File: 541.460.000n
308 0 C.G.

DEFENSE LOGISTICS AGENCY

THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 308

File:
C.G. 541.460.d

308

Defense Distribution Depot Memphis

FINAL

Background Sampling Program Report

May 1998

Prepared for
U.S. Army Corps of Engineers
Huntsville Division

Prepared by

CH2MHILL
151 Lafayette Drive, Suite 110
Oak Ridge, TN 37830

Contents

Appendices

Figures

Contents (continued)

Tables

Acronyms

ARARs	applicable or relevant and appropriate requirements
ASTM	American Society for Testing and Materials
BCT	BRAC Cleanup Team
BEHP	bis(2-ethylhexyl)phthalate
bgs	below ground surface
Bldg	Building
BRAC	Base Realignment and Closure
CDD	chlorinated dibenzo-p-dioxin
CDF	chlorinated dibenzo furans
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
COE	U.S. Army Corps of Engineers
CRDL	contract-required detection limit
CRQL	contract-required quantitation limit
DCA	dichloroethane
DDD	dichlorodiphenyldichloroethane
DDE	1,1,1-dichloro-2,2-bis(4-chlorophenyl)ethylene
DDMT	Defense Depot Memphis, Tennessee
DDT	dichlorodiphenyltrichloroethane
DLA	Defense Logistics Agency
DNBP	di-n-butylphthalate
DO	dissolved oxygen
EB	equipment rinseate blank
EPA	U.S. Environmental Protection Agency
FB	field blank
FR	*Federal Register*

Acronyms (continued)

HRS	Hazard Ranking System
IDL	instrument detection limit
LCS	Laboratory Control Sample
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µS/cm	microSiemens per centimeter
MDL	method detection limit
MEK	methylethyl ketone
MLGW	Memphis Light, Gas, and Water
MOH	Medal of Honor Park
MS/MSD	matrix spike/matrix spike duplicate
NPL	National Priorities List
O.D.	outside diameter
PARCC	precision, accuracy, representativeness, completeness, and comparability
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PCDD	polychlorinated dibenzo-p-dioxin
PCDF	polychlorinated dibenzofuran
PID	photoionization detector
PRG	preliminary remediation goal
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RME	reasonable maximum exposure
RPD	relative percent difference
SOW	Statement of Work
SVOC	semivolatile organic compound

Acronyms (continued)

TAL	Target Analyte List
TB	trip blank
TCA	trichloroethane
TCE	trichloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDEC	Tennessee Department of Environment and Conservation
TEF	toxicity equivalency factor
TM	Technical Memorandum
UCL	upper confidence limit
VOC	volatile organic compound

TAB

Executive Summary

Executive Summary

This report documents the background sampling program conducted at the Defense Depot Memphis, Tennessee (DDMT). The program was conducted to provide sufficient data to establish representative background concentrations for naturally occurring and, if appropriate, anthropogenic constituents. Background concentrations are used to support objectives of the environmental program at DDMT, including the following:

- Development of action levels to be used in further-action/no-further-action decisionmaking
- Development of interim remedial action/early removal decisionmaking
- Delineation of nature and extent during remedial investigation (RI) efforts
- Determination of potential offsite migration of site-related constituents
- Assessment of potential/future risk
- Development of cleanup criteria and preliminary remediation goals (PRGs)

Background data were collected for surface soil, subsurface soil, surface water, sediment, and groundwater. Background sampling locations were selected in areas believed to be unaffected by past or present DDMT waste management activities. However, background sample locations in the surrounding urban environment were not necessarily unaffected by residential or industrial activities. Twenty-two soil, surface water, and sediment sample locations were selected to identify the 90th percentile (the value that bounds 90 percent of the population values) of the population with 90 percent confidence. (That is, if 22 samples were repeatedly taken from the background population [e.g., background surface soil], the sample 90th percentile would be below the true 90th percentile of the population in 90 percent of the samples.) Twelve groundwater monitoring wells were assessed to be representative of background conditions. Data from these wells provide 85 percent confidence that the 85th percentile of the background population has been identified.

Surface and subsurface soil locations were selected along the perimeter of the DDMT main installation and Dunn Field as well as at offsite locations. Concentrations of metals, semivolatile organic compounds (SVOCs), and pesticides/herbicides were higher at the DDMT perimeter sample locations than at the offsite locations. The difference in the concentration of background constituents between the perimeter and offsite sample groups is low (less than 100 percent relative difference). This indicates that the difference is representative of variations in anthropogenic conditions between the two sample groups rather than a gross impact from waste management at DDMT. Therefore, perimeter and offsite data were combined into one background data set.

Dioxins and furans were detected in most perimeter and offsite soils and at generally higher concentrations at the surface than at depth. Dioxins were also detected in sediment and surface water background samples with the highest detected concentrations exceeding U.S. Environmental Protection Agency (EPA) Region III risk-based criteria at the Botanical

Gardens and Audubon Park. Specific dioxin and furan isomers detected in background samples are indicative of ambient atmospheric deposition rather than industrial or waste management sources.

Background data were validated according to EPA criteria. Constituents typical of field and laboratory contamination as well as dioxin and furan isomers were identified in the background samples as nondetected, following EPA procedures. Holding times, matrix recoveries, and duplicate analyses were all within EPA quality control performance requirements.

This report presents statistical summary tables for soil, sediment, surface water, and groundwater background constituents. In addition, background data are evaluated for quality and outliers or data population characteristics that could compromise the use of the data to represent background conditions.

TAB

1.0

1.0 Introduction

Defense Depot Memphis, Tennessee (DDMT) has conducted a multimedia background sampling program to support implementation of its environmental restoration program. The purpose of the background sampling program is to provide sufficient data to establish representative background concentration data for naturally occurring and, if appropriate, man-made constituents (e.g., pesticides) at DDMT. Constituent concentrations detected in various media as part of the remedial activities at the site will be compared with background data established herein to evaluate whether reported concentrations of those constituents were caused by DDMT operations, are naturally occurring, or are caused by ambient effects from the urban environment surrounding DDMT.

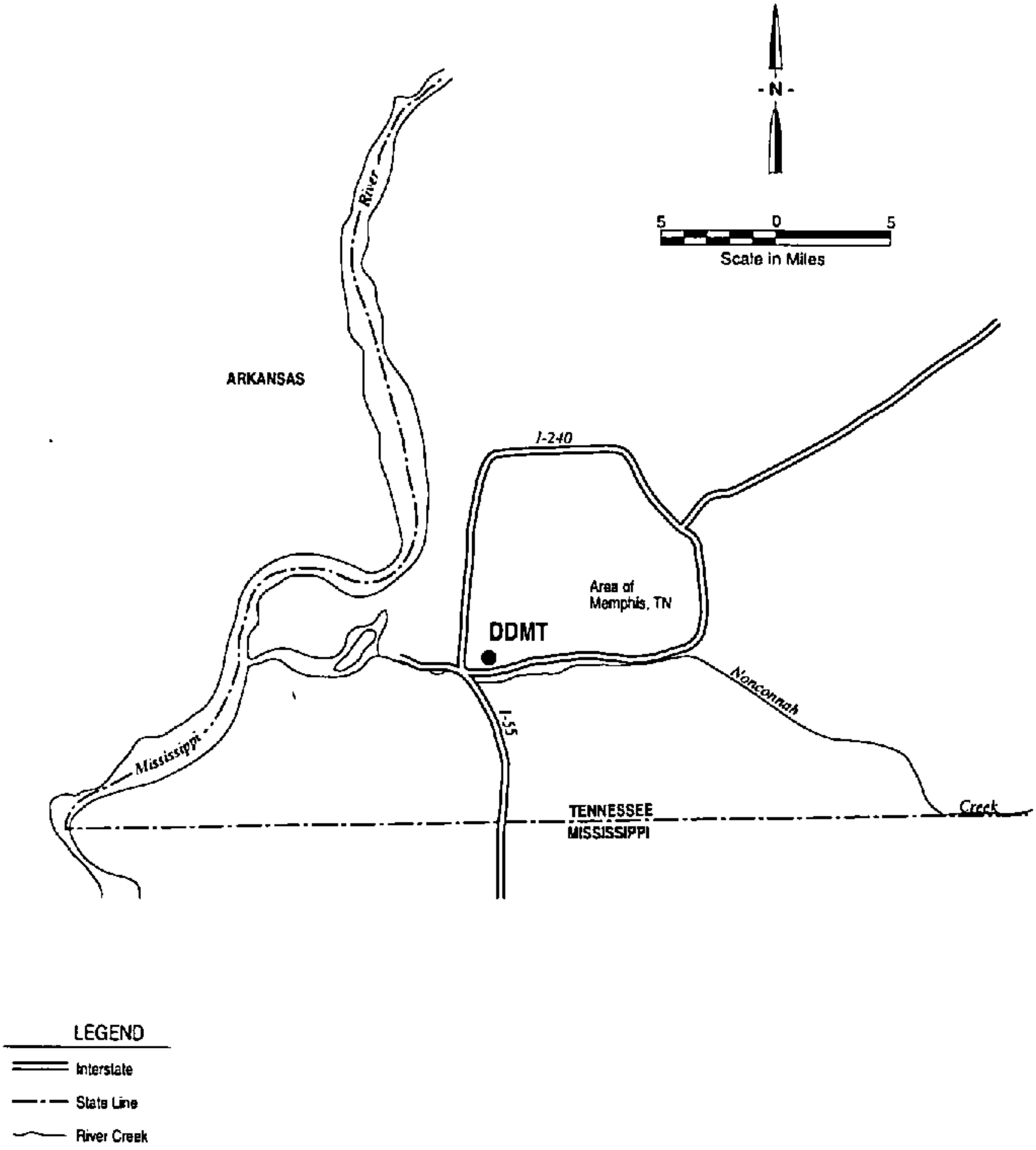
This report documents the multimedia Background Sampling Program conducted by DDMT to support its environmental restoration program. An overview of the facility and site information is presented in Section 1.1. The remaining sections in the introduction describe the background sampling project objectives and provide a guide to the organization of the remainder of the report.

1.1 Facility Background

DDMT covers 642 acres of land in Shelby County, Memphis, Tennessee, in the extreme southwestern portion of the state (see Figure 1-1). DDMT lies approximately 5 miles east of the Mississippi River and just northeast of the Interstate 240–Interstate 55 junction, in the south-central section of Memphis, approximately 4 miles southeast of the Central Business District and 1 mile northwest of Memphis International Airport. Airways Boulevard borders DDMT on the east and provides primary access to the installation. Dunn Avenue, Ball Road, and Perry Road serve as the northern, southern, and western boundaries to the main installation, respectively. Dunn Field, a known burial area at DDMT, is located just north of the main installation. Person Avenue, Kyle Street, and Hays Street serve as the northern, western, and eastern boundaries to Dunn Field, respectively.

The installation consists of approximately 110 buildings, 26 miles of railroad track, and 28 miles of paved streets. The facility has approximately 5.5 million square feet of covered storage space and approximately 6 million square feet of open space.

Past activities at DDMT include a wide range of storage, distribution, and maintenance practices. Dunn Field has been used as a landfill area (northwest quadrant), storage area for mineral stockpiles (southwest and southeast quadrants), and pistol range (northeast quadrant). Activities within the southwest quadrant of the main installation have included hazardous material storage and recoupment (Building [Bldg] 873), sandblasting/painting activities (Bldgs 1086 through 1089), and maintenance (Bldg 770). Other activities that are documented to have occurred in this area of the installation include polychlorinated biphenyl (PCB) transformer storage (near Bldg 274), pesticide/herbicide storage and use, and fire truck pump testing (Lake Danielson). The northern portion of the main installation has a history of storage of hazardous materials, treatment of wood products with pentachlorophenol (Bldg 737), and storage of items awaiting disposal.



SOURCE: Engineering-Science, 1993.

Figure 1-1
DDMT Location in
Memphis Metropolitan Area
Defense Depot Memphis, Tennessee

DDMT was issued a Resource Conservation and Recovery Act (RCRA) Part B permit (No. TN4 210 020 570) by the U.S. Environmental Protection Agency (EPA), Region IV and the Tennessee Department of Environment and Conservation (TDEC) on September 28, 1990. Subsequently, in accordance with Section 120(d)(2) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9620(d)(2), EPA prepared a final Hazard Ranking System (HRS) Scoring Package for DDMT. On the basis of the final HRS score of 58.06, EPA added DDMT to the National Priorities List (NPL) by publication in the *Federal Register* (FR), 57 FR 47180 No. 199, on October 14, 1992.

As a result of DDMT's status as an NPL site, DDMT entered a Federal Facilities Agreement on March 6, 1995. The signatories of that agreement, the Defense Logistics Agency (DLA), EPA, and TDEC, agreed that the investigation of all applicable sites would proceed under the CERCLA process for remediation (remedial investigation, feasibility study, proposed plan, record of decision, remedial design, and remedial action).

In July 1995, DDMT was placed on the Base Realignment and Closure (BRAC) list, which indicates that the facility will be closed and converted to potentially different ownership and uses. Therefore, in addition to meeting all CERCLA requirements, environmental restoration at DDMT must also comply with specific requirements for property transfer under development by the BRAC Cleanup Team (BCT).

1.2 Project Objectives

The purpose of the Background Sampling Program at DDMT is to provide sufficient environmental data of known and acceptable quality to establish representative background concentrations for constituents present in surface soil, subsurface soil, surface water, and sediment at DDMT. Constituent concentrations detected in various media as part of the future remedial activities at the facility will be compared with background data to evaluate whether the reported concentrations of those constituents were caused by DDMT operations, are naturally occurring, or are caused by ambient effects from the urban environment surrounding DDMT.

The background data will be used to support several aspects of the environmental program at DDMT, including the following:

- Development of action levels to be used in further-action/no-further-action decisionmaking
- Development of interim remedial action/early removal decisionmaking
- Delineation of nature and extent during RI efforts
- Determination of potential offsite migration of site-related constituents
- Assessment of potential/future risk
- Development of remedial criteria and PRGs

During a BCT meeting on July 2, 1997, "sensitive" chemical constituents were identified from analytical data gathered during environmental characterization efforts carried out at BRAC, screening, and RI sites between the fall of 1996 and the winter of 1997. Sensitive constituents are those parameters detected in the BRAC, screening, and RI sampling events that exceeded applicable criteria as well as background. Background levels for these parameters are therefore critical, as they will be compared to applicable criteria during the screening and data evaluation process to determine if parameter concentrations represent releases to the environment or natural conditions. Modifications (removal of outliers) to the background distributions were made by the BCT such that a more conservative (lower) background concentration was used in evaluating DDMT data. These modified background data are reported herein.

1.3 Organization

The report is organized into six sections:

- Section 1 contains introductory and background information.
- Section 2 presents a field sampling summary, sampling rationale, and specific sampling procedures.
- Section 3 identifies important background constituents, discusses the background data spatial distribution, and presents summary statistics.
- Section 4 contains a summary of project quality assurance and quality control (QA/QC) and the results of analytical data validation.
- Section 5 presents the summary and conclusions.
- Section 6 is a list of reference material consulted for this document.

Other data and supporting information are presented in the following appendices.

- Appendix A contains the soil boring logs.
- Appendix B presents copies of the field sampling logbooks.
- Appendix C presents distribution plots of metal data for all media.
- Appendix D contains a summary of the analytical data in tabular form.
- Appendix E contains a summary of background data qualifiers.
- Appendix F presents a compilation of summary statistics.
- Appendix G presents responses to review comments on the draft document.

TAB

2.0

2.0 Field Investigation

2.1 Field Sampling Summary

As specified in the *Draft Final Generic RI/FS Work Plan* (CH2M HILL, March 1995), environmental samples were taken from areas believed to be unaffected by past or present DDMT industrial activities. The soils, sediment, and surface water field sampling effort began October 9 and concluded on October 12, 1995. Groundwater sampling was conducted between February 6 and February 27, 1996.

Activities conducted by field personnel generally consisted of the following:

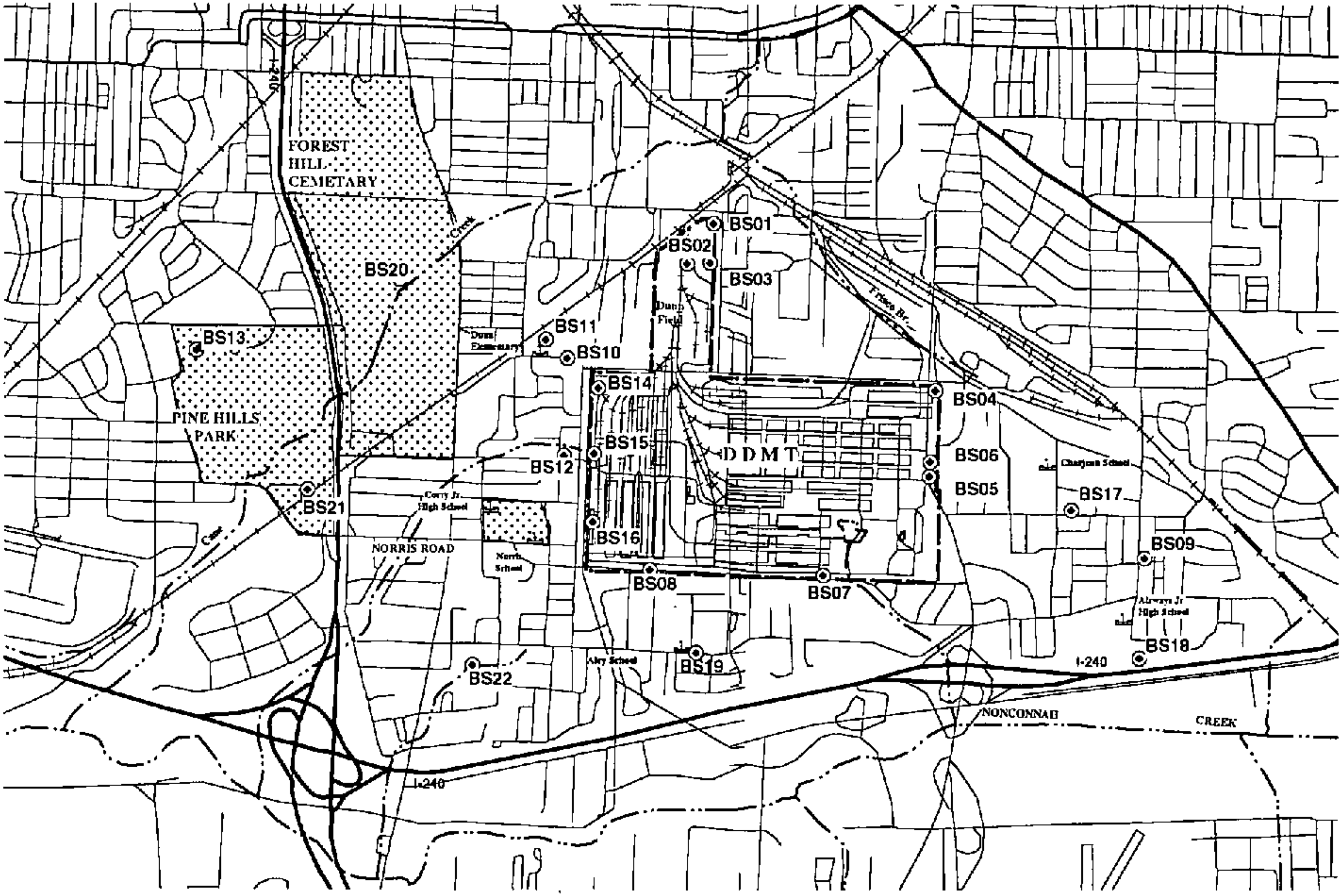
- Instrument calibration
- Equipment decontamination
- Surface and subsurface soil sampling
- Surface water and sediment sampling
- Surface water filtering
- Groundwater monitoring well purging
- Groundwater sampling
- Sample management, tracking, and shipping

A total of 101 environmental samples were taken during this field investigation, excluding QA/QC samples. The distribution of the samples by medium is summarized as follows.

Sample Medium	Number of Environmental Samples
Surface soil	22
Subsurface soil	22
Surface water	22
Sediment	22
Groundwater	12

Surface soil and subsurface soil sampling locations are shown in Figure 2-1 and described in Tables 2-1 and 2-2. Surface and subsurface samples were each taken from the same location. Although locations for samples BS02, BW14, BS15, BS16, and BS21 shown on Figure 2-1 appear to be near railroad tracks, all five locations are at least 50 meters away from the nearest tracks. The condensed scale used in Figure 2-1 causes the sample locations to appear to be within the railroad track areas.

Surface water and sediment sampling locations are shown in Figure 2-2 and described in Tables 2-3 and 2-4. A surface water and sediment sample was taken at each location. Figure 2-3 shows the location of background monitoring wells.



SACLE: 1" = 1/2 mi

FIGURE 2-1
BACKGROUND SOIL SAMPLING LOCATIONS

Defense Depot Memphis, Tennessee

CH2MHILL

Table 2-1
Background Surface Soil Sample and Location Information
Background Sampling Program
Defense Depot Memphis Tennessee

Sample #	Location	Group	Date	Time	General Sample Location	QA/QC Sample
SS51	BS01	Perimeter	10/9/95	1447	NE corner of Dunn Field; near intersection of Person and Hays St.	NA
SS51A	BS01	Perimeter	10/9/95	1447	NE corner of Dunn Field; near intersection of Person and Hays St.	Duplicate
SS52	BS02	Perimeter	10/9/95	1542	Dunn Field; near intersection of Carver and Hays St.	Split
SS53	BS03	Perimeter	10/9/95	1618	Dunn Field; near intersection of Carver and Hays St.	NA
SS54	BS04	Perimeter	10/10/95	857	NE corner of DDMT; intersection of Airways Blvd and Dunn Rd	NA
SS55	BS05	Perimeter	10/10/95	1010	East of SE corner of Administration Bldg	NA
SS56	BS06	Perimeter	10/10/95	1055	East of NE corner of Administration Bldg	NA
SS57	BS07	Perimeter	10/10/95	1334	South side of DDMT; south of Bldg 490	NA
SS58	BS08	Perimeter	10/10/95	1409	SW corner of DDMT; south of Bldgs 970 and 875	NA
SS59	BS09	Offsite	10/10/95	1516	East of DDMT; near intersection of Jolson St. and Barrymore St.	NA
SS60	BS10	Offsite	10/11/95	916	Dunn Elementary School; east of school building	NA
SS61	BS11	Offsite	10/11/95	1003	Dunn Elementary School; north of school playground	NA
SS62	BS12	Offsite	10/11/95	1102	West of DDMT; intersection of Sparks St. and Sparks Cove	NA
SS63	BS13	Offsite	10/11/95	1321	Pine Hills Golf Course; near Alice Ave. and Benton St.	NA
SS64	BS14	Perimeter	10/11/95	1445	W. edge of DDMT; Dunn Ave. and Perry St. (below power lines)	NA
SS65	BS15	Perimeter	10/11/95	1525	W. edge of DDMT; Perry St. and Elliston St. (below power lines)	NA
SS66	BS16	Perimeter	10/11/95	1604	W. edge of DDMT; Perry St. and Norris St. (below power lines)	NA
SS67	BS17	Offsite	10/12/95	835	Charjean School; near intersection of Dwight Rd. and Imogene St.	MS/MSD
SS68	BS18	Offsite	10/12/95	925	Airways Jr. High School; south of SW corner of school building	NA
SS69	BS19	Offsite	10/12/95	1022	Alcy Elementary School; E of SE corner of school building	NA
SS70	BS20	Offsite	10/12/95	1247	Forest Hill Cemetary; near Cane Creek; East of Garden of Hope	NA
SS71	BS21	Offsite	10/12/95	1345	Pine Hills Golf Course; off Mallory Ave.; near pump house	NA
SS72	BS22	Offsite	10/12/95	1424	Alcy Park West (SW of DDMT); South of Alcy St.	NA

Notes:

All samples were collected from zero- to 1-foot below ground surface.

All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, TAL metals, and dioxin/furans.

QA/QC = quality assurance/quality control
DDMT = Defense Depot Memphis Tennessee
MS/MSD = matrix spike/matrix spike duplicate
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
PCBs = polychlorinated biphenyls
TAL = Target Analyte List
NA = Not applicable
Bldg = Building

308 19

Table 2-2
Background Subsurface Soil Sample and Location Information
Background Sampling Program
Defense Depot Memphis Tennessee

Sample #	Location	Group	Date	Time	Sample Location Description	QA/QC Sample
SB095	BS01	Perimeter	10/9/95	1451	NE corner of Dunn Field; intersection of Person and Hays St.	MS/MSD
SB105	BS02	Perimeter	10/9/95	1555	Dunn Field; near intersection of Carver and Hays St.	NA
SB115	BS03	Perimeter	10/9/95	1627	Dunn Field; near intersection of Carver and Hays St.	NA
SB125	BS04	Perimeter	10/10/95	904	NE corner of DDMT; intersection of Airways Blvd and Dunn Rd	NA
SB135	BS05	Perimeter	10/10/95	1025	East of SE corner of Administration Bldg	NA
SB145	BS06	Perimeter	10/10/95	1101	East of NE corner of Administration Bldg	NA
SB155	BS07	Perimeter	10/10/95	1340	South side of DDMT; south of Bldg 490	NA
SB155A	BS07	Perimeter	10/10/95	1340	South side of DDMT; south of Bldg 490	Duplicate
SB165	BS08	Perimeter	10/10/95	1415	SW corner of DDMT; south of Bldgs 970 and 875	NA
SB175	BS09	Offsite	10/10/95	1522	East of DDMT; near intersection of Jolson St.& Barrymore St.	NA
SB184	BS10	Offsite	10/11/95	930	Dunn Elementary School; east of school building	MS/MSD
SB195	BS11	Offsite	10/11/95	1007	Dunn Elementary School; north of school playground	NA
SB205	BS12	Offsite	10/11/95	1108	West of DDMT; intersection of Sparks St. and Sparks Cove	NA
SB215	BS13	Offsite	10/11/95	1329	Pine Hills Golf Course; near Alice Ave and Benton St.	NA
SB225	BS14	Perimeter	10/11/95	1458	W. edge of DDMT; Dunn Ave and Perry St. (below power lines)	Split
SB235	BS15	Perimeter	10/11/95	1540	W. edge of DDMT; Perry St. and Elliston St.(below power lines)	NA
SB245	BS16	Perimeter	10/11/95	1625	W. edge of DDMT; Perry St. and Norris St. (below power lines)	NA
SB255	BS17	Offsite	10/12/95	851	Charjean School; near intersection of Dwight Rd and Imogene St.	NA
SB265	BS18	Offsite	10/12/95	936	Airways Jr. High; south of SW corner of school building	NA
SB265A	BS18	Offsite	10/12/95	936	Airways Jr. High; south of SW corner of school building	Duplicate
SB275	BS19	Offsite	10/12/95	1027	Alcy Elementary School; E of SE corner of school building	NA
SB275A	BS19	Offsite	10/12/95	1027	Alcy Elementary School; E of SE corner of school building	Duplicate
SB285	BS20	Offsite	10/12/95	1255	Forest Hill Cemetary; near Cane Creek; East of Garden of Hope	NA
SB295	BS21	Offsite	10/12/95	1350	Pine Hills Golf Course; off of Mallory Ave.; near pump house	NA
SB305	BS22	Offsite	10/12/95	1428	Alcy Park West (SW of DDMT); South of Alcy St.	NA

Notes:

All samples were collected from 5- to 6-feet below ground surface.

All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, TAL metals, and dioxin/furans.

QA/QC = quality assurance/quality control
DDMT = Defense Depot Memphis Tennessee
MS/MSD = matrix spike/matrix spike duplicate
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
PCBs = polychlorinated biphenyls
TAL = Target Analyte List
NA= Not applicable
Bldg = Building

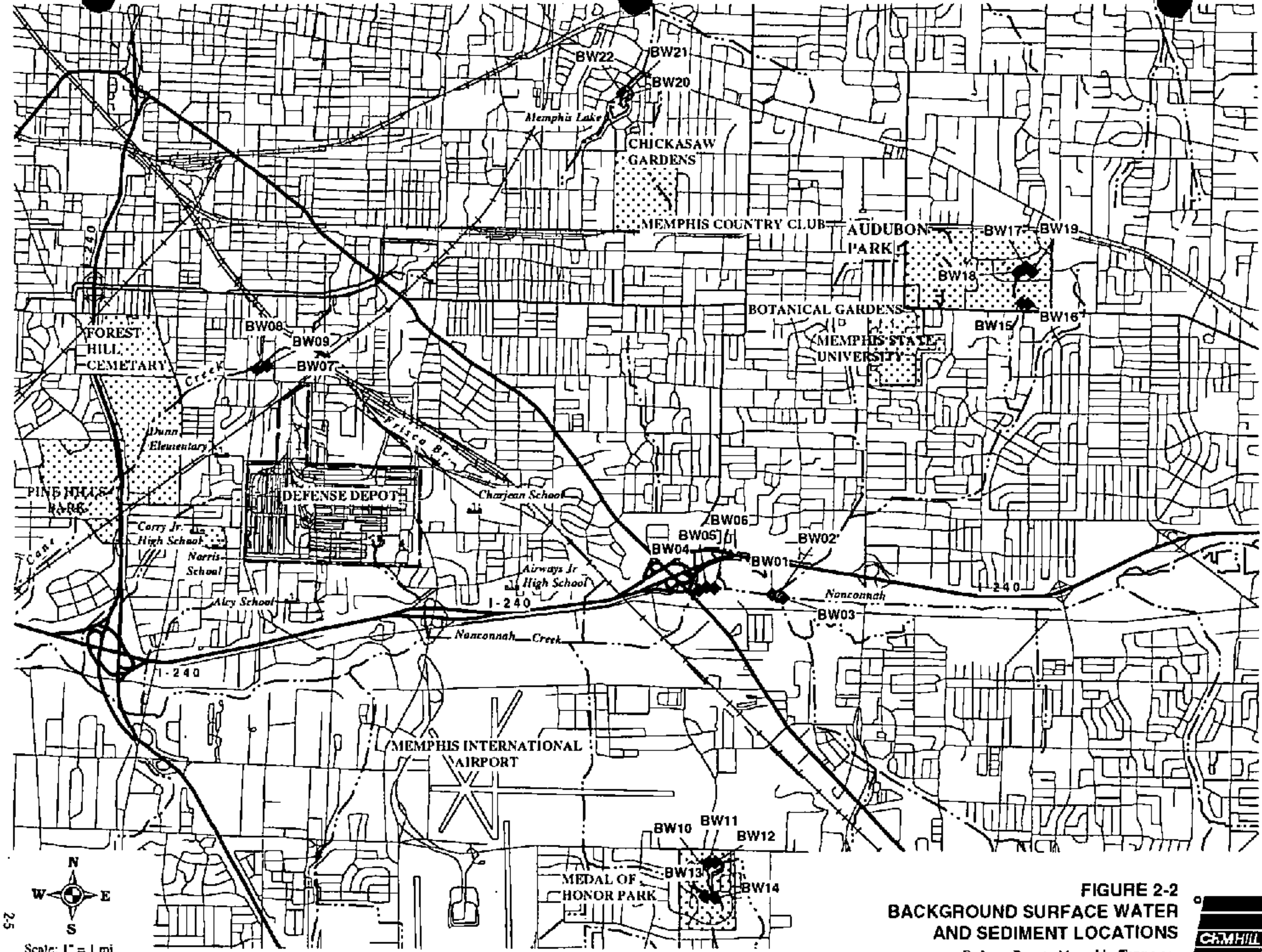


FIGURE 2-2
BACKGROUND SURFACE WATER AND SEDIMENT LOCATIONS
Defense Depot, Memphis, Tennessee

CH2MHILL

Table 2-3
Background Surface Water Sample and Location Information
Background Sampling Program
Defense Depot Memphis Tennessee

Sample #	Location	Group	Date	Time	General Sample Location	QA/QC Sample
SW17	BW01	Nonconnah	10/10/95	930	Nonconnah Creek; downstream of Tenmile Creek	NA
SW17A	BW01	Nonconnah	10/10/95	930	Nonconnah Creek; downstream of Tenmile Creek	Duplicate
SW18	BW02	Nonconnah	10/10/95	1030	Nonconnah Creek; near the mouth of Tenmile Creek	Split Sample
SW19	BW03	Nonconnah	10/10/95	1120	Nonconnah Creek; upstream of Tenmile Creek	NA
SW20	BW04	Nonconnah	10/10/95	1340	Nonconnah Creek; upstream (east) of Lamar Ave bridge	MS/MSD
SW21	BW05	Nonconnah	10/10/95	1345	Nonconnah Creek; upstream (east) of Lamar Ave bridge	NA
SW22	BW06	Nonconnah	10/10/95	1400	Nonconnah Creek; upstream (east) of Lamar Ave bridge	NA
SW23	BW07	Cane	10/10/95	1600	Cane Creek; upstream (east) of Ragan St. bridge	NA
SW24	BW08	Cane	10/10/95	1605	Cane Creek; upstream (east) of Ragan St. bridge	NA
SW25	BW09	Cane	10/10/95	1615	Cane Creek; upstream (east) of Ragan St. bridge	NA
SW26	BW10	MOH	10/11/95	925	Metal of Honor Park; western section of lake	NA
SW27	BW11	MOH	10/11/95	935	Metal of Honor Park; northwestern section of lake	NA
SW28	BW12	MOH	10/11/95	950	Metal of Honor Park; northern section of lake	NA
SW29	BW13	MOH	10/11/95	1015	Metal of Honor Park; southwestern section of lake	NA
SW30	BW14	MOH	10/11/95	1020	Metal of Honor Park; southern section of lake	NA
SW31	BW15	Botanical	10/11/95	1140	Botanical Gardens lake (western section)	NA
SW32	BW16	Botanical	10/11/95	1145	Botanical Gardens lake (eastern section)	NA
SW33	BW17	Audubon	10/11/95	1230	Audubon Park lake (northern section of lake)	NA
SW33A	BW17	Audubon	10/11/95	1230	Audubon Park lake (northern section of lake)	Duplicate
SW34	BW18	Audubon	10/11/95	1245	Audubon Park lake (northwestern section of lake)	NA
SW35	BW19	Audubon	10/11/95	1315	Audubon Park lake (northeastern section of lake)	Split + MS/MSD
SW35A	BW19	Audubon	10/11/95	1315	Audubon Park lake (northeastern section of lake)	Duplicate
SW36	BW20	Chickasaw	10/12/95	900	Chickasaw Gardens lake (northwestern section of lake)	NA
SW37	BW21	Chickasaw	10/12/95	855	Chickasaw Gardens lake (north edge of lake, next to outfall)	NA
SW38	BW22	Chickasaw	10/12/95	840	Chickasaw Gardens lake (northeastern section of lake)	NA

Notes:

All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, TAL metals, and dioxin/furans.

QA/QC = quality assurance/quality control
MS/MSD = matrix spike/matrix spike duplicate
VOCs = volatile organic compounds
NA = Not applicable
SVOCs = semivolatile organic compounds
PCBs = polychlorinated biphenyls
TAL = Target Analyte List

Table 2-4
Background Sediment Sample and Location Information
Background Sampling Program
Defense Depot Memphis Tennessee

Sample #	Station	Group	Date	Time	Sample Location Description	QA/QC Sample
SD060	BW01	Nonconnah	10/10/95	930	Nonconnah Creek; downstream of Tenmile Creek	NA
SD06A0	BW01	Nonconnah	10/10/95	930	Nonconnah Creek; downstream of Tenmile Creek	Duplicate
SD070	BW02	Nonconnah	10/10/95	1030	Nonconnah Creek; near the mouth of Tenmile Creek	Split Sample
SD080	BW03	Nonconnah	10/10/95	1120	Nonconnah Creek; upstream of Tenmile Creek	NA
SD090	BW04	Nonconnah	10/10/95	1340	Nonconnah Creek; upstream (east) of Lamar Ave bridge	MS/MSD
SD100	BW05	Nonconnah	10/10/95	1345	Nonconnah Creek; upstream (east) of Lamar Ave bridge	NA
SD110	BW06	Nonconnah	10/10/95	1400	Nonconnah Creek; upstream (east) of Lamar Ave bridge	NA
SD120	BW07	Cane	10/10/95	1600	Cane Creek; upstream (east) of Ragan St. bridge	NA
SD130	BW08	Cane	10/10/95	1605	Cane Creek; upstream (east) of Ragan St. bridge	NA
SD140	BW09	Cane	10/10/95	1615	Cane Creek; upstream (east) of Ragan St. bridge	NA
SD150	BW10	MOH	10/11/95	925	Medal of Honor Park; western section of lake	NA
SD160	BW11	MOH	10/11/95	935	Medal of Honor Park; northwestern section of lake	NA
SD170	BW12	MOH	10/11/95	950	Medal of Honor Park; northern section of lake	NA
SD180	BW13	MOH	10/11/95	1015	Medal of Honor Park; southwestern section of lake	NA
SD190	BW14	MOH	10/11/95	1020	Medal of Honor Park; southern section of lake	NA
SD200	BW15	Botanical	10/11/95	1140	Botanical Gardens lake (western section)	NA
SD210	BW16	Botanical	10/11/95	1145	Botanical Gardens lake (eastern section)	NA
SD220	BW17	Audubon	10/11/95	1230	Audubon Park lake (northern section of lake)	NA
SD220A	BW17	Audubon	10/11/95	1230	Audubon Park lake (northern section of lake)	Duplicate
SD230	BW18	Audubon	10/11/95	1245	Audubon Park lake (northwestern section of lake)	NA
SD240	BW19	Audubon	10/11/95	1315	Audubon Park lake (northeastern section of lake)	Split + MS/MSD
SD240A	BW19	Audubon	10/11/95	1315	Audubon Park lake (northeastern section of lake)	Duplicate
SD250	BW20	Chickasaw	10/12/95	900	Chickasaw Gardens lake (northwestern section of lake)	NA
SD260	BW21	Chickasaw	10/12/95	855	Chickasaw Gardens lake (north edge of lake, next to outfall)	NA
SD270	BW22	Chickasaw	10/12/95	840	Chickasaw Gardens lake (northeastern section of lake)	NA

Notes:

All samples were collected from zero to 6 inches below ground surface.

All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, TAL metals, and dioxin/furans.

QA/QC = quality assurance/quality control
MS/MSD = matrix spike/matrix spike duplicate
VOCs = volatile organic compounds
SVOCs = semivolatile organic compounds
MOH = Medal of Honor
PCBs = polychlorinated biphenyls
TAL = Target Analyte List
NA = Not applicable

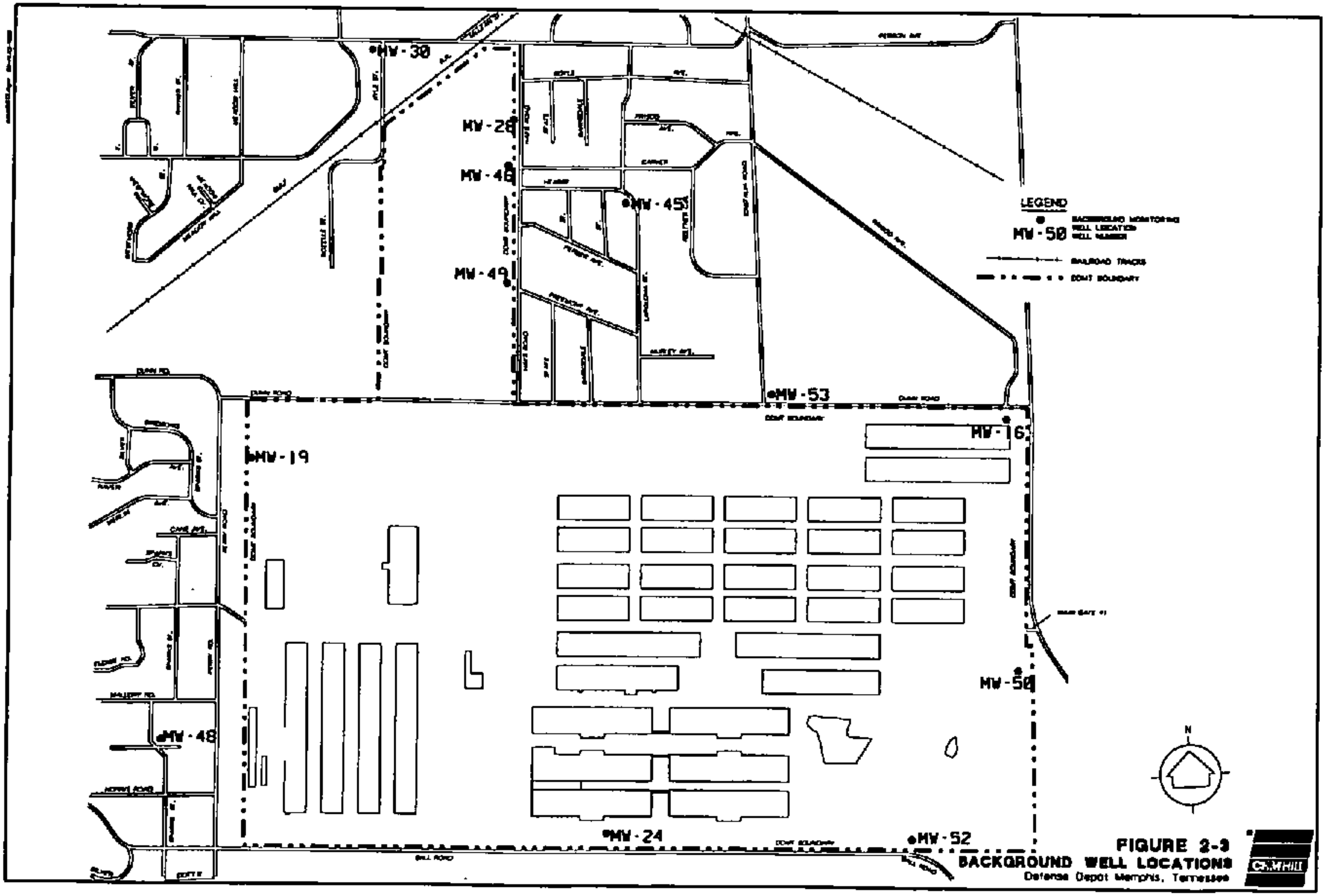


FIGURE 2-3
BACKGROUND WELL LOCATIONS
Defense Depot Memphis, Tennessee

Samples were taken according to the procedures developed in the *Generic Remedial Investigation/Feasibility Study Work Plan* (CH2M HILL, 1995a) and discussed in Sections 2.3.1 through 2.3.3 of this report. Samples from all media were analyzed by the laboratory according to the EPA Contract Laboratory Program (CLP) Statement of Work (SOW) except for herbicides, which were analyzed using EPA SW846, Method 8151. Specific methods are summarized as follows.

Analytes	VOCs	SVOCs	Pesticides/ PCBs	Herbicides	TAL Metals (Unfiltered)	TAL Metals (Filtered)	Dioxin/ Furans
Method	CLP Organic Laboratory Method 1.9			SW 846	CLP Inorganic Laboratory Method 3.1		CLP Dioxin/ Furan Laboratory Method 1.1
Soil	✓	✓	✓	✓	✓		✓
Surface Water	✓	✓	✓	✓	✓	✓	✓
Sediment	✓	✓	✓	✓	✓		✓
Groundwater	✓	✓	✓	✓	✓		

Lists of all compounds analyzed are presented in Appendices F-1 through F-3.

The rationale for selecting the number, sampling depth interval, and location of samples is presented by medium in Section 2.2. The location-specific methods, procedures, and other sample information (e.g., sample depth, equipment, decontamination procedures) are described in Section 2.3.

2.2 Overall Sampling Rationale

Background sampling locations were selected within areas believed to be unaffected by past or present DDMT waste management activities. An important aspect of the sampling effort was consideration of the potential effects of urban pollutants from the area surrounding the site and of historical uses of the general area (e.g., pesticides from historical farming operations).

A statistical approach was used to select the number of soil, sediment, and surface water samples required to provide an appropriate level of confidence for each medium (CH2M HILL, 1995a). Sample sizes appropriate to estimate nonparametric tolerance intervals (Conover, 1980) were used to estimate the number of samples required for each medium. Nonparametric tolerance intervals make no assumptions about the underlying distribution of the data being evaluated. However, independent samples are assumed to be randomly drawn from an infinite population. Coverage is the percent or quartile of the population distribution to be bounded by the largest concentration in the sample. An upper tolerance bound is designed to contain at least 100 percent of the sampled population from a sample of size *n* with (1-a) percent confidence. The level of confidence reflects the probability that the maximum concentration detected from a collection of samples will bound the pre-specified quartile of the population distribution.

The equation used to generate the minimum sample size is as follows:

$$n = \ln(a)/\ln(p)$$

where

a = significance level ($0 < a < 1$)

p = percentile of the population to be contained by the upper bound ($0 < p < 1$)

n = minimum number of samples required

Levels of confidence for each medium (sediment, surface water, surface soil, subsurface soil) were calculated according to the project objectives and are provided in the *Generic Remedial Investigation/Feasibility Study Work Plan* (CH2M HILL, 1995a). The selection of confidence intervals for DDMT was based on the need to obtain a relatively representative data set and on the cost of obtaining such data. It was determined that for soil, sediment, and surface water, the 90th percentile of the population would be determined with 90 percent confidence requiring 22 samples as follows:

$$n = \ln(1-0.9)/\ln(0.9) = 21.8 = 22$$

2.2.1 Surface and Subsurface Soil Sampling Rationale

The majority of the land surface at DDMT is classified as graded land (meaning that cut-and-fill or other surface disturbances have occurred). During grading and land development, the surface soil was mixed and reworked. Native surface soil is apparent in the stream and swale channels. Therefore, for purposes of this background sampling program, no distinctions were made between different surface soil mineralogies (as defined in Section 5.3.2.1 of the *Generic Remedial Investigation/Feasibility Study Work Plan* [CH2M HILL, 1995a]), although the soil type was classified in the field for identification purposes. Subsurface soil samples were taken from the same location as the surface soil samples at a depth interval representative of the native soil.

Surface and subsurface soil sampling locations are shown in Figure 2-1. Station descriptions and sample information are provided in Tables 2-1 and 2-2.

To obtain a set of background soil data representative of the diversity (non-homogeneity that results from regrading) of soil conditions anticipated at DDMT, samples were obtained from locations both on an off DDMT property. Onsite locations were included to represent ambient conditions expected at DDMT resulting from normal operation of the facility, excluding waste management and waste disposal activities. Onsite soil sampling locations were selected by first delineating areas throughout the installation that were not appropriate for background sampling, including areas of known or suspected contamination and areas covered by buildings or roads. A total of 11 onsite sample locations (BS01 through BS08 and BS14 through BS16; see Figure 2-1) were selected, generally along the perimeter of DDMT, to represent the most reasonable geographical distribution over the site, considering site limitations. Samples taken on DDMT property are herein referred to as perimeter samples.

Soil sampling locations off DDMT property were primarily focused at schools (SB10, SB11, SB17, SB18, and SB19), golf courses (SB13 and SB21), and cemeteries (SB20). Additional sampling locations included residential neighborhoods surrounding DDMT (BS09, BS12, and BS22). These locations were selected as representative of ambient environmental conditions in the urban environment surrounding DDMT. They also are subject to similar grounds maintenance activities such as possible application of herbicides, pesticides, fertilizers, and lawn seed as well as mowing and aeration. A total of 11 offsite locations were sampled during the background program.

At each sampling location, soil samples were taken from the ground surface (zero to 1 foot below ground surface [bgs]) and at a depth sufficient to be representative of native (undisturbed) soil (4 to 6 feet bgs). The depth of the native soil was determined in the field on the basis of visual soil classifications. All samples were scanned in the field with a photoionization detector (PID) to eliminate sampling locations that might contain PID detectable volatile organic compounds (VOCs). No VOCs were detected in the field.

2.2.2 Surface Water and Sediment Sampling Rationale

To obtain a minimum 90 percent confidence and 90 percent coverage of the sample population's maximum value, 22 surface water and 22 sediment samples were required. All surface water and sediment samples were taken from offsite (refer to Figure 2-2 and Tables 2-3 and 2-4). Sampling locations were selected upgradient of any outfalls from DDMT to ensure a representative background sample. Two types of surface water and sediment features were evaluated as part of the background program: ponds similar in size and surrounding land use to DDMT's golf course pond and Lake Danielson and perennial streams.

Surface water/sediment samples were collected from four ponds during the background sampling field effort. The ponds were located in Medal of Honor Park, Audubon Park, Memphis Lake in Chickasaw Gardens, and the Botanical Gardens in Audubon Park.

Surface water/sediment samples were also taken from two perennial streams located near DDMT: Nonconnah Creek, located south of DDMT, and Cane Creek, located northwest of DDMT.

2.2.3 Groundwater Sampling Rationale

Groundwater monitoring well installation and sampling has been occurring at DDMT since 1982. During previous site characterization efforts, primarily the sitewide remedial investigation of 1989 (Law, 1990), monitoring wells MW-2 through MW-39 were installed to evaluate the extent of potential groundwater contamination on a sitewide basis. All but two of these wells were installed in the uppermost unconfined Fluvial Aquifer to depths ranging from 29 to 157 feet bgs. In 1996, 16 additional groundwater monitoring wells (MW-40 through MW-55) were installed to further evaluate groundwater contamination west of Dunn Field and to characterize the chemical constituents in groundwater flowing onto the main installation. Samples were taken from these wells and analyzed to assess the background chemical characteristics of groundwater in the surrounding area that is not affected by DDMT operations.

The approach to selecting wells for use in the background sampling program was to use the presence of VOCs, SVOCs, or pesticides/PCBs as an indicator to eliminate wells that are potentially affected by DDMT operations (CH2M HILL, 1995a). Areas outside known contamination and that are primarily upgradient of the site were considered as potential sampling locations. Figure 2-4 presents the potentiometric surface based on data from new (MW-40 through MW-54) and existing wells.

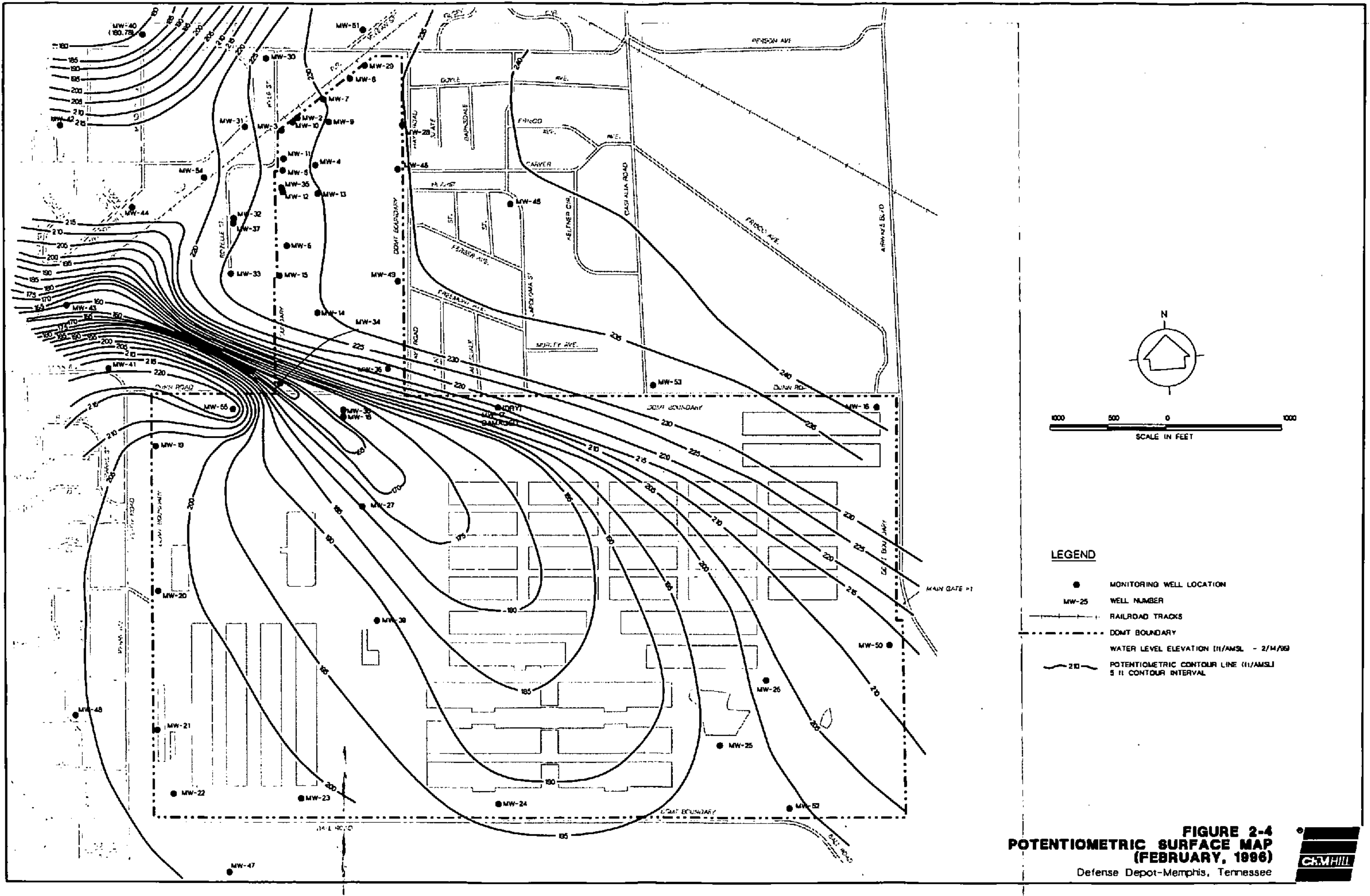


FIGURE 2-4
POTENTIOMETRIC SURFACE MAP (FEBRUARY, 1996)

Defense Depot-Memphis, Tennessee

CH2M HILL

The potentiometric gradient indicates that groundwater flows onto the site from the northeast, east, south, and southwest. Groundwater generally flows from Dunn Field offsite to the west. On the basis of these criteria, the following existing wells were selected for use as background wells: MW-16, MW-19, MW-24, MW-28, and MW-30, MW-45, MW-46, MW-48, MW-49, MW-50, MW-52, and MW-53 (see Figure 2-3).

MW-23 was originally identified as a background well (CH2M HILL, 1995), but was dropped because the presence of methylethyl ketone (MEK, or 2-butanone) and tetrachloroethylene (PCE) suggests that MW-23 may be impacted by an organic groundwater plume located in the southwest portion of DDMT. Trace detections of both compounds were estimated at 1 microgram per liter (µg/L), which is below the detection limits. At this time, it has not been determined whether this plume results from sources on or off DDMT property. Upgradient Wells MW-47 and MW-51 were not selected because they appear to be associated with organic groundwater contamination that may originate onsite.

Data from these 12 wells provide an 85 percent confidence level that the population's 85th percent quartile has been identified.

2.3 Field Activities

The sampling procedures, equipment, and locations followed the *Generic RI/FS Work Plan* (CH2M HILL, 1995a) and are fully described therein. Specific sampling equipment and procedures used during the field investigation are discussed for each medium in the following sections. All sampling equipment was decontaminated before use in the field and prior to sampling at each location.

2.3.1 Surface and Subsurface Soil Sampling

Surface soil samples were taken using a 5-foot stainless-steel continuous sampler from zero to 1 foot bgs (surface vegetation or gravel was removed prior to sampling). Samples were taken with the continuous sampler by either pushing the device hydraulically with the drill rig or by drilling and advancing the sampler ahead of a 7-5/8 inch outside diameter (O.D.) hollow-stem auger. If the amount of soil taken was insufficient to fill the designated laboratory sample containers, additional soil was taken at the same depth interval by offsetting a maximum of 2 feet from the original borehole location. VOC soil samples were taken directly from the continuous sampler using stainless-steel spoons. The remaining soil was placed into a stainless-steel bowl, mixed thoroughly, and then placed into the remaining laboratory sample containers.

Subsurface soil samples were taken from 4 to 6 feet bgs at the same sample locations where the surface soil samples were taken. Boreholes were advanced to the top of the sampling interval using a 7-5/8 inch O.D. hollow-stem auger. Soil was then taken from the sampling interval using a decontaminated 5-foot stainless-steel continuous sampler. VOC samples were taken directly from the sampler. The remaining soil was placed into a stainless-steel bowl, mixed thoroughly, and then placed into the appropriate sample containers. All soil cuttings were returned to the borehole.

An exception to the above procedures was the collection of soil from three locations (sample locations BS14, BS15, and BS16) along the western edge of DDMT. These borings were located beneath Memphis Light, Gas, and Water (MLGW) high-voltage power lines; and because of safety concerns, the drill rig was unable to set up at these locations. The three borings were completed to the desired depth intervals using a stainless-steel hand-auger. Analytical samples were taken from the hand-auger bucket using the same methods described above.

A soil boring log for each boring and well was completed in the field. Soils were logged according to *Visual-Manual Procedure for Description and Identification of Soils*, American Society for Testing and Materials (ASTM) D2488-24. The soil boring logs are included in Appendix A. Tables 2-1 and 2-2 contain specific information pertaining to each surface and subsurface soil sample taken. This information includes sample number, sample location, sample group, date and time taken, sample depth interval, boring location description, and corresponding QA/QC samples taken.

2.3.2 Surface Water and Sediment Sampling

Surface water samples were taken before sediment samples to minimize the amount of suspended solids in the water column. Thirteen samples were taken from ponds and 9 samples were taken from perennial streams within the area surrounding DDMT. All surface water samples were taken directly into laboratory sample containers. Table 2-3 contains specific information pertaining to each surface water sample taken. This information includes sample number, sample location, sample group, date and time taken, sample location description, and corresponding QA/QC samples taken.

Table 2-5 presents field parameters measured during collection of surface water samples. pH varies from near neutral at Nonconnah Creek (7.50 to 7.74) and Cane Creek (7.67) to slightly basic in the ponds at Medal of Honor Park (8.06 to 8.2), Botanical Gardens (8.05), Audubon Park (8.08 to 8.14), and Chickasaw Gardens (8.33). Conductivity is variable: it is highest in Nonconnah and Cane Creeks (0.199 to 0.243 microSiemens per centimeter [μS/cm]) as well as at Chickasaw Gardens (0.112) and is an order-of-magnitude lower in Botanical Gardens (0.073 to 0.079) and Audubon Park (0.066). Temperature and dissolved oxygen (DO) are variable within and between sample groups.

Sediment samples were taken within the same area of the water body as the surface water samples. Samples were taken from the top 6 inches using stainless-steel spoons. Samples taken for VOC analysis were transferred directly to the laboratory sample containers. The additional sediment material was placed into a stainless-steel bowl, thoroughly composited, and then transferred into sample containers. Table 2-4 details the sediment sample locations, sample numbers, sample locations, sample depths, dates and times taken, and corresponding QA/QC samples taken.

2.3.3 Groundwater Sampling

Groundwater monitoring wells were sampled following procedures identified in the *Generic Quality Assurance Project Plan* (CH2M HILL, 1995b). A Grundfos Redi-Flo2 submersible pump and Teflon pump tubing were used to develop and purge all wells. Metals, SVOC,

Table 2-5

Surface Water Field Parameters

Background Sampling Program

Defense Depot Memphis Tennessee

	Nonconnah Creek						Cane Creek			Medal of Honor Park					Botanical Gardens		Audubon Park			Chickasaw Gardens		
	BW01	BW02	BW03	BW04	BW05	BW06	BW07	BW08	BW09	BW10	BW11	BW12	BW13	BW14	BW15	BW16	BW17	BW18	BW19	BW20	BW21	DW22
	Sample Number																					
Parameter	SW17	SW18	SW19	BW20	SW21	SW22	SW23	SW24	SW25	SW26	SW27	SW28	SW29	SW30	SW31	SW32	SW33	SW34	SW35	SW36	SW37	SW38
pH	7.50	7.71	7.67	7.70	7.74	7.70	7.67	7.67	7.67	8.06	8.20	8.09	8.09	8.09	8.05		8.08	8.14	8.08	8.33		
Conductivity (µS/cm)	0.199	0.236	0.227	0.261	0.257	0.253	0.243	0.243	0.243	0.9	0.8	0.079	0.073	0.073	0.088		0.066	0.066	0.066	0.112		
Turbidity (NTU)	18	46	21	14	17	2	58	58	58	89	39	45	44	44	148		55	120	71	10		
Temperature (°C)	17.9	21.7	21.7	23.6	24.3	24.7	23.5	23.5	23.5	20.2	19.8	20.5	22.2	22.2	18.4		24.4	24.5	23.6	19.3		
Dissolved Oxygen (mg/L)	3.27	8.30	9.36	9.72	9.09	8.54	6.37	6.37	6.37	6.35	7.28	5.30	8.30	8.30	6.30		10.12	8.30	10.48	3.22		

Notes: All parameter data were collected using a Horiba U-10 Water Quality Meter.

Due to proximity of samples, only one parameter measurement was taken at Audubon Park and Chickasaw Gardens.

NTU = nephelometric turbidity unit

µS/cm = microsiemen per centimeter

mg/L = milligram per liter

308 31

and pesticide/herbicide samples were taken using the Grundfos pump. Samples to be analyzed for VOCs were collected with a disposable Teflon bailer.

Groundwater field parameters are presented in Table 2-6. Field parameters were taken with a Horiba U-10 Water Quality Meter.

308 33

Table 2-6
Groundwater Sample Summary
Background Sampling Program
Defense Depot Memphis Tennessee

Well Number	Date Sampled	Sample Number	Analysis	Well Volume (gal)	Developed Volume (gal)	Number of Well Volumes Developed	Purged Volume (gal)	Number of Well Volumes Purged	pH	Conductivity (µS/cm)	Temperature (c)	DO (mg/L)	Turbidity (NTU)	Hydraulic Conductivity (cm/sec)	Comments
14	2/11/96	MW141	VOC, SVOC, pesticide/PCB, herbicide, TAL, FS	0.86	na	na	4	4.65	6.03	0.221	16.2	7.86	>scale		None
16	2/13/96	MW161	VOC, SVOC, TAL, pesticide/PCB, herbicide	2.55	na	na	9	3.53	6.58	0.630	17.4	na	757	6.4 E-5	DO meter down
19	2/7/96	MW191	VOC, SVOC, pesticide/PCB, herbicide, TAL	1.1	na	na	3.1	2.82	5.92	0.201	15.8	7.86	>scale	6.7 E-5	Two events
24	2/10/96	MW241	VOC, SVOC, pesticide/PCB, herbicide, TAL	1.15	na	na	22	19.13	6.26	0.181	19.9	na	131	2.5 E-2	DO meter down
28	2/7/96	MW281	VOC, SVOC, pesticide/PCB, herbicide, TAL	1.5	na	na	7.5	5.00	5.87	0.184	16.00	8.04	>scale	1.0 E-2	Two events
30	2/7/96	MW321	VOC, SVOC, pesticide/PCB, herbicide, TAL	2.4	na	na	27	11.25	6.65	0.276	17.5	8.03	35	2.8 E-4	Two events
45	2/8/96	MW451	VOC, SVOC, TAL, pesticide/PCB, herbicide	2.01	50	24.88	8	3.98	6.14	0.378	18.00	9.67	138	2.2 E-2	None
46	2/9/96	MW461	VOC, SVOC, TAL, pesticide/PCB, herbicide	2.8	72.4	25.86	10	3.57	6.05	0.266	17.5	8.35	10	3.8 E-3	None
48	2/8/96	MW481	VOC, SVOC, TAL, pesticide/PCB, herbicide	2.3	15	6.52	12	5.22	6.32	0.257	19.2	8.26	10	2.3 E-2	None
49	2/9/96	MW491	VOC, SVOC, TAL, pesticide/PCB, herbicide	3.1	106	34.19	14	4.52	5.90	0.222	18.9	8.92	10	5.3 E-3	None
50	2/11/96	MW501	VOC, SVOC, TAL, pesticide/PCB, herbicide	6.2	123	19.84	21	3.39	6.01	0.796	18.4	na	10	1.6 E-3	DO meter down
52	2/11/96	MW521	VOC, SVOC, TAL, pesticide/PCB, herbicide	3.7	100	27.03	15	4.05	6.16	0.795	17.3	na	10	5.9 E-3	DO meter down
53	2/13/96	MW531	VOC, SVOC, TAL, pesticide/PCB, herbicide	1.5	100	66.67	7.5	5.00	5.81	0.364	18.1	8.75	33	1.0 E-2	None

Notes:

FS = TOC, sulfate, nitrate/nitrite, chloride (Cl), NH_4, and iron (Fe)

WQ = HCO_3, SO_4, chloride (Cl), fluoride (Fl), NO_3, TDS, hardness, and tritium (H_3)

gal = gallon

µS/cm = microsiemen per centimeter

DO = dissolved oxygen

mg/L = milligram per liter

NTU = nephelometric turbidity unit

cm/sec = centimeter per second

VOC = volatile organic compound

SVOC = semivolatile organic compound

TAL = Target Analyte List

TAB

3.0

3.0 Sampling Results

This section summarizes the analytical results for background surface soil, subsurface soil, surface water, sediment, and groundwater taken during the Background Sampling Program at DDMT. All samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, and Target Analyte List (TAL) metals by CH2M HILL's Montgomery, Alabama, Laboratory. Dioxin/furan samples were analyzed by Triangle Laboratories, Durham, North Carolina. The resulting data were validated by CH2M HILL's data quality evaluation team.

3.1 Identification of Background Constituents Exceeding Applicable Criteria

To provide a more concise understanding of the detected chemicals and their importance, the detected chemicals were compared with criteria as described in the following sections. The selected criteria are from existing guidance documents and were developed to be protective of human health and the environment. Background constituents exceeding these criteria are likely to be considered in evaluating remedial actions at DDMT.

Definitions of statistical terms used in this section are provided in Table 3-1.

3.1.1 Applicable Criteria

Section 3.5 of the *Generic Remedial Investigation/Feasibility Study Work Plan* (CH2M HILL, 1995a) presents applicable criteria developed for groundwater, surface water, soil, and sediment. Criteria are based on chemical-, location-, or action-specific applicable or relevant and appropriate requirement (ARAR) standards or on screening risk-based PRGs. As discussed in Section 3.6 of the *Generic Remedial Investigation/Feasibility Study Work Plan* (CH2M HILL, 1995a), DDMT-specific PRGs were developed using conservative assumptions regarding human exposure and contaminant uptake and are therefore appropriate for screening purposes. Sites or areas that do not exceed screening-level PRGs most likely will not require additional risk-based analysis.

Background values that exceed applicable criteria will be considered in developing site-specific cleanup levels. Background data were compared with the minimum value of applicable criteria. Table 3-2 summarizes the comparison. Tables 3-7 through 3-10 in the *Generic Remedial Investigation/ Feasibility Study Work Plan* (CH2M HILL, 1995a) provide the constituent-specific source for each ARAR and the basis for the PRG calculations which were used to establish the applicable criteria. Criteria have been updated to use the most recent values available.

3.1.2 Metal Constituents

As discussed in Section 4.9, many of the metal constituents were detected at levels between the Instrument Detection Limit (IDL) and the CLP contract-required detection limit (CRDL). These metal data are qualified with a "J" flag and the concentrations are considered estimated because results at or near the IDL (typically 5 to 10 times lower than the CRDL)

Table 3-1
Definition of Statistical Terms
Background Sampling Program
Defense Depot Memphis Tennessee

Detected Values	Analytical constituents that were reported as detected or estimated below detection limits and reported with a "J" qualifier.
Mean Value	Arithmetic average value. Undetected values (J or UJ qualifier) were averaged using one-half of the detection limit.
2 X Mean Value	Twice the mean value.
Ln(Mean Value)	The natural log of the mean value of a natural lognormal distribution.
Ln(Standard Deviation)	The natural log of the standard deviation of the data from a natural lognormal distribution.
Geometric Mean	The mean value of a lognormal distribution. The anti-logarithm of Ln (mean value) [$e^{\text{Ln(Mean Value)}}$].
UCL (Normal)	The 95 percent upper confidence limit (UCL) of the mean assuming the data are normally distributed. The true value of the mean of the distribution is known to be less than or equal to the UCL value with 95 percent confidence (EPA, 1992). The distribution was determined using one-half of undetected (U or U5 qualifier) values. Normality was determined using the Shapiro-Wilkes Test (Gilbert, 1987).
UCL (Lognormal)	The 95 percent UCL of the mean, assuming the data are lognormally distributed. The distribution was determined using one-half of undetected (U or U5 qualifier) values. Normality was determined using the Shapiro-Wilkes Test (Gilbert, 1987).
RME	The reasonable maximum exposure (RME) value is defined as the highest concentration that could reasonably be expected to occur for a given exposure pathway at DDMT (EPA, 1992). If the data are normal or lognormally distributed, the RME is the UCL for the respective distribution. If the data do not follow a parametric distribution, the RME is the maximum detected value.

Table 3-2
Background Constituents Exceeding ARAR or Risk-Based PRG Concentrations
Background Sampling Program
Defense Depot Memphis Tennessee

Media	Units	Constituent	Number of Analyses	Number of Detects	Criteria Value[a]	Criteria Basis	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Surface Soil	mg/kg	Aluminum	22	22	7800	RES	8160	18500	11905	37000	2MD
		Antimony	22	1	3.1	RES	3.5	3.5	3.5	7.0	2MD
		Arsenic	22	22	0.43	RES	4.2	27.7	10.9	20.0	BCT
		Barium	22	22	32	GWP	77	160	126	234	BCT
		Beryllium	22	15	0.15	RES	0.5	0.6	0.5	1.1	2MD
		Chromium, Total	22	22	1	TERR/ECO	8.4	17.7	13.7	25.1	BCT
		Iron	22	22	2300	RES	10800	26100	18520	52200	2MD
		Manganese	22	22	180	RES	330	1080	652	2160	2MD
		Mercury	22	4	0.3	TERR/ECO	0.1	0.4	0.2	0.8	2MD
		Nickel	22	22	21	GWP	10.4	21.4	16.5	30	BCT
		Vanadium	22	22	2	TERR/ECO	17.7	35.2	26.1	49	BCT
		Zinc	22	22	50	TERR/ECO	35.6	89.5	62.8	179	2MD
	µg/kg	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	22	6		n/a	0.071	0.39	0.14	0.390	NP
		Benzo(a)anthracene	22	9	700	GWP	43	710	151	710	NP
		Benzo(a)pyrene	22	9	88	RES	44	960	186	960	NP
		Benzo(b)fluoranthene	22	9	880	RES	51	900	208	900	NP
		Dibenz(a,h)anthracene	22	3	88	RES	36	260	117	260	NP
		Dieldrin	22	14	1	GWP	3.3	530	114	86	BCT
		Octachlorodibenzo-p-Dioxin	22	22		n/a	0.747	23.33	5.52	9.72	LN
		Octachlorodibenzofuran	22	3		n/a	0.045	0.39	0.16	0.393	NP
Subsurface Soil	mg/kg	Aluminum	22	22	7800	RES	6820	14900	10915	29800	2MD
		Arsenic	22	22	0.43	RES	3.1	14.1	8.5	28.2	2MD
		Barium	22	22	32	GWP	90	243	150	486	2MD
		Beryllium	22	14	0.15	RES	0.5	0.7	0.6	1.2	2MD
		Chromium, Total	22	22	1	TERR/ECO	8.7	18.0	13.2	36.0	2MD
		Cobalt	22	22	20	TERR/ECO	5.0	20.4	10.2	40.8	2MD
		Iron	22	22	2300	RES	8340	24900	19240	49800	2MD
		Manganese	22	22	180	RES	231	1580	770	3160	2MD
		Nickel	22	22	21	GWP	9.0	22.4	18.3	44.8	2MD

308 37

Table 3-2
Background Constituents Exceeding ARAR or Risk-Based PRG Concentrations
Background Sampling Program
Defense Depot Memphis Tennessee

Media	Units	Constituent	Number of Analyses	Number of Detects	Criteria Value^{a}	Criteria Basis	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Subsurface Soil	mg/kg	Vanadium	22	22	2	TERR/ECO	15.0	31.7	25.6	63.4	2MD
		Zinc	22	22	50	TERR/ECO	30.9	79.5	57.0	159	2MD
	µg/kg	Dieldrin	22	3	1	GWP	3.5	370.0	127.0	370.0	NP
		Octachlorodibenzo-p-Dioxin	22	17		n/a	0.209	9.44	2.99	9.44	NP
Sediment	mg/kg	Antimony	22	2	2	NOAA	3.7	3.9	3.8	7.6	2MD
		Arsenic	22	17	3.3	NOAA	1.5	11.1	6.0	22.2	2MD
		Cadmium	22	3	1	PRG	1.3	38.2	14.5	76.4	2MD
		Chromium, Total	22	22	33	PRG	4.1	174	19	21	BCT
		Copper	22	16	28	PRG	1.7	1250	135	54	BCT
		Lead	22	21	21	PRG	1.7	291	36.0	35.2	BCT
		Mercury	22	1	0.1	PRG	2.0	2.0	2.0	4.0	2MD
		Nickel	22	13	30	NOAA	5.3	37.4	15.2	74.8	2MD
		Silver	22	1	0.5	PRG	0.9	0.9	0.9	1.8	2MD
		Zinc	22	22	68	PRG	8.4	7630	399	15260	2MD
	µg/kg	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	22	3		n/a	0.064	0.58	0.24	0.583	NP
		2,3,4,7,8-Pentachlorodibenzofuran	22	1		n/a	0.002	0.002	0.002	0.002	NP
		Acenaphthene	22	2	22	PRG	59	770	415	770	NP
		Alpha-chlordane	21	4	0.5	NOAA	3.6	5.2	4.5	5.2	NP
		Anthracene	22	2	85	NOAA	310	1600	955	1600	NP
		Benzo(a)anthracene	22	6	160	PRG	64	2900	820	2900	NP
		Benzo(a)pyrene	22	7	230	PRG	64	2500	632	2500	NP
		bis(2-ethylexyl)phthalate	22	1		n/a	480	480	480	480	NP
		Chrysene	22	8	220	PRG	88	3200	735	3200	NP
		Dibenz(a,h)anthracene	22	2	31	PRG	130	700	415	700	NP
		Fluoranthene	22	10	380	PRG	60	7100	1294	7100	NP
		Fluorene	22	2	18	PRG	130	870	500	870	NP
		Gamma-Chlordane	22	5	0.5	NOAA	6.1	2000.0	417.0	2000.0	NP
		Naphthalene	22	1	130	PRG	130	130	130	130	NP
		Octachlorodibenzo-p-Dixoin	22	11		n/a	0.431	8.56	2.62	8.56	NP

308 38

Table 3-2
Background Constituents Exceeding ARAR or Risk-Based PRG Concentrations
Background Sampling Program
Defense Depot Memphis Tennessee

Media	Units	Constituent	Number of Analyses	Number of Detects	Criteria Value^a	Criteria Basis	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Sediment	µg/kg	p,p'-DDD	22	3	2	NOAA	2.8	6.1	5.0	6.1	NP
		p,p'-DDE	22	2	1.7	PRG	5.8	7.2	6.5	7.2	NP
		Phenanthrene	22	6	140	PRG	68	6900	1651	6900	NP
		Pyrene	22	10	290	PRG	43	6800	1360	2882	LN
Surface Water	µg/L	Aluminum, Dissolved	22	2	87	AWQC-AO	191.0	280.0	235.5	560.0	2MD
		Aluminum, Total	22	18	87	AWQC-AO	266	16900	2538	33800	2MD
		Antimony, Dissolved	22	1	14	AWQC-HH	16.4	16.4	16.4	32.8	2MD
		Arsenic, Dissolved	22	6	0.018	AWQC-HH	5.1	7.4	6.2	12.4	2MD
		Arsenic, Total	22	11	0.018	AWQC-HH	6.6	13.6	9.0	18.0	BCT
		Chromium, Dissolved	22	1	11	AWQC-AO	16.7	16.7	16.7	33.4	2MD
		Chromium, Total	22	2	11	AWQC-AO	18.0	18.1	18.1	36.1	2MD
		Copper	22	5	12	AWQC-AO	10.4	76.4	37.3	152.8	2MD
		Iron	22	22	1000	AWQC-AO	346.0	20800.0	3051.7	41600.0	2MD
		Iron, Dissolved	22	6	1000	AWQC-AO	118.0	2040.0	600.5	4080.0	2MD
		Lead	22	6	3.2	AWQC-AO	5.5	16.7	9.3	33.4	2MD
		Lead, Dissolved	22	1	3.2	AWQC-AO	11.3	11.3	11.3	22.6	2MD
		Nickel, Dissolved	22	1	13.4	TN STATE	118	118	118	236	2MD
		Nickel, Total	22	5	13.4	TN STATE	6.9	19.9	11.4	22.8	2MD
		Silver, Total	22	2	0.012	AWQC-AO	1.8	1.8	1.8	3.6	2MD
		Zinc, Dissolved	22	1	110	AWQC-AO	205.0	205.0	205.0	410.0	2MD
		Zinc, Total	22	3	110	AWQC-AO	64.0	221.0	143.7	442.0	2MD
	ng/L	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dixoin	22	4		n/a	0.043	0.18	0.10	0.184	NP
		1,2,3,7,8-Pentachlorodibenzofuran	22	3		n/a	0.027	0.06	0.04	0.057	NP
		1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	22	1		n/a	0.046	0.05	0.05	0.046	NP
		2,3,4,7,8-Pentachlorodibenzofuran	22	2		n/a	0.024	0.05	0.04	0.050	NP
		2,3,7,8-Tetrachlorodibenzofuran	22	6		n/a	0.007	0.03	0.02	0.031	NP
		Octachlorodibenzo-p-Dioxin	22	15		n/a	0.206	1.23	0.58	1.225	NP
Groundwater	µg/L	Antimony	12	1	6	MCL	17.2	17.2	17.2	34.4	2MD
		Beryllium	12	2	0.02	PRG	0.2	0.4	0.3	0.8	2MD

Table 3-2
Background Constituents Exceeding ARAR or Risk-Based PRG Concentrations
Background Sampling Program
Defense Depot Memphis Tennessee

Media	Units	Constituent	Number of Analyses	Number of Detects	Criteria Value[a]	Criteria Basis	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Groundwater	µg/L	Chromium, Total	12	2	18	PRG	20.3	34.0	27.2	68.0	2MD
		Copper	12	4	135	PRG	2.0	315.0	81.3	630.0	2MD
		Magnesium	12	12	18	PRG	5250.0	24000.0	13022.5	48000.0	2MD
		Tetrachloroethylene (PCE)	12	1	1	PRG	1	1	1	1	NP

[a] Groundwater, surface water, soil, and sediment criteria are based on Tables 3.7 through 3.10 of the *Generic Remedial Investigation/Feasibility Study Work Plan* (CH2M HILL, 1995a).

Notes:

blank cell = Criteria Value Not Available

n/a = Criteria Basis Not Available

GWP = Groundwater Protection Criteria

RES = EPA Region III Residential Risk Based Criteria

TERR/ECO = Terrestrial Ecology Criteria

PRG = Preliminary Remediation Goal

NOAA = National Oceanic and Atmospheric Administration

AWQC = Ambiant Water Quality Criteria

TN STATE = State of Tennessee

2MD = Background is twice the mean detected value

BCT = Background based on evaluation in the July 7, 1997 BCT meeting (See Section 3.3).

NP = Background is the maximum value based on nonparametric distribution.

NO = Background is the UCL95 value based on a normal distribution.

LN = Background is the UCL95 value based on a lognormal distribution.

UCL95 = 95th percentile upper confidence level on mean concentration

µg/L = micrograms per liter

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

ng/L = nanograms per liter

may be influenced by instrument noise or low-level background shifts rather than by an analytical signal. Therefore, metal concentration statistics that are dominated by low-concentration, J-qualified data should be considered approximate. Table 3-3 summarizes the distribution of analytical data qualifiers for metals exceeding applicable criteria. Appendix E presents a compilation of data qualifiers for detected background constituents.

Surface and Subsurface Soil

Aluminum, antimony, arsenic, barium, beryllium, chromium, iron, manganese, mercury, nickel, vanadium, and zinc exceed applicable criteria in surface and subsurface soils. Because all of the soil selenium detections are below the CRDL, the reasonable maximum exposure (RME) selenium soil background values are considered approximate.

Surface Water

Unfiltered metal constituents that exceed applicable criteria in surface water are aluminum, arsenic, total chromium, copper, iron, nickel, lead, silver, and zinc. However, there were a low number of detections of arsenic (three above and eight below CRDL), total chromium (two above CRDL), copper (two above and three below CRDL), nickel (five below CRDL), lead (six above CRDL), silver (two below CRDL), and zinc (one above and two below CRDL [see Table 3-3]). The RME nickel and silver values in surface water are considered approximate since they are below the CRDL.

Sediment

Metal constituents that exceed applicable criteria in sediment are antimony, arsenic, cadmium, total chromium, copper, mercury, lead, silver, and zinc. However, there were infrequent detections of antimony, cadmium, mercury, and silver (see Table 3-3). Lead was detected in 21 of 22 samples; three concentrations were above CRDL. The RME antimony and silver sediment concentrations are considered approximate since they are below the CRDL.

Groundwater

The RME values of antimony, barium, beryllium, and copper all exceed applicable criteria for groundwater. Barium was detected in every sample; 15 percent of the detections exceeded the CRDL. Antimony and arsenic each had one detection below the CRDL; the RME concentrations should therefore be considered approximate (see Table 3-3).

3.1.3 Semivolatile Organic Compounds

SVOC constituents that exceed applicable criteria in surface soil are benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and phenol. Phenol was detected in the subsurface samples as exceeding applicable criteria at six locations.

Fewer sediment samples had SVOC detections relative to the number of soil samples with VOCs. However, a greater range of SVOCs were detected in sediment at concentrations exceeding applicable criteria: acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and pyrene.

SVOCs were not detected in surface water or groundwater at levels exceeding applicable criteria.

Table 3-3
Qualifer Summary for Metals Exceeding Applicable Criteria
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Chemical	Number Sampled	Qualifier			
			=	J	U	UJ
Surface Soil	Aluminum	22	22			
	Antimony	22		1	8	13
	Arsenic	22	22			
	Barium	22	22			
	Beryllium	22		15	7	
	Chromium, Total	22	16	6		
	Iron	22	22			
	Manganese	22	15	7		
	Mercury	22	3	1	8	
	Nickel	22	22			
	Vanadium	22	22			
	Zinc	22	3	19		
Subsurface Soil	Aluminum	22	22			
	Arsenic	22	22			
	Barium	22	22			
	Beryllium	22		14	8	
	Chromium, Total	22	16	6		
	Cobalt	22	4	18		
	Iron	22	22			
	Manganese	22	15	7		
	Nickel	22	21	1		
	Vanadium	22	22			
	Zinc	22	3	19		
Surface Water	Aluminum, Dissolved	22	1	1	20	
	Aluminum, Total	22	5	13	4	
	Antimony, Dissolved	22		1	21	
	Arsenic, Dissolved	22		6	11	5
	Arsenic, Total	22	3	8	8	3
	Chromium, Dissolved	22		1	17	4
	Chromium, Total	22	2		20	
	Copper	22	2	3	17	
	Iron	22	22			
	Iron, Dissolved	22	6		16	
	Lead	22	6		14	2
	Lead, Dissolved	22	1		21	
	Nickel, Dissolved	22	1		21	
	Nickel, Total	22		5	17	
	Silver, Total	22		2	20	
	Zinc, Dissolved	22	1		21	
	Zinc, Total	22	1	2	8	11
Sediment	Antimony	22		2	17	3
	Arsenic	22	5	12	3	2
	Cadmium	22	3		19	
	Chromium, Total	22	12	10		
	Copper	22	11	5	6	
	Lead	22	3	18		1
	Mercury	22	1		21	
	Nickel	22	8	5	9	

Table 3-3
Qualifer Summary for Metals Exceeding Applicable Criteria
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Chemical	Number Sampled	Qualifier			
			=	J	U	UJ
Sediment (continued)	Silver	22		1	21	
	Zinc	22	13	9		
Groundwater	Antimony	12		1	11	
	Beryllium	12		2	10	
	Chromium, Total	12	2		10	
	Copper	12	1	3	8	
	Magnesium	12	12			

Notes:

"=" = Detected above the method detection limit

J = Reported value estimated

UJ = Analyte not detected at an estimated detection limit

U = Analyte not detected at the CRDL

CRDL = contract-required detection limit

Blank cells indicate zero qualifiers.

3.1.4 Volatile Organic Compounds

The VOC detected as exceeding applicable criteria was 1,1-dichloroethane (1,1-DCA) from groundwater monitoring well MW-45 at 2.0 µg/L.

3.1.5 Pesticides, Herbicides, and PCBs

Heptachlor epoxide was detected exceeding the PRG in one surface soil sample. PCBs were detected exceeding the PRG at two surface soil sample locations. Alpha-chlordane and gamma-chlordane were detected above ARARs in five sediment samples. Pesticides dichlorodiphenyldichloroethane (DDD) and 1,1,1-dichloro-2,2-bis(4-chlorophenyl)ethylene (DDE) exceeded criteria in three and two samples, respectively.

Pesticides were not detected in surface water or subsurface soils.

No herbicides were detected in any media.

3.1.6 Dioxins and Furans

For surface soil and surface water, the maximum value of the dioxin/furan toxicity equivalency factor (see Section 3.2.5 for definition) exceeds the applicable criteria of 0.004 micrograms per kilogram (µg/kg) for residential soil and 0.00001 µg/L for surface water. The toxicity equivalency factor RME for subsurface soil also exceeds the soil criteria.

3.2 Background Statistical Summary and Data Evaluation

This section summarizes the results of the statistical analysis of the background analytical data for surface soil, subsurface soil, sediment, surface water, and groundwater at DDMT. Table 3-1 presents definitions for statistical terms presented in the following sections and summary statistics tables. Statistical summaries of background values for all detected parameters are provided in Section 5 (see Table 5-1). Complete statistical tables of all analyzed data are presented in Appendix F.

Comparisons between perimeter and offsite soil samples are made in the following sections to confirm that there are no gross (i.e., order of magnitude) differences in concentrations between samples taken at the DDMT perimeter and offsite. Such differences would indicate that the samples may have intersected previously unknown waste disposal operations and therefore are not valid background data.

Surface water and sediment samples were taken at the distinct locations (e.g., Audubon Park) discussed in Section 2.2.2. Because these locations are upgradient of DDMT and therefore not potentially impacted by DDMT waste management operations, statistics from each location group were not evaluated to determine if there were distinct location-specific sample populations. Differences in the concentrations between locations are indicative of the ambient variability of constituents in the urban Memphis environment and are not an indicator of potential impact from DDMT operations.

3.2.1 Metals

Appendix F-1 provides a listing of the statistics for background metals for all sample media. Table 3-4 presents station-specific detected metal data for all media. The matrix-specific distribution of the metal data is discussed in the following sections.

Table 3-4
Station-Specific Detected Metal Data
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium, Total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Surface Soil (mg/kg)	BS01	17000 =		11.9 =	117 =	.61 J		642 J	17.7 =	9.1 J	19.7 =	26100 =	17.2 =	3200 =	524 =		18.4 =	1180 =					34.7 =	66.7 =
	BS02	12900 =		10.3 =	144 =	.53 J		686 J	14.6 =	10.2 J	12.6 =	15800 =	27.3 =	1590 =	859 =		14 =	1150 =					26.8 =	50.1 =
	BS03	15300 =		8.6 =	146 =	.56 J		719 J	14.3 =	9.2 J	13.8 =	18600 =	15.3 =	2150 =	699 =		15.2 =	1050 J					29.2 =	51.9 =
	BS04	14500 =	3.5 J	11.2 =	128 =	.58 J	.58 J	2520 J	15.7 J	9.4 J	18.6 J	21500 =	25.1 J	2720 =	713 =		17.9 =	1100 =					31 =	73 J
	BS05	11600 =		20.8 =	157 =	.59 J		2030 J	14.3 J	9.9 J	18.2 J	21200 =	26.1 J	2620 =	750 =		20.9 =	1340 =					26.8 =	73.8 J
	BS06	12400 =		19.1 =	144 =	.59 J		2340 J	15.9 J	8.9 J	19.2 J	21100 =	21.9 J	2610 =	772 =	.23 =	19.5 =	1460 =		1 J			28 =	87.3 J
	BS07	9410 =		9.6 =	134 =	.56 J		2050 J	16.1 J	12.3 =	17.4 J	19400 =	12 J	2540 =	677 =		18.7 =	835 J					24.3 =	56.9 J
	BS08	14300 =		12.3 =	160 =	.6 J		1490 J	13.5 J	8.5 J	20.1 J	23400 =	17.6 J	2870 =	330 =		18.6 =	1310 =					30.8 =	74 J
	BS09	10300 =		27.7 =	141 =	.52 J	.81 J	686 J	11.1 J	9.8 J	19.1 J	12800 =	73.3 J	1170 =	925 =	.11 =	12.9 =	1300 =					21.4 =	82.2 J
	BS10	8810 =		6.6 =	95 =	.47 J		2050 =	12.2 =	8.8 J	17.9 =	18400 =	11.7 =	2270 =	549 J		16.7 =	878 J					24 =	49.8 J
	BS11	13900 =		11.8 =	135 =	.6 J		699 J	14.3 =	9.3 J	23.3 =	23000 =	15.5 =	2960 =	548 J		21.2 =	964 J					28.1 =	81.4 J
	BS12	11900 =		7.5 =	101 =	.54 J		7490 =	14.4 =	9 J	20.1 =	19100 =	30.5 =	2310 =	505 J		15.2 =	999 J					26.4 =	75 J
	BS13	8160 =		7.4 =	77.1 =			668 J	9.4 =	10.6 =	10.7 =	12000 =	24.2 =	1370 =	492 J	.41 =	10.6 =	707 J					19.1 =	37.4 J
	BS14	12800 =		11.3 =	127 =	.53 J		1410 =	14.1 =	11.7 =	21.2 =	21400 =	28.8 =	2660 =	781 J		17.6 =	1100 =					27.6 =	89.5 J
	BS15	9410 =		7.3 =	116 =	.45 J		30600 =	14.9 =	7 J	13.9 =	13700 =	22.5 =	2550 =	625 J		17.5 =	893 J	.3 J				22 =	70.4 J
	BS16	9940 =		8.1 =	117 =	.51 J	.68 J	1960 =	13 =	9.7 J	18.4 =	18900 =	15.2 =	2550 =	654 J		18.1 =	848 J					25.4 =	54.2 J
	BS17	8930 =		4.2 =	124 =			424 J	8.4 =	7.6 J	7.3 =	10800 =	12.1 =	1110 =	1080 =	.1 J	11.1 =	701 J					17.7 =	35.6 J
	BS18	13500 =		13.9 =	121 =			940 J	17 =	11.4 =	20 =	24500 =	14.8 =	3170 =	644 =		17.8 =	832 J	.5 J				30.9 =	65.3 J
	BS19	18500 =		8.8 =	140 =			1030 J	16.2 =	9.4 J	17 =	22800 =	15.1 =	2890 =	447 =		21.4 =	1450 =					35.2 =	65.6 J
	BS20	10800 =		9 =	131 =			1580 =	12.4 =	6.7 J	13 =	15900 =	15 =	2030 =	708 =		14.6 =	806 J					23.2 =	51.4 J
	BS21	9190 =		6.5 =	128 =		.66 J	1360 =	11.8 =	6.8 J	17 =	14800 =	13.5 =	1980 =	648 =		14.4 =	734 J					21.5 =	51.7 J
	BS22	8360 =		6.2 =	95.1 =			863 J	10.1 =	5.7 J	9.8 =	12300 =	13.9 =	1460 =	411 =		10.4 =	641 J	.41 J				19.2 =	39.1 J
	All	11905	3.5	11	126	0.55	0.68	2920	14	9	17	18523	21	2308	652	0.21	16	1013	0.40	1			26	63
	Offsite	11123		10	117	0.53	0.74	1617	12	9	16	16945	22	2065	632	0.21	15	910	0.46				24	58
	Perimeter	12687	3.5	12	135	0.56	0.63	4222	15	10	18	20100	21	2551	671	0.23	18	1115	0.30	1			28	68
Subsurface Soil (mg/kg)	BS01	11800 =		10.4 =	154 =	.57 J		983 J	13 =	8.9 J	17.6 =	22200 =	11.9 =	2720 =	609 =		20.4 =	889 J					26.1 =	62 =
	BS02	13300 =		9.4 =	211 =	.62 J		745 J	16.8 =	9.4 J	17.6 =	22600 =	12 =	2880 =	494 =		20.6 =	1360 =					30.3 =	60.7 =
	BS03	13900 =		11.7 =	166 =	.67 J		1130 J	14.4 =	11.6 J	21.1 =	24900 =	13.2 =	3170 =	936 =		22.3 =	1010 J	.32 J				31 =	73.1 =
	BS04	14500 =		12.1 =	120 =	.59 J		623 J	15.2 J	11.4 J	19.9 J	22900 =	22.7 J	2930 =	695 =		17.9 =	1140 J					30.6 =	68.3 J
	BS05	13700 =		14.1 =	243 =	.69 J		1420 J	15.4 J	20.4 =	23.1 J	24700 =	14.2 J	3370 =	949 =		22.4 =	1150 J					30.4 =	75.3 J
	BS06	11500 =		8.5 =	195 =	.59 J		1070 J	12.4 J	9.2 J	17.6 J	20300 =	12.6 J	2510 =	812 =	.11 J	19.3 =	987 J					24.8 =	59.9 J
	BS07	9820 =		4.9 =	90.8 =		.71 J	2200 J	13.6 J	8 J	15.5 J	17500 =	7.7 J	2550 =	721 =		18.9 =	879 J					26.2 =	43.2 J
	BS08	10000 =		7.9 =	107 =	.51 J		1240 J	14.1 J	9.8 J	17.8 J	20900 =	11.3 J	2440 =	634 =		18.9 =	1160 J					26.9 =	55.6 J
	BS09	14300 =		11.7 =	95 =	.54 J	.71 J	587 J	14.4 J	9.8 J	20.2 J	23900 =	13.9 J	2960 =	772 =		18.6 =	1480 =		.42 J			29.3 =	66.9 J
	BS10	14900 =		9.5 =	113 =	.54 J		730 J	16.3 =	20.2 =	19.7 =	23500 =	15 =	2310 =	1030 J		17.5 =	990 J		.56 J			31.3 =	79.5 J
	BS11	9070 =		8.4 =	126 =	.53 J		1450 =	11.2 =	8.8 J	18.1 =	20300 =	11.1 =	2610 =	552 J		20.4 =	814 J					23.1 =	76.2 J
	BS12	8200 =		3.5 =	236 =	.65 J		2630 =	10.2 =	7.6 J	8 =	10300 =	10.4 =	1250 =	1570 J		17.7 =	716 J					17 =	37.5 J

Table 3-4
Station-Specific Detected Metal Data
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium, Total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Subsurface Soil (continued)	BS13	12400 =		13.4 =	187 =	.65 J		1090 J	12.1 =	9.8 J	21 =	23200 =	15.5 =	2900 =	1020 J		19.7 =	861 J					28 =	71.3 J
	BS14	10200 =		8 =	135 =	.49 J	.73 J	1550 =	12.2 =	12.2 =	17.2 =	19800 =	9.8 =	2680 =	609 J		19.1 =	1080 J					24.2 =	59 J
	BS15	7600 =		6.1 =	118 =			1040 J	9.3 =	6.5 J	12.4 =	12300 =	10.5 =	1650 =	231 J		12.6 =	781 J					18 =	44.1 J
	BS16	12300 =		3.6 =	89.9 =	.59 J		1590 =	15.8 =	9.3 J	11 =	15800 =	7.8 =	2240 =	576 J		17.6 =	522 J					31.7 =	33.5 J
	BS17	10800 =		11.1 =	177 =			1510 =	12.3 =	10.5 J	19.6 =	22400 =	13.3 =	2950 =	821 =		20.4 =	1030 J					27.1 =	72.9 J
	BS18	8200 =		7.7 =	121 =			1650 =	13.1 =	7.6 J	15 =	18800 =	9.5 =	2820 =	506 =		18.8 =	586 J					21.2 =	49.3 J
	BS19	11200 =		12.3 =	191 =			1140 J	11.8 =	8.7 J	20 =	22100 =	12.5 =	2850 =	948 =		20.2 =	817 J					25.9 =	70 J
	BS20	6820 =		3.4 =	136 =			765 J	8.7 =	5.2 J	7.4 =	9380 =	6.9 =	1200 =	616 =		9.9 =	606 J					15 =	32.1 J
	BS21	8230 =		6.5 =	196 =			1100 J	18 =	14.3 =	10.5 =	17200 =	13 =	1650 =	1580 =		20 =	483 J					27.5 =	39.7 J
	BS22	7380 =		3.1 =	94.7 =			511 J	10.3 =	5 J	9 =	8340 =	8.6 =	1240 =	256 =		9 J	499 J					18.6 =	30.9 J
	All	10915		9	150	0.59	0.72	1216	13	10	16	19242	12	2449	770	0.11	18	902	0.32	0.49			26	57
	Offsite	10136		8	152	0.58	0.71	1197	13	10	15	18129	12	2249	879		17	807		0.49			24	57
	Perimeter	11693		9	148	0.59	0.72	1236	14	11	17	20355	12	2649	661	0.11	19	996	0.32				27	58
Sediment (mg/kg)	BW01	1490 =		1.5 J	17.9 J			290 J	4.1 J			3330 =	3.2 J	211 J	108 =								4.7 J	12.3 J
	BW02	553 J		1.6 J	6.8 J			426 J	5.5 J			3480 =	1.7 J	101 J	73.3 =								4.9 J	15.6 J
	BW03	592 =			4.7 J				5.6 J	1.2 J	1.7 J	5410 =	2.3 J	51.2 J	70.2 =								4.4 J	10.4 J
	BW04	517 =	3.9 J		3.7 J			134 J	4.8 J			6480 =	2.9 J	57.2 J	100 =								5.6 J	12.3 J
	BW05	537 =			4.9 J				14.1 J			4980 =		54.7 J	61 =								9.2 J	9.7 J
	BW06	490 J			7.7 J			289 J	4.1 J			4080 =	43.8 J	66.6 J	99.1 =								4.5 J	8.4 J
	BW07	796 J		3.8 =	23.1 J		38.2 =	20000 J	11.4 J	7 J	21.7 =	16700 =	133 J	803 J	2610 =								7.5 J	7630 J
	BW08	879 J		4.9 =	18.2 J			14200 J	9.8 J	4.2 J	7.1 =	13400 =	16.5 J	812 J	422 =				.37 J				6.1 J	89.9 J
	BW09	1220 =	3.7 J	3.4 =	30.6 J		1.3 =	27800 J	39.7 J	5.3 J	112 =	30700 =	291 J	1730 =	213 =		37.4 =						8.6 J	90.5 J
	BW10	11600 =		7.1 J	126 =	.7 J		3060 =	16.1 =	10.8 J	26.6 =	19300 =	25.5 J	2530 =	566 =		18.1 =	1080 J	1.5 J	.89 J			31.5 J	87.9 =
	BW11	6580 =		5.7 J	70.9 =			1680 =	9.8 =	6.9 J	13.9 =	12000 =	10.6 J	1240 J	328 =		12.4 J	494 J					18.9 J	59.4 =
	BW12	10100 =		3.9 J	119 =	.52 J		1160 J	14.2 =	9.7 J	14.2 =	16300 =	12.2 J	1930 =	406 =		14 =	1040 J					25.3 J	49.4 =
	BW13	9840 =		5.1 J	115 =	.77 J		1340 J	15.7 =	9.4 J	16.5 =	19500 =	12.4 J	1860 =	618 =		16.6 =	812 J	1.1 J				31 J	59.9 =
	BW14	1440 =		2.4 J	25.9 J			56800 =	11.5 =	3.5 J	2.8 J	8210 =	8.6 J	2420 =	853 =		5.3 J						13.4 J	161 =
	BW15	12100 =		7.6 J	104 =	.65 J		1480 =	15.4 =	7.6 J	12.6 =	18100 =	19 J	1610 =	651 =		13.9 =	838 J				.52 J	27.8 J	46.8 =
	BW16	9460 =		11.1 J	119 =			1900 =	10.4 =	7.8 J	12.1 =	12900 =	29.2 J	1430 =	587 =		13.9 =	811 J					19.9 J	53.5 =
	BW17	3300 =			40.7 J			1150 J	8.8 =	4.7 J		7920 =	14 J	474 J	227 =		5.8 J	269 J				.56 J	13.7 J	19.5 =
	BW18	8720 =		10.8 J	137 =		3.9 =	950 J	174 =	8.4 J	19.1 =	11800 =	31.5 J	1380 J	667 =	2 =	14.5 =	.674 J					18.8 J	78.1 =
	BW19	14200 =		10 J	92.2 =	.57 J		710 J	14.2 =	8.8 J	13.5 =	18000 =	14.6 J	2060 =	433 =		19.1 =	997 J	.37 J				28.9 J	43.7 =
	BW20	6920 =		7.8 =	96 J			3450 =	9 =		512 J	7950 =	35.9 =	1370 J	221 =		8.1 J						17.3 J	73.7 =
	BW21	1140 =		4.7 =	14.3 J			7650 =	5.8 =		129 J	3790 =	7.3 =	2950 =	59.3 =								6.4 J	27.8 =
	BW22	8460 =		10.3 J	115 J			4120 J	9.6 J		1250 J	9520 =	43 =	1610 J	210 =		19.1 J				120 J		22.1 J	129 =

Table 3-4
Station-Specific Detected Metal Data
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium, Total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Sediment (continued)	All	5042	3.8	6	59	0.64	14.47	7429	19	7	135	11539	36	1216	436	2.00	15	779	0.84	0.89	120	0.54	15	399
	Audubon	8740		10	90	0.57	3.90	937	66	7	16	12573	20	1305	442	2.00	13	647	0.37			0.56	20	47
	Botanical	10780		9	112	0.65		1690	13	8	12	15500	24	1520	619		14	825				0.52	24	50
	Cane	965	3.7	4	24		19.75	20667	20	6	47	20267	147	1115	1082		37		0.37				7	2603
	Chickasaw	5507		8	75			5073	8		630	7087	29	1977	163		14				120		15	77
	MOH	7912		5	91	0.66		12808	13	8	15	15062	14	1996	554		13	857	1.30	0.89			24	84
	Nonconnah	697	3.9	2	8			285	6	1	2	4627	11	90	85								6	11
Total Surface Water (ug/L)	BW01	279 =			49.1 J			22200 =				2130 =		3840 J	399 =			3280 J			9530 =			
	BW02	600 =			71.9 J			24500 =				1070 =		5470 =	320 =			4800 J			14700 J			
	BW03	577 =			67.5 J			23400 =				941 =		5410 =	326 =			5420 =			14900 =			
	BW04				59.4 J			27900 =				628 =		6710 =	62.4 =			3070 J			17900 =			
	BW05				58 J			26600 =				460 =		6570 =	46.5 =			3130 J			17200 =			
	BW06	266 =			68.7 J			27300 =				808 =		6560 =	306 =			2790 J			17000 J			
	BW07			6.8 J	54.2 J			33400 =				346 =		4140 J	134 =			6280 =			12400 J			
	BW08			8.4 J	81.2 J			33600 =				1420 =		4180 J	308 =			6310 =			12300 J			
	BW09	549 =		9.6 J	95 J			34800 =				1990 =	13.7 =	4380 J	363 =			6730 =			12400 =			64 =
	BW10	5640 J		8.1 J	80.4 J			8830 =	18.1 =			7350 =	6.8 =	3300 J	744 =		11.9 J	3190 J					15 J	
	BW11	5470 J		11 =	71.9 J			8630 =				6820 =	5.5 =	3170 J	635 =		10.2 J	3230 J					13.2 J	
	BW12	5910 J		9.6 J	77.5 J			8730 =			75.6 =	7330 =	6.8 =	3300 J	669 =		6.9 J	3570 J					14.8 J	
	BW13	16900 J		13.6 =	185 J			9370 =	18 =		76.4 =	20800 =	16.7 =	4840 J	1140 =		19.9 J	5130 =			2890 J		39.4 J	146 J
	BW14	5790 J		10.8 =	82.6 J			8810 =				7470 =	6.5 =	3260 J	659 =		8.1 J	3590 J		1.8 J			15.2 J	
	BW15	527 J			33.1 J			6300 =				734 =		2690 J	58.2 =			733 J			8850 =			
	BW16	669 J			35.9 J			6500 =				830 =		2740 J	61.6 =			1000 J		1.8 J	8940 =			
	BW17	395 J			27.5 J			4410 J				1060 =		1500 J	192 =			2550 J			6980 =			
	BW18	370 J			26.2 J			4440 J				999 =		1470 J	197 =			1980 J			6770 =			221 J
	BW19	648 J			31.3 J			4490 J				1510 =		1530 J	223 =			2320 J			6880 =			
	BW20	371 J		6.6 J	40.4 J			9170 =			11 J	803 =		3170 J	125 =						8090 =			
	BW21	341 J		6.8 J	40.2 J			9220 =			10.4 J	792 =		3280 J	119 =						7350 =			
	BW22	389 J		7.7 J	40.9 J			9380 =			12.9 J	847 =		3210 J	131 =						7460 =			
	All	2538		9	63			15999	18		37	3052	9	3851	328		11	3637		1.8	10697		20	144
	Audubon	471			28			4447				1190		1500	204			2283			6876.7			221
	Botanical	598			35			6400				782		2715	60			867		1.8	8895			
	Cane	549		8	77			33933				1252	14	4233	268			6440			12367			64
	Chickasaw	367		7	41			9257			11	814		3220	125						7633.3			
	MOH	7942		11	99			8874	18		76	9954	8	3574	769		11	3742		1.8	2890		20	146
	Nonconnah	431			62			25317				1006		5760	243			3748			15205			

Table 3-4
Station-Specific Detected Metal Data
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium, Total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Dissolved Surface Water (ug/L)	BW01				39.5 J			22000 =				632 =		3830 J	340 =			3590 J			9480 J			
	BW02				58.8 J			23600 =						5290 =	162 =			4370 J			14300 J			
	BW03				48.3 J			20800 =						4770 J	68.4 =			4600 J			13400 J			
	BW04		16.4 J		56.6 J			27500 =	16.7 J					6550 =	48.6 =			3630 J			17500 J			
	BW05				53.5 J			25600 =						6270 =	40.3 =			3120 J			16200 J			
	BW06				52.4 J			25200 =						6170 =	31.9 =			3220 J	1.6 J		16000 J			
	BW07	280 =		7.4 J	99.4 J			34200 =				2040 =	11.3 =	4190 J	713 =		118 =	6330 =	1.4 J		12200 J			205 =
	BW08			7 J	48.6 J			30800 =				274 =		3980 J	137 =			5780 =			11600 J			
	BW09			7.2 J	50.9 J			32400 =						4060 J	156 =			6450 =			11900 J			
	BW10				34.8 J			7730 =						2440 J	308 =			2520 J						
	BW11				34.8 J			7860 =				272 =		2470 J	351 =			2450 J						
	BW12	191 J			34.8 J			7870 =				267 =		2470 J	422 =			2620 J						
	BW13				36 J			7510 =						2350 J	229 =			2710 J						
	BW14				35.7 J			7380 =						2310 J	288 =									
	BW15				23 J			6320 =						2620 J	39.9 =			1050 J			9190 J			
	BW16				26.5 J			6280 =						2540 J	32.4 =						9030 J			
	BW17							4200 J						1500 J				1330 J			7160 J			
	BW18							3710 J						1220 J	38.7 =			1760 J			6720 J			
	BW19							3930 J						1330 J	36.6 =			1600 J			6720 J			
	BW20			5.1 J	33.2 J			8720 =						3040 J	86.9 =						7210 J			
	BW21			5.2 J	33 J			8950 =						3080 J	75.1 =						7230 J			
	BW22			5.3 J	32.3 J			8800 =				118 =		3030 J	93.2 =						7230 J			
	All	236	16.4	6	44			15062	17			601	11	3432	176		118	3361	1.50		10769			205
	Audubon							3947						1350	38			1563			6866.7			
	Botanical				25			6300						2580	36			1050			9110			
	Cane	280		7	66			32467				1157	11	4077	335		118	6187	1.40		11900			205
	Chickasaw			5	33			8823				118		3050	85						7223.3			
	MOH	191			35			7670				270		2408	320			2575						
	Nonconnah		16.4		52			24117	17			632		5480	115			3755	1.60		14480			
Groundwater (ug/L)	MW16	2670 =			66.7 J			44900 =	34 =	12.3 J		3970 =	7.6 =	19100 =	143 =		25.6 J	1330 J			45200 J		6.5 J	
	MW19	235 J			42.9 J			17800 =			315 =		3.9 =	6160 =	296 =		12.1 J	4040 J					2.6 J	
	MW24	718 J			49.5 J			9950 =	20.3 =	2.2 J		5190 =		5250 =	17.2 =		9.4 J	962 J						
	MW28	287 J			47.6 J	.21 J		14000 =			4.4 J	598 J		6470 =	75.6 =								5.1 J	
	MW30				116 J			22900 =						12000 =										
	MW45	586 J	17.2 J		127 J	.35 J		34700 =		9.5 J	3.8 J	2280 J		19500 =	326 =			849 J					14.8 J	
	MW46				99.3 J			17400 =				648 =		8660 =	228 =			858 J						
	MW48				91.1 J			16500 =			2 J	1120 J		8690 =	112 =			1350 J						

Table 3-4
Station-Specific Detected Metal Data
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium, Total	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Groundwater (continued)	MW49				96.4 J			16500 =					2.6 J	8140 =	57.6 =			1260 J						
	MW50				307 =			49200 =				4900 =		24000 =	441 =			3330 J			61200 =			
	MW52				177 J			43700 =		18.2 J		7960 =		22500 =	467 =			1750 J			74600 =			
	MW53				122 J			29700 =		19.6 J		3610 =		15800 =	917 =				2.9 J		32300 J			
	All	899	17.2		112	0.28		26438	27	12	81	3364	5	13023	280		16	1748	2.90		53325		7	

Notes:
Blank cells indicate not detected at the CRDL.
Group value reported as the arithmetic average.
"=" = detected value
J = estimated value
ND = not detected
MOH = Medal of Honor
CRDL = contract-required detection limit

Soil

Figure 3-1 shows the spatial distribution of the total metal concentration at each surface soil location. Typically naturally occurring (calcium and magnesium) and anthropogenic (chromium and arsenic) metals are shown individually in Figure 3-1. The basic statistics for shallow soil metal concentrations in the perimeter and offsite soil groups (shown in Figure 3-2) indicate that there is a trend of somewhat higher concentrations in samples taken along the perimeter of DDMT relative to those taken offsite (see Appendix F-4).

Differences in the concentrations of metals between the offsite and perimeter soil groups may result from natural differences in soil type or past and present land management activities at DDMT that could alter the natural distribution of metals (e.g., grading and tilling). The statistical significance of the differences in metal concentrations between the offsite and perimeter sample groups was initially evaluated using a statistical t-test. T-tests are used to determine whether two sample populations are from the same parent population by evaluating the statistical significance between mean concentrations in the sample populations (Davis, 1973).

However, the commonly used statistical t-test assumes that both the perimeter and offsite data sets are normally distributed. This is not the case for some constituents. The statistical summary provided in Appendix F shows that many of the surface soil constituents are not normally distributed for the combined data set. Because the t-test is not valid for some of the constituents, the appropriate statistical test is the Wilcoxon test.

The Wilcoxon Rank Sum test (equivalent to the Mann-Whitney U test) is a nonparametric, two-sample test that is independent of the underlying data distribution and sample size. The Wilcoxon Rank Sum tests the null hypothesis that the distributions of two populations are equivalent. The alternative hypothesis is that one distribution lies to the right of the other.

To perform the test, data from both sets are combined and ranked from low to high; the ranks for tied values are averaged. The calculated sum of ranks for each data set are used to calculate simple linear rank statistics, which are then compared with statistics from the normal distribution. Scores that exceed expected values for a normal distribution lead to rejection of the null hypothesis and acceptance of the alternative hypothesis that the groups are from different populations. The Wilcoxon Rank Sum test was implemented using the SAS Procedure NPAR1WAY.

Sections F-4 and F-5 of Appendix F present the Wilcoxon test results for surface and subsurface soil, respectively. Results of the Wilcoxon test showed that for all constituents except chromium and potassium, the perimeter and offsite data were similar and the combined data set was used to establish the background value. Background values for chromium and potassium were developed using only the offsite data. Wilcoxon test results for subsurface soils indicate that the perimeter and offsite soils are from one population for all constituents.

Variations in metal concentrations in surface soil may result from land management activities or from natural variation in the soil type. Two lines of evidence suggest that the differences result primarily from grading or other reworking of the soil. First, the lowest concentrations of leachable metals, such as calcium, iron, and zinc in perimeter soil samples, were associated with samples in the northeast portion of Dunn Field (BW01, BW02, and

308 51

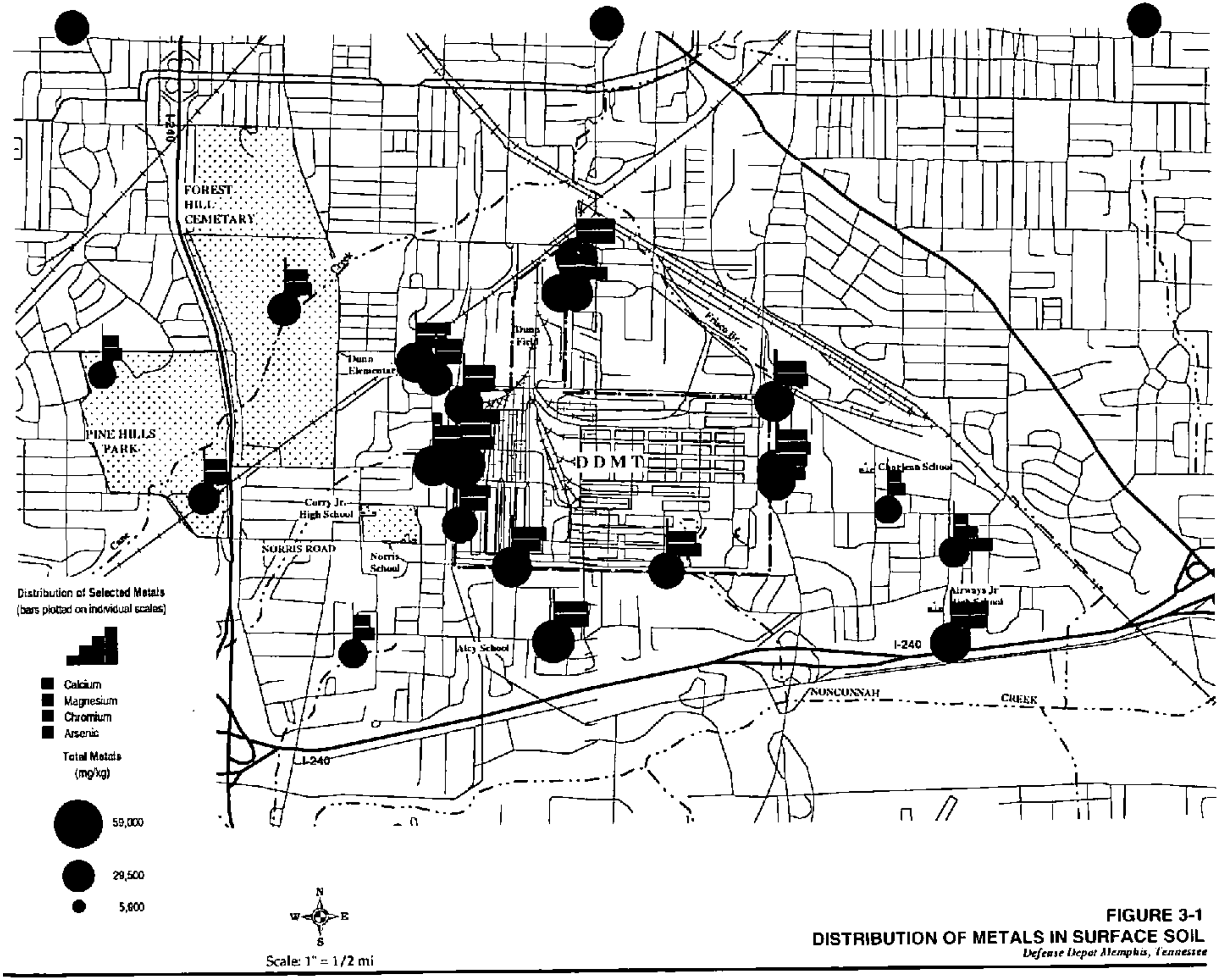


FIGURE 3-1
DISTRIBUTION OF METALS IN SURFACE SOIL
Defense Depot Memphis, Tennessee

CH2M HILL

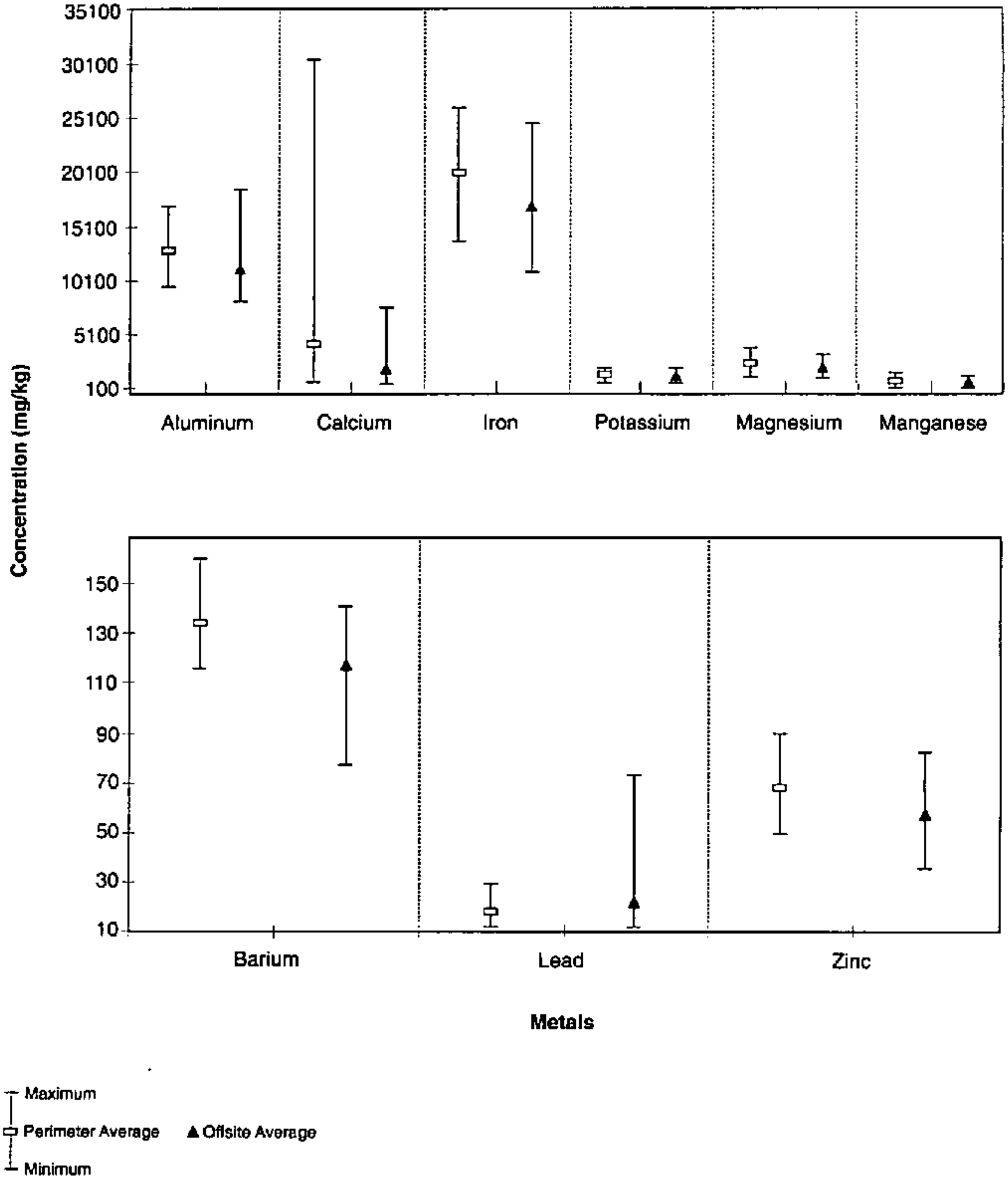


Figure 3-2

Perimeter and Offsite Metals Data

Defense Depot Memphis, Tennessee

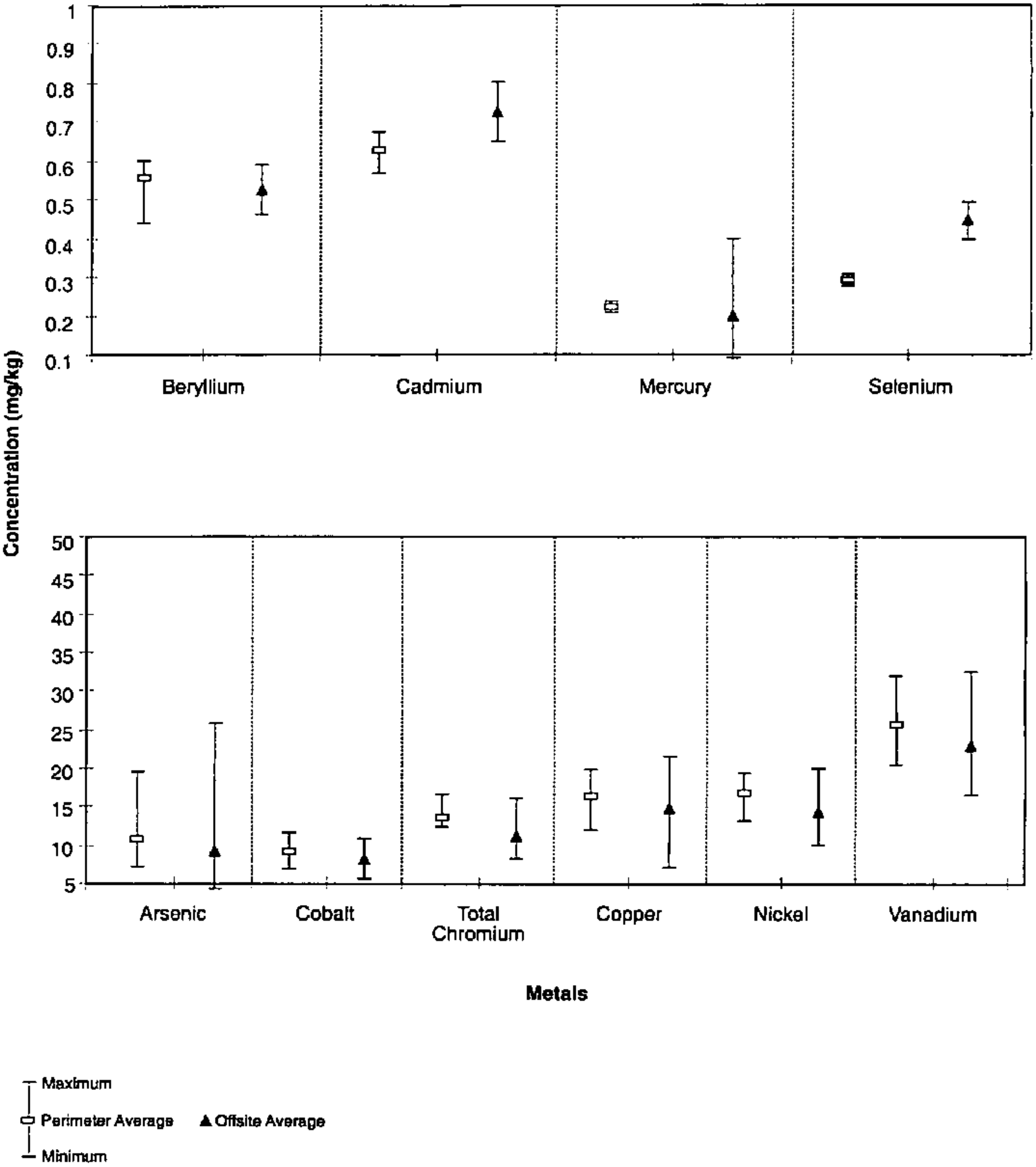


Figure 3-2 (continued)
Perimeter and Offsite Metals Data
Defense Depot Memphis, Tennessee

BW03) taken from undisturbed Falaya and Memphis Silt Loam (see Figure 3-3). Because these soils are undisturbed, the lower values are likely to be associated with loss of naturally occurring metals as a result of leaching. Soil associated with grading (Graded Land in Figure 3-3) has been disturbed and possibly replaced with soil from depth or other sources that are not depleted in these metals. Second, the uniformity of metal concentrations at depth (4 to 6 feet bgs) indicates that the natural soil material below the disturbed horizon has uniform chemical constituency.

Figure 3-4 presents background arsenic data as well as arsenic data from surface soil samples taken during the background, BRAC, and screening site sampling efforts undertaken in the fall of 1996 and the spring of 1997. Data from these sites are included with the background data to support the interpretation that most of the arsenic concentrations in surface soil, including the background arsenic concentrations, are below 20 mg/kg. The BCT reviewed these data and concluded that a value of 20 mg/kg was an appropriate value for arsenic background concentrations in surface soil.

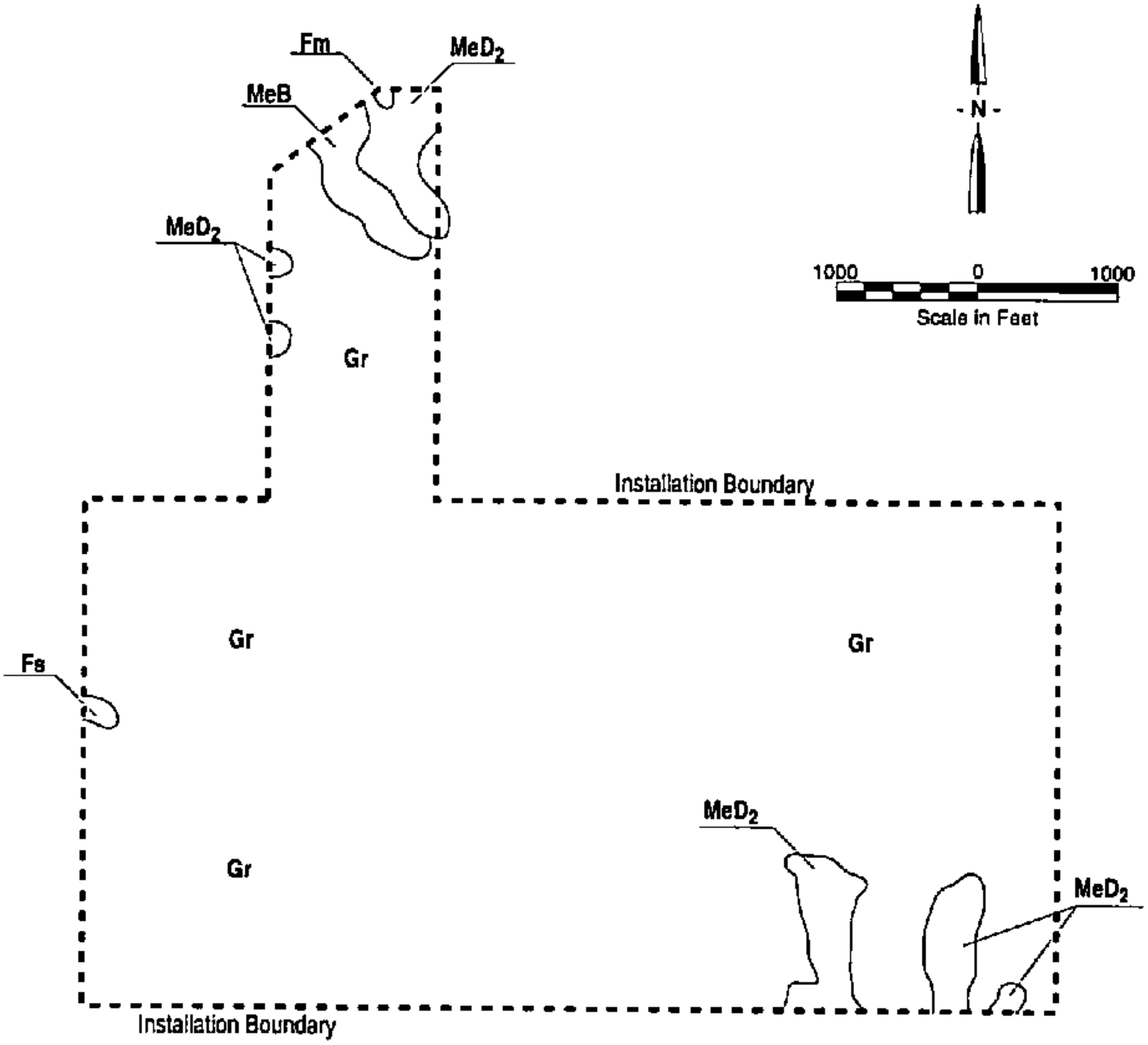
Surface Water, Sediment, Groundwater

Figures 3-5 through 3-7 show the spatial distribution of total and selected individual metals in surface water, sediment, and groundwater for each of the sample location groups (see Appendix F-1 for metals that were analyzed from each location). Total metal concentration was used as a relative indicator of the variability of metal contamination between locations. Individual metals were selected on the basis of toxicity and exceedance of ARARs or risk-based criteria as discussed in Section 3.1 and plotted as location-specific arithmetic averages. The total unfiltered inorganic loading of surface water at background locations is highest in Cane and Nonconnah Creeks and lowest in ponds at the Audubon Park, Botanical Gardens, and Chickasaw Gardens. The pond at Medal of Honor Park contained total chromium, lead, and the highest concentrations of arsenic (13.6 µg/L) and barium (185 µg/L). Other metals detected in Medal of Honor Park include silver, the highest concentration of copper (76.4 µg/L), nickel, vanadium, and zinc. Lead, arsenic, and zinc were also detected in Cane Creek.

The total metal concentration in sediment was also highest in Cane Creek, but was considerably lower in Nonconnah Creek even though surface water concentrations there are the highest of the background locations. The highest concentrations of total lead (147 mg/kg) and zinc (7,630 mg/kg) were also found in Cane Creek. Total metal concentrations in Medal of Honor Park were also relatively high among the background locations.

Unlike the surface soil sample locations, the surface water, sediment, and groundwater sample locations are upgradient of DDMT and not potentially affected by DDMT waste management operations. The variation in metal concentrations between the sample groups results from differences in ambient background concentrations. A statistical evaluation of the background metal concentrations between the groups was not performed since these variations are expected in an urban industrial setting and are not potentially affected by DDMT waste management operations. Box and whisker plots showing the distribution of the surface water, sediment, and groundwater metal data are presented in Appendix C.

Surface water data are presented for the dissolved (filtered) and total metals (unfiltered); unfiltered groundwater samples were taken.



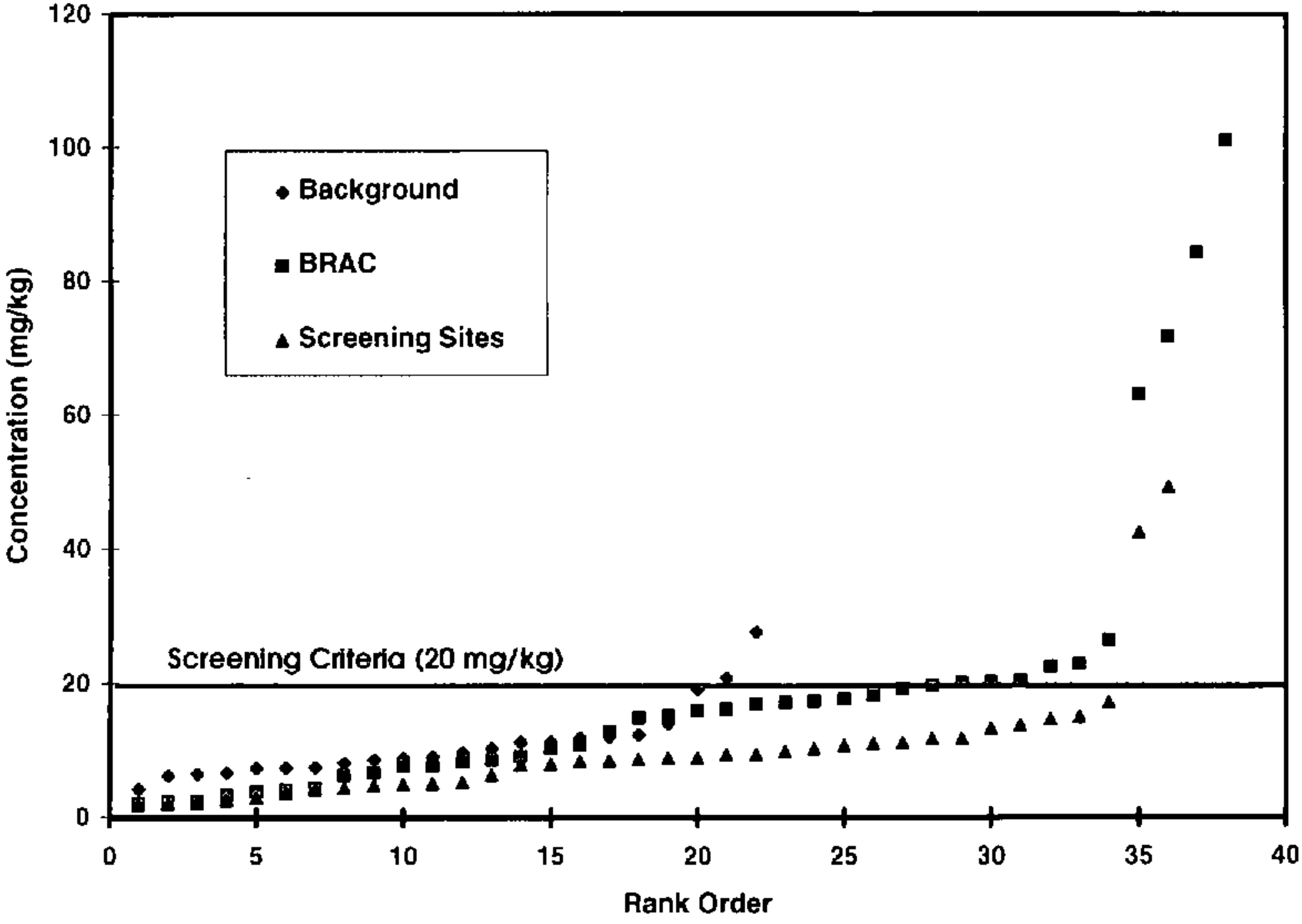
LEGEND

Fm	Falaya Silt Loam
Fs	Filled Land-Silty
Gr	Graded Land
MeB	Memphis Silt Loam
MeD$_2$	Memphis Silt Loam

SOURCE: Modified from USDA, Soil Conservation Service, 1970.

Figure 3-3
Study Area Surface Soils
Defense Depot Memphis, Tennessee

Figure 3-4: Arsenic Distribution in BRAC, Screening Sites, and Background Data Surface Soils



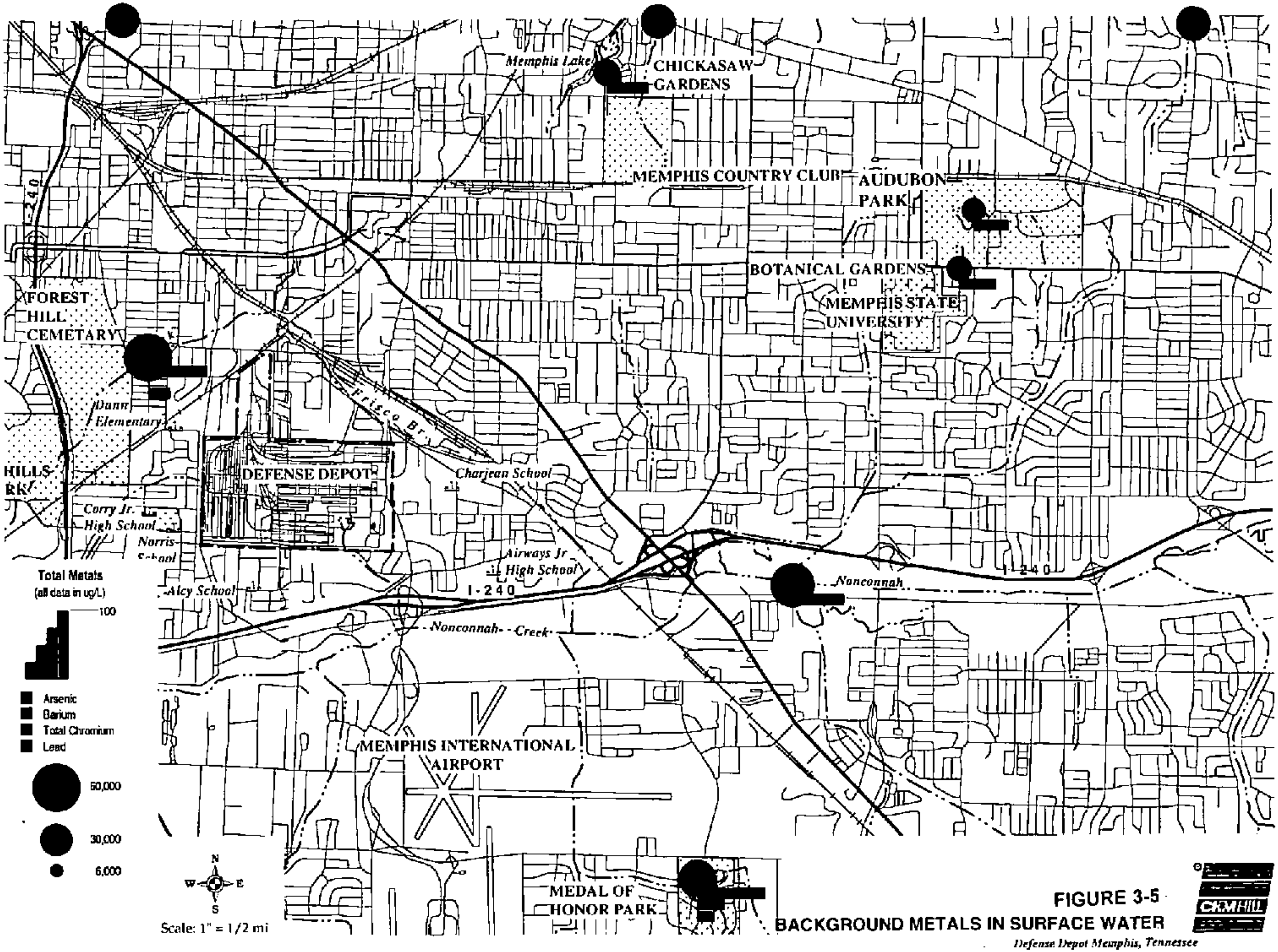


FIGURE 3-5

BACKGROUND METALS IN SURFACE WATER

Defense Depot Memphis, Tennessee

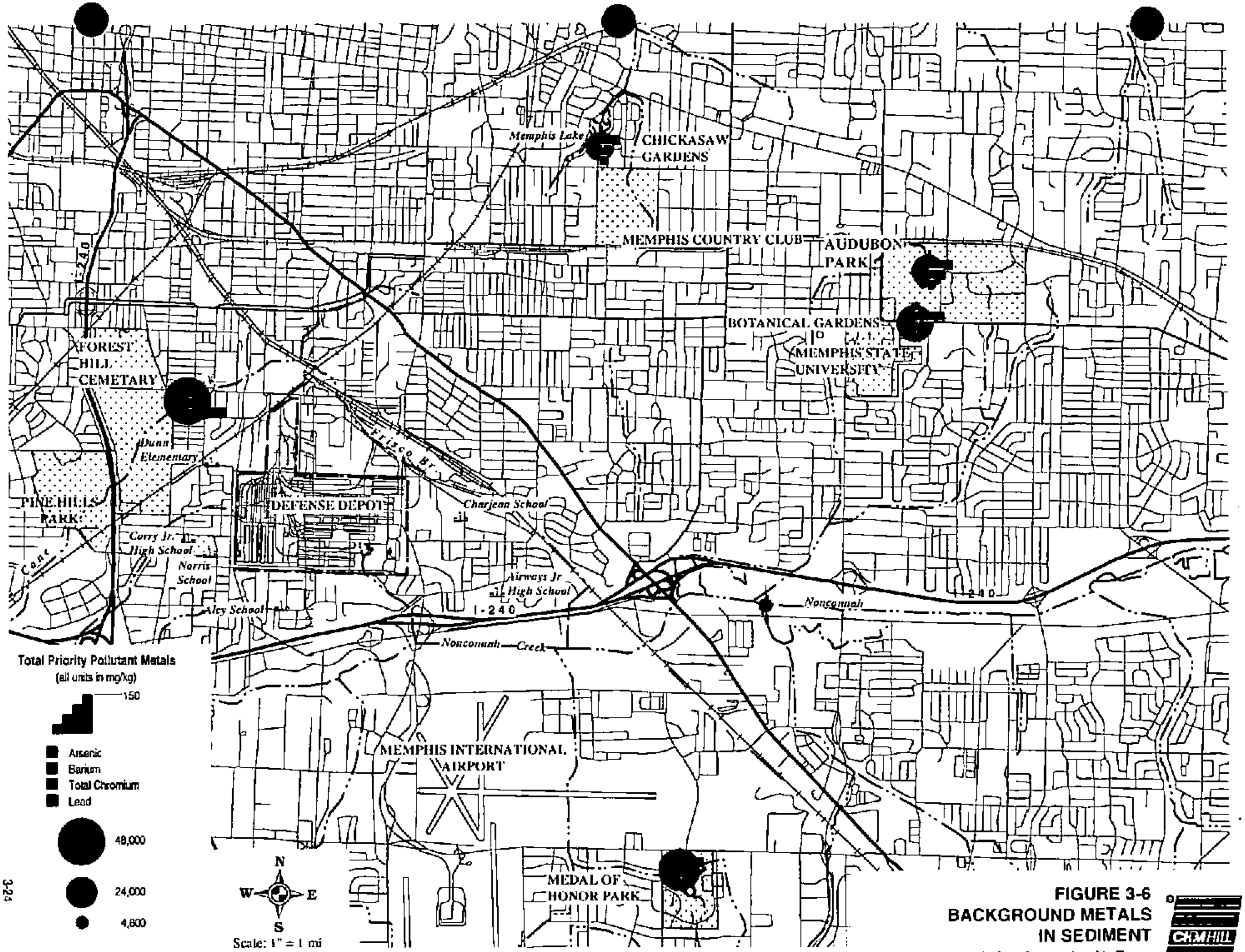


FIGURE 3-6
BACKGROUND METALS
IN SEDIMENT
Defense Depot, Memphis, Tennessee

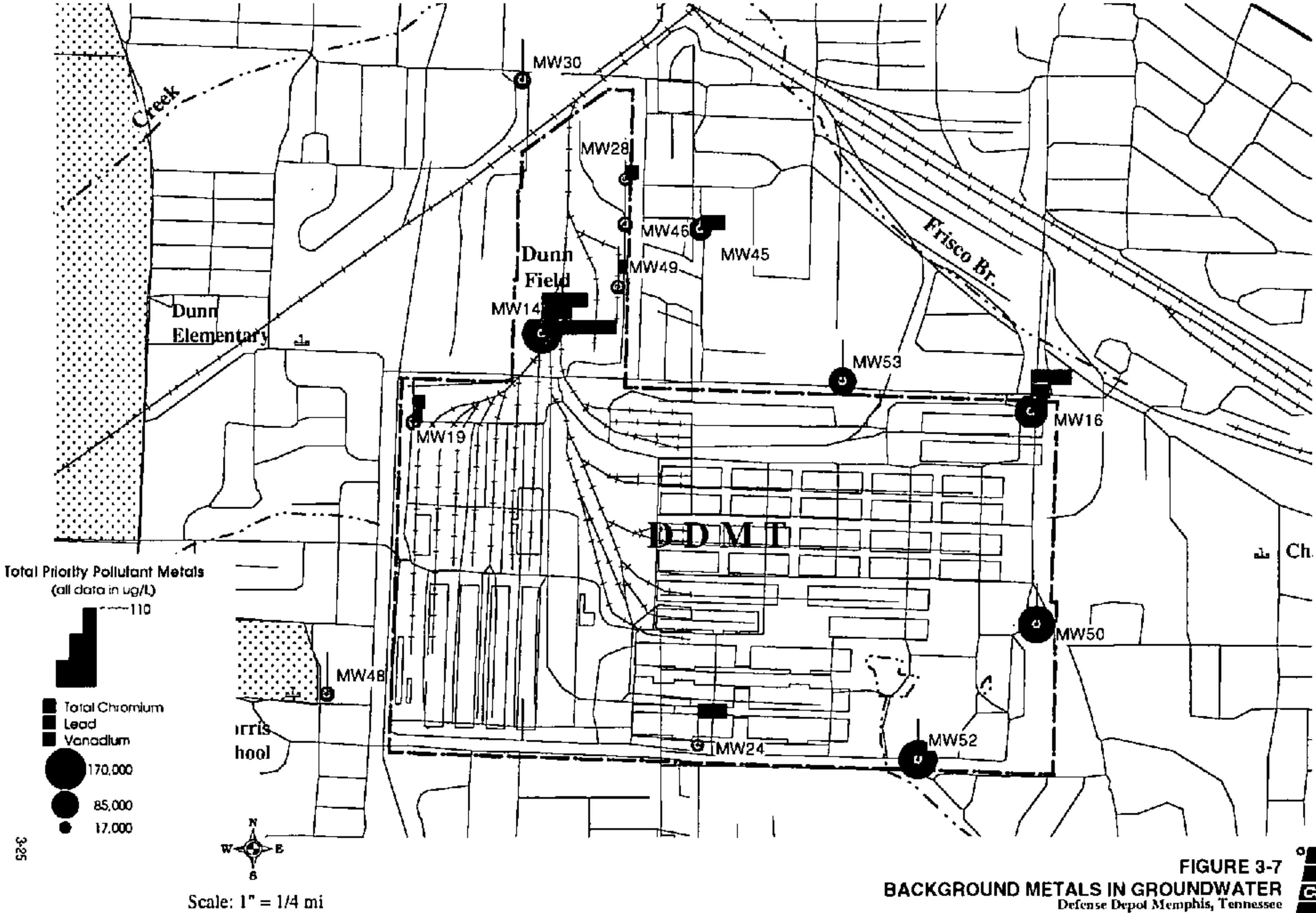


FIGURE 3-7
BACKGROUND METALS IN GROUNDWATER
Defense Depot Memphis, Tennessee

CH2MHILL

3.2.2 Volatile Organic Compounds

Table 3-5 presents the VOC data summarized by individual stations. Sporadic concentrations of VOCs were estimated in concentrations below CRDL in all media. Analysis of perimeter versus offsite soil data presented in Table 3-6 indicates that with the exception of two MEK (2-butanone) detections, almost all VOC surface and subsurface soil detections occur in the perimeter samples. Xylenes were found in 10 of the surface soils samples at low concentrations (< 9 µg/kg) possibly resulting from automobile emissions entrapped in soil pore spaces. The correlation between xylene concentrations and the DDMT perimeter sample locations may result from the higher traffic on roads (Airways Boulevard, Ball Road, Perry Road, and Dunn Road) that surround DDMT relative to less traveled offsite residential streets.

Although there are a greater number of VOC detections and, in the case of xylene, generally higher values in the perimeter soil surrounding DDMT, the magnitude of the perimeter relative to offsite concentrations of about 100 percent RPD (see Table 3-6) does not indicate impact from waste management operations. Perimeter and offsite background soil data are therefore combined into one statistical data set.

MEK (five detections) and total xylenes (two detections) were estimated at concentrations below 2 µg/L in surface water. MEK was also detected in low concentrations (less than 10 µg/kg) in 10 sediment samples. Chloromethane (3 µg/kg) and toluene (<14 µg/kg) were also detected in one and three sediment samples, respectively.

VOCs associated with organic solvents 1,1,1-trichloroethane (1,1,1-TCA) and 1,1-dichloroethane (1,1-DCA) were detected at concentrations less than 2 µg/L in groundwater from monitoring well MW-45. Data from this well were retained in the background database since MW-45 is upgradient from potential DDMT groundwater sources.

Summary statistics for VOCs are presented in Section 5 (see Table 5-1).

3.2.3 Semivolatile Organic Compounds

Table 3-7 indicates that a range of SVOCs was detected in 15 surface soil, 8 subsurface soil, and 15 sediment samples. Most of the compounds are typically associated with coal tar distillation, dye production, diesel oil, and unburned hydrocarbons. Phenol, which was detected in highest concentrations in surface and subsurface soils, is associated with the use of disinfectants and industrial solvents.

SVOC concentrations were significantly higher in surface soil samples BS04 (located outside the northeast corner of the DDMT property fence) and BS15 (located along the western perimeter of the Main Installation). Phenol concentrations were also elevated at BS01 (Dunn Field), BS08 (DDMT southwest perimeter), and BS09 (residential area 1.5 miles east of DDMT). Other SVOC concentrations in surface soil samples were estimated at below the CRDL. SVOC values for perimeter and offsite surface soil samples are summarized in Table 3-8. With the exception of phenol, mean surface soil SVOC values are higher in the perimeter samples than offsite (see Appendix F-6).

The range and concentrations of detected SVOCs decrease from surface to subsurface soils. Concentrations of fluoranthene and pyrene in subsurface soil samples are about a factor of seven lower than their corresponding surface soil samples. Phenol concentrations do not

Table 3-5
Detected Volatile Organic Compounds
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Group	1,1,1-Trichloroethane	1,1-Dichloroethene	Carbon Disulfide	Chloromethane	Methyl Ethyl Ketone (2-butanone)	Tetrachloroethylene (PCE)	Toluene	Total Xylenes	Trichloroethylene (TCE)
Groundwater	MW45	1 J	2 J							
(ug/L)	ALL	1	2				1			1
Surface Water	BW01					2 J				
(ug/L)	BW07					2 J				
	BW08					2 J				
	BW09					1 J			1 J	
	BW12								1 J	
	BW21					1 J				
	All					1.6			1	
	Cane					1.7			1	
	Chickasaw					1				
	MOH								1	
	Nonconnah					2				
Surface Soil	BS01								4 J	
(ug/kg)	BS02			2 J				2 J	9 J	
	BS03								1 J	
	BS04								4 J	
	BS05								2 J	
	BS07								2 J	
	BS08								2 J	
	BS11					2 J				
	BS15			2 J					2 J	
	BS19								1 J	
	BS22								1 J	
	All			2		2		2	2.8	
	Off					2			1	
	Perimeter			2				2	3.25	
Sediment	BW09				3 J	1 J				
(ug/kg)	BW10					7 J				
	BW11					4 J				
	BW12					10 J				
	BW13					7 J				
	BW14					2 J				
	BW16					4 J				
	BW17					3 J				
	BW18					5 J		2 J		

Table 3-5
Detected Volatile Organic Compounds
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Group	1,1,1-Trichloroethane	1,1-Dichloroethene	Carbon Disulfide	Chloromethane	Methyl Ethyl Ketone (2-butanone)	Tetrachloroethylene (PCE)	Toluene	Total Xylenes	Trichloroethylene (TCE)
Sediment (continued)	BW21					5 J		14 J		
	BW22							10 J		
	All				3	5		9		
	Audubon					4		2		
	Botanical					4				
	Cane				3	1				
	Chickasaw					5		12		
	MOH					6				
Subsurface Soil (ug/kg)	BS01								2 J	
	BS04			2 J					2 J	
	BS08			1 J					1 J	
	BS15								1 J	
	All			1.5					1.5	
	Perimeter			1.5					1.5	

Notes:

Blank cells indicate not detected at the CRDL.

Group values are expressed as arithmetic means.

MOH = Medal of Honor

J = estimated value

CRDL = contract-required detection limit

Table 3-6
Surface Soil Perimeter and Offsite VOC Concentrations
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Group	Data	Carbon Disulfide	Methyl Ethyl Ketone (2-Butanone)	Toluene	Total Xylenes
Surface Soil (ug/kg)	All	Mean Detected	2	2	2	2.8
		Number Detects	2	1	1	10
	Offsite	Mean Detected	ND	2	ND	1
		Number Detects	0	1	0	2
	Perimeter	Mean Detected	2	ND	2	3.3
		Number Detects	2	0	1	8
	Percent Relative Difference[a]:		NA	NA	NA	106%
Subsurface Soil (ug/kg)	All	Mean Detected	1.5	ND	ND	1.5
		Number Detects	2	0	0	4
	Perimeter	Mean Detected	1.5	ND	ND	1.5
		Number Detects	2	0	0	4

[a] (Mean Perimeter - Mean Offsite)/((Mean Perimeter + Mean Offsite)/2)

Notes:

ND = not detected

NA = not applicable

Table 3-7
Detected Background SVOCs
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h)perylene	Benzo(k)fluoranthene	Benzyl Butyl Phthalate	bis(2-Ethylhexyl) Phthalate	Carbazole	Chrysene	Di-n-Octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Ideno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene
Surface Soil (ug/kg)	BS01																					5400 =	
	BS02																49 J					140 J	50 J
	BS03																					52 J	
	BS04		190 J	96 J	710 =	960 =	900 =	820 =	780 =			67 J	940 =		260 J		1600 =		700 =		610 =		1500 =
	BS05				44 J	47 J	51 J	41 J	45 J				65 J				110 J				49 J		89 J
	BS06				120 J	140 J	180 J	150 J	170 J				180 J				330 J		130 J		160 J		270 J
	BS08																					14000 =	
	BS09																					6600 =	
	BS10				73 J	87 J	140 J	94 J	130 J				90 J		36 J		180 J		86 J		130 J		140 J
	BS12				160 J	200 J	210 J	150 J	200 J				210 J		56 J		350 J		130 J		120 J		320 J
	BS13				43 J	48 J	59 J	37 J	52 J				66 J				90 J						85 J
	BS14				60 J	58 J	91 J	72 J	89 J				100 J				200 J		63 J		79 J		180 J
	BS15				93 J	94 J	110 J	68 J	110 J				120 J				220 J		63 J		140 J		170 J
	BS16												40 J				76 J				37 J		70 J
	BS20				59 J	44 J	130 J	86 J	150 J				86 J				200 J		84 J		110 J		120 J
	All		190	96	151	186	208	169	192			67	190		117		310		179		159	5238	272
	Offsite				84	95	135	92	133				113		46		205		100		120	6600	166
	Perimeter		190	96	205	260	266	230	239			67	241		260		369		239		179	4898	333
Sediment (ug/kg)	BW01																					51 J	
	BW02				65 J	64 J	59 J	48 J	75 J				88 J	47 J			150 J		42 J		68 J		150 J
	BW03																					76 J	
	BW04																					200 J	
	BW05																60 J					51 J	43 J
	BW07				64 J	75 J	82 J	69 J	81 J				110 J				180 J		54 J		87 J		170 J
	BW08	770 J		1600 =	2900 =	2500 =	2600 =	1800 =	2300 =			1100 J	3200 =		700 J	380 J	7100 =	870 J	1700 =	130 J	6900 =		6800 =
	BW09	59 J		310 J	770 =	590 =	530 =	320 J	590 =			83 J	830 =		130 J	42 J	1500 =	130 J	360 J		1100 =	51 J	1400 =
	BW10										480 J												
	BW14												200 J				220 J						260 J
	BW17					84 J	350 J	140 J	200 J				92 J						130 J				
	BW18				130 J	130 J	120 J	110 J	140 J				160 J				330 J		92 J		150 J		300 J
	BW20				990 J	980 J	940 J	680 J	980 J				1200 J				2500 J		620 J		1600 J		2500 J
	BW21																400 J						1200 J
	BW22																500 J						780 J
	All	415		955	820	632	669	452	624		480	592	735	47	415	211	1294	500	428	130	1651	86	1360
	Audubon				130	107	235	125	170				126				330		111		150		300
	Cane	415		955	1245	1055	1071	730	990			592	1380		415	211	2927	500	705	130	2696	51	2790
	Chickasaw				990	980	940	680	980				1200				1133		620		1600		1493

Table 3-7
Detected Background SVOCs
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h)perylene	Benzo(k)fluoranthene	Benzyl Butyl Phthalate	bis(2-Ethylhexyl) Phthalate	Carbazole	Chrysene	Di-n-Octylphthalate	Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene	Ideno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Phenol	Pyrene
	MOH										480		200				220						260
	Nonconnah				65	64	59	48	75				88	47			105		42		68	95	97
Subsurface Soil (ug/kg)	BS01																					840 =	
	BS04																45 J						42 J
	BS07																					19000 =	
	BS08																					3900 =	
	BS09																					580 =	
	BS14																					770 =	
	BS15																44 J						39 J
	BS16																					680 =	
	All																45					4295	41
	Offsite																					580	
	Perimeter																45					5038	41
Groundwater (ug/L)	MW24									2 J													
	All									2													

Notes:
Surface soil, subsurface soil, and sediment units are in micrograms per kilogram.
Surface water and groundwater units are in micrograms per liter.
Blank cells indicate not detected at the CRDL.
Group values are expressed as arithmetic means
"=" = detected value
J = estimated value
MOH = Medal of Honor

Table 3-8
Comparison of Perimeter and Offsite SVOC Data
Background Sampling Report
Defense Depot Memphis Tennessee

Matrix	Sample Group	Statistic	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(b)Fluoranthene	Benzo(g,h,i)Perylene	Benzo(k)Fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Indeno(1,2,3-c,d)Pyrene	Phenanthrene	Phenol	Pyrene
Surface Soil (ug/kg)	All	Number Detections	9	9	9	9	9	10	3	11	7	9	5	11
	All	Mean	151	186	208	169	192	190	117	310	179	159	5238	272
	Offsite	Number Detections	4	4	4	4	4	4	2	4	3	3	1	4
	Offsite	Mean	84	95	135	92	133	113	46	205	100	120	6600	166
	Perimeter	Number Detections	5	5	5	5	5	6	1	7	4	6	4	7
	Perimeter	Mean	205	260	266	230	239	241	260	369	239	179	4898	333
	Percent Relative Difference		**84%**	**93%**	**66%**	**86%**	**57%**	**72%**	**140%**	**57%**	**82%**	**40%**	**-30%**	**67%**
Subsurface (ug/kg)	All	Number Detections								2			6	2
	All	Mean								45			4295	41
	Offsite	Number Detections											1	
	Offsite	Mean											580	
	Perimeter	Number Detections								2			5	2
	Perimeter	Mean								45			5038	41
	Percent Relative Difference		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**159%**	**NA**

Notes:

Blank cells indicate not detected

NA = not applicable

substantially decrease in the subsurface soil samples, most likely because of leaching of water-soluble phenol and adsorption of other insoluble SVOC compounds in the surface soil (CRC, 1971). Five out of six phenol detections in subsurface soil are from perimeter soil samples and are all higher than the single offsite phenol detection also in BS09.

The generally low number of surface and subsurface soil detections does not allow a meaningful statistical comparison, but the uniformity of the elevated perimeter SVOCs suggests that two populations of SVOCs are present. Where SVOCs are present in both perimeter and offsite samples, the difference in mean values is less than 100 percent, which is indicative of differences between industrial and residential and open field areas rather than impact from waste management operations.

The range of SVOC compounds detected in sediment is similar to that of surface soils. However, mean concentrations of SVOCs in sediments are generally 3 to 10 times higher than those observed in surface soils. An exception is phenol, which is depleted in sediments most likely because of its water solubility. Bis(2-ethylhexyl) phthalate is a common laboratory contaminant. However, the single-sediment bis(2-ethylhexyl) phthalate detection at BW10 (480 µg/kg) exceeds 10 times the maximum blank concentration (36 µg/kg); therefore, the value cannot be dismissed as laboratory contamination (EPA, 1994).

The phthalate concentration (estimated at below the detection limit) in groundwater at monitoring well MW-24 is likely associated with laboratory contamination, since phthalates are typically introduced in field and laboratory handling. However, SVOCs were not detected in laboratory or field QA blanks.

3.2.4 Pesticides, Herbicides, and PCBs

Table 3-9 presents pesticide and PCB concentrations detected in soils and sediment. The distribution of pesticides and PCBs in surface soil is graphically presented in Figure 3-8. Pesticides and PCBs were not detected in surface water or groundwater. No herbicides were detected in any background matrix. Pesticides were primarily detected in soil samples along the perimeter of DDMT, most likely associated with historic pesticide application by facility personnel. Alpha-chlordane, gamma-chlordane, and dieldrin were most frequently detected. Chlordane, dieldrin, and heptachlor epoxide were detected in two offsite locations, BS09 and BS12 (in a residential area just west of DDMT). PCBs (Arochlor 1260) were detected at two perimeter sample locations, BS05 and BS06, along the eastern fenceline of DDMT. No PCBs were detected offsite.

The Wilcoxon statistical analysis to compare perimeter and offsite data for selected pesticides in surface soil is presented in Appendix F, Section F-6. This evaluation shows that the data sets are similar except for dieldrin.

For purposes of establishing background concentrations representative of industrial land uses, application of pesticides and herbicides was considered a facility maintenance activity rather than a waste management operation. Therefore, perimeter and offsite pesticide data were combined into a single data set.

The highest background pesticide detection, heptachlor epoxide at 230 µg/kg, was detected in sediment at the Audubon Park (BW18) lake, which receives surface runoff from the park area. Alpha-chlordane, gamma-chlordane; dieldrin; p,p'-dichlorodiphenyldichloroethane

Table 3-9
Detected Pesticides and PCBs
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Group	Alpha-Chlordane	Dieldrin	Gamma-Chlordane	Heptachlor Epoxide	p,p'-DDD	p,p'-DDE	p,p'-DDT	PCB-1260 (Arochlor 1260)
Sediment	BW07		11 =						
	BW08	4.3 J		13 =		6.1 J			
	BW09	5.2 J		58 J					
	BW11	4.9 J		6.1 J					
	BW13					6 J	5.8 J		
	BW14	3.6 J		7.9 =					
	BW16					2.8 J	7.2 =		
	BW18				230 =				
	All	4.50	11	21.25	230	4.97	6.50		
	Audubon				230				
	Botanical					2.80	7.20		
	Cane	4.75	11	35.50		6.10			
	MOH	4.25		7.00		6.00	5.80		
Surface Soil	BS01		4.9 =						
	BS02		84 =						
	BS03		24 =						
	BS04		530 J						
	BS05	5 =	110 =	2.9 J			110 =	47 =	100 J
	BS06	3.5 J	360 =	2.3 J			160 =	74 =	110 J
	BS07	4 J	4.4 J	16 J		6.7 J			
	BS08		3.6 J						
	BS09	29 J		26 =	7.7 J				
	BS10		3.3 J						
	BS11		86 =						
	BS12	5.7 J	53 =	7.9 J				9.4 J	
	BS14		190 =						
	BS15		66 =						
	BS16		73 =						
	All	9.4	114	11.02	7.70	6.70	135	43.47	105.00
	Offsite	17.4	47.4	16.9	7.70			9.4	
	Perimeter	4.2	131	7.1		6.7	135	60.5	105.0
Subsurface Soil	BS04		370 =					7.2 J	
	BS06		3.5 J				1.5 J		
	BS08		6 =						
	BS22	2.6 =		2.2 =					
	All	2.6	126	2.2			1.5	7.2	
	Offsite	2.6		2.2					
	Perimeter		126				1.5	7.2	

Notes:

Blank cells indicate not detected at the CRDL. Units are in µg/kg.

PCBs = polychlorinated biphenyls

MOH = Medal of Honor

"=" = detected value

J = estimated value

CRDL = contract-required detection limit

DDD = dichlorodiphenyldichloroethane

DDE = 1,1,1-dichloro-2,2-bis(4-chlorophenyl)ethylene

DDT = dichlorodiphenyltrichloroethane

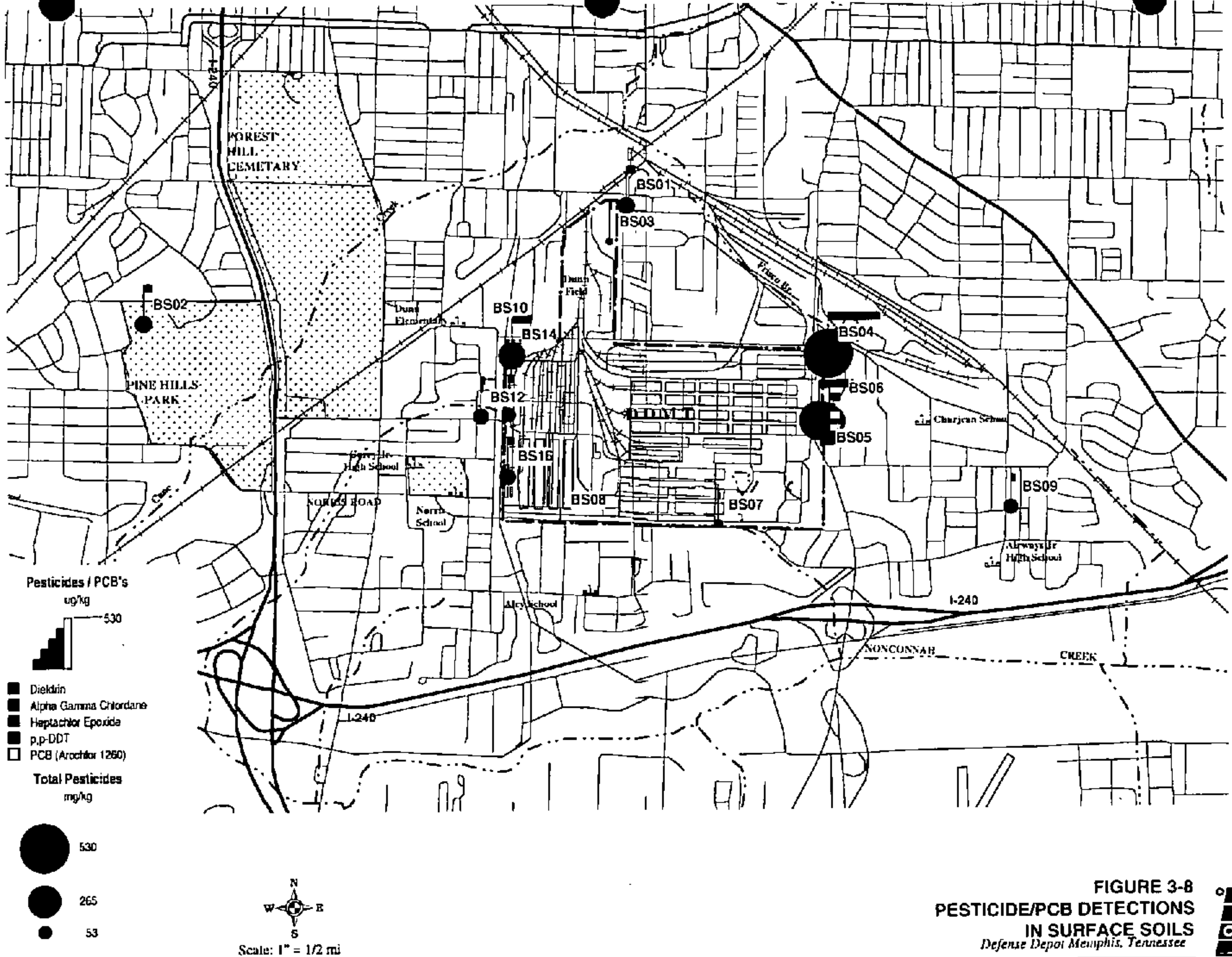


FIGURE 3-8
PESTICIDE/PCB DETECTIONS IN SURFACE SOILS

Defense Depot Memphis, Tennessee

CH2M HILL

(p,p'-DDD); and p,p'-DDT (dichlorodiphenyl-trichloroethane) were detected in sediments at the Botanical Gardens, Cane Creek, and Medal of Honor Park.

The BCT performed an evaluation of the background values in a meeting on July 2, 1997 (see discussion in Section 3.3 below). The value for dieldrin was revised from 530 µg/kg to 86 µg/kg on the basis of the maximum of the three offsite dieldrin detections.

Pesticide/PCB background statistics are summarized in Section 5 (see Table 5-1) and presented in full in Appendix F-2.

3.2.5 Dioxins and Furans

Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) are two related classes of aromatic heterocyclic compounds. The toxicity of dioxins and furans varies between the congeners. Total dioxin toxicity is typically expressed in terms of a toxicity equivalency factor (TEF), which normalizes each congener toxicity to that of the most toxic congener—2,3,7,8-tetrachlorodibenzo-p-dioxin. TEF values reported herein were calculated according to the I-TEF/89 scheme (EPA, 1989).

Dioxin concentrations in surface soil were evaluated to assess whether there was a significant difference in concentration between the perimeter and offsite sample groups. The distribution of the surface and subsurface soil TEFs is shown in Figure 3-9. Table 3-10 presents the results of a t-test evaluation and indicates that the t-statistic for 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin exceeds the critical t-value at 95 percent confidence. The t-test results for more prevalent octachlorodibenzo-p-dioxin and the TEF values indicated that for these congeners and total toxicity, it cannot be determined that the two groups are from different sample populations. Because there were a low number of detections of 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin (two in the perimeter group), background statistics were calculated for the combined perimeter and offsite datasets.

Detected dioxin/furan values are presented in Table 3-11. Background statistics for detected dioxin/furan data are summarized in Section 5 (see Table 5-1). A complete presentation of the dioxin/furan background statistics is included in Appendix F-3.

The distribution of the average TEF at each surface water and sediment sample location group is shown in Figure 3-10. TEF values are highest at Audubon Park, the Botanical Gardens, and Nonconnah Creek because of detections of multiple dioxin/furan congeners in Audubon sample locations BW16 through BW19, Botanical Gardens sample location BW16, and Nonconnah Creek sample location BW03 (see Table 3-11).

Dioxin concentrations in surface water were reported in concentrations of parts per trillion (nanograms [ng] per liter), while concentrations in sediment are reported in parts per billion (µg/kg). Surface water concentrations reported for unfiltered surface water samples are therefore very sensitive to inclusion of suspended sediment. An analysis comparing the turbidity of the water samples with the total dioxin/furan concentrations, represented by the TEF, was performed to determine whether dioxin concentrations in water were controlled by inclusion of suspended materials. Turbidity was used to provide a relative measurement of the amount of suspended material. Figure 3-11 presents the correlation between turbidity and total dioxin concentrations. The low correlation coefficient (R^2) of 0.24 indicates that there is no significant correlation between the concentrations in the two

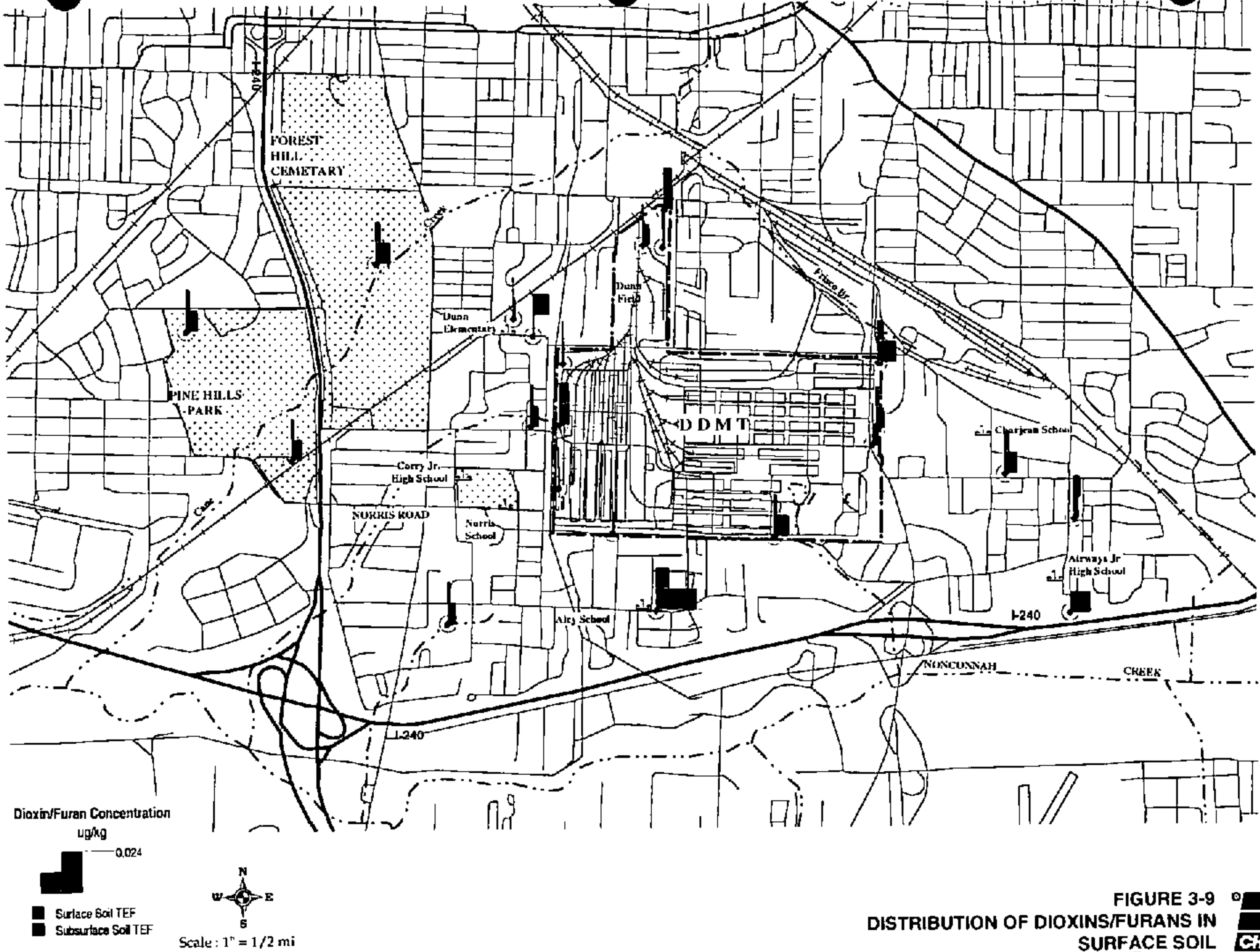


FIGURE 3-9
DISTRIBUTION OF DIOXINS/FURANS IN SURFACE SOIL
Defense Depot Memphis, Tennessee

CH2M HILL

Table 3-10
Surface Soil Dioxin/Furan Population Testing
Background Sampling Program
Defense Depot Memphis Tennessee

GROUP	STATISTIC	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	OCTACHLORODIBENZOFURAN	DIOXIN/FURAN TOTAL EQUIVALENCY FACTOR
All	Minimum	0.07	0.75	0.045	0.001
	Maximum	0.39	23.33	0.393	0.023
	Mean	0.14	5.52	0.163	0.006
	Stand. Dev.	0.13	5.08	0.199	0.005
	N	6	22	3	22
Offsite	Minimum	0.07	0.99	0.045	0.001
	Maximum	0.10	23.33	0.045	0.023
	Mean	0.08	6.77	0.045	0.007
	Stand. Dev.	0.01	6.34	0.000	0.006
	N	4	11	1	11
Perimeter	Minimum	0.12	0.75	0.050	0.001
	Maximum	0.39	10.61	0.393	0.011
	Mean	0.26	4.27	0.222	0.004
	Stand. Dev.	0.19	3.25	0.000	0.003
	N	2	11	2	11
Statistics	S_p^2	0.057	4.796	--	0.0048
	T	3.56	1.23	--	1.21
	T Critical[a]	2.13	1.73	--	1.73

Notes:

[a] 95 percent confidence level, 2-tailed T distribution

Units are in micrograms per kilogram

-- indicates not applicable because of infrequent detections

Table 3-11
Detected Dioxin/Furans
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo Furan	2,3,4,7,8-Pentachlorodibenzo Furan	2,3,7,8-Tetrachlorodibenzo Furan	Octachlorodibenzo-p-Dioxin	Octachlorodibzeno Furan	Dioxin/Furan Toxicity Equivalency Factor
Surface Soil	BS01						5.632 =		0.005632
	BS02	.122 J					4.108 J	.05 J	0.004158
	BS03						1.391 J		0.001391
	BS04						10.614 =		0.010614
	BS05						3.227 J		0.003227
	BS06						4.576 J		0.004576
	BS07						8.781 =		0.008781
	BS08						1.257 J		0.001257
	BS09						2.942 J		0.002942
	BS10						.989 J		0.000989
	BS11						1.274 J		0.001274
	BS12	.071 J					4.411 J	.045 J	0.004456
	BS13						6.702 =		0.006702
	BS14						.747 J		0.000747
	BS15	.39 J					5.597 =	.393 J	0.00599
	BS16						.991 J		0.000991
	BS17						3.136 J		0.003136
	BS18						11.711 =		0.011711
	BS19	.099 J					23.325 =		0.023325
	BS20	.075 J					8.488 =		0.008488
	BS21						6.489 =		0.006489
	BS22	.071 J					5.026 =		0.005026
	All	0.14					5.52	0.163	0.0055
	Offsite	0.08					6.77	0.045	0.0068
	Perimeter	0.26					4.27	0.222	0.0043
Subsurface Soil	BS01						4.445 J		0.004445
	BS03						1.249 J		0.001249
	BS04						2.948 J		0.002948
	BS06						1.642 J		0.001642
	BS07						1.75 J		0.00175
	BS09						3.439 J		0.003439
	BS10						9.435 =		0.009435
	BS11						.209 J		0.000209
	BS12						1.683 J		0.001683
	BS13						2.141 J		0.002141
	BS14						.645 J		0.000645
	BS15						5.432 =		0.005432
	BS17						2.869 J		0.002869
	BS19						7.619 =		0.007619

Table 3-11
Detected Dioxin/Furans
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo Furan	2,3,4,7,8-Pentachlorodibenzo Furan	2,3,7,8-Tetrachlorodibenzo Furan	Octachlorodibenzo-p-Dioxin	Octachlorodibzeno Furan	Dioxin/Furan Toxicity Equivalency Factor
Subsurface Soil (continued)	BS20						2.498 J		0.002498
	BS21						1.378 J		0.001378
	BS22						1.458 J		0.001458
	All						2.99		0.0030
	Offsite						3.27		0.0033
	Perimeter						2.59		0.0026
Sediment	BW07						.431 J		0.000431
	BW08						.483 J		0.000483
	BW10						.761 J		0.000761
	BW11						1.484 J		0.001484
	BW15						1.1 J		0.0011
	BW16	.067 J					3.655 J		0.003655
	BW17	.064 J					2.536 J		0.002536
	BW18	.583 J			.002 J		7.707 =		0.008707
	BW19						8.556 =		0.008556
	BW20						1.608 J		0.001608
	BW22						.498 J		0.000498
	All	0.24			0.002		2.62		0.0027
	Audubon	0.32			0.002		6.27		0.0066
	Botanical	0.07					2.38		0.0024
	Cane						0.46		0.0005
	Chickasaw						1.05		0.0011
	MOH						1.12		0.0011
Surface Water	BW03	.098 J		.057 J		.024 J	.384 J		0.005634
	BW04						.254 J		0.000254
	BW09	.088 J							
	BW10						.645 J		0.000645
	BW11					.011 J	.635 J		0.001735
	BW12						.597 J		0.000597
	BW13	.043 J					1.225 J		0.001225
	BW14						.843 J		0.000843
	BW15						.206 J		0.000206
	BW16			.027 J	.024 J	.013 J	.232 J		0.014882
	BW17	.184 J	.046 J	.037 J	.05 J	.031 J	1.135 J		0.031085
	BW18					.01 J	.669 J		0.001669
	BW19					.007 J	.892 J		0.001592
	BW20						.299 J		0.000299
	BW21						.374 J		0.000374

Table 3-11
Detected Dioxin/Furans
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Station/Location	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	1,2,3,7,8-Pentachlorodibenzo Furan	2,3,4,7,8-Pentachlorodibenzo Furan	2,3,7,8-Tetrachlorodibenzo Furan	Octachlorodibenzo-p-Dioxin	Octachlorodibzeno Furan	Dioxin/Furan Toxicity Equivalency Factor
Surface Water (continued)	BW22						.267 J		0.000267
	All	0.08	0.046	0.040	0.037	0.016	0.58		0.0041
	Audubon	0.09	0.046	0.037	0.050	0.016	0.90		0.0114
	Botanical			0.027	0.024	0.013	0.22		0.0075
	Cane	0.09							
	Chickasaw						0.31		0.0003
	MOH	0.04				0.011	0.79		0.0010
	Nonconnah	0.10		0.057		0.024	0.32		0.0029

Notes:
Blank cells indicate not detected at the CRDL.
MOH = Medal of Honor
"=" = detected value
J = estimated value
CRDL = contract-required detection limit

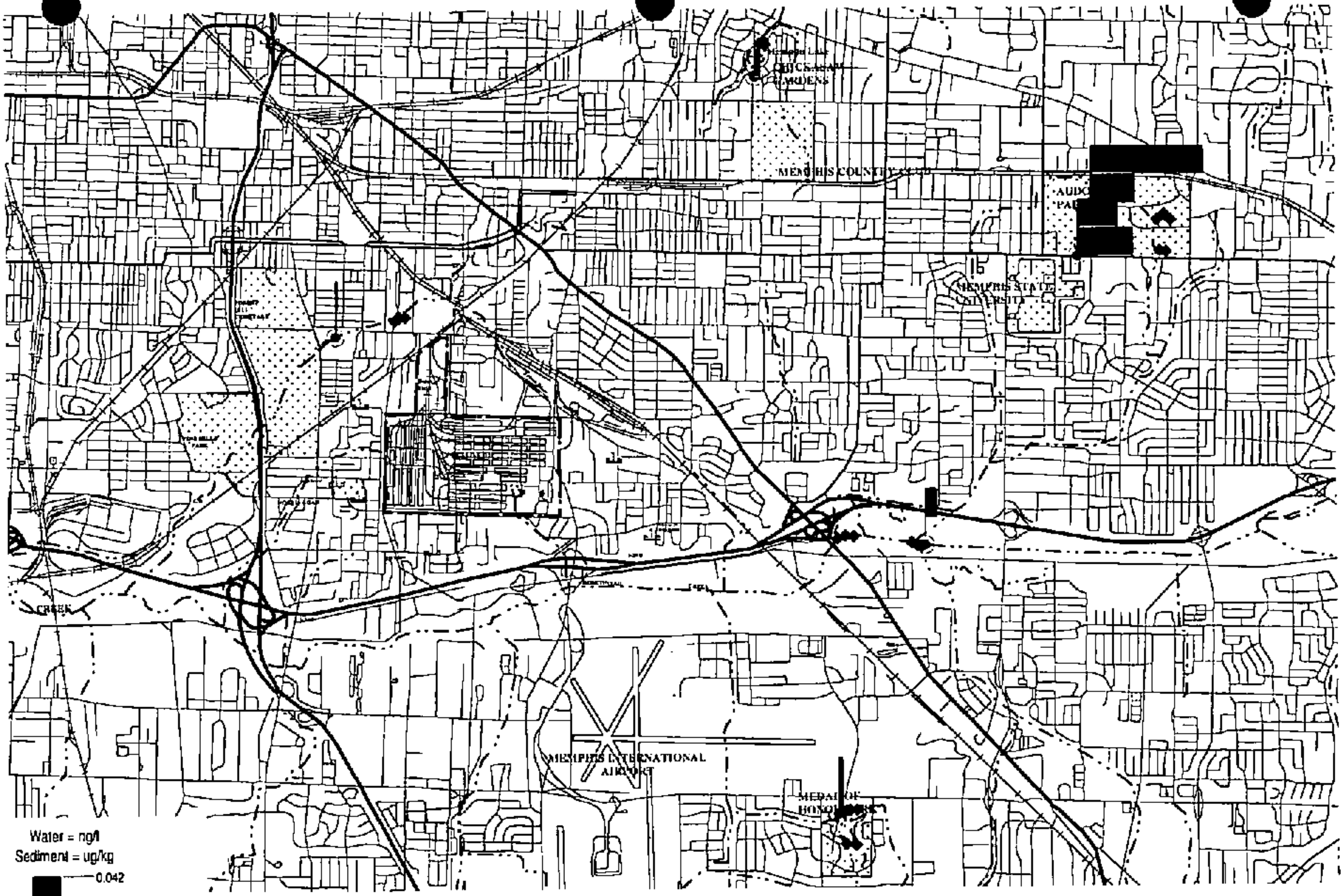
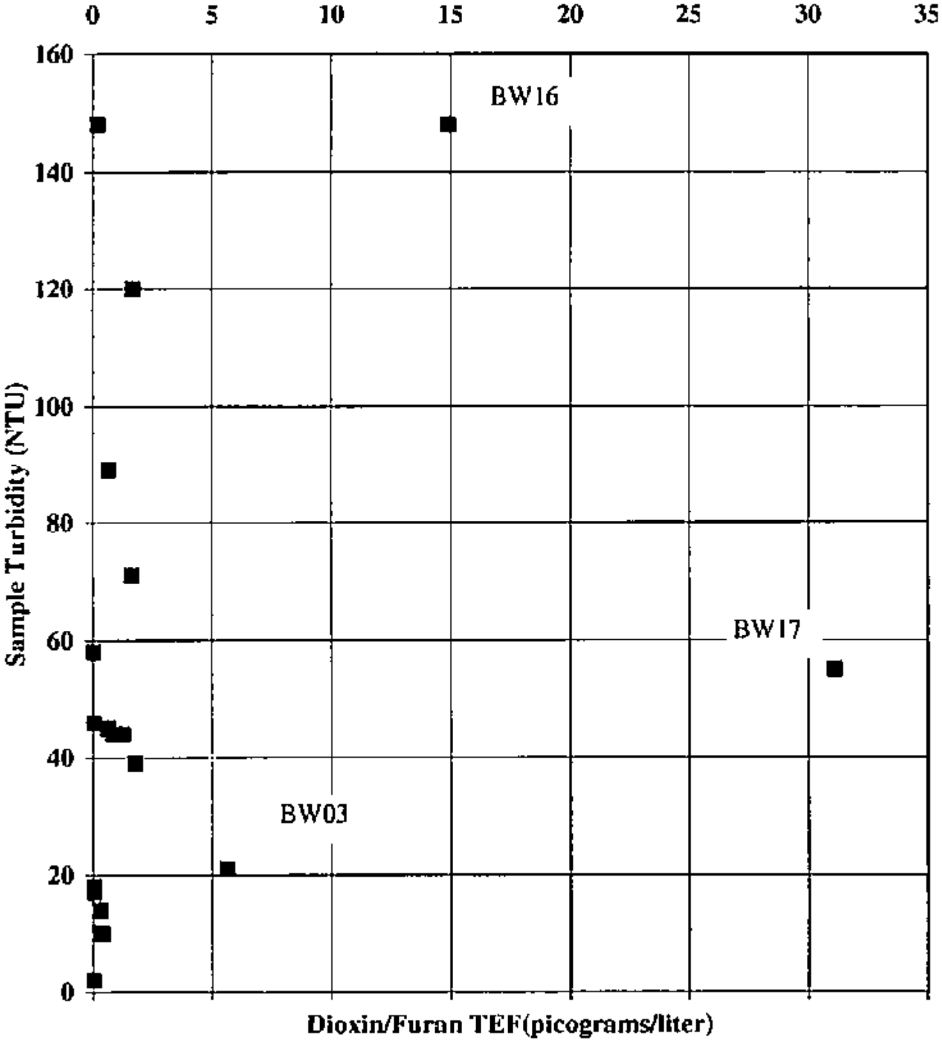


FIGURE 3-10
DISTRIBUTION OF DIOXINS/FURANS
IN SURFACE WATER AND SEDIMENTS
Defense Depot Memphis, Tennessee



Sample Location	Dioxin/Furan TEF (picogram/liter)	Turbidity (NTU)
BW01	0	18
BW02	0	46
BW03	5.634	21
BW04	0.254	14
BW05	0	17
BW06	0	2
BW07	0	58
BW08	0	58
BW09	0	58
BW10	0.645	89
BW11	1.735	39
BW12	0.597	45
BW13	1.225	44
BW14	0.843	44
BW15	0.206	148
BW16	14.882	148
BW17	31.085	55
BW18	1.669	120
BW19	1.592	71
BW20	0.299	10
BW21	0.374	10
BW22	0.267	10
	$r^2 =$	0.24

Figure 3-11 Analysis of Correlation Between Dioxin in Surface Water and Turbidity
Defense Depot Memphis, Tennessee

media, probably because of the low observed concentrations and other potential analytical artifacts in reporting such low concentrations. Outlier TEF values at Audubon Park (BW17), Botanical Gardens (BW16), and Nonconnah Creek (BW03) discussed above are also identified in Figure 3-11.

Dioxins are widespread in environmental media originating primarily from atmospheric depositions that result from waste incineration/burning activities. In general, dioxins in such emissions are dominated by octa-CDD. Furthermore, if a source-related contribution exists, a series of dioxins such as 2,3,7,8-TCDD and other lower chlorinated congeners are expected in the samples. Most of the background detections were octa- and hepta- isomers, indicating that the observed concentrations could be from atmospheric deposition, rather than from a localized source contribution. There were no detects of 2,3,7,8-TCDD in any of the 76 samples tested (22 sediment, 14 surface water, 20 deep soil, and 20 shallow soil samples).

At very low concentrations (detected concentrations below the mean detection limits), the presence of the reported chemical is uncertain. Additionally, most but not all of the detected dioxins and furans were also detected in the field and trip blanks at concentrations similar to the sample concentrations (see Section 4.5.1, Table 4-2). Following EPA CLP protocol (see Section 4.5.1), dioxin and furan values less than 5 times the maximum blank concentrations were reported as undetected in the database. This could be because the dioxin isomers have very low solubility (20 to 483 ng/g) due to a very high carbon-based sediment partition coefficient (log Koc = 7), and therefore high resistance to chemical and biological breakdown. It is possible for these chemicals to strongly adhere to the analytical equipment and hence be detected in several samples at low concentrations. Low solubility is also the reason for suspecting that the observed surface water concentrations are from suspended particulates in the surface water. Therefore, the detected dioxin/furan concentrations do not appear to be source related and are likely from atmospheric deposition and runoff from the surrounding soil depositions into the sediments.

Elevated TEF values in the surface soil samples indicate that the dioxin/furans result from surficial deposition rather than from other sources (such as laboratory input), because dioxin/furans are quickly sorbed onto soil particles and are not expected at depth under normal conditions. Low-level detections in the subsurface soil could be a result of other factors (such as an analytical artifact).

3.3 BCT Evaluation

During the BCT meeting of July 2, 1997, BRAC, screening site, and RI site data were evaluated relative to applicable criteria and background concentrations. A suite of chemical constituents was identified for which concentrations exceeded the applicable criteria, but the background concentration also exceeded the criteria. For these "sensitive" constituents, background was considered an important evaluation criterion. To present a conservative evaluation, the background concentrations for these chemical constituents were modified by removing outliers (see Appendix C). In all instances, removal of outliers resulted in a lower, more restrictive background criterion. The results of the BCT evaluation of sensitive parameters are summarized in Table 3-12. Modified background values identified in this table were used in evaluation of the data.

Table 3-12
Background Data Modified by the BCT
Background Sampling Program
Defense Depot Memphis Tennessee

Chemical	Matrix	Units	Initial Background	Modified Background	Comments
Arsenic	SB	mg/kg	**17**		
Arsenic	SD	mg/kg	**12**		17 detections. No outliers.
Arsenic	SS	mg/kg	21.8	**16.5**	Offsite locations only. Dropped outlier of 27.7.
Arsenic	SW	mg/L	**18**		No outliers
Arsenic, Dissolved	SW	mg/L	**12.4**		No outliers
Barium	SB	mg/kg	**300**		No outliers
Barium	SS	mg/kg	253	**234**	Offsite locations only.
Beryllium	SS	mg/kg	**1.1**		No outliers. Perimeter and offsite values nearly identical.
Cadmium	SD	mg/kg	**28.9**		Only 3 detections.
Chromium	SB	mg/kg	**26.4**		No outliers.
Chromium	SD	mg/kg	38	**20**	Dropped 2 outliers (174 and 40).
Chromium	SS	mg/kg	27.4	**24.8**	Based on offsite mean of 12.4.
Copper	SD	mg/kg	271	**58**	Dropped 2 outliers (512 and 1250 -- both are J qualified)
Dieldrin	SS	mg/kg	530	**86**	Nonparametric distribution -- Maximum value proposed. Alternate value is maximum of three offsite dieldrin detections.
p,p'-DDD	SD	mg/kg	**6.1**		
p,p'-DDD	SS	mg/kg	**6.7**		
p,p'-DDE	SD	mg/kg	**7.2**		
p,p'-DDE	SS	mg/kg	**160**		
p,p'-DDT	SS	mg/kg	**74**		
Lead	SD		69	**35.2**	Removed 2 outliers.
Lead	SS	mg/kg	42.6	**30**	Offsite values only with 73.3 mg/kg outlier removed.
Lead	SW	mg/L	**18.6**		Twice mean detected. No outliers.
Lead, Dissolved	SW	mg/L	**11.3**		Maximum detected. Only one detected.
Mercury	SD	mg/kg	**4**		Only one detection.
Nickel	SS	mg/kg	33	**30**	No outliers. Offsite values only.
Nickel	SB	mg/kg	**37**		No positive outliers.
Vanadium	SS	mg/kg	52	**48.4**	No outliers. Offsite values only.

Notes:

Values presented in bold-face will be used in evaluation of DDMT data.

SS = Surface Soil

SB = Subsurface Soil

SW = Surface Water

SD = Sediment

TAB

4.0

4.0 Quality Assurance/Quality Control Overview

The purpose of the data quality evaluation process is to assess the effect of the overall analytical process on the usability of the data. The two major categories of data evaluation are laboratory performance and matrix interference. Evaluation of laboratory performance is a check for compliance with the method requirements: the laboratory either did or did not analyze the samples within the limits of the analytical method. Evaluation of matrix interference is more subtle and involves the analysis of several areas of results including surrogate spike recoveries, matrix spike recoveries, and duplicate sample results.

Two separate sets of data were evaluated, and the results of both of these evaluations are presented in this section. As discussed in Section 2.1, soil, sediment, and surface water samples were collected as part of the DDMT Background Sampling Program in October 1995. These samples were analyzed for VOCs, SVOCs, pesticides/PCBs, herbicides, TAL metals, and dioxins/furans. Groundwater samples were collected during the DDMT groundwater sampling event in February 1996. All samples were analyzed using Level C QC (Level C is equivalent to EPA level 3 QC) as described in the *Generic Quality Assurance Project Plan* (CH2M HILL, 1995b). EPA Level 3 QC requirements include collecting and analyzing field and laboratory QC samples at a specified frequency. The data from these samples are used to evaluate laboratory performance and matrix interference, as well as to monitor potential field and laboratory contamination.

Section 4.0 is divided into 11 subsections. Sections 4.1 and 4.2 provide a discussion of the field and laboratory QA/QC samples. Section 4.3 provides an overview of the data review and the validation process. The remaining sections provide a summary of QA/QC parameters and data quality conclusions.

4.1 Field QA/QC

Sampling requirements for EPA Level 3 Field QC include field blanks and duplicate field samples. Three types of field blank QC samples were collected to detect and monitor the existence and magnitude of contamination problems potentially introduced by field errors. The three types are as follows:

Trip Blank (TB). Trip blanks were used to monitor any possible VOC contamination introduced to samples during shipping and handling. The blanks are 40-milliliter vials of ASTM Type II water that are filled in the laboratory, transported to the site with the sample bottles, and returned to the laboratory with VOC samples for analysis. The trip blank containers were not opened in the field. One trip blank sample was included with each shipping container that contained samples requiring VOC analysis.

Equipment Rinseate Blank (EB). Equipment rinseates are samples of organic-free water that is passed through and over decontaminated sampling equipment. The samples were used to monitor the effectiveness of the decontamination process. Equipment rinseate samples were collected at a rate of one per day per sample matrix. Because surface water samples were collected directly into the laboratory containers, rinseate samples were not required for this medium. The equipment rinseate samples were analyzed for the same parameters as the associated field samples.

Field Blank (FB). The field blank consisted of a sample of the organic-free water that was used for the final rinse during equipment decontamination. This blank was used to monitor contamination that may have been introduced by the rinse water. The field blank was analyzed for the same parameters as the field samples.

Duplicate field samples were collected at a frequency of 10 percent of the samples collected per matrix. Field duplicates consisted of an original (or native) sample and a replicate sample that were collected from the same location at the same time. These samples were used to monitor sampling precision.

4.2 Laboratory QA/QC

QA/QC samples analyzed by the laboratory during the DDMT background sampling included method blanks and spiked samples. The type and frequency of each QA/QC sample is detailed in the analytical method. Results of these QA/QC samples and laboratory performance data (e.g., instrument calibration) were used to evaluate data quality during the data review and validation process.

Method blanks were analyzed each day prior to analysis of field samples. A method blank is a sample of ASTM Type II water that is analyzed by the same process as the corresponding field samples. Method blanks were used to monitor both laboratory performance and contamination potentially introduced during the analytical process.

Laboratory QC samples can be categorized as organic or inorganic QC samples. The two types of organic QC samples are as follows:

- **Surrogate Spikes.** Surrogate compounds are the structural homologs of target compounds and are expected to behave in a similar manner during analysis. Surrogate spike recoveries were used to monitor both matrix effects and laboratory performance as well as to estimate laboratory accuracy.
- **Matrix Spike/Matrix Spike Duplicates (MS/MSDs).** MS/MSDs were used to estimate the effect of the specific sample matrix on sample analyte recovery, as well as on accuracy and precision. MS compounds are found on the Target Compound List (TCL). The field sample was split into thirds, and two portions were spiked with known quantities of TCL compounds to ascertain the effects of the specific sample matrix on the recovery of these analytes. MS/MSD samples were collected and analyzed with 5 percent of the samples from each matrix (i.e., soil, surface water, sediment, and groundwater).

The three types of inorganic QC samples include:

- **Laboratory Control Standard.** A laboratory control standard (LCS) consists of an ideal matrix (usually ASTM Type II water) that has been spiked with a known amount of the analyte of interest; the LCS was prepared (digested) and analyzed with the field samples. The LCS is designed to monitor the efficiency of the overall analytical procedure (including sample preparation); the resulting analyte recoveries must fall within pre-established acceptance limits.

- **Spiked Samples.** Pre-digestion spikes are analogous to the MS/MSD spike recovery for organic analyses because they measure the effects of the sample matrix on the recovery of a known quantity of analyte after sample preparation and analysis. If the pre-digestion spike recovery did not fall within the acceptance window of 75 to 125 percent, then a post-digestion spike was added and the sample reanalyzed. The post-digestion spike monitors instrument performance and matrix effects. If both the pre- and post-digestion spike recoveries fell outside the acceptance limits, the data were flagged to indicate the non-conformance.
- **Laboratory Duplicate Samples.** Field samples were split in the laboratory, and the duplicate results were used to estimate precision. These samples are not replacements for field duplicate samples. Laboratory duplicate samples are analogous to the MS/MSD because they measure the effects of the sample matrix on precision after sample preparation and analysis. If the precision of the duplicate results was greater than 20 percent relative percent difference (RPD), then the results were qualified to indicate poor duplicate precision.

4.3 Data Review and Validation Approach

Before the analytical results were released by the laboratory, both the sample and QC data were carefully reviewed to verify sample identity, instrument calibration, detection limits, dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. Additionally, the QC data were reduced and the resulting data were reviewed to ascertain whether they were within the laboratory-defined limits for accuracy and precision.

The data packages were reviewed by the project chemists using the process developed by EPA (EPA, 1994 a/b). The data review and validation process is independent of the laboratory's checks and focuses on the usability of the data to support the project data interpretation and decisionmaking processes. Areas of review included holding time compliance, initial and continuing calibration, spiked sample results, method blank results, and duplicate sample results. A data review worksheet was completed for each data package.

Samples that were not within the acceptance limits were indicated with a qualifying flag, which consists of a single or double-letter abbreviation that indicates a problem with the data. Although the qualifying flags originate during the data review and validation process, they are included in the data summary tables so that the data will not be used indiscriminately. The following flags were used in this text:

- U Undetected. Analyte was analyzed for but not detected above the method detection limit.
- UJ Detection limit estimated. Analyte was analyzed for but qualified as not detected. The result is estimated.
- J Estimated. The analyte was present, but the reported value may not be accurate or precise.

- R Rejected. The data are unusable. (Note: Analyte/compound may or may not be present.)

As required by the EPA, organic sample results that are greater than the method detection limit (MDL), but less than the contract-required quantitation limit (CRQL), are qualified with a J for estimated. Similarly, inorganic sample results that are greater than the IDL, but less than the CRDL, are qualified with a J.

Once the data review and validation processes were completed, the entire data sets were reviewed for chemical compound frequencies of detection, dilution factors that might affect data usability, and patterns of target compound distribution. The data sets were also evaluated to identify potential data limitations, uncertainties, or both in the analytical results.

4.4 Holding Times

The holding times for each parameter were evaluated according to EPA CLP requirements. The holding time for metallic analytes is 180 days (except for mercury, which is 28 days). All holding time requirements were met for elemental targets. The holding time for pH measurement is 6 hours. All samples were received by the laboratory outside of the holding time and were therefore qualified as estimated. However, pH measurements were taken in the field during sample collection (see Table 2-6). The holding time for VOC samples is 14 days from date of collection to analysis. For other organic analyses (i.e., SVOCs, pesticides, herbicides, and PCBs), the extraction holding time is 7 days and the analysis holding time is 40 days. All organic holding times were met except in cases where samples were re-extracted out of holding time in order to investigate low surrogate or low internal standard recoveries. All results from samples re-extracted out of holding time were qualified as estimated.

4.5 Potential Field Sampling and Laboratory Contamination

As discussed in Section 4.1, trip, equipment rinseate, and field blanks were used to monitor potential contamination introduced during field sampling, sample handling, and shipping activities. In addition to field blank samples, duplicate field samples were collected to provide information about sampling and analysis precision and accuracy. One duplicate sample was collected for every 10 field samples.

Also as discussed in Section 4.1, laboratory method blanks were analyzed. A laboratory method blank is ASTM Type II water that is treated as a sample because it undergoes the same analytical process as the corresponding field samples. Method blanks are used to monitor laboratory performance and contamination introduced during the analytical procedure. One method blank was analyzed for every 10 samples, or one per analytical batch, whichever was more frequent.

According to EPA (1994 a/b), concentrations of common contaminants detected in samples at less than 10 times the maximum concentration in the blanks can be attributed to field sampling or laboratory contamination rather than to environmental contamination from site activities. Concentrations of less common blank contaminants are multiplied by 5 rather than 10. Common contaminants include acetone, methylene chloride, and phthalates.

Acetone and methylene chloride are used as extraction solvents in the laboratory and are common laboratory contaminants. Acetone and methylene chloride were detected in the field samples at concentrations greater than 10 times the highest concentration detected in the corresponding blanks. However, acetone and methylene chloride can probably be attributed to field sampling or laboratory contamination because they were detected in the majority of the blanks and samples at similar concentrations, indicative of systematic contamination.

Phthalates are used as plasticizers. The most common phthalates are bis(2- ethylhexyl) phthalate (BEHP) and di-n-butylphthalate (DNBP). These are often introduced into samples during handling. Wearing latex gloves, the field samplers transfer the soil samples from the sampling equipment (i.e., split spoons or stainless-steel spoons). Latex gloves are used when handling groundwater sampling equipment such as pumps, hoses, and bailers. Also, laboratory personnel wear latex gloves when handling samples during the analytical process. The latex gloves are coated with plasticizers to facilitate release of the gloves from the skin. Therefore, the BEHP and DNBP can be attributed to field sampling or laboratory contamination. Similarly, other phthalates (e.g., butylbenzyl phthalate, diethylphthalate, and di-n-octylphthalate) were detected in samples but not in corresponding field or laboratory blanks. These sample results are most likely attributable to field sampling or laboratory contamination rather than to environmental conditions.

Inorganic target analytes (metals) were detected in field and laboratory blanks at concentrations at or near the IDL. These results can be attributed to instrument "noise" and are not indicative of contamination (see Section 4.9).

4.5.1 Soil, Sediment, and Surface Water

Table 4-1 summarizes the target compounds detected in the soil, sediment, and surface water field and laboratory QC blanks. An evaluation of blank contamination compared with field sample results for soil, sediment, and surface water is presented in Table 4-2.

These samples were analyzed for dioxins and furans using EPA Method SW-846/8290, which is a sensitive method with low MDLs. Concentrations of dioxins and furans were detected in the field and laboratory blank samples as well as in the field samples. These low concentrations of dioxins and furans can be attributed to background or instrument noise and are not indicative of environmental conditions. Dioxin and furan concentrations less than 5 times the maximum concentration in associated blanks were qualified (in the database) as undetected.

Bromomethane (two of eight laboratory method blanks) and carbon disulfide (one of six equipment rinseate blanks) were detected in selected field and laboratory blank samples at concentrations equal to or less than the reporting limits. These target compounds were not detected in the field samples; these results can therefore be attributed to laboratory contamination.

Table 4-1
Summary of Target Compounds in the Field QA/QC Samples
Background Sampling Program
Defense Depot Memphis Tennessee

Blank Type	Fraction	Target Compound	Frequency of Detection	Maximum Concentration	Units
TB	VOC	Acetone	4 of 6	5 J	µg/L
		Methylene Chloride	1 of 6	9 JB	
FB	VOC	Acetone	1 of 1	7 J	
	Dioxin/Furans	2378-TCDD	1 of 1	0.031	
		123678-HxCDD	1 of 1	0.007	
RS	VOC	Acetone	6 of 6	9 J	
		Methylene Chloride	2 of 6	1 JB	
		Carbon Disulfide	1 of 6	2 J	
	SVOC	Bis(2-ethylhexyl)phthalate	1 of 6	2 J	
	Dioxin/Furans	2378-TCDD	2 of 6	0.033 BJ	ng/L
		2378-TCDF	1 of 6	0.011	
		23478-PeCDF	1 of 6	0.008 J	
		123478-HxCDF	2 of 6	0.010 J	
		123678-HxCD	1 of 6	0.008 BJ	
		123678-HxCDD	2 of 6	0.014 BJ	
		123789-HxCDD	1 of 6	0.013 BJ	
		234678-HxCDF	2 of 6	0.007 J	
		123789-HxCDF	1 of 6	0.009 J	
		1234678-HpCDF	2 of 6	0.025 BJ	
		1234678-HpCDD	1 of 6	0.031 J	
		1234789-HpCDF	1 of 6	0.008 J	
		OCDD	1 of 6	0.637 BJ	

Notes:

J indicates an estimated value.

B indicates the analyte was found in the associated blank as well as in the sample.

QA/QC = quality assurance/quality control

TB = trip blank

FB = field blank

RS = equipment rinseate

µg/L = microgram per liter

ng/L = nanogram per liter

VOC = volatile organic compound

SVOC = semivolatile organic compound

Table 4-2
Evaluation of Field Samples and QC Blank Detections
Background Sampling Program
Defense Depot Memphis Tennessee

Sample Matrix	Target Compound Name	Total Number Field Samples Analyzed	Total Number Detected in Field Samples	Minimum Concentration Detected in Field Samples	Maximum Concentration Detected in Field Samples	Maximum Blank Concentration	Maximum Blank Concentration x 5 (x 10 for common cont)	Attributable to Field/Lab Contamination	Units
Sediment	bis(2-ethylhexyl)phthalate	25	9	63	1200	36	360	Yes (dilution)	µg/kg
	Di-n-butyl phthalate	25	12	52	560	110	1100	Yes	
	Acetone	24	25	10	91	5	50	Probably	
	Methylene chloride	25	25	10	91	7	70	Probably	
Sediment	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	27	10	0	0.583	0.012	0.06	No	
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	27	8	0	0.07	0.023	0.115	Yes	
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	27	2	0.003	0.005	0.016	0.08	Yes	
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	27	2	0.003	0.003	0.007	0.035	Yes	
	1,2,3,4,7,8-Hexachlorodibenzofuran	27	7	0	0.004	0.011	0.055	Yes	
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	27	8	0	0.013	0.011	0.055	Yes	
	1,2,3,6,7,8-Hexachlorodibenzofuran	27	4	0	0.004	0.01	0.05	Yes	
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	27	8	0	0.008	0.011	0.055	Yes	
	1,2,3,7,8,9-Hexachlorodibenzofuran	27	1	0.004	0.004	0.013	0.065	Yes	
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	27	2	0	0.002	0.002	0.01	Yes	
	1,2,3,7,8-Pentachlorodibenzofuran	27	2	0	0.002	ND	ND	No	
	2,3,4,6,7,8-Hexachlorodibenzofuran	27	4	0	0.005	0.013	0.065	Yes	
	2,3,4,7,8-Pentachlorodibenzofuran	27	2	0.002	0.003	ND	ND	No	
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	27	6	0	0.004	0.005	0.025	Yes	
	2,3,7,8-Tetrachlorodibenzofuran	27	6	0	0.004	0.002	0.01	Yes	
	Octachlorodibenzo-p-dioxin	27	18	0	11.654	0.039	0.195	No	
	Octachlorodibenzofuran	27	1	0	0	ND	ND	No	
Soil	Bis(2-ethylhexyl)phthalate	63	9	350	410	36	360	Probably	
	Di-n-butyl phthalate	63	19	350	420	110	1100	Yes	
	Acetone	49	43	10	27	5	50	Yes	
	Methlene chloride	49	49	10	29	7	70	Yes	
Soil	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	51	24	0	0.39	0.012	0.06	No	
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	51	7	0	0.1	0.023	0.115	Yes	
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	51	2	0	0.006	0.011	0.055	Yes	
	1,2,3,6,7,8-Hexachlorodibenzofuran	51	1	0	0	0.01	0.05	Yes	
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	51	1	0.004	0.004	0.011	0.055	Yes	
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	51	1	0	0	0.002	0.01	Yes	
	2,3,4,6,7,8-Hexachlorodibenzo-p-dioxin	51	1	0.004	0.004	0.013	0.065	Yes	
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	51	5	0	0	0.005	0.025	Yes	
	2,3,7,8-Tetrachlorodibenzofuran	51	1	0.001	0.001	0.002	0.01	Yes	

Table 4-2
Evaluation of Field Samples and QC Blank Detections
Background Sampling Program
Defense Depot Memphis Tennessee

Sample Matrix	Target Compound Name	Total Number Field Samples Analyzed	Total Number Detected in Field Samples	Minimum Concentration Detected in Field Samples	Maximum Concentration Detected in Field Samples	Maximum Blank Concentration	Maximum Blank Concentration x 5 (x 10 for common cont)	Attributable to Field/Lab Contamination	Units
Soil (continued)	Octachlorodibenzo-p-dioxin	51	48	0.165	23.325	0.039	0.195	No	µg/kg
	Octachlorodibenzofuran	51	5	0	0.393	ND	ND	No	
Surface Water	bis(2-ethylhexyl)phthalate	27	14	3	310	36	360	Yes	µg/L
	Acetone	26	26	10	25	45	450	Yes	
	Methylene chloride	26	16	1	10	9	90	Yes	
Surface Water	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	28	11	0	0.184	0.031	0.155	No	ng/L
	1,2,3,4,6,7,8-Heptachlorodibenzofuran	28	20	0	0.213	0.092	0.46	Yes	
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	28	4	0	0.143	0.057	0.285	Yes	
	1,2,3,4,7,8-Hexachloordibenzo-p-dioxin	28	5	0.009	0.095	0.046	0.23	Yes	
	1,2,3,4,7,8-Hexachlorodibenzofuran	28	12	0	0.095	0.033	0.165	Yes	
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	28	13	0	0.123	0.057	0.08	No	
	1,2,3,6,7,8-Hexachlorodibenzofuran	28	8	0	0.093	0.038	0.19	Yes	
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	28	11	0	0.134	0.064	0.32	Yes	
	1,2,3,7,8,9-Hexachlorodibenzofuran	28	5	0.008	0.119	0.04	0.2	Yes	
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	28	3	0	0.046	25	125	Yes	
	1,2,3,7,8-Pentachlorodibenzofuran	28	4	0.027	0.057	ND	ND	No	
	2,3,4,6,7,8-Hexachlorodibenzofuran	28	7	0	0.125	0.05	0.25	Yes	
	2,3,4,7,8-Pentachlorodibenzofuran	28	4	0	0.05	0.008	0.04	No	
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	28	16	0	0.043	0.043	0.215	Yes	
	2,3,7,8-Tetrachlorodibenzofuran	28	10	0	0.031	0.011	0.055	Yes	
	Octachlorodibenzo-p-dioxin	28	24	0	6.038	0.637	3.185	No	
	Octachlorodibenzofuran	28	1	0	0	ND	ND	No	

Notes:
QC = quality control
µg/kg = microgram per kilogram
µg/L = microgram per liter
ng/L = nanogram per liter
cont = contaminants

308 88

Compounds found in soil, sediment, and surface water blanks that should be attributed to field sampling or laboratory contamination include:

- Acetone
- Methylene chloride
- Bis(2-ethylhexyl)phthalate
- Di-n-butyl phthalate
- Selected dioxins and furans as summarized in Section 4.5.1 (see Table 4-2)

4.5.2 Groundwater

Tables 4-3 and 4-4 summarize the target analytes and compounds detected in the field and laboratory QC blanks associated with the groundwater sampling event.

Several inorganic analytes were detected in QC blanks. Silicon was detected in several method blanks but not in field blanks. Silicon can be attributed to dissolution of the borosilicate glass beakers used in the sample digestion process. Target metals detected in groundwater field and laboratory blanks are summarized in Table 4-3. Sample results less than 5 times the maximum concentration detected in associated blanks were attributed to contamination and were qualified (in the database) as undetected.

Chloroform and tetrachloroethene were detected in one equipment rinseate blank each and 2-butanone was detected in two of the equipment rinseate blanks. Presence of these compounds in the equipment rinseate blanks is indicative of incomplete decontamination of field sampling equipment. Sample results for these target compounds at concentrations less than 5 times that in the associated equipment rinseate blanks were attributed to field sampling contamination and were qualified as undetected.

TABLE 4-3
Target Analytes Detected in Laboratory and Field Blanks for the Groundwater Sampling
Background Sampling Program
Defense Depot Memphis Tennessee

Analyte (inorganic)	Detected / Analyzed	Highest Concentration	CRDL	Probable Source
Aluminum	24 / 38	124	200	Field contamination
Barium	31 / 37	3.1	200	Field contamination
Calcium	35 / 37	211	5,000	Field contamination
Chromium	3 / 13	9.5	10	Field contamination
Copper	9 / 20	3.2	25	Field contamination
Iron	36 / 39	410	100	Field contamination
Lead	4 / 20	14	3	Field contamination
Magnesium	12 / 30	68	5,000	Field contamination
Manganese	27 / 37	8.9	15	Field contamination
Nickel	1 / 13	16	40	Field contamination
Sodium	37 / 37	10,100	5,000	Field contamination
Zinc	39 / 39	63.4	20	Field contamination

Notes:
The total number of blanks analyzed are not the same because of the varying number of laboratory method blanks prepared per analyte.
Concentration values are presented in µg/L.

TABLE 4-4
Target Compounds Detected in Laboratory and Field Blanks for the Groundwater Sampling
Background Sampling Program
Defense Depot Memphis Tennessee

Compound (organic)	Detected / Analyzed	Highest Concentration	CRQL	Probable Source
BEHP	8 / 36	45	10	Sample handling
DNBP	16 / 36	26	10	Sample handling
Acetone	51 / 59	12	10	Laboratory contamination
Methylene Chloride	42 / 59	3	10	Laboratory contamination
2-Butanone	2 / 29	2	10	Field contamination
Chloroform	1 / 29	1	10	Field contamination
Tetrachloroethene	1 / 29	2	10	Field contamination

Note:
Concentration values are presented in µg/L.

Compounds found in groundwater samples that should be attributed to field sampling or laboratory contamination include:

- Acetone
- Methylene chloride
- BEHP
- Di-n-butylphthalate
- Di-n-octylphthalate
- Butylbenzylphthalate
- Diethylphthalate

4.6 Surrogate Spike Recovery

Surrogate spike compounds were added to every sample analyzed for the organic parameters including field and laboratory blanks as well as field environmental samples. Surrogate spike compounds are the structural homologs of target compounds and are therefore expected to behave in a similar manner during analysis.

Surrogate spike recoveries were used to monitor both laboratory performance and matrix interference. Surrogate spike recoveries from field and laboratory blanks were used to evaluate laboratory performance because the field blanks represent an "ideal" sample matrix. Surrogate spike recoveries for field samples were used to evaluate the potential for matrix interference. For field samples, when the surrogate spike recoveries fell outside the target acceptance windows of the method, the samples were re-analyzed. If the surrogate spike recovery was still outside the acceptance window for the re-analyzed sample, then the sample results were qualified as affected by matrix interference.

The VOC surrogate recoveries for surface water, soil, and groundwater samples were clustered within a window of about 85 to 115 percent, which is within the target acceptance limits of the method. A greater variation (and hence broader range of recoveries) in surrogate spike recovery was observed for the other organic analyses, but this is typical of these analyses and is reflected by the broader target acceptance limits of the method. Except for SVOC analyses, samples with surrogate recoveries outside the acceptance limits are flagged as estimated. For SVOC analysis (where there are eight surrogates), the method allows one surrogate recovery to be outside the acceptance limits before requiring sample results to be qualified.

Many surrogate recoveries of zero were a result of sample dilution. Samples were diluted because of high target content or matrix interference, and surrogate compounds were not added to the diluted sample. Sample results with low surrogate recoveries that resulted from dilution were not qualified.

4.6.1 Soil, Sediment, and Surface Water

The majority of surrogate spike recoveries for sediment, soil, and surface water were within the target acceptance limits of the method, which indicates that the matrix did not influence the overall analytical process or the final numerical sample result.

4.6.2 Groundwater

As above, the majority of surrogate spike recoveries for groundwater were within the target acceptance limits of the method, which again indicates that the matrix did not influence the analytical process or sample result.

The pesticide/PCB results for one sample, IDWW01 (MA251010), exhibited extremely low surrogate recoveries in both the original (22 percent and zero percent recovery) and the repeat (42 percent and zero percent recovery) extracts. IDWW01 was a sample from the holding tank for equipment decontamination water. The decontamination water contains cleaning agents and surfactants (soap) that typically interfere with the laboratory extraction process. Final results for the pesticide/PCB fraction of this sample were qualified as estimated.

4.7 Matrix Spike Recoveries

For organic analysis, three aliquots of a single sample are analyzed: one native and two spiked with matrix spike compounds. Unlike the surrogate spike compounds, matrix spike compounds are found on the method compound list. For inorganic analysis, two aliquots of a single sample are analyzed: one native and one spiked with target analytes. Spike recovery is used to evaluate potential matrix interference with and accuracy of the analytical process. The duplicate spike results are compared to evaluate precision.

More than 90 percent of matrix spike recoveries were within the target acceptance ranges of the method, which indicates that the specific sample matrices did not influence the overall analytical process or the final numerical sample result.

4.8 Duplicate Sample Results

Duplicate sample analyses were used to evaluate the precision of the analytical data. Approximately one duplicate field sample was collected for every 10 field samples. Both the native and duplicate samples were analyzed for the same parameters. EPA (1994 a/b) sets advisory limits of 20 RPD for water and 35 RPD for soil when both values are more than 5 times the CRDL for inorganic analytes or the CRQL for organic analysis. If either one or both of the values is less than 5 times the CRDL or CRQL, then duplicate results should be within plus or minus the CRDL or CRQL for water, or plus or minus 2 times the CRDL or CRQL for soil. Overall, the field duplicate results indicate that precision was not compromised by either the matrices or the field sampling techniques.

4.8.1 Soil, Sediment, and Surface Water

Target analytes were detected 73 times in field duplicate samples for soil, sediment, and surface water. Two of these had RPDs that were outside of the criteria described above. They are summarized in Table 4-5.

TABLE 4-5
Soil, Sediment, and Surface Water Field Sample Duplicate Precision Outside Acceptance Criteria
Background Sampling Program
Defense Depot Memphis Tennessee

Sample ID	Element	Native Concentration	Duplicate Concentration	RPD
SD240	Copper	13.5	20.8	43
SD220	Manganese	227	131	54

Note:
Concentration values are presented in mg/kg

4.8.2 Groundwater

Target analytes were detected 35 times in field duplicate groundwater samples. Six of these had RPDs that were outside of the criteria described above. They are summarized in Table 4-6.

TABLE 4-6
Groundwater Field Sample Duplicate Precision Outside Acceptance Criteria
Background Sampling Program
Defense Depot Memphis Tennessee

Sample ID	Element / Compound	Native Concentration	Duplicate Concentration	RPD
MW241	Aluminum	718	973	30
MW241	Iron	5,190	7,450	36
MW311	Trichloroethene	680	1,100	47
MW311	1,1,2,2 - Tetrachloroethane	420	280	40
MW311	(Total) 1,2 - Dichloroethene	760	480	45
MW311	Chloroform	35 (J)	23 (J)	41

Note:
Concentration values are presented in µg/L.

4.9 Results for Metals Near the Instrument Detection Limit

The IDL is the constituent concentration that produces a signal greater than 5 times the signal/noise ratio of the instrument and is a calculated value rather than an experimentally demonstrated value. Therefore, sample results at or near the IDL may be caused by instrument noise or low-level background shifts rather than an analyte signal.

The samples were analyzed for the TAL list of metals (or parts thereof) consisting of antimony, aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, lead, iron, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, vanadium, and zinc.

Concentrations of metals near the IDL were reported for many of the target metals. These data were evaluated before they were used in the risk evaluation and report preparation process.

The sample results were reported in terms of the CRDL. Sample results that were above the IDL, but less than the CRDL were qualified as estimated values. The reporting limit, or CRDL, is typically 5 to 10 times the concentration of the IDL. Results at or near the CRDL are more "viable" sample results and are not suspect in the same way as results reported at or near the IDL.

4.10 Precision, Accuracy, Representativeness, Completeness, and Comparability (PARCC)

Precision—is defined as the agreement between duplicate results and was estimated by comparing duplicate matrix spike recoveries and field duplicate sample results. More than 90 percent of matrix spike recoveries was less than 20 percent RPD. More than 90 percent of RPDs for duplicate field sample results was less than 20 percent for water and 35 percent for soil samples, indicating that sample matrix did not interfere with the overall analytical process.

Accuracy—is a measure of the agreement between an experimental determination and the true value of the parameter being measured. For the organic analyses, each of the samples was spiked with a surrogate compound; and for inorganic analyses, each sample was spiked with a known reference material before digestion. Each of these approaches provides a measure of the matrix effects on the analytical accuracy. Accuracy can be estimated from these analytical data but cannot be measured directly. More than 95 percent of the spike recoveries was within the method acceptance limits; therefore, there was no evidence of matrix interference.

Representativeness—this criterion is a qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter and is used to evaluate the efficacy of the sampling plan design. Representativeness was demonstrated by providing full descriptions in the project scoping documents of the sampling techniques and the rationale used for selecting sampling locations.

Completeness—is defined as the percentage of measurements that is judged to be valid compared with the total number of measurements made. A goal of 95 percent usable data was established in the project scoping document and more than 99 percent of the data was determined to be valid.

Comparability—is another qualitative measure designed to express confidence for comparing data sets. Factors that affect comparability are sample collection and handling techniques, sample matrix type, and analytical method. Comparability is limited by the other PARCC parameters because data sets can be compared with confidence only when precision and accuracy are known. Data from this investigation are comparable with other data collected at the site because only EPA methods were used to analyze the samples, and Level 2 QC data are available to support the quality of the data.

4.11 Data Quality Evaluation Conclusions

Conclusions of the data quality evaluation process are as follows:

- The laboratory analyzed the samples according to the EPA methods stated in the work plan as demonstrated by acceptable instrument calibration and blank spikes.
- Concentrations of acetone, methylene chloride, and phthalates (including BEHP, di-n-butylphthalate, di-n-octylphthalate, butylbenzylphthalate, and diethylphthalate) can all be attributed to field sampling or laboratory contamination rather than to environmental contamination.
- Sample results for metals above the IDL but less than the CRDL may be attributed to instrument noise and not to site-related activities.
- Sample results for organics above the MDL but less than the CRQL should be considered indicative of the presence of that compound but at an estimated concentration.
- Spike recoveries and duplicate sample results indicate that the specific sample matrix did not interfere with the analytical process.

The data can be used in the project decisionmaking process without further qualification.

TAB

5.0

5.0 Summary and Conclusions

Soil, sediment, surface water, and groundwater were sampled in locations unaffected by DDMT waste management operations and analyzed for a wide range of organic and inorganic chemical constituents. A background statistical database has been developed to identify background concentrations of contaminants at DDMT that will be used to determine whether site-specific waste management operations or releases of hazardous materials at DDMT have contributed contaminants exceeding background levels.

Metals and SVOC, pesticide, and dioxin/furan compounds were detected at concentrations exceeding risk-based preliminary screening criteria, as summarized below.

Matrix	Background Constituents Exceeding Screening Criteria
Soil	Arsenic, barium, beryllium, manganese, and selenium[a], benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene, phenol, and dioxin/furan TEF
Sediment	Antimony[a], arsenic, cadmium, total chromium, copper, mercury, lead, silver[a], zinc, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and pyrene
Surface water	Aluminum, arsenic, total chromium, copper, iron, nickel[a], lead, silver[a], zinc, and dioxin/furan TEF
Groundwater	Antimony[a], arsenic[a], barium, beryllium, copper, lead, vanadium, 1,1,1-trichloroethane; 1,1-dichloroethane; and trichloroethylene

[a] All concentrations are estimated.

Background values for all detected constituents are presented in Table 5-1. Complete statistical tables were developed for all media and are presented in Appendix F.

Surface and subsurface background soil samples were taken from locations along the DDMT perimeter and off DDMT property to evaluate the potential impact that normal operation of the DDMT facility, excluding waste management operations, has had on background soil concentrations. Perimeter DDMT sample locations are representative of an industrial environment, whereas offsite background locations are associated with residential or recreational environments. DDMT perimeter surface soil concentrations were higher for metals, VOCs, SVOCs, pesticides, and PCBs, but the difference between perimeter and offsite concentrations was less than 100 percent RPD. Elevated xylene and phthalate concentrations at the DDMT perimeter are likely a result of increased vehicular traffic around the facility. This difference in concentration is expected when comparing industrial land use with residential and recreational land uses and does not suggest impact from waste management and disposal operations.

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

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	TMDV
	Aluminum, Dissolved		22	2	191.0	280.0	235.5	471.0	TMDV
	Antimony, Dissolved		22	1	16.4	16.4	16.4	32.8[a]	TMDV
	Arsenic, Total		22	11	6.6	13.6	9.0	18.0	TMDV
	Arsenic, Dissolved		22	6	5.1	7.4	6.2	12.4[a]	TMDV
	Barium, Total		22	22	26.2	185.0	62.6	125.3	TMDV
	Barium, Dissolved		22	19	23.0	99.4	43.8	87.6	TMDV
	Calcium, Total		22	22	4410	34800	15900	31800	TMDV
	Calcium, Dissolved		22	22	3710	34200	15100	30200	TMDV
	Chromium, Dissolved		22	1	16.7	16.7	16.7	33.4[a]	TMDV
	Chromium, Total		22	2	18.0	18.1	18.1	36.1[a]	TMDV
	Copper, Total		22	5	10.4	76.4	37.3	74.6	TMDV
	Iron, Total		22	22	346	20800	3051.7	6103.5	TMDV
	Iron, Dissolved		22	6	118	2040	600.5	1201	TMDV
	Lead, Total		22	6	5.5	16.7	9.3	18.6	TMDV
	Lead, Dissolved		22	1	11.3	11.3	11.3	22.6	TMDV
	Magnesium, Total		22	22	1470	6710	3850.9	7701.8	TMDV
	Magnesium, Dissolved		22	22	1220	6550	3432.3	6864.5	TMDV
	Manganese, Total		22	22	46.5	1140	328.1	656.2	TMDV
	Manganese, Dissolved		22	21	32	713	176	352	TMDV
	Nickel, Total		22	5	6.9	19.9	11.4	22.8[a]	TMDV
	Nickel, Dissolved		22	1	118	118	118	236[a]	TMDV
	Potassium, Total		22	19	733	6730	3640	7280	TMDV
	Potassium, Dissolved		22	17	1050	6450	3360	6720	TMDV
	Selenium, Dissolved		22	2	1.4	1.6	1.5	3.0[a]	TMDV
	Silver, Total		22	2	1.8	1.8	1.8	3.6[a]	TMDV
	Sodium, Total		22	18	2890	17900	10700	21400	TMDV
	Sodium, Dissolved		22	17	6720	17500	10800	21600	TMDV
	Vanadium, Total		22	5	13.2	39.4	19.5	39.0	TMDV
	Zinc, Total		22	3	64.0	221.0	143.7	287.3	TMDV
	Zinc, Dissolved		22	1	205.0	205.0	205.0	410.0[a]	TMDV
Surface Soil	Aluminum	mg/kg	22	22	8160	18500	11905	23810	TMDV
	Antimony		22	1	3.5	3.5	3.5	7.0[a]	TMDV
	Arsenic		22	22	4.2	27.7	10.9	16.5	BCT
	Barium		22	22	77	160	126	234	BCT
	Beryllium		22	15	0.5	0.6	0.5	1.1[a]	TMDV
	Cadmium		22	4	0.6	0.8	0.7	1.4[a]	TMDV
	Calcium		22	22	424	30600	2920	5840	TMDV
	Chromium, Total		22	22	8.4	17.7	13.7	24.8	BCT

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Constituent	Units	No. Analyses	No. Detects	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Surface Soil (continued)	Cobalt	mg/kg	22	22	5.7	12.3	9.1	18.3	TMDV
	Copper		22	22	7.3	23.3	16.7	33.5	TMDV
	Iron		22	22	10800	26100	18520	37040	TMDV
	Lead		22	22	11.7	73.3	21.3	30	BCT
	Magnesium		22	22	1110	3200	2308	4616	TMDV
	Manganese		22	22	330	1080	652	1304	TMDV
	Mercury		22	4	0.1	0.4	0.2	0.4	TMDV
	Nickel		22	22	10.4	21.4	16.5	30	BCT
	Potassium		22	22	641	1460	1013	2025	TMDV
	Selenium		22	3	0.3	0.5	0.4	0.8*	TMDV
	Silver		22	1	1.0	1.0	1.0	2.0*	TMDV
	Vanadium		22	22	17.7	35.2	26.1	48.4	BCT
	Zinc		22	22	35.6	89.5	62.8	126	TMDV
Subsurface Soil	Aluminum		22	22	6820	14900	10915	21829	TMDV
	Arsenic		22	22	3.1	14.1	8.5	17.0	TMDV
	Barium		22	22	90	243	150	300	TMDV
	Beryllium		22	14	0.5	0.7	0.6	1.2*	TMDV
	Cadmium		22	3	0.7	0.7	0.7	1.4*	TMDV
	Calcium		22	22	511	2630	1216	2432	TMDV
	Chromium, Total		22	22	8.7	18.0	13.2	26.4	TMDV
	Cobalt		22	22	5.0	20.4	10.2	20.4	TMDV
	Copper		22	22	7.4	23.1	16.3	32.7	TMDV
	Iron		22	22	8340	24900	19240	38480	TMDV
	Lead		22	22	6.9	22.7	12.0	23.9	TMDV
	Magnesium		22	22	1200	3370	2450	4900	TMDV
	Manganese		22	22	231	1580	770	1540	TMDV
	Mercury		22	1	0.1	0.1	0.1	0.2*	TMDV
	Nickel		22	22	9.0	22.4	18.3	36.6	TMDV
	Potassium		22	22	483	1480	900	1800	TMDV
	Selenium		22	1	0.3	0.3	0.3	0.6*	TMDV
	Silver		22	2	0.4	0.6	0.5	1.0*	TMDV
	Vanadium		22	22	15.0	31.7	25.6	51.3	TMDV
	Zinc		22	22	30.9	79.5	57.0	114	TMDV
Sediment	Aluminium		22	22	490	14200	5042	10085	TMDV
	Antimony		22	2	3.7	3.9	3.8	7.6*	TMDV
	Arsenic		22	17	1.5	11.1	6.0	12.0	TMDV
	Barium		22	22	3.7	137.0	59.0	118	TMDV
	Beryllium		22	5	0.5	0.8	0.6	1.3	TMDV
	Cadmium		22	3	1.3	38.2	14.5	28.9	TMDV
	Calcium		22	20	134	56800	7430	14860	TMDV

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Constituent	Units	No. Analyses	No. Detects	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Sediment (continued)	Chromium, Total	mg/kg	22	22	4.1	174	19	20	BCT
	Cobalt		22	14	1.2	10.8	6.8	13.6	TMDV
	Copper		22	16	1.7	1250	135	58	BCT
	Iron		22	22	3330	30700	11540	23080	TMDV
	Lead		22	21	1.7	291	36.0	35.2	BCT
	Magnesium		22	22	51.2	2950	1220	2440	TMDV
	Manganese		22	22	59.3	2610	436	871	TMDV
	Mercury		22	1	2.0	2.0	2.0	4.0*	TMDV
	Nickel		22	13	5.3	37.4	15.2	30.5	TMDV
	Potassium		22	9	269	1080	780	1560*	TMDV
	Selenium		22	4	0.4	1.5	0.8	1.7	TMDV
	Silver		22	1	0.9	0.9	0.9	1.8	TMDV
	Sodium		22	1	120	120	120	240	TMDV
	Thallium		22	2	0.5	0.6	0.5	1.1*	TMDV
	Vanadium		22	22	4.4	31.5	15.0	30.0	TMDV
	Zinc		22	22	8.4	7630	399	797	TMDV
Groundwater	Aluminum	µg/L	12	5	235	2670	899.2	1798	TMDV
	Antimony		12	1	17.2	17.2	17.2	34.4*	TMDV
	Barium		12	12	42.9	307.0	111.9	223.8	TMDV
	Beryllium		12	2	0.2	0.4	0.3	0.6	TMDV
	Calcium		12	12	9950.0	49200.0	26437.5	52875.0	TMDV
	Chromium, Total		12	2	20.3	34.0	27.2	54.4	TMDV
	Cobalt		12	5	2.2	19.6	12.4	24.8	TMDV
	Copper		12	4	2.0	315.0	81.3	162.6	TMDV
	Iron		12	9	598.0	7960.0	3364.0	6728.0	TMDV
	Lead		12	3	2.6	7.6	4.7	9.4*	TMDV
	Magnesium		12	12	5250.0	24000.0	13022.5	26045.0	TMDV
	Manganese		12	11	17.2	917.0	280.0	560.0	TMDV
	Nickel		12	3	9.4	25.6	15.7	31.4	TMDV
	Potassium		12	9	849.0	4040.0	1747.7	3495.4	TMDV
	Selenium		12	1	2.9	2.9	2.9	5.8*	TMDV
	Sodium		12	4	32300.0	74600.0	53325.0	106650*	TMDV
	Vanadium		12	4	14.8	7.3	3.0	6.0	TMDV

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Constituent	Units	No. Analyses	No. Detects	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Volatile Organic Compounds									
Surface Soil	Carbon Disulfide	μg/kg	22	2	2	2	2	2	NP
	Methylethyl 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	Methylethyl 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
	Methylethyl Ketone (2-Butanone)		22	10	1	10	4.8	10	NP
	Toluene		22	3	2	14	8.7	14	NP
Groundwater	1,1,1-Trichloroethane	μg/L	12	1	1	1	1	1	NP
	1,1,-Dichloroethene		12	1	2	2	2	2	NP
	Tetrachloroethylene (PCE)		12	1	1	1	1	1	NP
Semivolatile Organic Compounds									
Surface Soil	Acenaphythylene	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
Subsurface Soil	Fluoranthene		22	2	44	45	45	45	NP
	Phenol		22	6	580	19000	4295	19000	NP
	Pyrene		22	2	39	42	41	42	NP
Sediment	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	2216.046	LN

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Constituent	Units	No. Analyses	No. Detects	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Sediment (continued)	Benzo(g,h,i)perylene	µg/kg	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		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
	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
Pesticides/PCBs									
Surface Soil	Alpha-Chlordane	µg/kg	22	5	3.5	29.0	9.4	29.0	NP
	Dieldrin		22	14	3.3	530	114	86	BCT
	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'-DDD		22	1	6.7	6.7	6.7	6.7	NP
	p,p'-DDE		22	2	110	160	135	160	NP
	p,p'-DDT		22	3	9.4	74.0	43.5	74.0	NP
	PCB-1260 (Arochlor 1260)		22	2	100	110	105	110	NP
Subsurface Soil	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'-DDE		22	1	1.5	1.5	1.5	1.5	NP
	p,p'-DDT		22	1	7.2	7.2	7.2	7.2	NP
Sediment	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'-DDD		22	3	2.8	6.1	5.0	6.1	NP
	p,p'-DDE		22	2	5.8	7.2	6.5	7.2	NP

Table 5-1
Statistics for Detected Background Constituents
Background Sampling Program
Defense Depot Memphis Tennessee

Matrix	Constituent	Units	No. Analyses	No. Detects	Minimum Detected	Maximum Detected	Mean Detected	Background Value	Background Basis
Dioxin/Furans									
Surface Soil	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
Subsurface Soil	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
Surface Water	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-Pentachlordibenzofuran		22	3	0.027	0.06	0.04	0.057	NP
	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-Dixoin		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
Sediment	2,3,4,7,8-Pentachlorodibenzofuran	µg/kg	22	1	0.002	0.002	0.002	0.002	NP
	Octachlorodibenzo-p-Dixoin		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

[a] Because of the low number of detections, the background value, based on twice the mean detected value, exceeds the maximum detected value.

Notes:

BCT = Background value established by BCT review of data.
TMDV = Twice mean detected value.
NP = Background is the maximum value based on nonparametric distribution.
NO = Background is the UCL95 value based on a normal distribution.
LN = Background is the UCL95 value based on a lognormal distribution.
UCL95 = 95th percentile upper confidence level on mean concentration
µg/L = micrograms per liter
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
ng/L = nanograms per liter

Dioxins and furans were detected in most perimeter and offsite soils and at generally higher concentrations at the surface than at depth. Dioxins were also detected in sediment and surface water samples, with the highest detected concentrations exceeding EPA Region III risk-based criteria at the Botanical Gardens and Audubon Park. Most of the background detections were octa- and hepta isomers, indicating that the detections likely resulted from atmospheric deposition rather than isolated surface sources.

Validation of the data indicated that the results for the following soil, sediment, and surface water parameters should be attributed to field or laboratory contamination:

- Acetone
- Methylene chloride
- Bis(2-ethylhexyl)phthalate
- Di-n-butyl phthalate

Likewise, the results for the following groundwater parameters should be attributed to field or laboratory contamination:

- Acetone
- Methylene chloride
- BEHP
- Di-n-butylphthalate
- Di-n-octylphthalate
- Butylbenzylphthalate
- Diethylphthalate

Dioxin and furan isomers were also identified in field and laboratory blanks. Background dioxin concentrations less than 5 times the maximum blank concentration were reported as not detected. Holding times, matrix recoveries, and duplicate analyses were all within CLP performance requirements.

TAB

6.0

6.0 Works Cited

CH2M HILL. *Early Removal Action Memorandum*. Draft. Prepared for Defense Distribution Depot Memphis, Tennessee. 1996.

CH2M HILL. *Background Sampling Program Technical Memorandum*. Draft. Prepared for Defense Distribution Depot Memphis, Tennessee. September 1996.

CH2M HILL. *Generic Remedial Investigation/Feasibility Study Work Plan*. Draft Final. Prepared for Defense Distribution Depot Memphis, Tennessee. 1995(a).

CH2M HILL. *Generic Quality Assurance Project Plan*. Prepared for Defense Distribution Depot Memphis, Tennessee. 1995(b).

Cody, R., and J.K. Smith. *Applied Statistics and the SAS Programming Language*. Second Edition. New York: North Holland. 1987.

Conover, W.L. *Practical Nonparametric Statistics*. Second Edition. New York: John Wiley and Sons. 1980. p. 493.

CRC. *CRC Handbook*. 52nd edition. 1971-72. 1971.

Davis. *Statistics and Data Analysis in Geology*. New York: John Wiley and Sons. 1973.

Engineering-Science, Inc. *Engineering Report Removal Action for Ground Water*. Draft Final. Prepared for U.S. Army Corps of Engineers, Huntsville Division, Huntsville, AL. Contract No. DACA 87-90-D0030. August 1993.

Gilbert, R.O. *Statistical Methods for Environmental Pollution Monitoring*. New York: Van Nostrom Reinhold Co. 1987.

Helsel, Dennis R., and Robert M. Hirsch. *Statistical Methods in Water Resources*. U.S. Geological Survey, Water Resources Division, Reston, VA. Elsevier Publishers. 1991.

Law Environmental. *Remedial Investigation at DDMT, Final Report*. August 1990.

SYSTAT, Inc. *SYSTAT for Windows: Graphics, Version 5 Edition*. Evanston, IL. 1992.

U.S. Environmental Protection Agency (EPA). *Guidance for Data Quality Assessment*. EPA QA/G9. 1995.

U.S. EPA. *U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*. EPA540/R-94/012. February 1994(a).

U.S. EPA. *U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. EPA540/R-94/013. February 1994(b).

U.S. EPA. *Supplemental Guidance to RAGS: Calculating the Concentration Term*. EPA 9285.7-081. 1992.

U.S. EPA. *Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxin and -Dibenzo Furans (CDDs and CDFs) and 1989 Update.* EPA/625/3-89/016. March 1989.

TAB

Appendix A

Appendix A

Soil Boring Logs

[illegible]

CH2M HILL

PROJECT NUMBER 113627.BS.ZZ
BORING NUMBER SS-51/SB-09-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN - Dunn Field
ELEVATION
DRILLING CONTRACTOR TRISTATE TESTING SERVICES
DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55
WATER LEVELS NOT ENCOUNTERED START 09 OCT 95 FINISH 09 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0 1.0	SS-51 AND SS-51A	1.0	—	TOP 1.5 INCHES = TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots	START 1432 SS-51/SS-51a - collected 1447 - hnu = 0 ppm - first run from 0 ft to 1 ft bgs not enough sample, offset borehole approx. 1 ft for second run from 0 ft to 1 ft bgs
1 2 3 4	5.0	SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots	
5	6.0	SB-09-5	1.0	—	SILTY CLAY (CL), light brown, moist, with a trace of roots BORING TERMINATED AT 6 FEET	SB-09-5/MS-MSD - collected 1451 - hnu = 0 ppm STOP 1456

A-1

308 110

CH2M HILL

PROJECT NUMBER 113627. BS.ZZ

BORING NUMBER SS-52/SB-10-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN - Dunn

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55

WATER LEVELS NOT ENCOUNTERED START 09 OCT 95 FINISH 09 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				TOP 1.0 INCH = TOPSOIL	START 1535
		SS-52	1.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots	SS-52 - collected 1547 - hnu = 0 ppm - collected c split sample
1	1.0					
2		SAMPLE NOT COLLECTED	4.0	-	SILT (ML), brown to gray, dry to moist	
3						
4						
5	5.0					
		SB-10-5	1.0	—	SILTY CLAY (CL), light brown, moist, with a trace of roots	SB-10-5 - collected 1555 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET	STOP 1559

(8.30)

REV 11/89 FORM D1586

A-2

308 111

CH2M HILL

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-53/SB-11-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN - Dunn Field

ELEVATION ________ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVELS NOT ENCOUNTERED START 09 OCT 95 FINISH 09 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				TOP 1 INCH = TOPSOIL	START 1608
		SS-53	1.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots	SS-53 - collected 1618 - hnu = 0 ppm
1	1.0	SAMPLE NOT COLLECTED	4.0	-	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots	
2						
3						
4						
5	5.0	SB-11-5	1.0		SILTY CLAY (CL), light brown with grey mottling, moist, with a trace of roots	SB-11-5 - collected 1627 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET	STOP 1632

(8.30)

REV 11:89 FORM D1586

A-3

CH2M HILL

PROJECT NUMBER 113627. BS. ZZ
BORING NUMBER SS-54/SB-12-5
SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING
LOCATION MEMPHIS, TN/NE Corner
ELEVATION
DRILLING CONTRACTOR TRI STATE TESTING SERVICES
DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55
WATER LEVELS NOT ENCOUNTERED
START 10 OCT 95 FINISH 10 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				TOP 1.5 INCHES = TOPSOIL	START 0850
		SS-54	1.0	—	<u>SILTY CLAY</u> (CL), light brown dry, with some roots and trace limestone/chert gravel (POSSIBLE FILL)	<u>SS-54</u> - collected 0857 - hnu = 0 ppm
1	1.0					
2		SAMPLE NOT COLLECTED				
			4.0	—	<u>SILTY CLAY</u> (CL), light brown with grey mottling, moist	
3						
4						
5	5.0					
		SB-12-5	1.0	—	<u>SILTY CLAY</u> (CL), light brown with grey mottling, moist	<u>SB-12-5</u> - collected 0904 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET	STOP 0910

(8.30)

REV 11/89 FORM D1586

1 0

308 113

CH2M HILL

PROJECT NUMBER 113627.BS.ZZ
BORING NUMBER SS-55/SB-13-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN - Bldg 144
ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES
DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55
WATER LEVELS NOT ENCOUNTERED START 10 OCT 95 FINISH 10 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1.5 INCHES OF TOPSOIL	START 1010
		SS-55	1.0	—	SILTY CLAY (CL), light brown, dry, with a trace of roots and rounded, fine-grained, chert gravel	SS-55 - collected 1017 - hnu = 0 ppm
1	1.0	SAMPLE NOT COLLECTED				
2						
			4.0	—	SILTY CLAY (CL), light brown to light brown with gray mottling, dry to moist	
3						
4						
5	5.0					
		SB-13-5	1.0	—	SILTY CLAY (CL), light brown with gray mottling, moist	SB-13-5 - collected 1025 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET	STOP 1037

A-5

CH2M HILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
113627.BS.ZZ	SS-56/SB-14-5	1	1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN - Bldg 1

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55

WATER LEVELS NOT ENCOUNTERED START 16 OCT 95 FINISH 16 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
1	0 1.0	SS-56	1.0	—	1.5 INCHES OF TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots	START 1044 SS-56 - collected 1055 - hnu = 0 ppm
2 3 4 5	5.0	SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown to light brown with gray mottling, dry to moist	
	6.0	SB-14-5	1.0	—	SILTY CLAY (CL), light brown with grey mottling, moist	SB-14-5 - collected 1101 - hnu = 0 ppm
					BORING TERMINATED AT 6 FEET	STOP 1103

CH2M HILL

308 115

PROJECT NUMBER 113627.BS.ZZ
BORING NUMBER SS-57/SB-15-5/SB-15-5a
SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / S. of Bldg 490
ELEVATION
DRILLING CONTRACTOR TRISTATE TESTING SERVICES
DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55
WATER LEVELS NOT ENCOUNTERED START 10 OCT 95 FINISH 10 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	NUMBER AND TYPE	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1.5 INCHES OF TOPSOIL	START 1328
		SS-57	1.0	—	SILTY CLAY (CL), light brown, dry, with a trace of roots	SS-57 - collected 1334 - hnu = 0 ppm
1	1.0					
2		SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown to light brown with grey mottling, dry to moist, increasing silt content with increasing depth	
3						
4						
5	5.0					
		SB-15-5 SB-15-5a	1.0	—	SILTY CLAY (CL), light brown with grey mottling, moist, very silty	SB-15-5/SB-15-5a - collected 1340 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET	STOP 1344

(8.30)

REV 11 89 FORM D1586

A-7

CH2M HILL

308 116

PROJECT NUMBER	BORING NUMBER	
113627.BS.ZZ	SS·5B/SB·16·5	SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS TN / S. of Bl[illegible]d

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 10 OCT 95 FINISH 10 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
1	0 1.0	SS-5B	1.0	—	1.5 INCHES TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots		START 1405 SS-5B - collected 1409 - hnu = 0 ppm
2 3 4 5	5.0	SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown to light brown with gray mottling, dry to moist, with a trace of roots		
	6.0	SB-16-5	1.0	—	SILTY CLAY (CL), dark brown with gray mottling, moist, very silty, with a trace of roots		SB-16-5 - collected 1415 - hnu = 0 ppm
					BORING TERMINATED AT 6 FEET		STOP 1420

REV 7/88 FORM D1586

A-8

308 117

CH2M HILL

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-59/SB-17-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT- BACKGROUND SAMPLING LOCATION MEMPHIS, TN / E. of DDMT

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 10 OCT 95 FINISH 10 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0 1.0	SS-59	1.0	—	1 INCH TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots		START 1508 SS-59 -collected 1516 -hnu = 0 ppm
1 2 3 4	5.0	SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace roots		
5	6.0	SB-17-5	1.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots BORING TERMINATED AT 6 FEET		SB-17-5 -collected 1522 -hnu = 0 ppm STOP 1530

CH2M HILL

308 118

PROJECT NUMBER	BORING NUMBER
113627. BS.ZZ	SS-60/SB-18-4 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Dunn Elem

ELEVATION ____ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0 1	0 1.0	SS-60	1.0	—	1 INCH TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots, fine- to medium-grained quartz sand, and fine-grained limestone gravel (FILL)		START 0916 SS-60 - collected 0924 - hnu = 0 ppm
2 3 4	1.0 4.0	SAMPLE NOT COLLECTED	3.0	—	- with some angular to rounded, fine-grained chert gravel and asphalt SILTY CLAY (CL), light brown, dry to moist, with a trace of roots		
5 6	4.0 6.0	SB-18-4/MS/MSD	2.0	—	SILTY CLAY (CL), light brown, dry to moist, with a trace of roots BORING TERMINATED AT 6 FEET		SB-18-4/MS/MSD - collected 0930 - hnu = 0 ppm STOP 0948

CH2M HILL

308 119

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-61 / SB-19-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Dunn Elementary

ELEVATION DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA · CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1000
		SS-61	1.0	—	SILTY CLAY (CL), light brown, dry, with a trace of roots		SS-61 -collected 1003 - hnu = 0 ppm
1	1.0						
2		SAMPLE NOT COLLECTED	4.0	—			
3					CLAYEY SILT (ML), light brown, moist, with a trace of roots		
4							
5	5.0						
		SB-19-5	1.0	—			SB-19-5 -collected 1007 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 1011

REV 7/88 FORM D1586

A-11

CH2M HILL

308 120

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-62/SB-20-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / West of

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S. BRUER / MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1057
		SS-62	1.0	—	SILTY CLAY (CL), light brown, dry, with some sand- to cobble-sized concrete fragments and a trace of sand- to gravel-sized asphalt fragments (FILL)		SS-62 - collected 1102 - hnu = 0 ppm
1	1.0						
2		SAMPLE NOT COLLECTED	4.0	—	SILTY CLAY (CL), light brown, dry		
3							
4							
5	5.0						
		SB-20-5	1.0	—	SILTY CLAY (CL), dark brown, moist, very silty		SB-20-5 - collected 1108 - hnu = 0 pp
	6.0				BORING TERMINATED AT 6 FEET		STOP 1116

CH2M HILL 308 121

PROJECT NUMBER 113627.BS.ZZ
BORING NUMBER SS-63/SB-21-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Pine Hills G.C.
ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES
DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55
WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: TYPE AND NUMBER	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL	SYMBOLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1317
		SS-63	1.0	—	SILTY CLAY (CL), light brown to light grey with orange mottling, dry, with a trace of fine-grained, rounded chert gravel and roots (POSSIBLE FILL)		SS-63 - collected 1321 - hnu = 0 ppm
1	1.0						
2							
		SAMPLE NOT COLLECTED	4.0	—			
3							
4							
5	5.0						
		SB-21-5	1.0	—	SILTY CLAY (CL), dark brown with grey mottling, moist, with a trace of roots		SB-21-5 - collected 1329 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 1334

REV 7/88 FORM D1586

CH2M HILL

308 122

PROJECT NUMBER	BORING NUMBER
113627. BS. ZZ	SS-64/ SB-22-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Perry St

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT HAND AUGERS WITH 3" ID BUCKETS

WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1430
		SS-64	0.5 0.5	—	SILTY CLAY (CL), light brown, dry to moist with a trace of roots		SS-64 - collected 1445 - hnu = 0 ppm
1	1.0						
2		SAMPLE NOT COLLECTED		—	SILTY CLAY (CL), light to dark brown, dry to moist		
3							
4							
5	5.0						
		SB-22-5	0.5 0.5	—	SILTY CLAY (CL), dark brown, moist, very silty		SB-22-5/SPLIT - collected 1458 - hnu = 0 PP
	6.0				BORING TERMINATED AT 6 FEET		STOP 1504

CH2M HILL

308 123

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-65/SB-23-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Perry & Elliston St.

ELEVATION ____ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT HAND AUGERS WITH 3" ID BUCKETS

WATER LEVEL AND DATE NOT ENCOUNTERED START 11 OCT 95 FINISH 11 OCT 95 LOGGER S BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1520
		SS-65	0.5	—	SILTY CLAY (CL), light brown, dry with angular to rounded medium-grained limestone and chert gravel (FILL)		SS-65 - collected 1525 - hnu = 0 ppm
			0.5				
1	1.0	SAMPLE NOT COLLECTED					
2				—	SILTY CLAY (CL), light brown, moist		
3							
4							
5	5.0						
		SB-23-5	0.5	—	SILT (ML), light gray with orange mottling, moist		SB-23-5 - collected 1540 - hnu = 0 ppm
			0.5				
	6.0				BORING TERMINATED AT 6 FEET		STOP 1545

CH2M HILL

308 124

PROJECT NUMBER 113627. BS. ZZ

BORING NUMBER SS-66/SB-24-5 **SHEET** 1 **OF** 1

SOIL BORING LOG

PROJECT DDMT- BACKGROUND SAMPLING

LOCATION MEMPHIS, TN / Perry & Norc[illegible]st.

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT HAND AUGERS WITH 3" ID BUCKETS

WATER LEVEL AND DATE NOT ENCOUNTERED

START 11 OCT 95

FINISH 11 OCT 95

LOGGER S. BRUER/ MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0	SS-66	0.5 0.5	–	1 INCH TOPSOIL SILTY CLAY (CL), light brown, dry		START 1600 SS-66 - collected 1604 - hnu = 0ppm
1	1.0						
2		SAMPLE NOT COLLECTED		–			
3							
4							
5	5.0	SB-24-5	0.5 0.5	–	SILTY CLAY (CL), dark brown, moist		SB-24-5 - collected 1625 - hnu = 0ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 1630

REV 7/88 FORM D1586

A-76

308 125

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-67/SB-25-15 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Charjean School

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0	SS-67	1.0	—	1 INCH TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots		START 0835 SS-67 /MS/MSD - collected 0846 - hnu = 0 ppm - not enough soil recovered in first run, offset approx. one foot and collected top one foot of soil for sample SS-67
1	1.0						
2 3 4		SAMPLE NOT COLLECTED	4.0	—			
5	5.0	SB-25-5	1.0	—	SILTY CLAY (CL), dark brown with grey mottling, moist, with a trace of roots		SB-25-5 - collected 0851 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 0857

CH2M HILL

308 126

PROJECT NUMBER 113627.BS.22

BORING NUMBER SS-68/SB-26-5 / SB-26-5a SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Airways Jr [illegible]n

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S. BRUCE/ MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0	SS-68	1.0	—	1 INCH TOPSOIL SILTY CLAY (CL), light brown, dry, with a trace of roots		START 0925 SS-68 - collected 0930 - hnu = 0 ppm
1	1.0	SAMPLE NOT COLLECTED	4.0	—			
2							
3							
4							
5	5.0	SB-26-5 SB-26-5a	1.0	—	SILTY CLAY (CL), dark brown with grey mottling, dry to moist, with a trace of roots		SB-26-5/SB-26-5a - collected 0936 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 0939

A-1B

CH2M HILL

PROJECT NUMBER	BORING NUMBER
113627. BS. ZZ	SS-69 / SB-27-5 / SB-27-5a SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Alcy Elemen

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-¼" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S. BRUER / MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1015
		SS-69	1.0	—	SILTY CLAY (CL), light brown, dry, with a trace of roots		SS-69 -collected 1022 -hnu = 0 ppm
1	1.0						
2							
		SAMPLE NOT COLLECTED	4.0	-			
3							
4							
5	5.0						
		SB-27-5 SB-27-5a	1.0	—	SILTY CLAY (CL), dark brown with grey mottling, moist		SB-27-5/SB-27-5a - collected 1027 - hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 1034

A-19

CH2M HILL

308 128

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-70/SB-28-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS TN/Forest Hill Cemetery

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S.BRUER/MHM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0				1 INCH TOPSOIL		START 1240
		SS-70	1.0	—	CLAYEY SILT (ML), light grey with brown and orange mottling, dry to moist, with a trace of roots		SS-70 -collected 1247 -hnu = 0 ppm
1	1.0						
2							
		SAMPLE NOT COLLECTED	4.0	—			
3							
4							
5	5.0						
		SB-28-5	1.0	—	CLAYEY SILT (ML), light grey with brown mottling, moist, with a trace of roots		SB-28-5 -collect 1255 -hnu = 0 ppm
	6.0				BORING TERMINATED AT 6 FEET		STOP 1259

REV 7/88 FORM D1586

CH2M HILL

PROJECT NUMBER 113627.BS.ZZ

BORING NUMBER SS-71/SB-29-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Pine Hills G.C.

ELEVATION ______ DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA- CME55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S.BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0 1.0	SS-71	1.0	—	1 INCH TOPSOIL CLAYEY SILT (ML), light grey with brown and orange mottling, dry to moist, with a trace of roots		START 1340 SS-71 -collected 1345 - hnu = 0 ppm
1 2 3 4		SAMPLE NOT COLLECTED	4.0	-			
5	5.0 6.0	SB-29-5	1.0	—	CLAYEY SILT (ML), light grey with brown and orange mottling, moist, with a trace of fine-grained, rounded, quartz sand and roots BORING TERMINATED AT 6 FEET		SB-29-5 -collected 1350 - hnu = 0 ppm STOP 1353

CH2M HILL

308 130

PROJECT NUMBER 113627. BS. ZZ

BORING NUMBER SS-72/SB-30-5 SHEET 1 OF 1

SOIL BORING LOG

PROJECT DDMT - BACKGROUND SAMPLING LOCATION MEMPHIS, TN / Alcy Par

ELEVATION

DRILLING CONTRACTOR TRISTATE TESTING SERVICES

DRILLING METHOD AND EQUIPMENT CONTINUOUS SAMPLING WITH 3-1/4" ID HSA - CME 55

WATER LEVEL AND DATE NOT ENCOUNTERED START 12 OCT 95 FINISH 12 OCT 95 LOGGER S. BRUER/MGM

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	6"-6"-6" (N)	SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	0 1.0	SS-72	1.0	—	1 INCH TOPSOIL CLAYEY SILT (ML), light grey with orange mottling, moist, with a trace of roots		START 1420 SS-72 - collected 1424
1 2 3 4	5.0	SAMPLE NOT COLLECTED	4.0	—			
5	6.0	SB-30-5	1.0	—	CLAYEY SILT (ML), light grey with orange mottling, moist, with a trace of roots		SB-30-5 -collected 1428 - hnu = 0 pp
					BORING TERMINATED AT 6 FEET		STOP 1433

TAB

Appendix B

Appendix B

Field Sampling Logbooks

DDMT Background Sampling

Soil Sampling

10/9/95 - 10/17/95

CONTENTS

PAGE NO.	REFERENCE	DATE

09 OCT 95 STEVE BRUER/MGM

0700 - arrive at DDMT Gate 1 - meet Frank ~~Navitsk~~ Novitzki/DDMT to get visitor pass

0710 - arrive at CH2M HILL DDMT field office - former golf course pro-shop

0715 - unloading equipment from vehicles and arranging office

0725 - Scott Bradley/COE-Huntsville arrives at CH2M HILL field office

0747 - Drillers (Tri-State Testing) and Frank Novitzki arrive at CH2M HILL field office

0755 - kickoff meeting at CH2M HILL field office

0845 - Scott Bradley/COE offsite

0847 - kickoff meeting concludes

0902 - depart field office to observe decon area for drilling equipment - Dunn field

0910 - arrive at Dunn Field

0925 - arrive at northeast corner of Dunn field to stake soil sampling location

0940 - marked two onsite soil sample locations on hill across from Cove Ave.

0948 - arrived at DDMT Admin. Bldg. will stake locations on 10 Oct 95.

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
09 OCT 95

09 OCT 95 STEVE BRUER/MGM

1000 - arrive at CH2M HILL field office to see if sample coolers have arrival - coolers have not arrival

1009 - staked on site location south-west intersection of Dunn Road and Airways

1018 - staked onsite sample location - West of Bldg 440

1026 - staked onsite sample location - South west corner of DPMT

1043 - staked three locations along western boundary of DPMT

1058 - arrive at CH2M HILL field office

1105 - organizing sample containers and coolers

1152 - to Dunn field to meet with driller

1204 - arrive at Dunn Field

1212 - off site to CH2M HILL/MGM office + lunch

1337 - arrive at CH2M HILL field office - Unloading sample coolers from vehicles to field office

1400 - finished loading vehicles with sampling supplies

Steve M. B

THIS PAGE INTENTIONALLY LEFT BLANK
Steven M. Bruer

3

Ø9 OCT 95 STEVE BRUER/MGM
1401 - calibrating hnu PID - calibration
gas is 100 ppm ~~ISOBUTYNE~~ ISOBUTYLENE
(LOT NO. 42692), span set at 9.9,
instrument reads 55 ppm, battery check
was OK - instrument number is 5510
property of HAZCO 10.2 eV probe
1406 - leave field office to meet
drillers at decon pad
1411 - arrive at DUNN FIELD - drillers
decon pad set up - to first subsurface
soil sampling location in northeast corner
of DUNN FIELD
1419 - arrive at sampling location
1432 - started drilling to collect samples
SS-S1, SS-S1A, SB-09-5, and MS/MSD
1442 - collected samples SS-S1 and SS-S1A
1451 - collected sample SB-09-5 and
MS/MSD - Frank Novitzki / DDMT onsite
1510 - arrive at next sampling location -
[illegible] - drillers deconning equipment
at temporary decon pad
1532 - drilling arrive at SS-S2/SB-10-5
1535 - started drilling SS-S2/SB-10-5
1542 - collected SS-S2 and SS-S2 split
1555 - collected SB-10-5
Steve M. B

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Br
09 OCT 95

09 OCT 95 STEVE BRUER/MGM

1608- started drilling SS-53/SB-11-5
1610- collected SS-53
1627- collected SB-11-5
1648- leave site to CH2M HILL field office
1656- arrive CH2M HILL field office completing COC forms, deconning sampling bowls and spoons
1735- collected RS001 and RS001 split
1756- finished collecting RS001 and split
1805- double checking samples w/ the COC
1821- off site to FED EX to drop off sample coolers
1845- sent 3 coolers via FEDEX - two coolers to MGM Lab and one cooler to COE Lab in Omaha, Nebraska - end of work day

NO ENTRIES AFTER 1845 hrs

Steve M. Br

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
10 OCT 95

10OCT95 STEVE BRUER/mcum

0631 - summary table of yesterday's (09OCT95) sampling:

SAMPLE ID	TIME COLLECTED	DATE
SS-S1	1447	09OCT95
SS-S1A	1447	09OCT95
SB-09-S	1451	09OCT95
SS-S2	1542	09OCT95
SB-10-S	1555	09OCT95
MS/MSD	1447	09OCT95
SS-S3	1618	09OCT95
SB-11-S	1627	09OCT95
RS001	1735	09OCT95

0720 - arrive at CH2M HILL field office preparing sample coolers

0759 - calibrating hnu; battery check - ok; span set at 9.8; cal gas is isobutylene at 100ppm - Lot No. 42692; hnu reads 70 ppm; hnu number 5510 - Property of HAZCO; O₂/LEL meter not functioning properly

0824 - leave CH2M HILL field office to meet drillers at temporary decon pad at Dunn Field

0829 - arrive at Dunn Field

0833 - leave Dunn Field call to Frank

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. R

10 OCT 95

---

10 OCT 95 STEVE BRUER/MGM

0833 (cont'd) - Novitsk: to inform him we are going sample SS-54/SB-12-5 at northeast corner of DDMT
0845 - arrive at sample location SS-54/SB-12-5
0850 - started drilling SS-54/SB-12-5
0857 - SS-54 collected: hnu = 0 ppm
0904 - SB-12-5 collected: hnu = 0 ppm
0913 - stopped drilling
0914 - to Bldg 270 to get utility drawings for Admin Bldg front lawn
0915 - call to Frank Novitsk/DDMT to inform him that SS-54/SB-12-5 collected
0917 - arrive at Bldg 270
0919 - meet Mr. Rachel Bain/DDMT received three copies of utility plans from Mr. Bain: storm, electrical, and sprinkler (water) lines
0934 - to Admin Bldg - call to Frank Novitzk/DDMT
0942 arrive at front lawn of Admin. Bldg
1000 - Frank Novitsk: on site
1010 - Frank Novitik: off site. Start drilling SS-55/SB-13-5

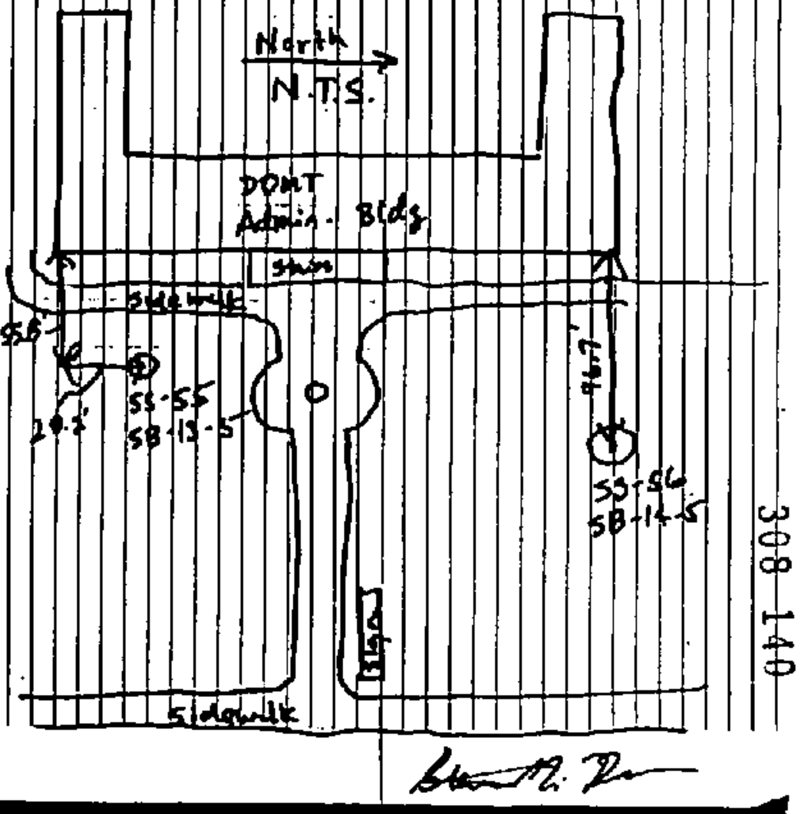
Steve M. R

THIS PAGE INTENTIONALLY LEFT BLANK

Steven M Bruer
10 OCT 95

10 OCT 95 STEVE BRUER/MGM

1017 - collected SS-55
1025 - collected SB-13-5
1037 - move to SS-56/SB-14-5
1044 - begin drilling for SS-56/SB-14-5
1055 - collected SS-56, hnu = 0 ppm
1101 - collected SB-14-5, hnu = 0 ppm
1103 - drillers stopped
1112 - measure locations for SS-55/SB-13-5 and SS-56/SB-14-5



Steven M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK
Steve M. B
10 OCT 95

10 OCT 95 STEVE BRUER/ACC

1126 - location description for SS-55/SB-13-5: from southeast corner of Admin Bldg go 55.8 ft towards Airways Blvd (East) then 28.2 ft to the North parallel to Admin Bldg and Airways Blvd; location description for SS-56/SB-14-5: from northeast corner of Admin. Bldg go 96.7 ft towards Airways Blvd (East)

1132 - to CH2M HILL field office

1135 - arrive at field office - deconning sampling bowls and spoons - can't decon realized I have no methanol bottle - drillers borrowed it

1146 - call to Greg Schaefer/ORD and Dale Jayne/ORD - they are on their way to CH2M HILL field office

1200 - Greg and Dale arrive at field office

1205 - began deconning field sampling bowls and spoons

1240 - finished deconning - offsite for lunch

1309 - on site at field office

1314 - arrive at SS-57/SB-15-5

1320 - began drilling

Steve M. B

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
10 oct 95

10 OCT 95 STEVE BRUER/MGM

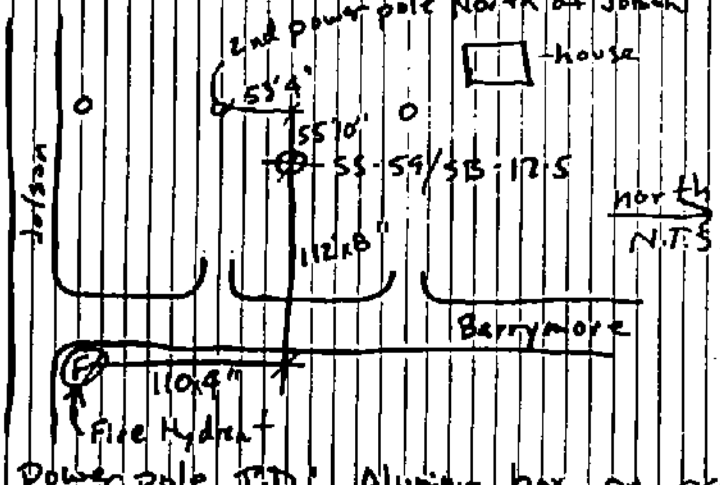
1334 - collected SS-57
1340 - collected SB-15.5 and SB-15.54
1344 - drillers stop
1350 - Terry Templeton/TDEC onsite with George Dunn/DDMT and Frank Novitski/DDMT
1352 - to next sampling location
1356 arrive at sampling location for SS-58/SB-16.5; Terry + Frank offsite
1405 - start drilling; George Dunn videotaping
1409 - collect sample SS-58; hnu = 0ppm
1415 - collect sample SB-16.5; hnu = 0ppm
1420 - stopped drilling
1424 - call to Frank Novitski/DDMT - he wants us to drill 3 "onsite" samples on west DDMT property boundary - to Admin Bldg
1445 - arrive Admin Bldg
1452 - off DDMT to Site 2
1502 - arrive site 2
1508 - start drilling
1516 - collect SS-59; hnu = 0 ppm
1522 - collect SB-17.5; hnu = 0 ppm
1530 - stop drilling
1532 - drillers to decon pad

Steve M. Br

1φ OCT 95 STEVE BRUER/MGM

1533 - measurements for sample location SS-59/SB-17.5 - Site 2

1541 - sketch of Site 2 sample location



Power pole ID: Aluminum box on east side pole is numbered 2295; aluminum plate on west side is numbered 7782

1546 - leave site 2

1553 - arrive at northeast corner of DDMT to measure location of sample SS-54/SB-12.5

Steven M. Bru

THIS PAGE INTENTIONALLY LEFT BLANK

Steven M. Blum
1φ OCT 95

10 OCT 95 STEVE BRUER/MGI

1601 - DS-54/SB-12.5 location descripte
125 ft 10 in east then 22 ft 8 in
South of power pole A028
1603 - to driller decon pad
1609 - arrive at Dunn Field, driller
off site until tomorrow; received sample
tip from Tri-State Testing Service to
collect rinsate sample SMB 10/10/95
1611 - ~~to CH2M Hill field office~~,
returned to Site 2 to obtain
photograph of sample location
1620 - arrive at Site 2
1622 - Photo #1 - sample location in
center of photograph - looking south -
two pecan trees on right - pear tree
on left (Site 2)
1624 - Photo #2 - sample location in center
of photograph - looking north - two pecan
trees on left - pear tree on right (Site 2)
1626 - to CH2M Hill field office
1632 - arrive at CH2M Hill field office
unload sampling supplies
1653 - to sampling locations south of
Bldgs 875 and 770, + Bldg 490
1700 - arrive at sampling location south of Bldg 41

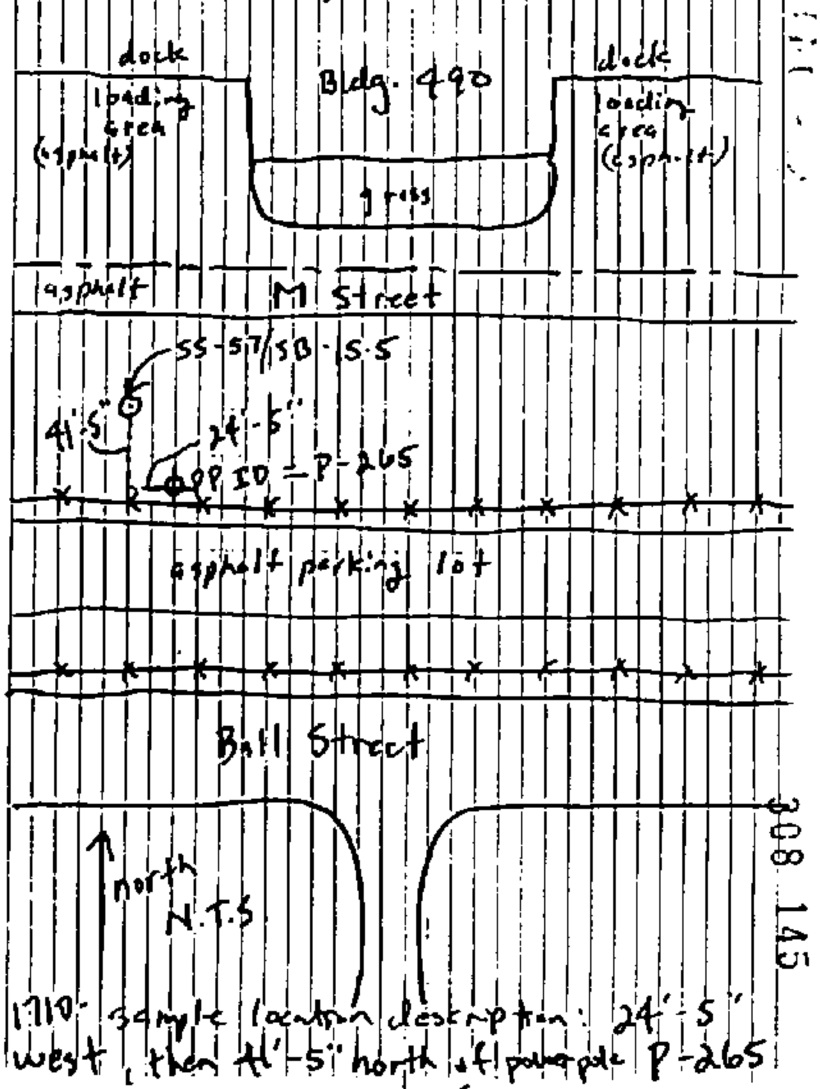
Steven M. Bu

THIS PAGE INTENTIONALLY LEFT BLANK

Steven M. Bu
10 oct 95

10 OCT 95 STEVE BRUER/MGM

1703 - measurements for location of Sample SS-57/SB-15-5



1710 - sample location description: 24'-5" west, then 41'-5" north of power pole P-265

Steven M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

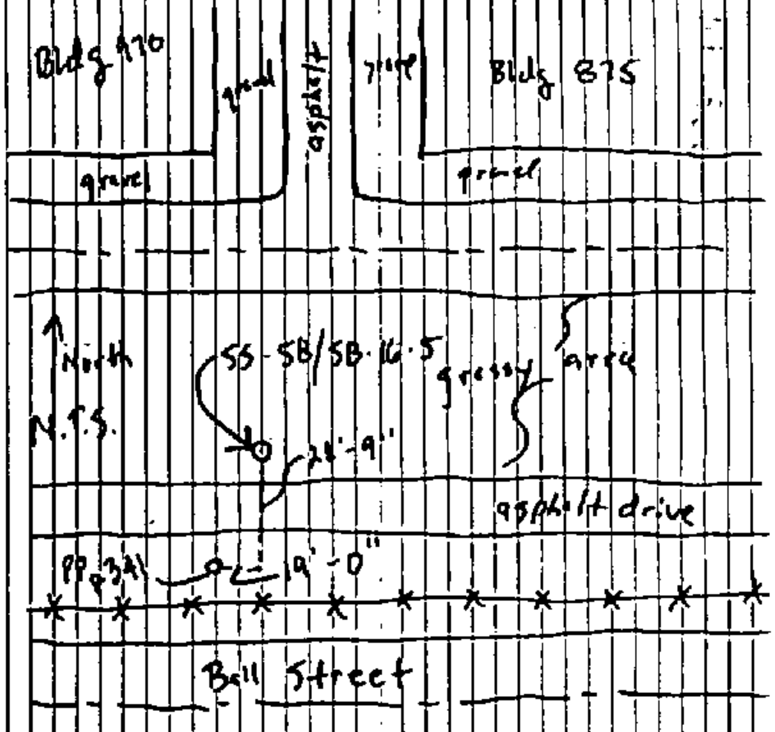
Steven M. Bruer
10 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK
Steve M Bruer
10 OCT 95

10 OCT 95 STEVE BRUER/MGM

1713 - to sampling location south of Bldgs 875/970

1717 - arrive at sampling location south of Bldgs 875/970 - begin measurements to ~~location~~ locate sampling point



1724 - location description for sample SS-58/SB-16.5: 19'-0" east then 28'-9" north from power pole P-341

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK
Steven M Bruer
10 oct 95

10 OCT 95 STEVE BRUER/MG

1727 - to CH2M HILL field office

1733 - arrive at CH2M HILL field office

1735 - Frank Novitzki / DDMT and Sue Estes/MTE arrive at CH2M HILL field office

1738 - discussing project progress and plans for tomorrow (11 OCT 95)

1740 - preparing sample coolers for shipment to QAL/MGM

1904 - Summary table for today's sampling

SAMPLE ID	TIME COLLECTED
SS-54	0857
SB-12-5	0904
SS-55	1017
SB-13-5	1025
SS-56	1055
SB-14-5	1101
SS-57	1334
SB-15-5	1340
SB-15-5a	1340
SS-58	1409
SB-16-5	1415
SS-59	1516
SB-17-5	1522

1909 - start deconning sampling spoons and bowls

Steven M. Bru

15

1Ø OCT 95 STEVE BRUER/MGM

~~2022 - completed sample cooler preparation~~ SMB

1945 - collected RS002

2022 - completed sample cooler preparation

2025 - off site to FED EX

2110 - coolers delivered to FED-EX -

NO ENTRIES AFTER 2110 hrs

Steven M. Bruer

1Ø OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK

Steven M. Bruer

1Ø OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK
M. B
11 OCT 95

11 OCT 95 STEVE BRUER/MGM

0712- arrive at CH2M Hill field office

0715- preparing for today's sampling

0815- drillers arrive at CH2M HILL field office - Sue Estes/MES has not arrived yet

0830- calibrating hnu battery check OK; span set at 9.8, cal gas is ISOBUTYLENE at 100 ppm - Lot No 42692; hnu reads 98 ppm; hnu number SS60 - property of HAZCO; O2/LEL meter not functioning properly

0836- Call to Sue Estes/MES - no answer - drillers waiting at Gate/

0837- Call to Frank Novitsk/DDMT - not in office

0855- Sue Estes/MES and Frank Novitsky/DDMT at field office

0857- Sue Estes and I to Dunn School (Site 16a 16); Frank Novitzk going with Greg Scheetz/DRO and Dale Jemp/ ORD

0910- arrive Site 15 (SS-60/SB-18-4)

0916- start drilling

0924- collect sample SS-60; hnu = 0 ppm

0930- collect sample SB-18-4/MS/MSD; hnu: 0 ppm

M. B

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bru

11 OCT 95

17

11 OCT 95 STEVE BRUER/MGM

0950 - stop drilling; to Site 15 16

1000 - Start drilling SS-61/SB-19.5

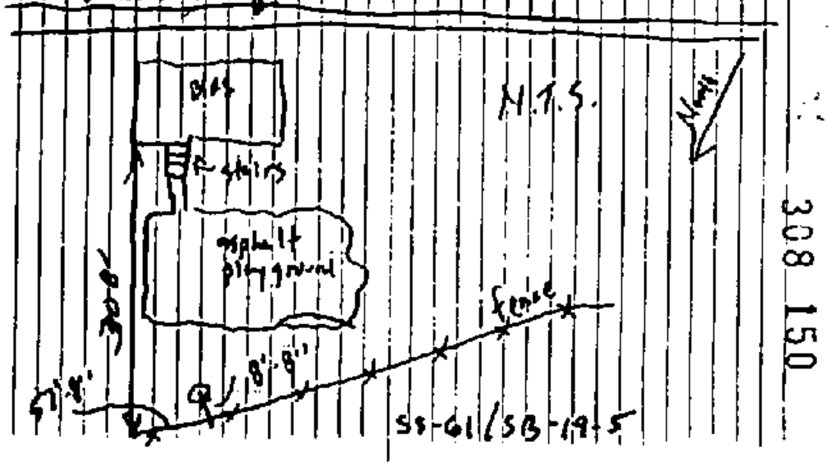
1003 - collect SS-61; hnu = 0 ppm

1007 - collect SB-19.5; hnu = 0 ppm

1011 - Stop drilling SS-61/SB-19.5

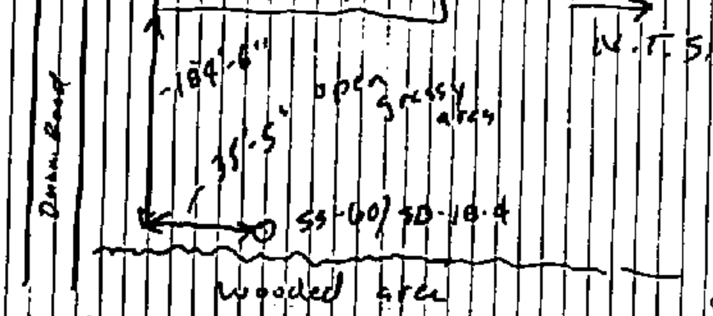
1020 - drillers and Sue Estes/MEB to Site 19; S. Bruer/MGM taking photographs and sample location measurements at Sites 15 and 16

1027 - Photograph #3 - Site 16, sample SS-61/SB-19.5 at Dunn Elementary School; sample location is marked by red flag in center foreground of photograph; photograph taken looking W-SW along fence in rear of school bldg



11 OCT 95 STEVE BRUER/MGM

1040 - to site 15
1041 - arrive site 15; measurements and photographs
1043 - Photograph #4 - Site 15, sample SS-60/SB-18.4; sample location is marked by red flag in center foreground of photograph; looking towards Dunn Road



1044 - to site 19
1052 - arrive site 19
1057 - begin drilling SS-62/SB-20.5
1102 - collect SS-62; hnu = 0 ppm
1108 - collect SB-20.5; hnu = 0 ppm
1116 - Stop drilling
1120 - photographs and measurements for sample location SS-62/SB-20.5
1123 - Photograph #5 - Site 19, SS-62/SB-20.5; sample location is marked by red

Steve M. Br

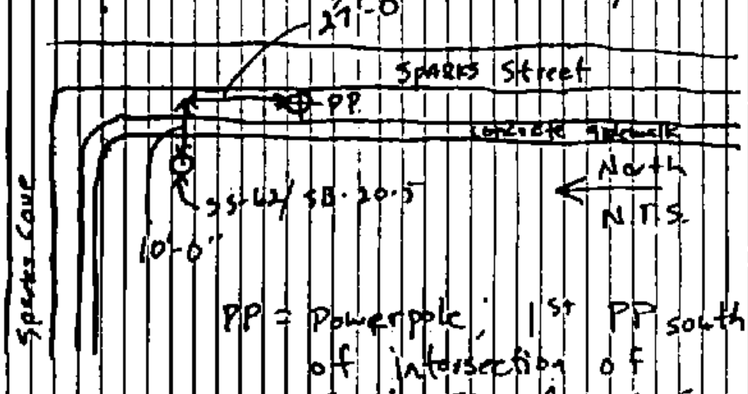
THIS PAGE INTENTIONALLY LEFT BLANK

11OCT95

308 151

11 OCT 95 STEVE BRUER/MGM

1123 (cont'd) - flag in center foreground of photograph. looking south on west side of Sparks Street; drillers to decon/lunch



PP = Powerpole, 1st PP south of intersection of Sparks St and Sparks Cove on west side of Sparks St.

1133 - to CH2M Hill field office and lunch - Sue Estes/MEB offsite

1147 - talked with Frank Novitzki/ODMT via cellular phone - he will meet up with us after lunch to drill site 13 - Pine Hills Golf Course

1154 - arrive at CH2M Hill field office - lunch

1208 - began deconning sample spoons and bowls

1245 - finished deconning - to drillers decon pad

Steve Br

THIS PAGE INTENTIONALLY LEFT BLANK

Steve W. Bru
11 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
11 OCT 95

20

11 OCT 95 STEVE BRUER/MGM

1254 - arrive drillers decon pit

1250 - leave drillers decon pad - to Site 13

1307 - arrive at Site 13; Frank Novitzki/DDMT and Terry Templeton/TDEC on site waiting for us

1312 - Start drilling at Site 13: SS-63/SB-21.5

1321 - collect SS-63; hnu = 0 ppm

1329 - collect SB-21.5; hnu = 0 ppm

1330 - Frank Novitzki/DDMT and Terry Templeton/TDEC offsite

1334 - stop drilling

1339 - measurements and photographs

1341 - Photograph #6, Site 13: SS/63 - SB 21.5; sampling location is marked by red flag in center background ~~foreground~~ of photograph between pump on left and pump house on right; drillers off site to CH2M HILL field office

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK
Steven M. Bru
11 OCT 95

11 OCT 95 STEVE BRUER/MGM

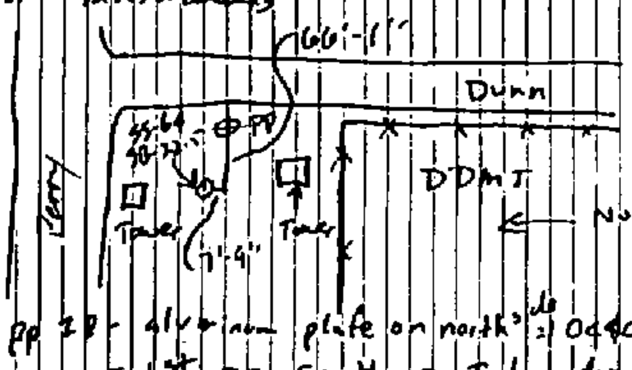
1348- Sue Estes/~~ME~~ ME3 and Chris Karhman/DDMT onsite
1350 - Sue Estes/ME3 and Chris Karhoff/DDMT offsite
1355- to CH2M HILL field office
1409- arrive at CH2M HILL field office
1410- drillers onsite
1413- deconning hand auger buckets
1910 - driller leave CH2M HILL field ~~to~~ SMB office, will meet at sampling location on west side of DDMT along Perry Street
1421- Greg Scheafer/ORO and Dale Jayne/ORO arrive at field office
1425- finished deconning hand-auger buckets
1429- to sampling location SS-64/SB-22.5
On site, sample along Perry Street beneath power lines
1435- arrive SS-64/SB-22.5
1438- Start hand augering
1445- collect SS-64; hnu = Ø ppm
1446- Sue Estes/ME3 onsite
1458- collect SB-22.5 and split; hnu = Ø ppm
1503- Sue Estes/ME3 offsite

Steven M. Bru

11 OCT 85 STEVE BRUER/MGM

1505 - stop hand-augering; drillers decon'ing buckets - buckets were decon'd between sampling intervals

1511 - measurements



PP ID - aluminum plate on north side : 04405
- 1st PP South of Intersection of Perry and Dunn on west side of Dunn

1517 - to 55-65/58-23.5

1520 - arrive at 55-65/58-23.5; start hand-augering

1525 - collect 55-65; hnu = 0 ppm

1540 - collect 58-23.5; hnu = 0 ppm

1545 - stop; decon'ing equipment

1547 - measurements; from PP 159355: 94'-2" north, then 37'-4" east, see sketch on next page (Page No. 23)

No entries this page after 1547 hrs 11 OCT 85

THIS PAGE INTENTIONALLY LEFT BLANK

11 OCT 85

THIS PAGE INTENTIONALLY LEFT BLANK

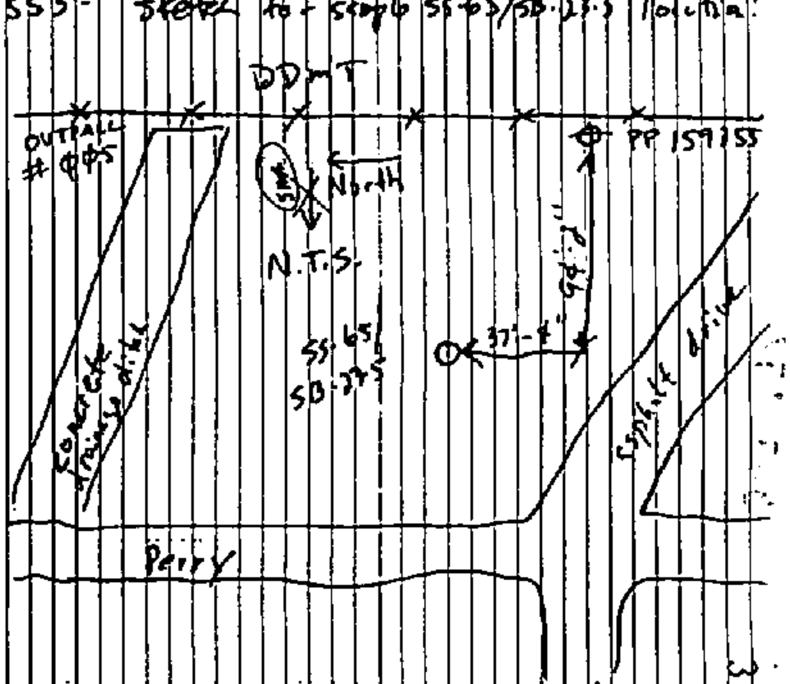
11 OCT 95

B-23

---

11 OCT 95 STEVE BRUER/MGR

1553 - sketch for sample SS-65/SB-23.5 location:



1557 - to sample location SS-66/SB-24.5

1600 - arrive SS-66/SB-24.5; start hand augering

1604 - collect SS-66; hnu = 0 ppm

1625 - collect SB-24.5; hnu = 0 ppm

1630 - stop augering

1634 - drillers off site; meet at CH2M Hill field office at 0800 on 12 OCT 95

1655 - measurements for sample SS-66/SB-24.5 location

THIS PAGE INTENTIONALLY LEFT BLANK

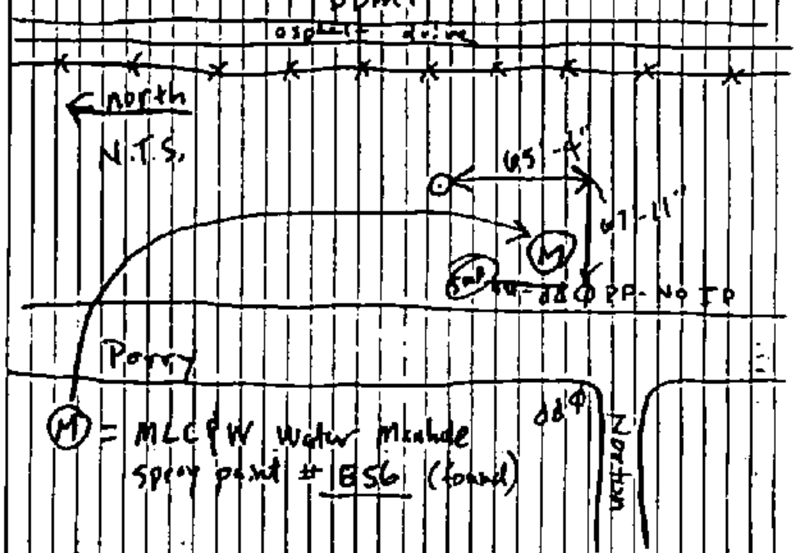
Steve M Bruer
11 OCT 95

---

11 OCT 95

STEVE BRUER/MGH

1640 - sketch of sample SS-64/SB-24-5 location



(M) = MLC&W Water Manhole spray paint # B56 (found)

1645 - to CH2M HILL field office
1652 - arrive at field office, unloading vehicle
1720 - preparing sample cooler for FED EX shipment to labs
1846 - finished sample cooler prep; decoming sample spoons and bowls - already deconned - just wrapping in foil
1906 - finished wrapping sampling spoons and bowls, preparing more sample coolers for FED EX shipment

Steve M. B

11 OCT 95 STEVE BRUER/mgm

1935 - coolers located in vehicles - 15 coolers total
1938 - off site to FEDEX
1953 - arrive at FEDEX
2005 - coolers delivered to hotel

No ENTRIES AFTER 2005 hrs ON 11 OCT 95

11 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK

11 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M.
12 OCT 95

12 OCT 95 STEVE BRUER/MGM

0715 - arrive at CH2M Hill field office
0717 - loading vehicles
0735 - hnu calibration; hnu model PI 101; HAZCO ID No. 5510; 10.2 eV probe; calibration gas - ISOBUTYLENE at 100 ppm, Lot No. 42052 (HAZCO bottle); 0.25 LPM regulator HAZCO ID No. 22702; hnu reads 70 ppm
0740 - Frank Moutek at field office
0800 - drillers at field office
0810 - to site 3
0814 - arrive site 3
0821 - Frank Moutek arrives site 3 - heads to the drill site 1 first
0823 - to site 1
0830 - arrive site 1
0835 - start drilling for sample SS-67/ MS/MSD and SB-25-5
0846 - collect SS-67/MS/MSD
0851 - collect SB-25-5
0857 - stop drilling
0903 - measurements and photograph; from PP 78449 (aluminum plate ID No.) 64.5 ft west, then 2.5' south
0910 - sketch of sample SS-67/MS/MSD and

Steve M

THIS PAGE INTENTIONALLY LEFT BLANK

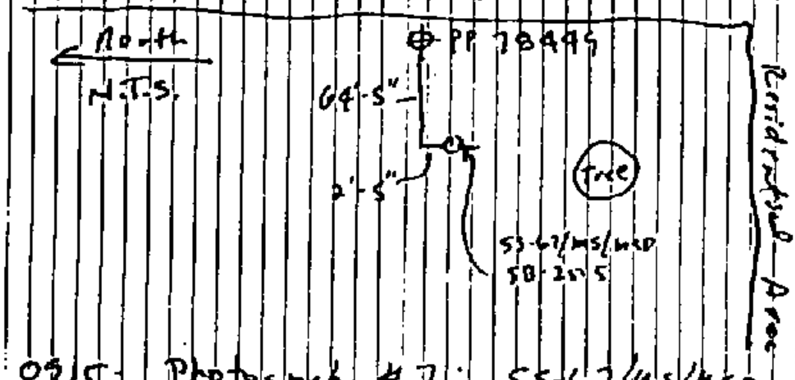
Steve M. R

12 OCT 95

---

12 OCT 95 STEVE BRUGH/MW

0920 (cont'd) - SB-25-5;



0915 - Photograph #7; SS-67/MS/MSD and SB-25-5 sample location looking east; sample location marked by stake with orange flagging north of tree

0918 - to site 3

0923 - arrive site 3

0925 - start drilling to collect samples SS-69/ SB-26-5 / SB-26-59

0930 - collect SS-69 ; hnu = 0 ppm

0936 - collect SB-26-5 / SB-26-59; hnu = 0 ppm

0939 - stop drilling

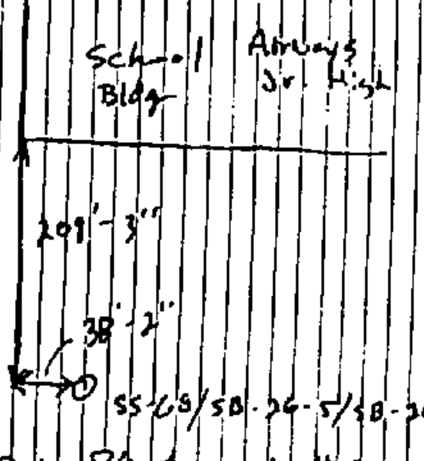
0951 - measurements and photograph. See sketch on page 28

No entries this page after 0951

Steve M. R

12 OCT 95 STEVE BRUER/MGM

0553 - sketch



1000 - Photograph #8 - photograph of samples SS-6E/SB-26-5/SB-26-5A location, marked by orange-flagged stake in center foreground of photograph, looking north

1002 - to site 8

1010 - arrive site 8; Sae Esto/MGS and Frank Nowitzk/DDMT on site

1015 - start drilling; Tony Templeton/TDEC on site

1022 - SS-69 collected; hnu = 0 ppm

1027 - SB-27-5/SB-27-5A collected

1034 - stop drilling; T. Templeton/TDEC, F. Nowitzk/DDMT off

1041 - measurements and photographs for SS-69/SB-27-5/SB-27-5A location

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
12 OCT 95

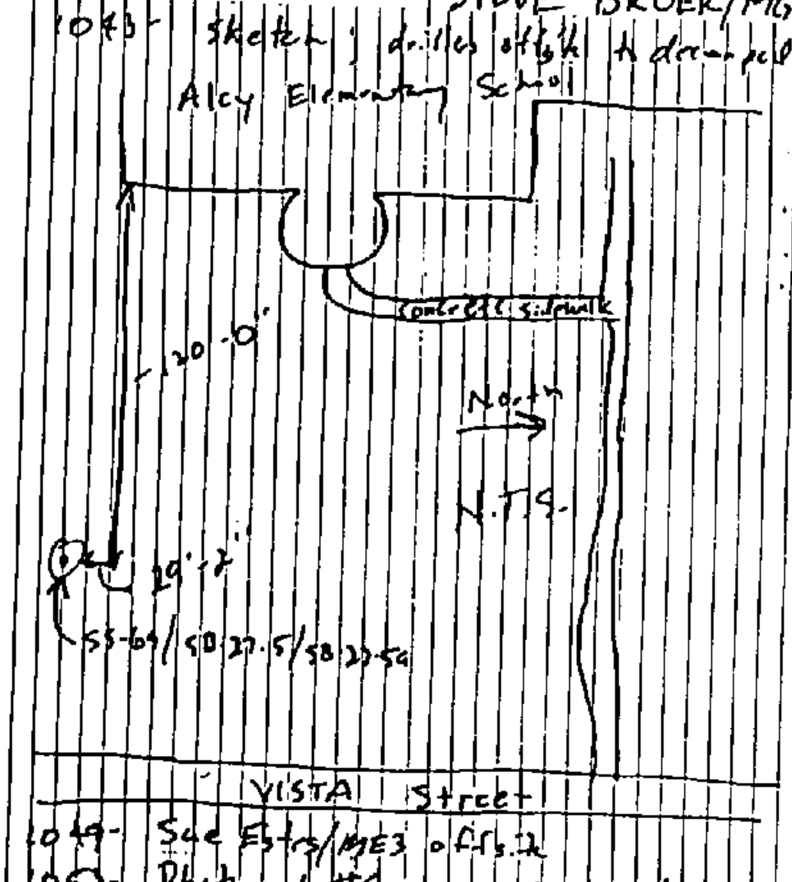
THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
12 OCT 95

29

12 OCT 95 STEVE BRUER/MGM

1043- sketch ; drilled off [illegible] to drain field



1049- See Ests/ME3 offs.2

1053- Photograph #9 - sample location SS-64/SB-27.5/SB-27.5a - location marked by orange flagged stake in center foreground of photograph - looking west

1055- to CH2M HILL field office

1100 - arrive at field office. lunch

1130 - deconning sampling spoons and bowls

Steve M. Bruer

308 162

THIS PAGE INTENTIONALLY LEFT BLANK
Steve M. Bruer
12 Oct 95

12 OCT 95 STEVE BRUER/MGM

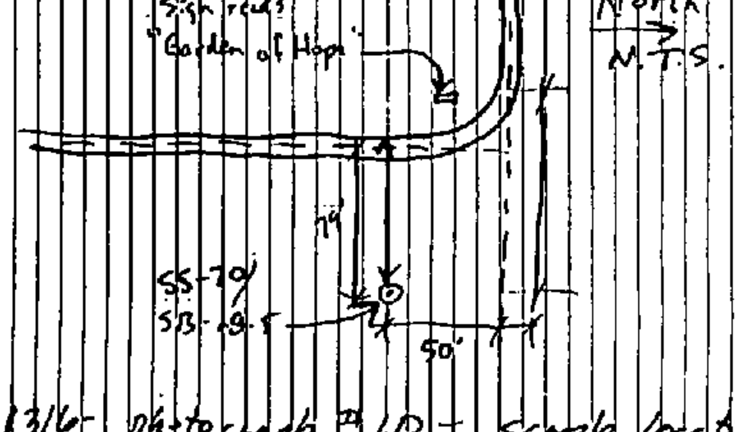
1206- finished decontaminating sampling spoons and bowls
1207 - to meet drillers at decon pad at Dunn Field
1216- arrive decon pad
1220- to site 10
1230- arrive site 10
1232- Frank Nowitzki/DDMT and Terry Templeton/TDEC on site; funeral procession delays drilling
1239- clearance received to drill
1240- Started drilling
1245- Frank Nowitzki/DDMT offsite
1247- collected SS-70; hnu = 0 ppm
1255- collected SB-285; hnu = 0 ppm
1259 - stopped drilling
1300 - Terry Templeton/TDEC offsite
1305- Greg Schaefer/CH2M Hill/ORO on site
1307- measurements and photographs; see sketch on page 31

no entries this page after 1307 hrs

Steve

12 OCT 95 STEVE BRUER/MGM

1305 - sketch



1316 - photograph #10 - sample location for SS-70/SB-20.5; looking east from "Garden of Hope" sign; orange-flagged stake marks location

1318 - G. Schaefer/CH2M HILL/ORD offsite

1324 - to site 12

1330 - arrive site 12

~~1340 - G. Schaefer/CH2M HILL/ORD at start drilling~~ SMB

1340 - G. Schaefer/CH2M HILL/ORD leave site 12; start drilling

1345 - collect SS-71; hnu = 0 ppm

1350 - collect SB-24.5; hnu = 0 ppm

1353 - stop drilling

1402 - measurements and photograph

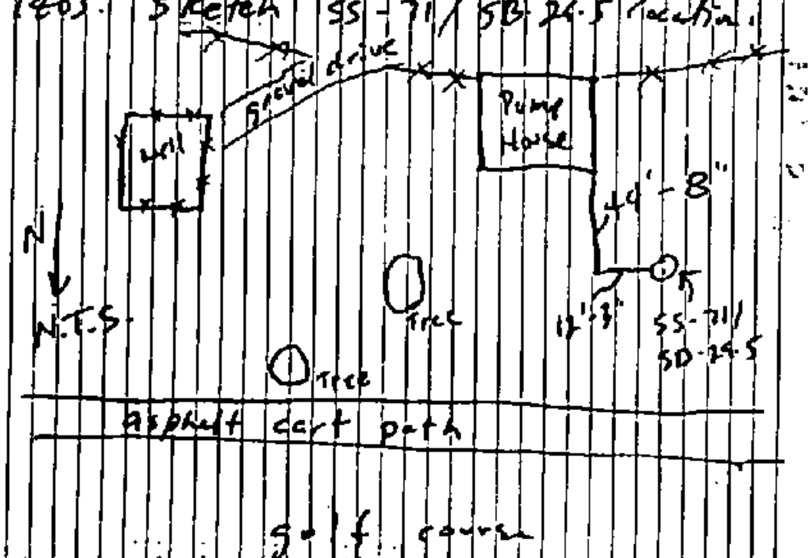
Steve M. B

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
12 OCT 95

12 OCT 95 STEVE BROER/AGM

1403: Sketch SS-71/SB-24.5 location:



1406 - Photograph #11 - looking south from cart path; sample SS-71/SB-24.5 location; location marked by orange-flagged stake

1411 - to site 9

1416 - grout site 9

1420 - start drilling

1422 - Terry Templeton/TDEC onsite

1424 - collect SS-72; hnu = 0 ppm

1428 - collect SB-30.5; hnu = 0 ppm

1433 - stop drilling; T. Templeton/TDEC offsite

1440 - drillers to decon pad; measurements and photograph for SS-72/SB-30.5 location

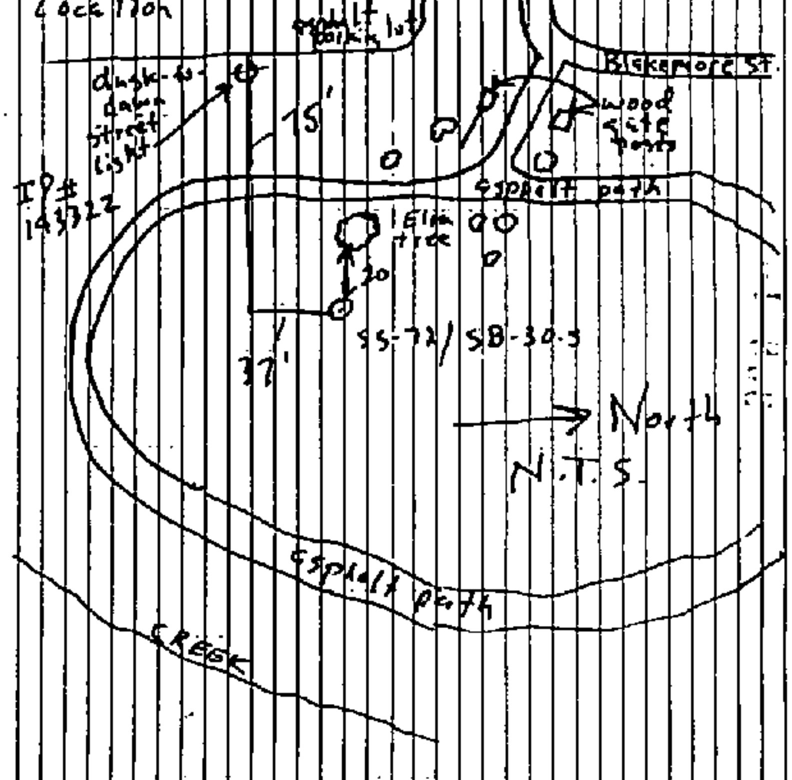
Steven M. Br

THIS PAGE INTENTIONALLY LEFT BLANK

Steven M. Broer
12 OCT 95

12 OCT 95 STEVE BRUER/MGM

1440 (contd) - sketch for SS-72/SB-30.5 location



1452 - Photograph # 12 - looking west sample SS-72/SB-30.5 location marked by orange-flagged stake in center fore-ground of photograph, street ~~lamp~~ sms lamp pole #143322 in background

1455 - TD drillers clean pad at Dunn Field

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
12 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bru

12 OCT 95

34

12 OCT 95 STEVE BRUER/MGM

1502 - arrive at drillers decon pad at Dunn Field

1526 - to CH2M HILL field office

1532 - arrive CH2M HILL field office

1540 - preparing coolers for shipment via FED EX to QAL/MGM

1625 - finished preparing sample coolers

1630 - offsite to FED EX

1655 - coolers delivered to hotel

No Entries after 1655 hrs on 12OCT95

Steve M. Bru

12 OCT 95

308 167

17 OCT 95 STEVE BRUER/MGM

1640 - Summary table:

SAMPLE	DATE	TIME	DEPTH	COMMENTS
SS-51/SS-5A	9 OCT95	1937 ~~0857~~ smb	0'-1'	dup.
SB-09-5	9 OCT95	1951 ~~0904~~ smb	5'-6'	MS/MSD
SS-52	9 OCT95	1542	0'-1'	Split
SB-10-5	9 OCT95	1555	5'-6'	
SS-53	9 OCT95	1618	0'-1'	
SB-11-5	9 OCT95	1627	5'-6'	
SS-54	10 OCT95	0857	0'-1'	
SB-12-5	10 OCT95	0904	5'-6	
SS-55	10 OCT95	1010	0'-1'	
SB-13-5	10 OCT95	1025	5'-6'	
SS-56	10 OCT95	1055	0'-1'	
SB-14-5	10 OCT95	1141	5'-6'	
SS-57	10 OCT95	1334	0'-1'	
SB-15-5 SB-15-5A	10 OCT95	1340	5'-6'	dup.
SS-58	10 OCT95	1409	0'-1'	
SB-16-5	10 OCT95	1415	5'-6'	
SS-59	10 OCT95	1516	0'-1'	
SB-17-5	10 OCT95	1522	5'-6'	
SS-60	smb 11 OCT95	0916	0'-1'	
SB-18-4	smb 11 OCT95	0930	4'-6'	MS/MSD
SS-61	11 OCT95	1003	0'-1'	
SB-19-5	11 OCT95	1007	5'-6'	

table continued on next page

Steve M. Bruer

THIS PAGE INTENTIONALLY LEFT BLANK

Steve M. Bruer
17 OCT 95

THIS PAGE INTENTIONALLY LEFT BLANK
M. Bruer
12 OCT 95

---

17 OCT 95 STEVE BRUER / MGM

SAMPLE	DATE	TIME	DEPTH	COMMENTS
SS-62	11 OCT 95	1102	0'-1'	
SB-20-5	11 OCT 95	1108	5'-6	
SS-63	11 OCT 95	1321	0'-1	
SB-21-5	11 OCT 95	1329	5'-6'	
SS-64	11 OCT 95	1445	0'-1'	
SB-22-5	11 OCT 95	1458	5'-6'	Split
SS-65	11 OCT 95	1525	0'-1	
SB-23-5	11 OCT 95	1540	5'-6'	
SS-66	11 OCT 95	1604	0'-1'	
SB-24-5	11 OCT 95	1625	5'-6'	
SS-67	12 OCT 95	0835	0'-1	MS/MSD
SB-25-5	12 OCT 95	0851	5'-6'	
SS-68	12 OCT 95	0925	0'-1'	
SB-26-5/ SB-26-5D	12 OCT 95	0936	5'-6'	dup.
SS-69	12 OCT 95	1024	0'-1'	
SB-27-5 SB-27-5D	12 OCT 95	1027	5'-6'	dup.
SS-70	12 OCT 95	1247	0'-1'	
SB-28-5	12 OCT 95	1255	5'-6'	
SS-71	12 OCT 95	1345	0'-1'	
SB-29-5	12 OCT 95	1350	5'-6'	
SS-72	12 OCT 95	1424	0'-1'	
SB-30-5	12 OCT 95	1428	5'-6'	

no entries after 1640 hrs

M. Bruer

DDMT Background Sampling

Surface Water and Sediment Sampling

10/9/95 - 10/12/95

DOMT - BS

10/9/95

1

0700 - meeting Frank Novitski (DOMT) @ Gate 1.
CH2M Hill Personnel
G. Schaefer / ORO
D. Jayne / ORO
S. Bruer / MGM

0715 - @ field office on-site - unloading field supplies

0725 - Scott Bradley (Huntsville CORP) visit site

0745 - Tri - State Testing (Drill Team) arrived at the field office.
Conducting "Kick-off" meeting with Frank Novitski
Scott Bradley
Tri-state: Joe Fleeger
Ken Street
Mark Totty

Dale Jayne / ORO
S. Bruer / MGM

15/4/95

2

DDMT-BS 10/9/95

Frank: 391-7279 - pager
Alan 11 Alpha
901-775-6372

→ 2163 Airways Blvd, Bld 144
Memphis, TN 38114
Attn: Frank

Fed Ex to Frank

10/9/95

DDMT - BS 10/9/95

3

0800 - driving to temp decon pad location @ Dunn Field with Frank @ Tri-State.

0815 - staking locations on Dunn Field with Frank

0840 - @ Administration Bldg (#144) next to gate #1.

1000 - N. of bldg S290 (NE corner) intersection of Airways Ave. + Dunn Ave.

1010 - stakes s/t south of bldg 490; south of door #25 on bldg 490.

1020 - staking location South of bldgs 970 & 875 on top of slope; SW corner of OU-2.

1030 - staking 3 locations along Perry Rd (W side of DDMT); Frank needs to clear locations with MLGW.

10/9/95

DDMT - BS 10/9/95

SS-51
SD-09
SS-51A

Blank

10/9/95

DDMT - BS 10/9/95

Note: white car stays to film us staking the site.

1045 - staking northern most location along fern St. (being filmed). Channel 13 news filming the site.
* Arthur Thompson - Channel 13

1100 - @ field office organizing sample bottles; Frank N. leaves to get his pager

1200 - mopping decon pad; heading to CH2M Hill office to pick up remaining coolers.

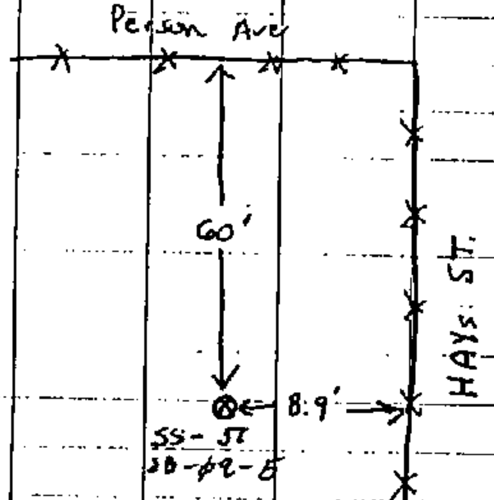
1315 - unloading coolers @ onsite office; getting soil sampling equipment together.

1415 - @ boring SS-51/SD-09 (northwest corner of Dunn Field.

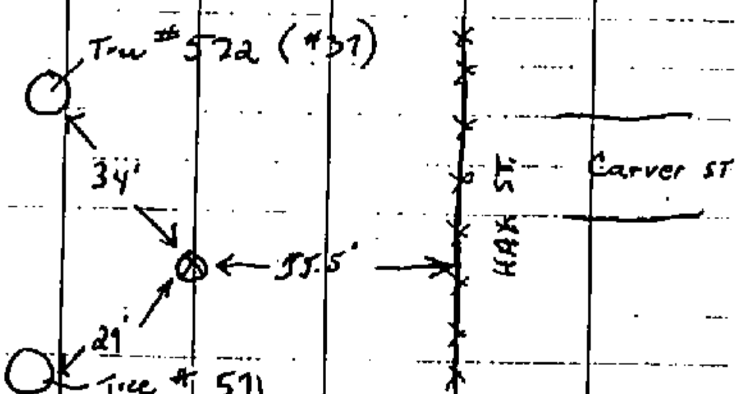
10/9/95

00MT - BS 10/9/95

SS-51 / SB-09-5:



SS-52/SB-10-5:



B-40

MD 10/9/95

00MT - BS 10/9/95

Collecting SS-51 + SS-51A (duplicate)
from 0-1' interval.
Collecting SB-09-5 + MS/MSD
from 5-6 ft bgs interval.

1510 - @ SS-52 / SB-10-5
in Dunn Field (taking split sample
from 0-1 ft interval for Missouri
River Division Lab).
Drillers Deconning equipment

1530 - Sampling 0-1' from SS-52 in
Dunn Field.

Trip Blank #: TB-01 for main
Soil Cooler.

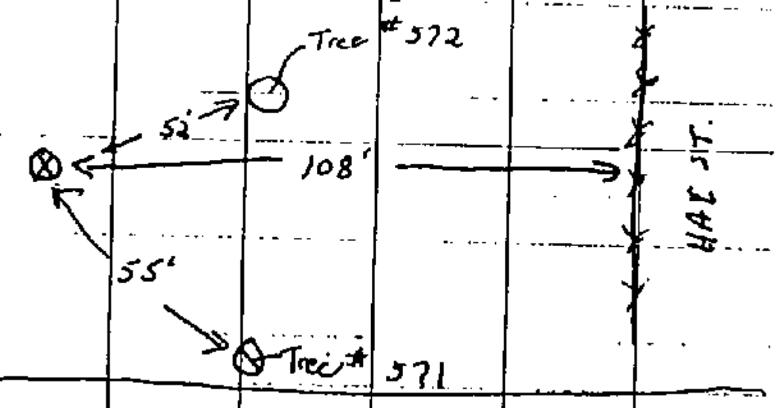
1600 - @ SS-53 / SB-11-5 in Dunn Field

1605 - Ed Evans called from GNV office.

MD 10/9/95

DOMT-05 10/9/95

SS-53 / SB-11-5:



Sample #	Time	Depth (ft)	Location
SS51	1415	0-1	Dunn Field
SS51A	1415	0-1	" " (Duplicate)
SB0905	1420	5-6'	Dunn Field (MS/MSD)
SS52	1510	0-1	" " (Split)
SB1005	1520	0-1	Dunn Field
SS53	1600	0-1'	Dunn Field
SB1105	1610	5-6'	Dunn Field
TB-01	1400	—	Trip Blank
RS001	1735	—	Rinse + (Split):
TB002	1145	—	no Lab

10/9/95

DOMT-05 10/9/95

Notes
for 10/10/95:

- Hold off on Sketch #9
- Sketch #2 - OK'd by Frank N. -
- 3 OK'd onsite (staked 10/11/95)
- NW of Pine Hill Golf Course - OK'd.

1630 - drilling completed for the day; decon'ing augers + 5 ft continuous samplers.

1650 - @ field office, packing coolers + filling out COCs.

Frank + myself discuss the next days potential schedule.

Drillers have stated that David McCray has cleared all off-site locations with "Tenn-2" call line.

1710 - Frank leaves office;

1735 - collecting rinsate + split on SS+SB equipment (RS001).

10/9/95

Weather: Clear + warm ≈ 60°F

Crew: G. Schaefer / ORO
D. Joyne / ORO
S. Bruer / MGM

Purpose • Collect soil samples from 3 locations onsite + 4 offsite
• Collect SW/SED samples offsite

MW 10/10/95

0700 - @ Gate #2 ; obtaining badges

0715 - @ field office ; preparing sample kits

0805 - S. Bruer heading out to Owens Creek to meet with drillers

Calibrating Horiba U-10
Serial # 11466
Using 100-4 pH standard solution
+ automatic calibration procedure
Power - OK
Calibration completed

0920 - @ Northumbrian Creek near Ten Mile Creek intersection off of American Way Blvd.

Sample Location # SW17 / SD060 / SW170
SD0600

pH = 7.50
Cond = 0.199
Temp = 17.9
Turb = 18
DO = 3.27
SAL = 0

MD

12 DDMT - 05 10/10/95

Sample #	Time	Depth	Comments
SW17	0930	—	Nonconnah Creek
SW17A	0930	—	Duplicate
SD0600	0930	0-6"	Nonconnah Creek
SD06A0	0930	0-6"	Duplicate
SW17F	0930	—	Filtered
SW18 + U,F	1030	—	Nonconnah
* SW18 + U,F	1030	—	(Split Sample)
SD0070	1030	0-6"	
* SD0070	1030	0-6"	(Split Sample)
SW19	1120	—	Nonconnah Creek
SD0080	1120	0-6"	" "
SW20	1340	—	MS/MSD
SD0090	1340	0-6"	MS/MSD
SW21	1345	—	Nonconnah Creek
SD0100	1345	0-6"	" "
SW22	1400	—	" "
SD0110	1400	0-6"	" "
SW23	1600	—	Person Rogers (East Creek)
SD0120	1600	0-6"	
SW24	1605	—	
SD0130	1605	0-6"	
SW25	1615	—	
SD0140	1615	0-6"	

10/10/95

DDMT - 05 10/10/95 13

775-6372

1015 - filtering SW samples from creek using 0.45 micron filter & peristaltic pump (Sample + dup)

1030 - collecting SW/SD sample upstream (≈ 200 ft) from SW17 location in Nonconnah Creek.

SW18 / SD0070 + Split Sample

TB003 - for split samples

including filtered sample

pH = 7.71

Cond = 0.236

Turb = 46

DO = 9.3

Temp = 21.7°C

SAL = 0

1120 - collecting SW19 / SD0080 from Nonconnah Creek (≈ 150 ft upstream from SW18 location).

pH = 7.67 Temp = 21.7°C

Cond = 0.227 DO = 9.36

Turb = 21 SAL = 0

including filtered sample

10/20/95

Sample #	Time	Comments
RS 002	1945	Soil Rinsate
RS 003	1950	SD Rinsate
TB 005	—	SW/SD Trip Blank
TB 003	—	(Split) Soil SW/SD Trip Blank

NM 10/20/95

20MT-BS 10/20/95

1200 - @ field office setting up SW/SD Sample Kits

1330 - @ Nomeakuna Creek (adjacent to Lane Ave Bridge) collecting 3 locations for SW/SD.

1340 - collection SW20/SD098 + MS/MSD

pH = 7.70 DO = 9.72

Cond = 0.241 SAL = 0.01%

Temp = 23.6°C Turb = 14

near bridge

1345 - collection SW21 / SD100 ≈ 150 ft upstream from SW20.

pH = 7.74 DO = 9.09

Cond = 0.252 Temp = 24.3°C

Turb = 17 SAL = 0.01%

Note - decontaminating all sampling equipment between sample locations according to the Project Instructions.

NM 10/20/95

16 00MT-BS 10/10/95

Blank

00MT-BS 10/10/95 12

1400 - sampling SW22/SD110 ~ 200 ft upstream from SW21 location:
pH = 7.70 DO = 8.54
Cond = 0.253 Temp = 24.7 C
Turb = 2 SAL = 0.00 %

1410 - decontaminating sampling equipment & preparing sampling bottles.

1550 - @ Cane Creek near the corner of Person ST & Regan St. NOTE: Near Lincoln Park the creek is concrete lined; no sediment.

1600 - collecting SW23/SD120 in Cane Creek

1605 - collecting SW24/SD130 in Cane Creek
pH = 7.61 DO = 6.37
Cond = 0.283 Temp = 23.5
Turb = 5.83 SAL = 0.002

1615 - collecting SW25/SD140 upstream from SW24 (Cane Creek)

AM 10/10/95

18

10/10/95

Sue Estes
205 - 656 - 9490
Mobile Phone

* Spencor Hand : 334 - 271 - 1444 : Lab

TB004 - Soil TB 10/10/95

10/10/95

19

ODMT - BS 10/10/95

1630 - trying to locate a sw/SO location in Cane Creek upstream from the sample sets;
Note: all of Cane Creek & Cane Creek tributaries are concrete lined (no sediment samples available).

1705 - calling Frank Novitzki to coordinate 10/11/95 schedule.

1715 - filling out COCs on SW/SD coolers & filtering SW22, SW23 & SW24 metals samples.

1730 - F. Novitzki & Sue Estes @ field office. Discussing 10/11/95 schedule.
- meet at Henor Park - 8:00
- call Frank prior to heading to Autobahn Park

1945 - collecting rinseate samples from Soil (RS002) & SD (RS003) sampling equipment.

10/10/95

20 10/10/95

Blnk

10/10/95

DDMT-B5 10/10/95 21

2100 - Heading to Fed Ex office to drop off
17 coolers to CH2MHill lab &
1 cooler to MO River Lab

<u>Note</u>:

TB006 : next sample # for trip blank

RS004 : next rinsate sample #

10/10/95

10/11/95

Weather: Clear + warm ≈ 68°F
expected high ≈ 85°F

Crew:
G. Schaefer / ORO } SW/SD Sampling
O. Jayne / ORO }
S. Bruer / MGM - Soil sampling

0700 - @ field office ; preparing bottles
K-15 for SW/SD + soil locations.

Purpose: - collect SW/SD @ Medal of
Honor Park + Audubon Park
- collect Soil samples @
Dunn School (2 locations)
Sparks Cove
Airways + Dunn
(3) locations along W. edge of DDMT

MA 10/11/95

DDMT - BS 10/11/95

0720 - Calibrating Horiba U-10
Serial # 1266
using 100-4 pH standard solution
+ automatic calibration procedure.
Power - OK

0800 - Calling Spencer Hamil / CH2M Hill / 46
regarding sample questions + bottle
ordering

0815 - Waiting on Frank Wozniak +
Sue Estes before heading out
to sample.

0850 - Frank + Sue @ site ; heading to
Medal of Honor Park.
Frank will meet us @ the Park.

0915 - @ Medal of Honor Park ;
2 interconnected lakes.

10/11/95

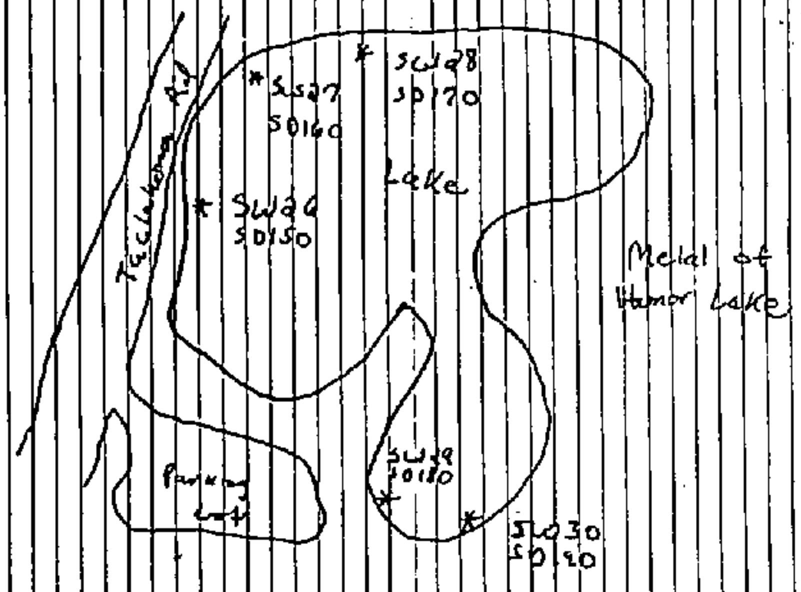
10/11/95

Sample #	Time	Location
TB006	0830	SW/SD Samples
SW 26	0925	Metal at Honor Park (West)
SD 150	0925	~~(NW)~~ EAR
SW 27	0935	(NW)
SD 160	0935	"
SW 28	0950	North
SD 170	0950	"
SW 29	1015	
SD 180	1015	
SW 30	1040	
SD 190	1020	
SW 31	1140	Botanical Gardens
SD 200	1140	West side of lake
SW 32	1145	Botanical Gardens
SD 210	1145	east side of lake
SW 33	1230	Northside of lake
SD 220	1230	in Audubon Park
SW 33A	1230	Duplicate
SD 220A	1230	Duplicate
SW 34	1245	Audubon Lake
SD 230	1245	western edge
SW 35	1315	Audubon Lake DUP MS/MSD Split
SD 240	1315	NE edge

(Continued on p. 30)

10/11/95 MW

0925 - SW26/SD150 located on Western edge of Northern lake; (adjacent to Tochulana Rd)



Lake Parameters: near SW26:

pH = 6.06
Cond = 0.90
Turb = 89

DO = 6.35
Temp = 20.6°C
SAL = 0.00%

MW 10/11/95

10/11/95

0935 - @ SW27 / SO160 location:
pH = 8.20 DO = 7.28
Cond = 0.80 SAL = 0.00 %
Temp = 19.8°C Turb = 39

0950 - SW28 / SO170 location:
pH = 8.07 Turb = 45
SAL = 0.00 % DO = 5.30
Cond = 0.079 Temp = 20.5 °C

0955 - Decontaminating sampling equipment according to Project Instructions.

Note: Terry Templeton / TDEC @ the site with Frank.
Sample locations are ≈ 200 ft apart

1020 - Horiba parameters for southern section of Motel at Honor Lake:
pH = 8.09 DO = 8.30
Cond = 0.073 Temp = 22.0°C
Turb = 439 SAL = 0.002.
* Samples SW29 + SW30
SO180 SO190

10/11/95

1045 - heading back to office to drop off coolers. Will meet Frank & Terry @ Audubon Park (Botanical Garden lake @ ≈ 11:15)

1135 - @ Botanical Gardens in Audubon Park (small lake; bottom of lake was re-worked with a bulldozer in 1987.

1140 - Collecting SW31 / SO200 from west side of lake.

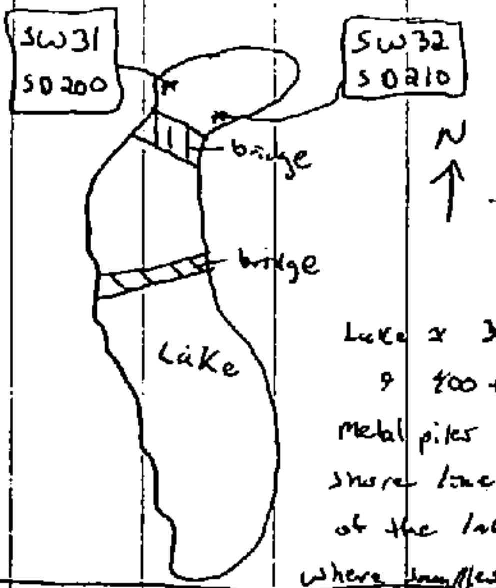
1145 - Collecting SW32 / SO210 from east side of lake.
Lake:
pH = 8.05 DO = 6.30
Cond = 0.088 Turb = 148
Temp = 19.4°C SAL = 0.00 %

1220 - moving to Audubon Lake for samples; Frank + Terry leave.

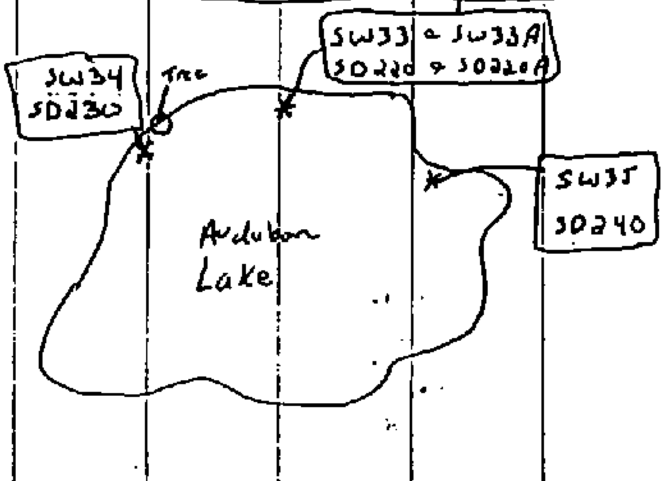
10/11/95

10/11/95

Botanical Gardens Lake – Audubon Park



Lake ≈ 30 ft wide & 400 ft long
metal piles along the shore line of most of the lake except where samples are collected.



10/11/95

ODMT-BS 10/11/95

1235 – Physical parameter @ SW33:

pH = 8.08 DO = 10.12
Cond = 0.066 Turb = 5.5
Temp = ~~25~~ 24°c SAL = 0.08%

1240 – Reconning sampling equipment.

1245 – Collecting SW34 / SD230 from NW corner of lake

pH = 8.14 DO = 8.30 mg/e
Cond = 0.066 ms/cm Temp = 24.5 °c
Turb = 120 SAL = 0.00 %

1315 – Collecting SW35 / SD240 NW edge of lake in Audubon Park.

pH = 8.08 DO = 10.48
Cond = 0.066 Temp = 23.6°c
Turb = 71 SAL = 0.00%

~~1340 – heading to field office.~~ MS 10/11/95

Collecting QA/QC samples @ SW35 location (Duplicate 35A, MS/MSD & split sample).

10/11/95

DDMT-05 1-/11/95

Sample #	Time	
SW35 A	1315	} Duplicate
SW240 A	1315	

MS/MSD & Split sample collected @ SW35/SW240 location.

1530 - @ office preparing coolers for shipping & following Metals SW samples.

1645 - Frank & Denise Cooper/DDMT stop by the field office.

1725 - collecting rinsate on SD sampling equipment RS004.

Note: TB007 being used for soil VOCs cooler on 10/11/95.

TB008 included with MO River Division split samples.

MA 10/11/95

DDMT-05 10/11/95

1910 - collecting equipment rinsate RS005 from soil sampling equipment including hand-auger bucket.

1925 - Loading vans & preparing to head to Fed Ex.

1945 - @ FEDEX:
Shipping out
18 coolers to CH2M Hill
1 cooler to COE Lab.

MAB 10/11/95

Weather: clear & warm ≈ 65°F
Expected high ≈ 85°F

Crew: G. Schuetz / ORO
D. Jyne / ORO
S. Bruer / MGM

Purpose:

- Collect soil samples from 6 offsite locations
- Collect 3 SW/SD samples offsite
- collect IDW Sample
- Ship field blank

MD 10/12/95

0705 - @ the field office ; getting sample kits together.

0715 - Frank Nowicki (DOMT) @ the office to discuss the day's schedule.

0720 - Calibrating the Horiba U-10
Serial # 12606
Using 100-4 pH stand solution & automatic calibration procedure.

0815 - Heading North of DOMT to collect SW/SD sample @ creek near Chickasaw Gardens

0835 - Preparing to collect SW/SD samples from the lake outfall in Chickasaw Gardens (near the northern end of the lake.)

MWL 10/12/95

34 00MT-BS 10/12/95

Sample #	Time	Comments
SW38	0840	Chickasaw Lake near outfall
SD 270	0840	to Creek
SW37	0855	at outfall point of
SD 260	0855	Chickasaw Lake
SW36	0900	≈ 70 ft SW of outfall
SD 250	0900	of Lake
TB009	0800	Trip Blank for sw/sd
FB 01	1030	Field Blank at OF Water
ID01	1220	Decon Water (IDW)
ID02	1220	Soil Cuttings (IDW)
RS006	1320	soil rinseate

AW 10/12/95

00MT - BS 10/12/95 35

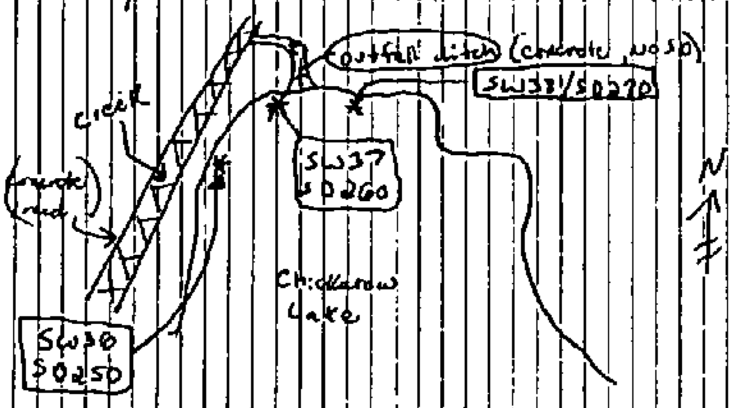
0840 - physical parameters for Chickasaw Lake near the outfall:

pH = 8.33 DO = 3.22

Cond = 0.112 Temp = 19.3 °C

Turb = 10 SAL = 0.00%

Collecting SW38 / SD270 from northern edge of lake ≈ 20 ft east of outfall.



0855 - Sampling SW37/SD270 from mouth of outfall ditch.

0900 - Collecting SW36/SD250 ≈ 70 ft SW of outfall in Chickasaw Lake.

AW 10/12/95

36 DOMT-BS 10/12/95

Drum #	Material
BS-001	Water (decon)
BS-002	" "
BS-003	soil cuttings

10/12/95

37 DOMT-BS 10/12/95

0830 - sampling completed; purchasing ice & heading back to office.

0945 - @ office; filtering SW samples & preparing coolers for shipping

1030 - collecting field blank of OF water used during the background sampling effort = FB01

1115 - heading to Fed Ex with (4) coolers to MGM.

1215 - @ Decon pad: sampling decon water from drum (composite of 2 decon water drums) + IDW sample of cuttings (1 drum).

1240 - dropping IDW cooler @ office; A. Fagan preparing coolers for shipping; heading out to S. Bowie's drilling location; taking drillers over [illegible].

10/12/95

00MT-BS 10/12/95

Blank

10/12/95

00MT-BS 10/12/95

1320 - collecting rinsate sample RS006 from soil sampling equipment.

1400 - taking decon water from field office to the decon pad for disposal into waste drums.

1415 - buying ice & starting to demob office.

1500 - Frank stops by the office.

1630 - demobed office & heading to Fed EX with (4) coolers to [illegible].

10/12/95

DDMT Groundwater Sampling

2/8/96 – 2/14/96

GW Sampling
2/10/96 113630.05.ZZ

ANALYSIS

0940 VOC - 3x40mL VOA w/HCl
SVOC - 1X2 l amb
pest/PCB - 1X2 l amb
Herbicides - 1X2 l amb
metals - 1X1 l Poly w/HNO3
All Samples go directly into
a Ice Cooler

1010 Done Sampling
Final Static Level = 102.40'

1020 Pickup Equipment & Supplies
and go to decon
Refer To Page # 2

NOTE - Well Needs New Cap
Surface water entering well.

950 Done Decon - Go to MW 30
1100 Arrive MW30 - Do not have
Key.
1135 Get key from LEE Thompson
1150 Back at MW 30 - open well

GW Sampling
2/10/96 113630.03.ZZ

HNU = BG=0.0, BZ=0.0, DH=0.0
SWL = 45.75 .17 ≈ 2.5 GAL/VOL
TD = 59.74

1200 Setup for Sampling MW 30
1210 START Purging Well

Time	SWL	VOL	Temp	PH	S.C	TURB	DO
1213	51.38	2.5	18.5	5.77	263	>100	7.55
1215		5.0	18.3	5.76	261	>100	8.02
1218		7.5	18.2	5.78	260	80	8.07
1220		10.0	18.4	5.78	258	71	7.96
1223		12.5	18.4	5.76	265	40	8.68
1225		15.0	18.5	5.85	276	35	8.69
1228		17.5	18.5	5.76	201	30	9.22
1230		20.0	18.5	5.71	274	28	8.46
1235	50.18	25.0	18.6	5.81	281	25	7.60

END Purging
1245 Sample MW 301
Pest/PCB - 1X2 l amb
Herbicides - 1X2 l amb

Collect Last Parameter
1248 18.6 9.82 282 26 7.64
Final SWL = 45.60

GW Sampling
2/10/96 113630:03.23 35

1300 - Pull Pump & Hose from MW 30 - pickup Equipment & Supplies, Secure Well Head over to transfer purge water to Poly Tank

1300 Lunch
1330 Back at Staging area - UNLOAD Pump & Hose for decon (Refer to Page #4)

1358 Complete Decon of Pump & Hose, Equipment.
Go to MW-E for Well Development

Continue on Page 37

2/10/96

Well Development
2/10/96 113630:01.22 36

MW-E

1405 Setup on MW-E for development
1500 START Developing MW-E

Time	VOL	SWL	Temp	PH	SC	Turb	DO	SAL
1505	4.8	74.0	19.5	6.02	397	59	8.62	0.01
1520	21	74.1	19.5	5.89	400	41	8.62	0.01
1550	31	Pump quit operating						
1540	41							
1550	5							
1600	6							
1610	7							
1620	8							
1630	9							
1640	100							

Well Developement

2/11/96 113630.01.22 (39)

0900 ARRIVE at MW-E
Continue Developement from previous day.

0930 Setup for developement
HNU = BG = 0.0
BZ = 0.0
DH = 0.0
SWL = 74.20

0940 START continuing developement
Purge @ 1 GPM
DRAWDOWN to 74.40' continuous
Pump at 78' BTOC
TOTAL Purge = 50 gal

1030 Pump off -
SWL = 74.20'
Pull Pump & Hose

1045 - Secure Well and go transfer 50 gals developement water to the Poly Tank

1055 - Go to decon pump & Hose
Refer to Page #2

Cwsmhlf 2/11/96

Well Developement

2/11/96 113630.01.22 (40)

MW-E Continued

Time	Gal Vol	SWL	Temp	PH	SC	Turb	DO
0950	60	74.50'	17.1	5.59	408	24	6.65
1000	70	74.50'	17.3	5.71	436	2	8.92
1010	80	74.50'	17.0	5.67	435	2	9.33
1020	90	74.50	17.4	5.68	431	2	8.00
1030	100	74.50	17.4	5.70	415	2	8.75

MW 28

1113 - Complete decon - Load up Sample containers & Supplies for MW 28 & MW 20

1135 - Go to MW 28 and setup for GW Sampling
HNU = BG = 0.2 ppm
BZ = BG ✓
DH = BG ✓
SWL = 59.40'
TD = 68.70' > 1.5 gal/vol

1205 - Overpump Well for a while to get NTU's DOWN - VERY SILTY
Purge 20 gals prior to purge for Sampling -

Cws mhlf 2/11/96

Well Sampling
2/11/96 113630.Ø3.ZZ (41)
MW 28

Time	VOL	SWL	Temp	PH	SC	Turb	DO	SAL
1227	1.5	59.53	16.5	5.35	164	>100	8.51	0.00
1229	3.0	59.60	17.9	5.39	187	>100	8.35	0.00
1231	4.5		18.2	5.38	188	>100	9.72	0.0
1233	6.0		18.0	5.37	187	>100	9.42	0.00
1235	7.5	59.60	18.1	5.39	183	>100	9.35	0.00
1237	9.0		18.0	5.40	187	65	9.70	0.00
1239	10.5		18.3	5.40	184	55	9.28	0.00
1241	12.0		18.4	5.39	187	46	11.35	0.00
1243	13.5		18.5	5.38	183	44	9.30	0.00
1245	15		18.3	5.41	185	30	9.61	0.00
1247	16.5		18.3	5.42	189	30	9.86	0.00

1255 Sample Time - MW 28
VOC's - 3x40 ml VOA w/ HCl
Pest/PCB - 1 X 2 l amber
SVOC - 1 X 2 l amber
Herbicides - 1 X 2 l amber

1315 after Sample 17.4 5.45 185 80 8.99 0.00
VOC's collected with a disposible bailer.

1320 Go transfer purge water to the Poly Tank - 40 gals

2/11/96

Well Sampling
2/11/96 113630.Ø3.ZZ (42)

1335 - Lunch
1400 Return to decon area & decon pump & hose / drop off samples
1435 - Load Equipment and go to MW 20 for GW Sampling

1446. Arrive at MW 20 — NO KEY. Call Greg B. — NO
Go find Weet Linno at bldg 271 and see if they have a set of Keys - YES, Success

1500 - Go back to MW20 and set setup
HNU - BG = 0.2 ppm
BZ = 0.0
DH = 0.0
SWL = 84.64 > 2.6 gal/wc
TD = 100.5
Set Pump at 92' BTOC
Sustained Pumping rate = 1.0 gpm
SWL during purging = 85.10

2/11/96

Well Sampling
2/13/96 113630.03.22 (57)
MW-53

1430 LOAD up Sample containers & Supplies for MW531

1445 Go to MW53 setup for GW Sampling
HNU=BG=0.0 BZ=0.0 DH=0.12
SWL=73.84' > 1.5 gals/vol
TD=82.80'
Pump set at 76.0' BTOC

1505 START Purging MW53
1515 END Purging

1520 Begin Sampling MW531
1535 Pump off - Pull Pump + Hose
1600 END Sampling MW53
Final SWL=0 73.60'
1610 Pickup Equipment + Supplies, Sample Coolers and go transfer purge water to the poly TANK
MW54 = 20 gALS
MW53 = 15 gALS

1625 ARRIVE back at decon

2/13/96

Well Sampling
2/13/96 113630.03.22 (58)

Time	Vol	SWL	Temp	PH	SC	Turb	DO	SAL
1508	1.5	73.90	17.8	5.63	375	>100	10.92	0.00
1509	3.0		18.6	5.72	414	>100	10.63	0.00
1511	4.5		18.8	5.76	419	>100	9.20	0.01
1513	6.0		18.5	5.74	422	12	8.55	0.01
1515	7.5		18.7	5.77	425	5	8.54	0.01
~~after sample~~ e								
~~1517~~	~~9.0~~ @							
~~1519~~	~~10.5~~ @							
after sample			18.1	5.81	364	33	8.75	0.01

Sample ID MW531
(MS/MSD Included)
VOCs - 9 x 40mL Vial w/ HCL
TAL metals - 3 x 1L Poly w/ HNO3
SVOCs - 3 x 2L amber
Pest/PCB - 3 x 2L amber
Herbicides - 3 x 2L amber

1630 - Decon pump & Hose (see page 62)
Unload equipment + Supplies.
Take ICED down samples into the ready room for packaging for Fed-X Shipment

2/13/96

This page intentionally left blank

LBlackwelder

2/7/96 LBlackwelder, L Thompson
cont. from pg 10

see if control box has arrived from Fed Ex.

1030 Fed Ex shipment has arrived, will return to site & attempt to purge MW-36 with new control box.
Terry Templeton left site when we did, asked that Greg U. call him to let him know when we may sample

1050 Arrive back at MW-36
The new control box made no difference. Unable to pump. Called Greg Underberg who said to go to MW-30 and bail it if necessary. Pulled pump & returned to office.

1120 Attempt to decon pump to see if it works in shallow well.
Pump appears to work fine

1148 Break for lunch

LBlackwelder

(13)

2/7/99 L Blackwelder, L Thompson

Well MW30 Purge & Sample record

Casing Diameter : 2"
DTW = 45.53'
TD = 59.85'
Well Volume Calculation
59.85' - 45.53' = 14.32'
(14.32')(0.17 gal/ft) = 2.43 gal

Time	Vol.	T°C	pH	Cond.	Turb.	D.O.	Salinity
1321	2 gal	14.0	4.66	0.283	>999	9.13	0.01
1324	5	16.2	5.8	0.249	>999	8.09	0.00
1328	9	16.8	6.37	0.275	870	7.92	0.01
1333	12	17.2	6.30	0.270	220	8.11	0.01
1337	15	17.2	6.66	0.275	186	8.07	0.01
1342	18	@ 16.6	6.27	0.274	68 *	8.77	0.01
1346	21	17.4	6.54	0.274	120	8.04	0.01
1350	24	17.4	6.64	0.279	57	8.01	0.01
1354	27	17.5	6.65	0.276	35	8.03	0.01

End of data

* Unstable readings varied from 68 to 333

@ took T reading several minutes after sample collected.

L Blackwelder

(14)

2/7/99 L Blackwelder, L Thompson

1300 Arrive at site of MW30 to purge and sample well.
Using Grundfos # HS15077

1313 Begin pumping - pump set at 49 ft (20 foot screen) - middle of screened interval.

1316 Pumped for 4 minutes, then stopped. Can see water in tubing. Slowed pump rate then lowered to 54 feet.

1320 Water discharging.
Water is very cloudy. orange brown in color.

1338 Water is getting much clearer

1356 Collect Sample MW301 - SVOC 2 liter amber glass;
Metals - 1 liter plastic

1358 Pump off - pull pump from well

1410 Collected VOC sample using disposable bailer - wasted 3 full bailers of water & used 4th to sample.

L Blackwelder

(23)

This page intentionally left blank

L Blackwelder

(24)

2/8/96 L Blackwelder, L. Thompson

1150 After discharging air for several minutes it stopped! So we lowered pump to within 2 feet of the bottom (~179. feet), began discharging air again

1202 Pump has gone into thermal overload & stopped. We lowered pump to bottom to try again. Same thing happened

1214 Pulled pump & loaded up. Break for lunch

1300 Discuss pump problem with Greg Underberg. Decide to install check valve in the tubing to prevent loss of removed water back into well. Ordered a stainless steel valve for tomorrow AM. Meanwhile, we'll bail and sample Well C. It was developed yesterday, so we only need to purge 3 well volumes if parameters stabilize.

L Blackwelder

(25) 2/8/96 L Blackwelder. L Thompson

Well Purge & Sample Record Well C
(MW451)
To ~~Time Vol~~ Casing diameter =
DTW = 55.39'
TD: 67.95'
Well volume Calculation
67.95 - 55.39' = 12.56'
(12.56')(0.16) = 2.00

Time	Vol	T°C	pH	Cond	Turb*	Do	Sal	#bailers
1436		18.1	6.45	0.374	> 999	9.97	0.01 ~~0.00~~	3
1443	3	18.0	6.12	0.342	100	9.77	0.01	
1451	5	17.9	6.08	0.369	146	9.80	0.01	
1457	6	18.0	6.11	0.370	219	9.64	0.01	
1504	8	18.0	6.14	0.379	138	9.67	0.01	

End of data

* Water appears much more turbid than reading indicates.

L Blackwelder

2/8/96 L Blackwelder, L Thompson (26)

1350 Analytical parameters for Well C: VOCs
SVOCs
total metals
Pest/PCBs
Herbicides

1420 Arrive at site of Well C (MW-45) Cool, cloudy 55°F

1430 Begin bailing well using Teflon bailer with app. 1 qt capacity.

1443 The turbidity of the water seems much higher than the reading indicates. Rinsed water checker & changed batteries with no difference.

1510 After bailing 4 well volumes there was no noticeable improvement to turbidity. To collect metals sample we poured water into clean glass jar to let sit for a few minutes so

L Blackwelder

This page intentionally left blank

1510 cont. sediment can settle and we can decant water into appropriate preserved container.

1536 Filled all containers, load up and leave site

1545 Stopped at Dunn Field to transfer purge water to large poly tank.

1600 At site office - unload truck Pack samples. Recorded purge & sample information for Well C on Monitoring Well sampling log and Monitoring Well purging log. Pack samples.

1830 Leave site

2/9/96 - At office 7:10. No key to get in

7:30 Calibrate, w/ Water Checker # 312046 using AutoCal procedure.

L Blackwelder

2/10/96 C Thompson L Blackwelder
Well purging log MW24

Casing diameter = 2"
DTW = 106.43'
TD = 113.64'
Well Volume Calculation
113.64' - 106.43' = 7.21'
(7.21)(0.16) = 1.15 gallons

T	V	Temp	pH	Cond.	Turb	Sal
1350	1	17.7	7.01	0.146	>999	0.00
1352	3	19.2	6.14	0.191	>999	0.00
1355	6	19.9	6.70	0.188	751	0.00
1358	9	19.8	6.66	0.165	345	0.00
1402	12	20.1	6.25	0.183	199	0.00
1405	15	20.0	6.26	0.182	107	0.00
1408	19	20.1	6.13	0.182	67	0.00
1414	22	19.9	6.26	0.181	131	0.00

End of data

L Blackwelder

2/10/96 L Blackwelder C Thompson
1215 Break for lunch
1300 Decon pump. Collect sample containers for MW24. Record information from MW23 on Monitoring Well Purge and Sample log.
1330 At Location of MW-24
Well has no lock
Set up to purge & sample well.
Using Grundfos # 22493
Set pump at 104 feet.
1342 Pump on.
1414 106.53 - DTW
1416 Begin sampling
1420 Pump off - pulled
1430 Sample VOAs w/ teflon disposable bailer.
1435 Pack up and leave site (Replaced lock with a Dolphin lock)
1445 Back at site office. Record purge & sample information on Monitoring well purge & sample log.

L Blackwelder

this page intentionally left blank

L Blackwelder

2/11/96 L Blackwelder, L Thompson

0715 Arrive at site office. Assignment for today is to sample Wells F (MW-50), G (MW-52) and MW-9. No QC samples today.

Well F (MW-50)
  VOC
  SVOC
  Metals (TAL)
  Pest/PCBs
  Herbicides

Well G (MW-52)
  VOC
  SVOC
  Metals (TAL)
  Pest/PCB
  Herbicides
MW-9
  VOCs
  PPM metals
  AL

L Blackwelder

(51)

2/11/96 LBlackwelder, LThompson
Well purge & sample record - Well F

Casing diameter - 2"
DTW = 85.96'
TD = 124.72

Well volume Calculation
124.72 - 85.96 = 38.76
(38.76)(0.16) = 6.20

Time	Vol	T°C	pH	Cond	Turb.	Sal
0835	3	15.9	4.95	0.834	>999	0.03
0839	6	17.7	5.91	0836	670	0 03
0842	9	17.0	6 16	0840	250	0.03
0845	12	17 8	6 20	0.835	81	0.03
0848	15	17.4	6 14	0.830	71	0 03
0852	18	17.8	5.69	0 770	3	0 03
0854	21	18.4	6.01	0 796	10	0.03

End of data

LBlackwelder

(52)

2/11/96 LBlackwelder, LThompson

0743 Calibrate U10 Water Checker #31206 Using Auto Cal Procedure.
Auto Cal Solution Lot #827; Exp. 1-15-98

Calibration Parameters
pH : 3.94
Cond : 4.48
* Turb : ~~00~~ -10 to +20
DO - meter malfunctioning
Turbidity reading fluctuating between -10 and 120

Weather Conditions, Cold, clear, windy, low 40's

0805 Leave for MW-50 (Well F). Set up to purge and sample.
Set pump at 120'
0829 Pump on - Grundfos #22993
0853 DTW = 87.26'
0900 Begin sampling
0902 Pump off. Remove
0908 Bail VOA sample
0911 Complete sampling.
LBlackwelder

2/11/96 L Blackwelder, L Thompson
Well Purge and sample record Well G
(MW 52)

Casing diameter = 2"
DTW = 80.46'
TD = 103.67'
Well Volume Calculation
103.67' - 80.46' = 23.21'
(23.21)(0.16) = 3.7 gal

Time	Vol	T°C	pH	Cond.	Turb	Sal
1011	1	10.7	6.49	0.182	42	0.00
1012	3	14.2	576	0.634	403	0.02
1015	6	16.3	6.12	0.793	449	0.03
1018	9	16.9	6.25	0.802	169	0.03
1021	12	17.0	6.22	0.812	10	0.03
1024	15	17.3	6.16	0.795	10	0.03

End of data

L Blackwelder

2/11/96
L Blackwelder, L Thompson

0915 Leave site of Well F. Return to site office. Decon pump using method described on page 4. Complete well purging and sampling logs.

0955 Leave site office for Well G (MW52)
Set up to purge and sample with Grundfos # 22493

1000 Greg Schaeffer called and asked that we go to MW 39 next rather than MW9.

1009 Pump on. Set at 99 feet.

1024 Begin sampling
DTW = 81.20'

1034 Sample VOAs w/ bailer (teflon) after pulling pump.

1038 Load up & leave site

1040 At site office. Decon pump using method described on page 4. Transfer data onto Well Purge & Sampling forms. Collect information regarding MW 38.

L Blackwelder

2/13/96 L Blackwelder, L Thompson
MW-16 Purge & Sample Record.

Casing diameter =
DTW = 58.22
TD = 74.20
Well volume calculation
74.20 - 58.22 = 15.98
(15.98)(0.16) = 2.55

Time	Vol	T°C	pH	Cond	Turb	Sal.
832	1	14.1	5.50	0.617	427	0.02
837	3	17.0	6.16	0.555	956	0.02
0842	6	18.1	6.62	0.588	157	0.02
846	7.5	17.5	6.62	0.624	973	0.02
850	9	17.4	6.55	0.631	95.1	0.02

End of data

L Blackwelder

---

(74)

2/13/96 L Blackwelder L Thompson
0800 cont. site of MW 16

0816 At site of MW 16 prepare to purge & sample well.

0825 Set Grundfos #22092 at 68 feet

0829 Pump on
0835 Discharge has stopped lowering pump to 68 feet & slow pumping rate.
0850 Pump off - Allow well to recover before sampling

90% recovery = 614 ft.
0857 DTW = 58.17
0858 Pump on collect all but VOAs
0903 Pump off - Pull pump
0905 Collect VOC samples w/ Teflon disposable bailer.
0910 Load truck & leave site.
0920 At site office. Decon Grundfos # 22093 according to procedure on page 4. Transfer information to

308 206

well sampling

Personnel: Dale Jayne / CH2M HILL-ORO
Mike Murable / CH2M HILL-ORO
Weather: Cloudy 45°F. chance of rain
Purpose: Sample wells ~~37, 38~~ DFJ 19,20.

0730 Arrive at B271. Begin getting equipment ready.

0745 Auto calibrate Horbia U-10 Water Quality Checker
SN - 307009

0750 HNu Model # PI 101
SN 301298 zero,
span @ 100ppm w/ Isobutylene
set @ 9.8 & 55 ppm

0755 Begin loading pickup w/ gw sampling supplies
0815 mob to locate wells 19 & 20.
0835 At well MW19. will prepare to sample.
0840 W.L. in MW19 = 87.42' BTOC
TD = 94.36' BTOC
0930 Collect GW sample MW191 at well MW19
- Vocs, Metals
0935 mob back to B271.

Dale J. Jayne 2/7/96

well Sampling

0945 Looking for MW-20.
1025 Located MW-20
W.L = 84.11
TD = 97.92
HNU = 0
1145 collect sample # MW201
-Vocs, metals.
1200 mob back to B271.
1215 Lunch
1250 mob to wal/mart to get supplies.
1345 mob back to B271.
1400 Talk to Greg Unikberg he directs us to MW15.
1440 At well MW15, will prepare to Sample.
1450 HNU = 6.5 ppm
W.L in MW15 = 65.76' BTOC
TD = 80.08
1540 Collect MW151 at MW15.
1550 Empty purge water into polytanks
1600 At B271. MW151 was sampled for Vocs metals, AL
1610 At MW28. will prepare to Sample.
HNU = 0 ppm

Dale J. Jayne 2/7/96

GW sampling

1620 MW28 W.L = 59.10
TD = 68.84
well cap of well MW28 is broken and needs to be replaced.

~~1650 collect Sample # MW-28~~ DFS
~~metals. Put time~~ 1630 DFS on
~~metals sample~~ DFS

1740 ~~Collected~~ purged DFS 5 well volumes and then allowed well to recover for 25 minutes to get a sediment free metals sample.

1745 Collected Sample # MW28 W time $\boxed{1630}$: metals

1800 Back at field office getting samples ready for fedex.

1830 Mob to Hotel. END of daily entries

Dale F. Jayne 2/8/96

Thurs DFS [illegible] 1996 113630.03.EZ(21)
GW Sampling

Personnel: Dale Jayne/CH2M Hill - ORO
Mike Mumb6 /CH2M Hill - ORO
Weather: Cloudy 50°F
Purpose: Sample wells I & H.

0715 At B271, Begin calibrating instrument

0720 Auto calibrate Horiba Water Quality Instrument SN 307009. All parameter calibrated OK. (Exp. date 7/11/97 of Solution)

0728 Calibrate HNu Model PI 101 SN 301298
Zero @ 0ppm
100 ppm Isobutylene
Set span @ 9.8 @ 55ppm

0755 mob to wells H & I.

0805 At well H. need to get tool to open well.

0825 At B271. Schedule changed. Will sample well A & I and MW34.

0845 At well A. will prepare to sample
HNu =
W.L. = 40.78' BTOC
TD = 67.61

Dale F. Jayne 2/8/96

Thus Feb 8, 1996 1126 30.03 ZZ
GW Sampling

0855 Purge volume ≈ 13 gallons. Decide to wait till we can pump the well
Will mob to MW34

0900 At well MW-34
HNU = 0 ppm
W.L = 139.96' BTOC
TD = 157.62' BTOC

0930 Talk w/ Greg Schuster he decided to wait for pump and not to bail well.

0940 Back at B271. Fedex delivered Grundfos controller. Will hook up pump and decon

1100 Deconned pump w/ 300' leader. Will give the pump to Team #2 (Lee and Linda) to sample a deep well.

1115 Deliver pump to Team #2 and pick up their dirty pump. Will decon their pump and use for the rest of the sampling event.

1155 Pump Deconned, mob to lunch.

1220 Back at B271. Will mob to sample well A

1245 At well A. Preparing to sample.

Dale F. Jym 2/8/96

Thus Feb 8, 1996 113630.03 ZZ
Well Sampling

1340 Finish purging well. Will allow well to recover to collect VOCS with a bailer.

1345 Collect sample #'s MW511 and field duplicate # MW511A for VOCs, SVOCs, metals, Pest/PCBs and Herbicides.

1400 mob to B271 to decon.

1435 Finished deconning.

1450 Mob to well I

1500 Stop at Dunn Field and dump purge water into polytanks.

1520 At well I
HNU = 0 ppm
W.L. = 78.94
TD = 93.40

1600 Collect Sample # MW481 for VOCs, SVOCs, Pest/PCBs, Herbicides

1625 mob back to B271

1700 Decon pump and collect rinsate R5005 - VOCs, SVOCs, metals, pest/PCBs, Herbicides, AL.

1730 mob to put water (decon) in polytanks

1800 Packing samples.

Dale F. Jym 2/8/96

Feb 8, 1996 113630.03.ZZ

1830 mob offsite to Hotel.

Dale Jayne 2/8/96

Fri Feb 9, 1996 113630.03.ZZ
GW Sampling

Personnel: Dale Jayne / CH2M Hill - ORO;
mike Mauldle / CH2M Hill - ORO

Weather: Sunny 45°F

Purpose: Groundwater Sampling

0700 Mob to Kmart to pick up field supplies.

0750 At B271 getting equipment ready.

0800 Calibrate HNu Model # PI-101
SN 301298
Zero @ 0ppm
9.8 span @ 55 ppm

0805 Calibrate Horiba Mode U-10
Water Quality Checker
SN 307009
Auto Cal w Solution @ pH = 4.0
0.0 NTU, 4.49 mS
All parameters check out OK.

0830 mob to Dunn field.

0850 At well B (MW46)
HNU = Ø ppm
W.L = 53.37' BTOC
TD = 71.02' BTOC

(34) 113630.03.ZZ
G.W Sampling

0930 Collect sample # MW461
for VOCs, SVOCs, metals (TAL), pest/PCBs
and Herbicides.
0955 Back at B271. Will decon
pump and prepare to sample
well D.
1030 Finished deconning, mob to
Kmart to buy rope.
1130 Lunch
1150 mob to Dunn Field
1200 At well D (MW 49)
HNU = 0 ppm
W.L = 70.06 'BTOC
TD = 89.36 'BTOC
1235 Collect Sample # MW 491
for VOCs, SVOCs, pest/PCBs, Herb,
TAL metals
1300 mob to empty purge water into
polytanks
1320 Back at B271. Deconning pump.
1350 mob to well H
1420 At well H. will prepare to sample
HNU = 1 ppm
W.L = 101.88
TD = 121.28
Dale F. Jam 2/9/96

Fri Feb 4, 1996 113630.03.ZZ
GW Sampling (35)

1515 Collect Sample # MW471
for VOCs, SVOCs, pest/PCBs, Herbicides,
TAL metals. MS/MSD

1550 mob to Dunn Field to empty
purge water.
1620 Back at B271. Transferring decon
water to 55 gall. drums on truck
and will empty into polytanks at
Dunn field.
1705 Back at B271, will pack
samples and ship to FedEx.
1900 Mob back to Hotel. Shipped
6 coolers. Last of daily entries.

Dale F. Jam 2/9/96

(38) Feb 10, 1996 113630.03.ZZ
SAT GW Sampling

1140 At well mw DFJ 22
flvu = 1 ppm
W.L = 96.40' BTOC
TD = 107.22 BTOC

1230 collect Sample # mw221
for VOCs, SVOCs, pest/PCBs, Herb, TAL metals.
at well mw22.

1241- mob to B271,
1300 Lunch

1320 Back at B271, will get ready
to get the pump decomed.

1420 At well MW DFJ 19.
W.L = 87.70
TD = 94.36

1445 Could not pump well, it did
not have enough water. will
have to purge and sample
with a bailer.

1530 Finished Sampling mw 19.
Collected mw19I at 1430
SVOCs, pest/PCBs, Herbicides.

1550 Back at B271 packing
Sample Coolers.

1640 mob to FEDEX to drop
off Samples. END of days entries

DaleT.Dn 2/10/96

Sun Feb 11, 1996 113630.03 ZZ (39)
GW Sampling

Personnel: Dale Cayne / CH2M HILL - DRO
Mike Marobb / CH2M HILL - DRO

Weather: Sunny 40°F

Purpose: Ground water sampling
(mw 38, 14, 29)

0720 Arrive at DDMT field
office

0730 Begin calibrating instruments

- Horiba Water Quality Meter
SN 307009 Model U-10
Calibration using Auto Cal Solution
Exp date: 1/15/98
pH: 4.0 NTU: 0.0 @ 4.49 mS/cm
All parameters - OK

0735 Calibrate HNU SN 301098
w/ 100 ppm Isobutylene
Set @ 0.0 ppm
9.8 span @ 55 ppm

0750 Getting Sample Jars and decoming
pump.

0845 At well mw 38. will prepare
to Sample.
W.L = 134.93 BTOC
TD = 153.98 BTOC
well needs a lock.

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project Groundwater investigation

Project Number 113620.03.ZZ

Sampled by LThompson LBlackwelder

Well Number MW-16

Sample ID Number MW161

Sample Start 2/13/96 0850

Sample End 2/13/96 0905

Original Static Water Level 58.22 ft BTOC

Final Static Water Level 58.17 ft BTOC

Screen interval 58 - 73 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
0850	17.4	6.58	0.430	757		002

DO meter not functioning

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y [✓ N]

Number of repurge volumes

Sampling Method

Submersible Pump ☒ Dedicated Bladder Pump ☐ Bladder Pump ☐ Bailer ☒ SS ☐ Tef ☒ PVC ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Hand Pump ☐ Gas Lift/ Displacement Pump ☐ Other

Sampling Equipment (Make, Model, Etc.) Grundfos #22993 ; Disposable Teflon bailer for VOAs

Sampling Equipment Decontaminated ? [✓ Y] N

If pump or discrete bailer: depth(s) where pump set 72 ft BTOC

Weather Cold, clear, app. 40 °F

Lab Analyses

VOC ☒ SVOC ☒ TAL Metals ☒ Pesticides/PCBs ☒ Herbicides ☒ TPH ☐ Dioxin/Furans ☐

Other

Metals: Filtered ☐ Unfiltered ☒ Both ☐

Field Duplicates Y [✓ N]

Split Sample Y [✓ N]

MS/MSD Y [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project DO4

Project Number 113630.03.~~ZZ~~

Sampled by Dale Jayne/mike Marable

Well Number mw19~~Z~~ ΔFJ

Sample ID Number mw19Z

Sample Start date 2/7/96 time 0930

Sample End date 2/7/96 time 0930

Original Static Water Level 87.42 ft BTOC

Final Static Water Level NA ft BTOC

Screen interval 83.1 – 93.1 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
0855	16.0	5.45	0.195	10	7.82	0.01
0857	15.8	5.88	0.154	999	7.89	0.00
0905	15.8	5.93	0.190	999	7.86	0.00
0912	15.8	5.92	0.201	999	7.86	0.00

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y / [✓ N]

Number of repurge volumes NA

Sampling Method

Submersible Pump

Dedicated Bladder Pump

Bladder Pump

Bailer X

SS ☐ Teflon ☒ PVC ☐

Centrifugal Pump ☐

Peristaltic Pump ☐

Hand Pump ☐

Gas Lift/Displacement Pump ☐

Other

Sampling Equipment (Make, Model, Etc.) Disposable Teflon Bailer

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer, depth(s) where pump set NA ft BTOC

Weather Windy 45 °F

Lab Analyses

VOC ☒ SVOC Metals ☒ Pesticides/PCBs ☐ Herbicides ☐ TPH ☐ Dioxin/Furans ☐

Other

Metals: Filtered Unfiltered ☐ Both ☐

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD 0

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project D04

Project Number 113630.03.ZZ

Sampled by Dale Jaque / Mike Mirabile

Well Number MW19

Sample ID Number MW191

Sample Start date 2/10/96 time 2

Sample End date 2/10/96 time

Original Static Water Level 87.70 ft BTOC

Final Static Water Level NA ft BTOC

Screen interval 83.1 – 93.1 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1606	17.8	6.25	0.228	715	9.60	0.00

Are parameters 20% of purge values? [✓ Y] / N

Repurge? Y / [✓ N]

Number of repurge volumes

Sampling Method

Submersible Pump ☐ Dedicated Bladder Pump ☐ Bladder Pump ☐ Bailer ☒ SS ☐ Teflon ☒ PVC ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Hand Pump ☐ Gas Lift/ Displacement Pump ☐ Other

Sampling Equipment (Make, Model, Etc.) Disposable Teflon Bailer

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer, depth(s) where pump set NA ft BTOC

Weather Sunny 55 °F

Lab Analyses

VOC ☐ SVOC ☒ Metals ☐ Pesticides/PCBs ☒ Herbicides ☒ TPH ☐ Dioxin/Furans ☐

Other

Metals: Filtered ☐ Unfiltered ☐ Both ☐

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DOMT

Well Number MW-24

Site/Project Groundwater investigation

Sample ID Number MW241

Project Number 113630.C3.ZZ

Sample Start date 2/10/96 time 1415

Sampled by L Blackwelder, J Thompson

Sample End date 2/10/96 time 1430

Original Static Water Level 106.43' ft BTOC

Final Static Water Level 106.53 ft BTOC

Screen Interval 97 – 112 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1414	19.9	6.26	0.181	131	–	0.00

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y / [✓ N]

Number of repurge volumes

Sampling Method

Submersible Pump X Dedicated Bladder Pump Bladder Pump __ Bailer X SS __ Tef X PVC __ Centrifugal Pump __ Peristaltic Pump __ Hand Pump __ Gas Lift/Displacement Pump __ Other __

Sampling Equipment (Make, Model, Etc.) Grundfos # 22493 disposable Teflon bailer

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer; depth(s) where pump set 104 ft BTOC

Weather Cool cloudy breezy app 60

Lab Analyses

VOC X SVOC X TAL Metals X Pesticides/PCBs X Herbicides X TPH __ Dioxin/Furans __

Other

Metals: Filtered Unfiltered X Both __

Field Duplicates [✓ Y] / N

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project DOY

Project Number 115630.03.ZZ

Sampled by Dale Jayne/mike marable

Well Number MW Z8

Sample ID Number MW Z8Z

Sample Start date 2/7/96 time 1630

Sample End date 7/7/96 time 1630

Original Static Water Level 59.10 ft BTOC

Final Static Water Level NA ft BTOC

Screen Interval 54.3 - 69.3 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1628	16.0	5.65	0.187	999	8.11	0.00
1631	16.1	5.78	0.172	999	8.17	0.00
1639	15.4	5.81	0.1777	999	8.20	0.00
1645	15.8	5.84	0.181	999	8.27	0.00
1652	15.9	5.76	0.186	999	8.11	0.00
1657	16.0	5.67	0.184	999	8.04	0.00

Are parameters 20% of purge values? [✓ Y] / N

Repurge? Y / [✓ N]

Number of repurge volumes NA

Sampling Method

Submersible Pump

Dedicated Bladder Pump _

Bladder Pump _

Bailer X

SS _ Teflon X PVC _

Centrifugal Pump _

Peristaltic Pump _

Hand Pump _

Gas Lift/Displacement Pump _

Other _

Sampling Equipment (Make, Model, Etc.) Disposable Teflon Bailer

Sampling Equipment Decontaminated? [✓ Y] / N

If pump or discrete bailer; depth(s) where pump set NA ft BTOC

Weather windy 45 °F

Lab Analyses

VOC SVOC Metals X Pesticides/PCBs _ Herbicides _ TPH _ Dioxin/Furans _

Other

Metals Filtered Unfiltered X Both _

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Well Number MW-30

Site/Project Groundwater Investigation

Sample ID Number MW301

Project Number 113630.C2.ZZ

Sample Start date 2/7/96 time 1356

Sampled by L Thompson L Blackwelder

Sample End date 2/7/96 time 1402

Original Static Water Level 45.53 ft BTOC

Final Static Water Level ______ ft BTOC

Screen Interval 39 - 59 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1321	14	466	0293	>997	9.13	0.01
1324	16.2	5.80	0.249	>999	8.07	0.00
1328	16.6	6.37	0.275	879	7.92	0.01
1333	17.2	6.38	0.270	220	9.11	0.01
1337	17.2	6.66	0.275	186	8.07	0.01
1346	17.4	6.54	0.274	120	8.04	0.01
1350	17.4	6.64	0.278	57	8.01	0.01
1354	17.5	6.65	0.276	35	8.03	0.01

Sampled directly after purgi.

Are parameters 20% of purge values? Y / N

Repurge? Y / [✓ N]

Number of repurge volumes ______

Sampling Method

Submersible Pump ✓ Dedicated Bladder Pump Bladder Pump Bailer ✓ SS Tef PVC Centrifugal Pump Peristaltic Pump Hand Pump Gas Lift/ Displacement Pump Other

Sampling Equipment (Make, Model, Etc.) Grundfos # HS15077, disposable teflon bailer

Sampling Equipment Decontaminated? [✓ Y] / N

If pump or discrete bailer, depth(s) where pump set 54 ft BTOC

Weather Cloudy, breezy, app 50 °F

Lab Analyses

VOC ✓ SVOC ✓ Metals ✓ Pesticides/PCBs Herbicides TPH Dioxin/Furans

Other ______

Metals: Filtered Unfiltered ✓ Both

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments ______

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMJ

Well Number MW30

Site/Project Groundwater Investigation

Sample ID Number MW301

Project Number 113630.03.ZZ

Sample Start date 2/10/96 time 1245

Sampled by Bob Trebbly, Jeff Dillenae

Sample End date 2/10/96 time 1248

Original Static Water Level 45.75 ft BTOC

Final Static Water Level 45.60 ft BTOC

Screen interval 39' - 59' ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1248	18.6	5.82	282	26	7.64	0.01

Are parameters 20% of purge values? [✓ Y] N

Repurge? [✓ Y] / N

Number of repurge volumes 5

Sampling Method

Submersible Pump [✓] Dedicated Bladder Pump Bladder Pump Bailer SS Tef PVC Centrifugal Pump Peristaltic Pump Hand Pump Gas Lift/ Displacement Pump Other

Sampling Equipment (Make, Model, Etc.) Grundfos 2" Submersible Pump

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer: depth(s) where pump set 54' ft BTOC

Weather Overcast, Fog, Mist, 55°F

Lab Analyses

VOC SVOC Metals Pesticides/PCBs [✓] Herbicides [✓] TPH Dioxin/Furans

Other

Metals: Filtered Unfiltered Both:

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments Other Analytes Previously Collected on 2/7/96

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation ODMT

Site/Project Groundwater Investigation

Project Number 113630.03.ZZ

Sampled by L. Thompson, L. Blackwelder

Well Number Well C (MW-45)

Sample ID Number MW451

Sample Start date 2/8/96 time 1510

Sample End date 2/8/96 time 1530

Original Static Water Level 55.39 ft BTOC

Final Static Water Level ______ ft BTOC

Screen interval 58 - 68 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
See Monitoring Well Purging Log for						
table of parameters. Sample collected						
immediately following purging.						

Are parameters 20% of purge values? Y / N

Repurge? Y / [✓ N]

Number of repurge volumes ______

Sampling Method

Submersible Pump ☐ Dedicated Bladder Pump ☐ Bladder Pump ☐ Bailer ☒ SS ☐ Tef ☒ PVC ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Hand Pump ☐ Gas Lift/Displacement Pump ☐ Other ______

Sampling Equipment (Make, Model, Etc.) Teflon bailer - app 1 qt capacity

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer: depth(s) where pump set NA ft BTOC

Weather Cloudy, breezy, app 55 °F

Lab Analyses

VOC ☒ SVOC ☒ Metals ☒ Pesticides/PCBs ☒ Herbicides ☒ TPH ☐ Dioxin/Furans ☐

Other ______

Metals: Filtered ☐ Unfiltered ☒ Both ☐

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments ______

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project DOU

Project Number 113630.03.ZZ

Sampled by Dale Jenn / mike Mcnabb

Well Number MW46 (81)

Sample ID Number MW46

Sample Start date 2/9/96 time 0930

Sample End date 2/9/96 time 0930

Original Static Water Level 53.37 ft BTOC

Final Static Water Level NA ft BTOC

Screen interval 62 - 72 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
0906	14.7	5.75	0.111	257	9.27	0.00
0908	16.0	5.92	0.146	577	8.50	0.00
0914	17.2	5.99	0.235	10	8.32	0.00
0919	17.5	6.05	0.266	10	8.35	0.01

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y / [✓ N]

Number of repurge volumes NA

Sampling Method

Submersible Pump X

Dedicated Bladder Pump _

Bladder Pump _

Bailer X SS: ___ Tef: X PVC: ___

Centrifugal Pump _

Peristaltic Pump _

Hand Pump _

Gas Lift/ Displacement Pump _

Other ___

Sampling Equipment (Make, Model, Etc.) Grundfos Submersible Pump and Disposable Teflon Bailer for VOCs.

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer: depth(s) where pump set 60' ft BTOC

Weather Sunny 50 °F

Lab Analyses

VOC X SVOC X Metals X Pesticides/PCBs X Herbicides X TPH ___ Dioxin/Furans ___

Other ___

Metals: Filtered _ Unfiltered X Both ___

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD [✓ Y] / N

Comments ___

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project DO4

Project Number 13630.03.ZZ

Sampled by Dale Jayne / Mike Marable

Well Number MW 48 (I)

Sample ID Number MW 48 I

Sample Start date 2/8/96 time

Sample End date 2/8/96 time

Original Static Water Level 78.94 ft BTOC

Final Static Water Level NA ft BTOC

Screen Interval 84 - 94 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1543	16.5	6.76	0.110	1.76	9.59	0.00
1545	17.4	6.33	0.212	264	9.12	0.00
1547	18.8	6.73	0.244	10	8.51	0.00
1553	19.1	6.11	0.248	36	8.30	0.00
1555	19.2	6.32	0.257	10	8.26	0.00

Are parameters 20% of purge values? [✓ Y] / N

Recharge? Y / [✓ N]

Number of recharge volumes NA

Sampling Method

[✓ Submersible Pump] Dedicated Bladder Pump __ Bladder Pump __ [✓ Bailer] SS __ [✓ Tef] PVC __ Centrifugal Pump __ Peristaltic Pump __ Hand Pump __ Gas Lift/Displacement Pump __ Other __

Sampling Equipment (Make, Model, Etc.) Grund FOS Submersible Pump and Disposable Teflon Bailer for VOCs

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer: depth(s) where pump set 90' ft BTOC

Weather cloudy 55 °F

Lab Analyses

[✓ VOC] [✓ SVOC] [✓ Metals] [✓ Pesticides/PCBs] [✓ Herbicides] TPH __ Dioxin/Furans __

Other

Metals: Filtered __ [✓ Unfiltered] Both __

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project D04

Project Number 113630.03.ZZ

Sampled by Dale Jayne / mike Morable

Well Number MW 49 (D)

Sample ID Number MW491

Sample Start date 2/9/96 time 1235

Sample End date 2/9/96 time 1235

Original Static Water Level 70.06 ft BTOC

Final Static Water Level NA ft BTOC

Screen Interval 80 – 90 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1216	17.1	6.07	0.105	201	9.23	0.00
1222	18.9	5.82	0.213	31	8.66	0.00
1226	19.1	5.95	0.222	10	8.58	0.00
1230	19.1	5.91	0.222	10	8.73	0.00
1234	18.9	5.90	0.222	10	8.92	0.00
			0.222			

Are parameters 20% of purge values? [✓ Y] / N

Repurge? Y / [✓ N]

Number of repurge volumes NA

Sampling Method

Submersible Pump ☒ Dedicated Bladder Pump ☐ Bladder Pump ☐ Bailer ☒ SS ☐ Tef ☒ PVC ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Hand Pump ☐ Gas Lift/Displacement Pump ☐ Other ☐

Sampling Equipment (Make, Model, Etc.) Grundfos submersible Pump and Disposable Teflon Bailer for VOCs

Sampling Equipment Decontaminated? [✓ Y] / N

If pump or discrete bailer: depth(s) where pump set 86' ft BTOC

Weather Sunny 55 °F

Lab Analyses

VOC ☒ SVOC ☒ Metals ☒ Pesticides/PCBs ☒ Herbicides ☒ TPH ☐ Dioxin/Furans ☐

Other

Metals: Filtered ☐ Unfiltered ☒ Both ☐

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

308 224

Installation DDMT

Site/Project 113630.03.ZZ

Project Number → Groundwater Investigation

Sampled by L Blackwelder, L Thompson

Well Number MC11 = (MW-50)

Sample ID Number MMW501

Sample Start date 2/11/96 time 0900

Sample End date 2/11/96 time 0905

Original Static Water Level 85.96 ft BTOC

Final Static Water Level 87.26 ft BTOC

Screen Interval 114 – 124 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
0854	18.4	6.01	0.796	10		0.03

DO meter not functioning

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y [✓ N]

Number of repurge volumes

Sampling Method

Submersible Pump X

Dedicated Bladder Pump

Bladder Pump

Bailer X

SS

Tef X

PVC

Centrifugal Pump

Peristaltic Pump

Hand Pump

Gas Lift/Displacement Pump

Other

Sampling Equipment (Make, Model, Etc.) Grundfos #22993, Teflon bailer for VOCs

Sampling Equipment Decontaminated ? [✓ Y] N

If pump or discrete bailer, depth(s) where pump set 120 ft BTOC

Weather Cold, clear, gusty wind app 45 °F

Lab Analyses

VOC X SVOC X Metals X Pesticides/PCBs X Herbicides X TPH Dioxin/Furans

Other

Metals: Filtered Unfiltered X Both

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments

BTOC = Below Top of Casing (or other measurement reference point)

308 225

CH2M HILL MONITORING WELL SAMPLING LOG

Installation DDMT

Site/Project Groundwater Investigation

Project Number 113630.03.ZZ

Sampled by LThompson LBlackwelder

Well Number Well 6 (MW-52)

Sample ID Number MW521

Sample Start date 2/11/96 time 1024

Sample End date 2/11/96 time 1030

Original Static Water Level 80.46 ft BTOC

Final Static Water Level 81.20 ft BTOC

Screen Interval 94 – 104 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1024	17.3	6.16	0.795	10		0.03

Do meter not functioning

Are parameters 20% of purge values? [✓ Y] / N

Repurge? Y / [✓ N]

Number of repurge volumes ____

Sampling Method

Submersible Pump X Dedicated Bladder Pump Bladder Pump ___ Bailer X SS ___ Tef X PVC ___ Centrifugal Pump ___ Peristaltic Pump ___ Hand Pump ___ Gas Lift/ Displacement Pump ___ Oth

Sampling Equipment (Make, Model, Etc.) Grundfos # 22593, Teflon Bailer

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer, depth(s) where pump set 99 ft BTOC

Weather Clear, cold, breezy, app 45 °C

Lab Analyses

VOC X SVOC X Metals X Pesticides/PCBs X Herbicides X TPH ___ Dioxin/Furans ___

Other ____

Metals: Filtered ___ Unfiltered X Both ___

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD Y / [✓ N]

Comments ____

BTOC = Below Top of Casing (or other measurement reference point)

CH2M HILL MONITORING WELL SAMPLING LOG

308 226

Installation DDMT

Well Number MW53 (Well E)

Site/Project Groundwater Investigation

Sample ID Number MW531

Project Number 113630.03.ZZ

Sample Start date 2/13/96 time 1520

Sampled by Bob Trebble, Jeff Dillomee

Sample End date 2/13/96 time 1600

Original Static Water Level 73.84' ft BTOC

Final Static Water Level 73.60' ft BTOC

Screen Interval 72.5 - 82.5 ft BTOC

Time	Temperature	pH	Conductivity	Turbidity	DO	Salinity
1600	18.1	5.81	364	33	8.75	0.01

Are parameters 20% of purge values? [✓ Y] N

Repurge? Y / [✓ N]

Number of repurge volumes

5 VOLS TOTAL

Sampling Method

Submersible Pump X Dedicated Bladder Pump Bladder Pump ___ Bailer X SS ___ Tel ___ PVC ___ Centrifugal Pump ___ Peristaltic Pump ___ Hand Pump ___ Gas Lift/ Displacement Pump ___ Other ___

Sampling Equipment (Make, Model, Etc.) Grundfos 2" Submersible Pump, Disposable Bailer

Sampling Equipment Decontaminated ? [✓ Y] / N

If pump or discrete bailer, depth(s) where pump set 76.0 ft BTOC

Weather Sunny, Breezy, 60°F

Lab Analyses

VOC X SVOC X TAL Metals X Pesticides/PCBs X Herbicides X TPH ___ Dioxin/Furans ___

Other ___

Metals: Filtered ___ Unfiltered X Both ___

Field Duplicates Y / [✓ N]

Split Sample Y / [✓ N]

MS/MSD [✓ Y] N

Comments Collect 3X the sample for MS/MSD - Collect VOC's using a disposible bailer

BTOC = Below Top of Casing (or other measurement reference point)

TAB

Appendix C

Appendix C

Box and Whisker and Probability Plots for Metals

Appendix C Contents

Appendix C

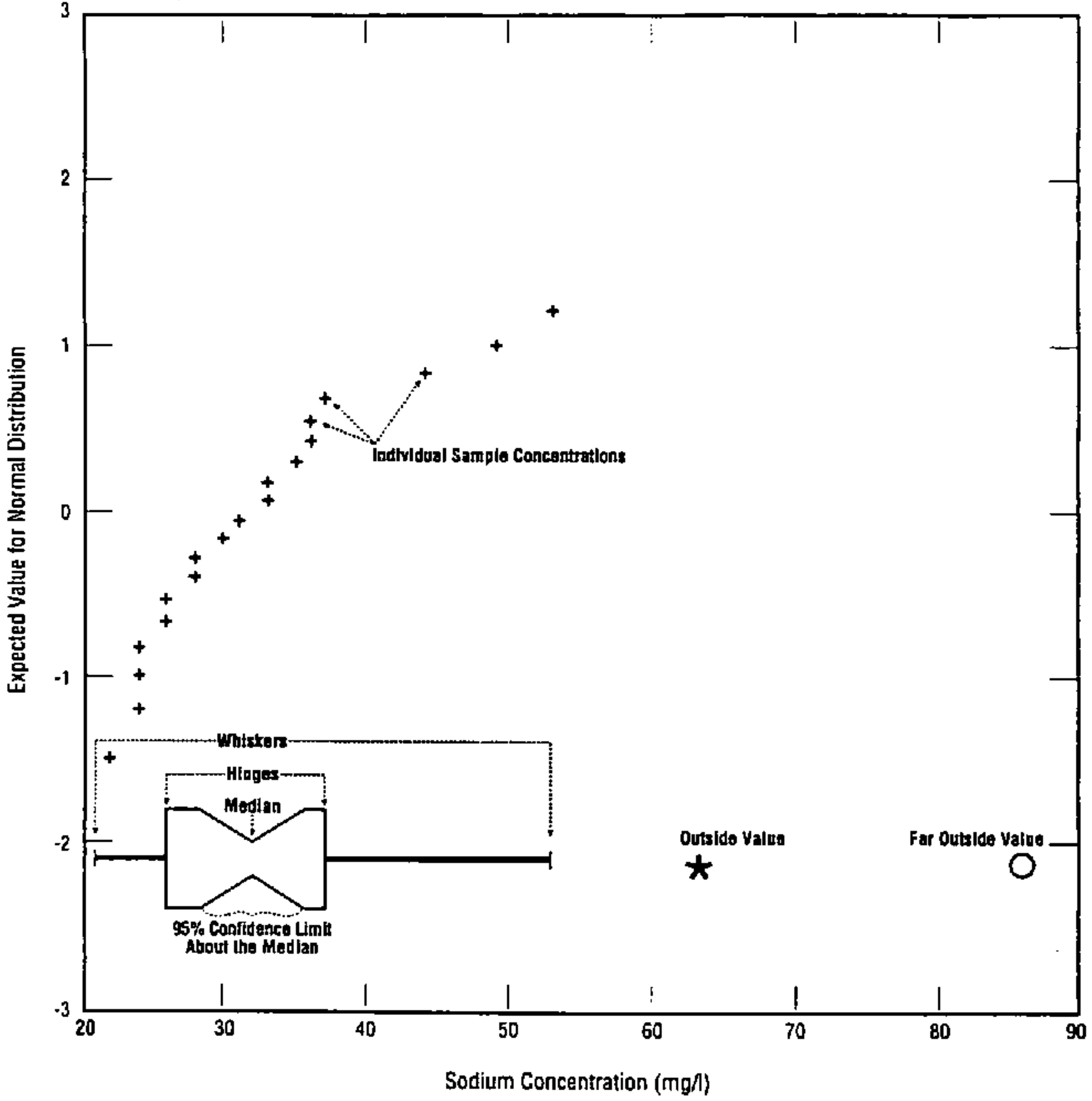
Box and Whisker and Probability Plots for Metals

Both probability and box and whisker plots are presented to represent the distribution of metal constituents in soil and groundwater. The plots do not present rigorous statistics but rather represent a graphical presentation of background data distributions. Plots were presented only for metals because the infrequent detection of organic constituents does not permit meaningful graphic presentation of the data distribution.

Elements of the probability and box and whisker plots are presented in Figure C-1. Probability plots are used to determine how well data fit a theoretical distribution such as the normal or lognormal distribution (Helsel and Hirsch, 1991). The concentration of each metal is converted to standard normal (value minus the sample mean divided by the sample standard deviation) quartiles and plotted against the concentration. If the data are perfectly normally distributed, the data plot will be linear. Departures from normality are indicated by departures of the plotted data distribution from a straight line.

Box and whisker plots are used to provide visual summaries of the center, the variation, and the skewness of the data as well as any data outliers (Helsel and Hirsch, 1991). The hinges of the plot mark the first and the third population quartiles. The "pinched" portion of the plot between the hinges and the median covers the range of the 95 percent confidence limit about the median. The median splits the ordered numbers in half, and the hinges split the remaining halves in half again. The term Hspread is comparable with the interquartile range or midrange. It is the absolute value of the difference between the values of the two hinges (Systat, 1992). The whiskers show the range of values that fall within 1.5 Hspreads of the hinges. Outlier values that exceed or are less than the absolute value of 3 times Hspread from the upper or lower hinge, respectively, are plotted with an open circle. Outlier values between the whisker values and the absolute value of 3 times Hspread from the upper or lower hinge, respectively, are plotted with an asterisk.

Surface water and groundwater are in units of micrograms per liter (µg/L). Soil data are in units of milligrams per kilogram (mg/kg).

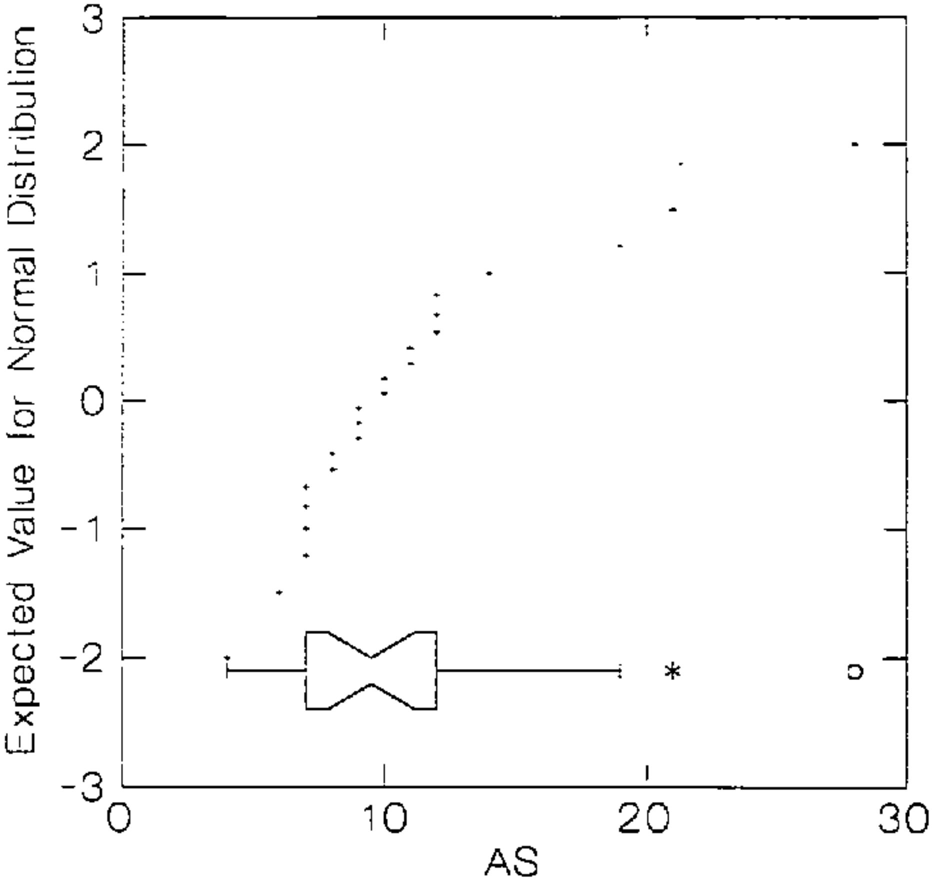


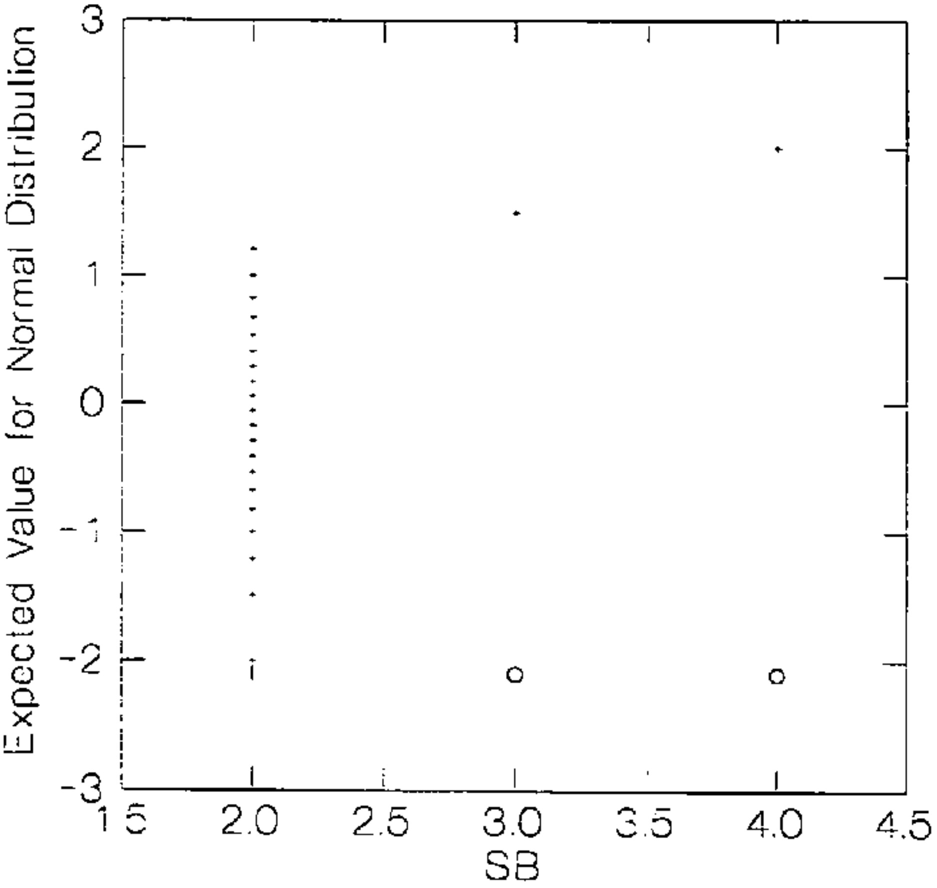
From:
SYSTAT for Windows: Graphics, Version 5 Edition.
Evanston, IL: SYSTAT, Inc. 1992. 636 pp.

Figure C-1
Definition of Box and Whisker Plots
Defense Depot, Memphis, Tennessee

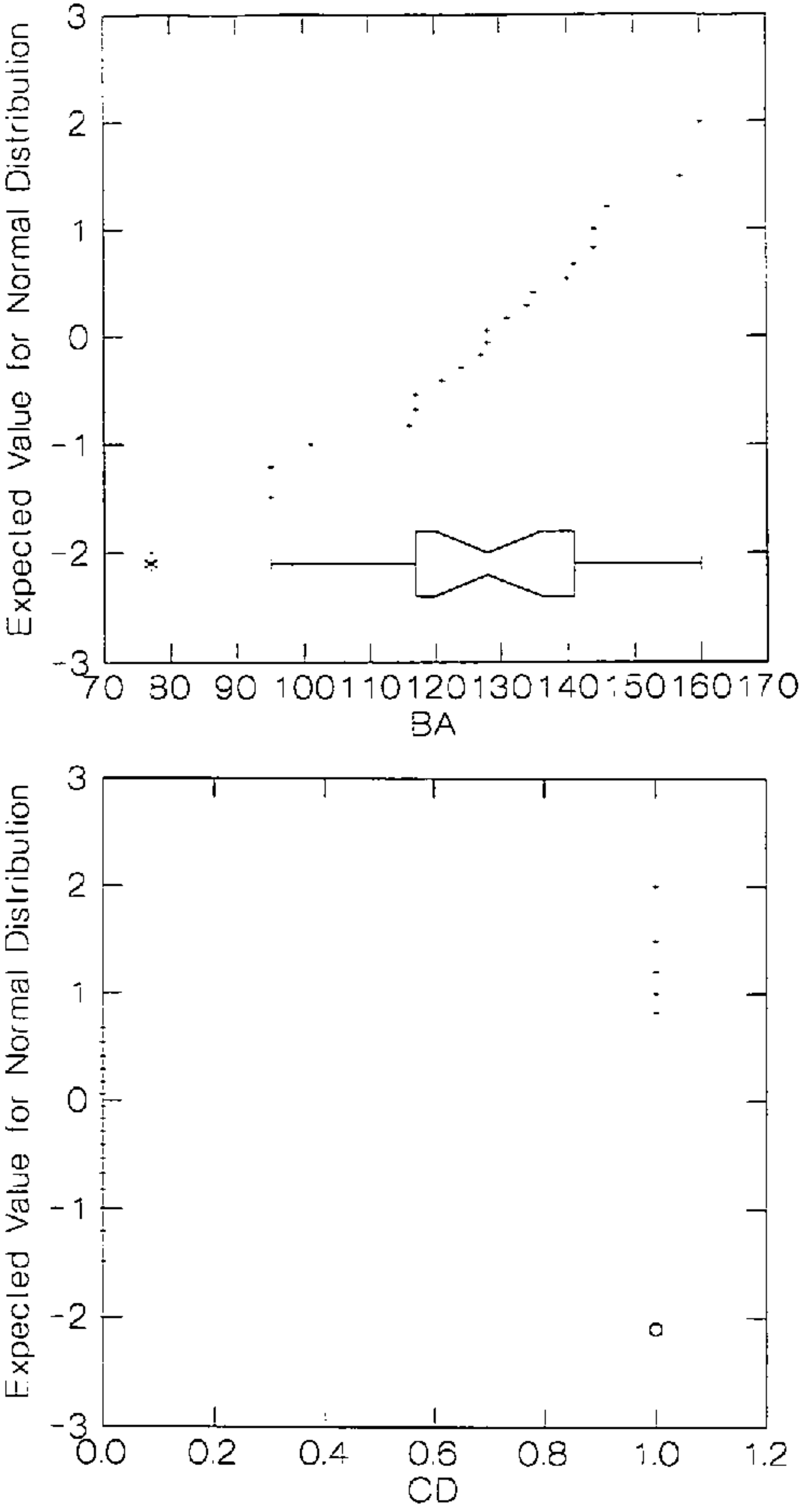
Appendix C-2

All Shallow Soil Locations

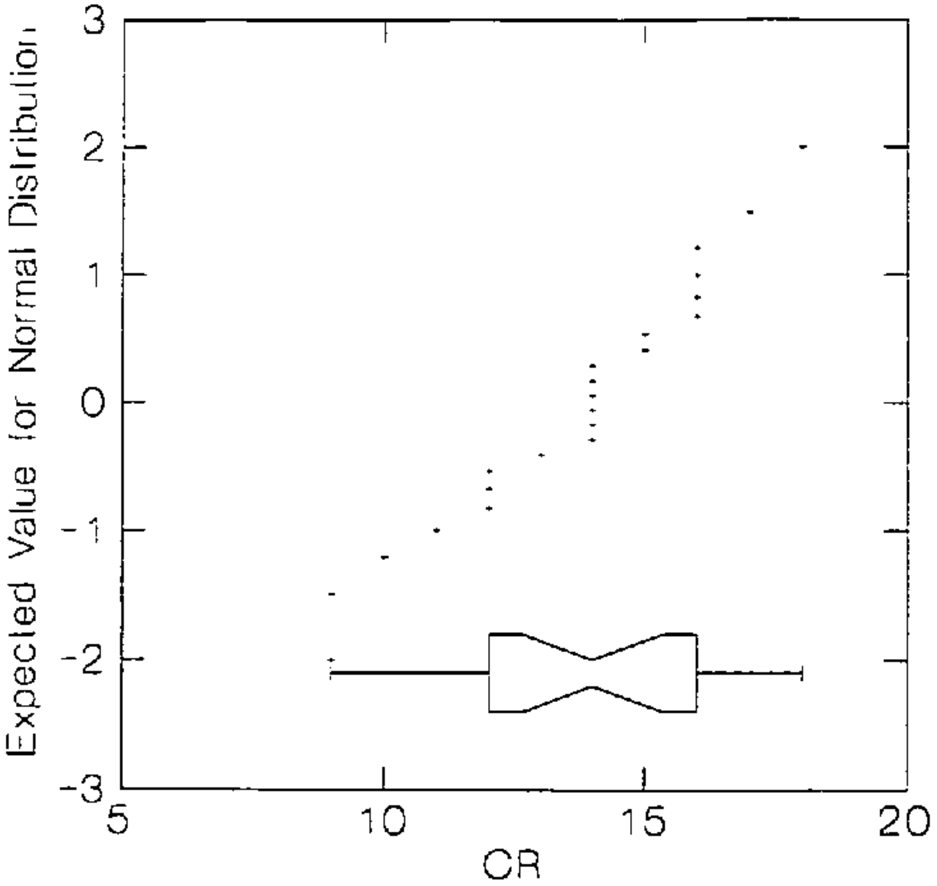


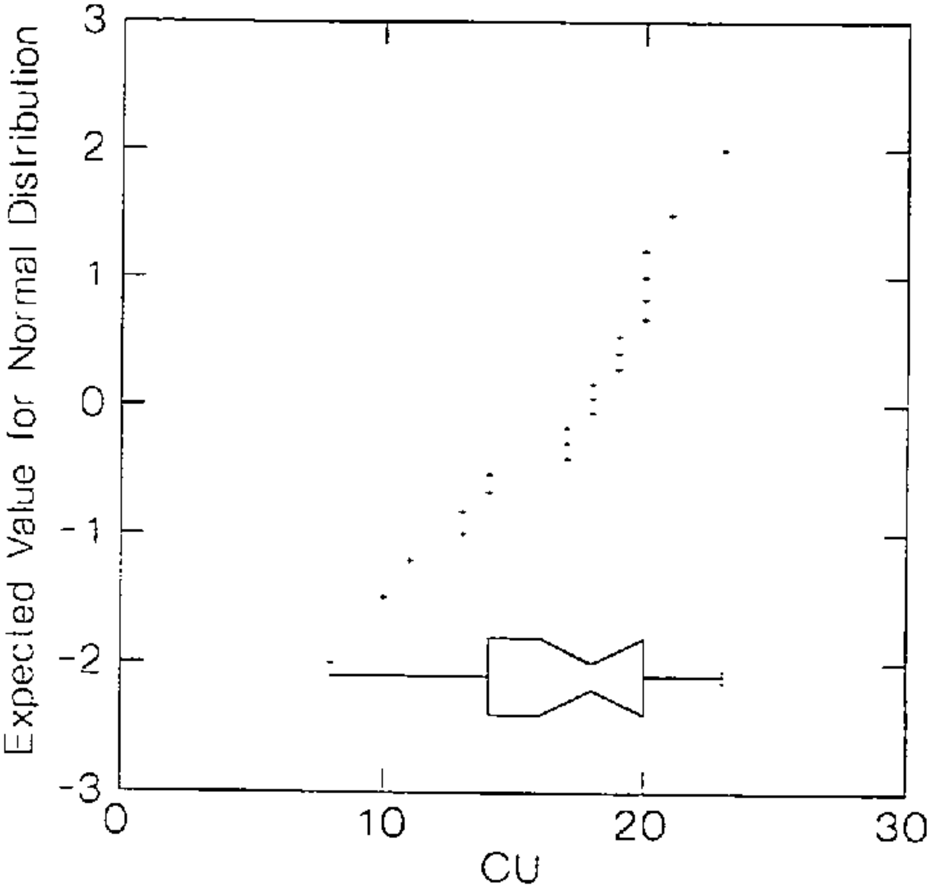


Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

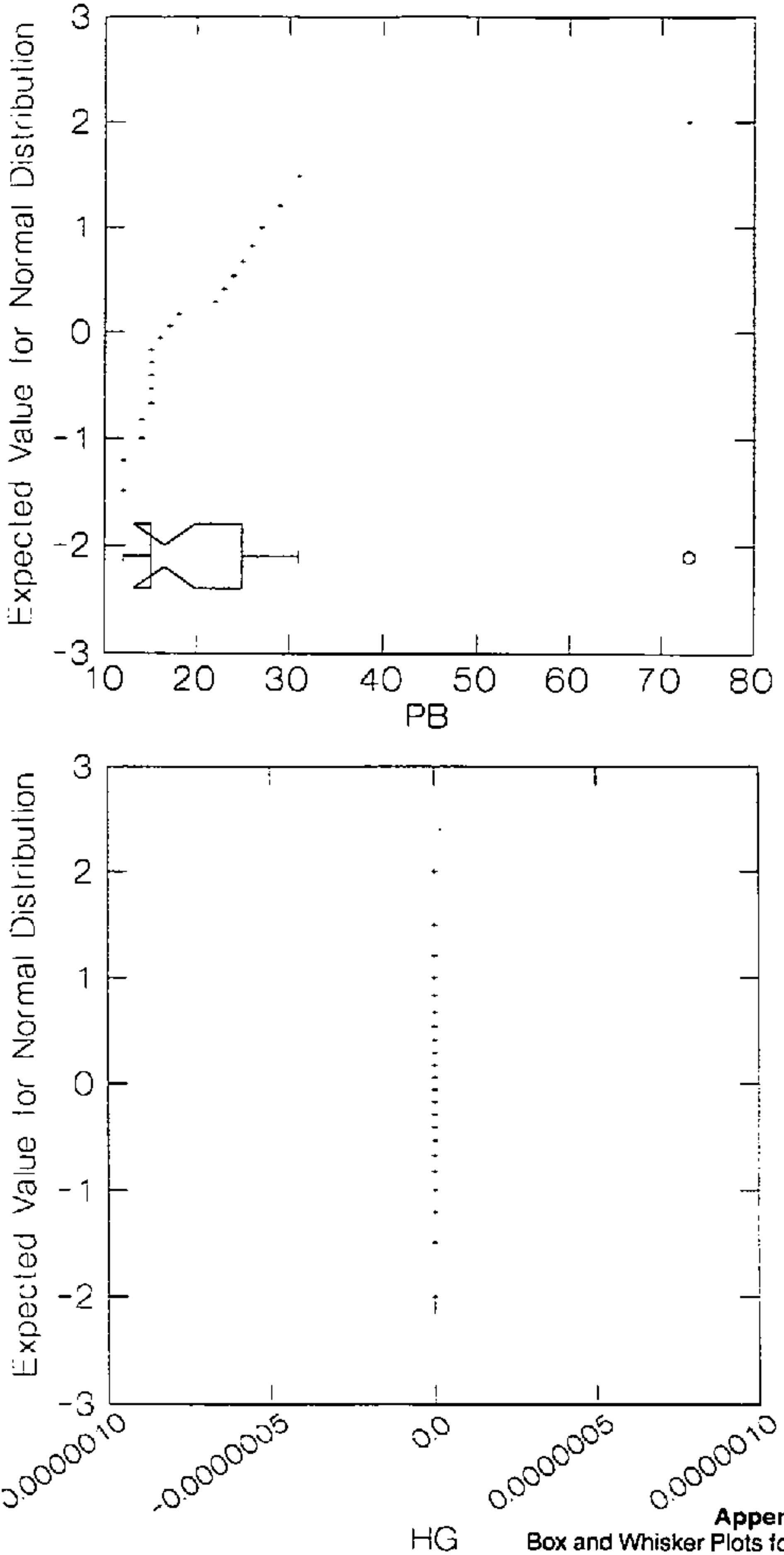


Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations





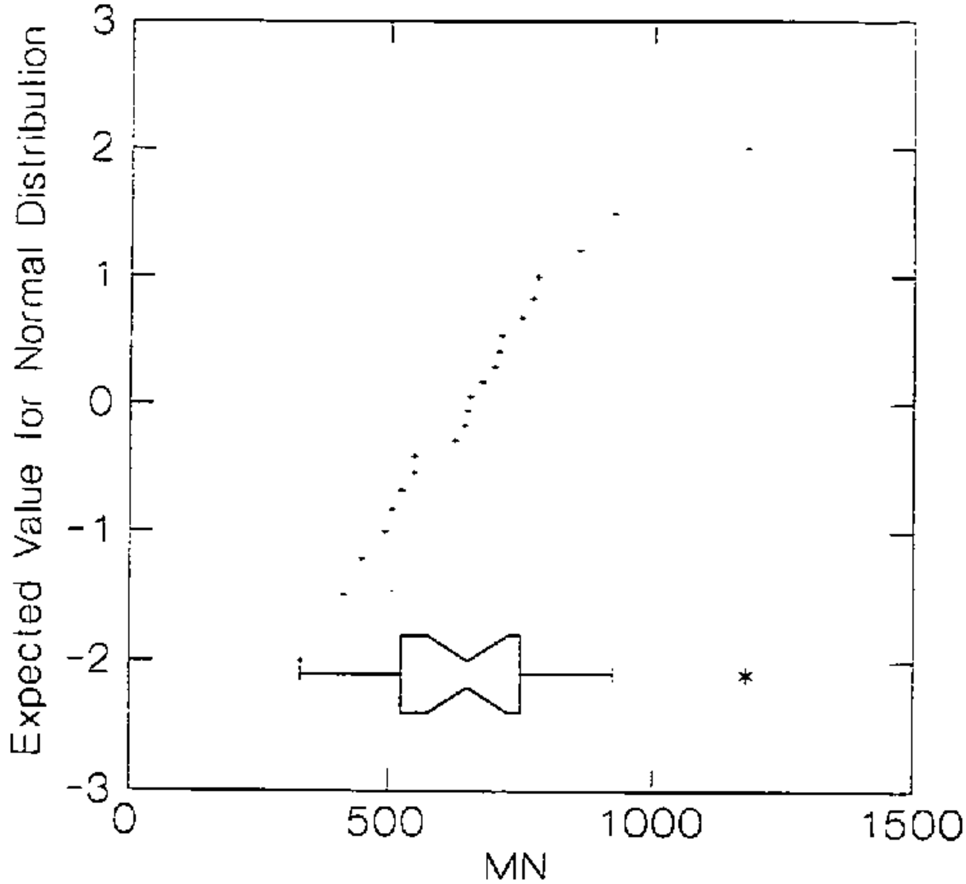
Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

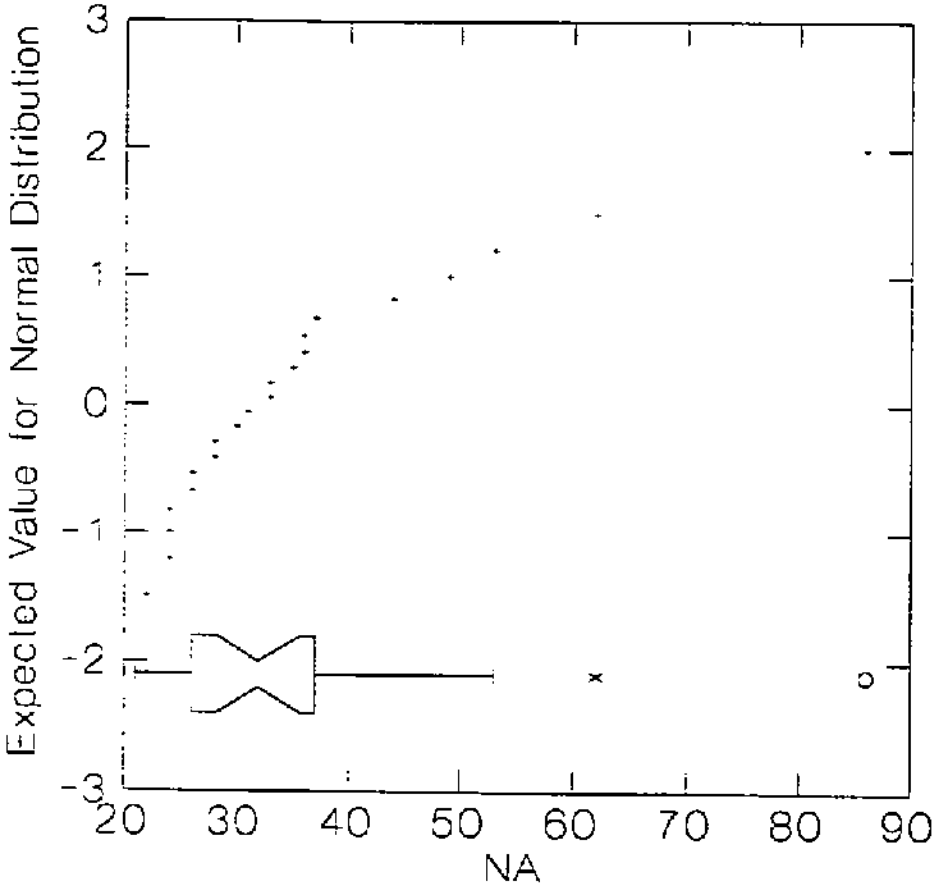


Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

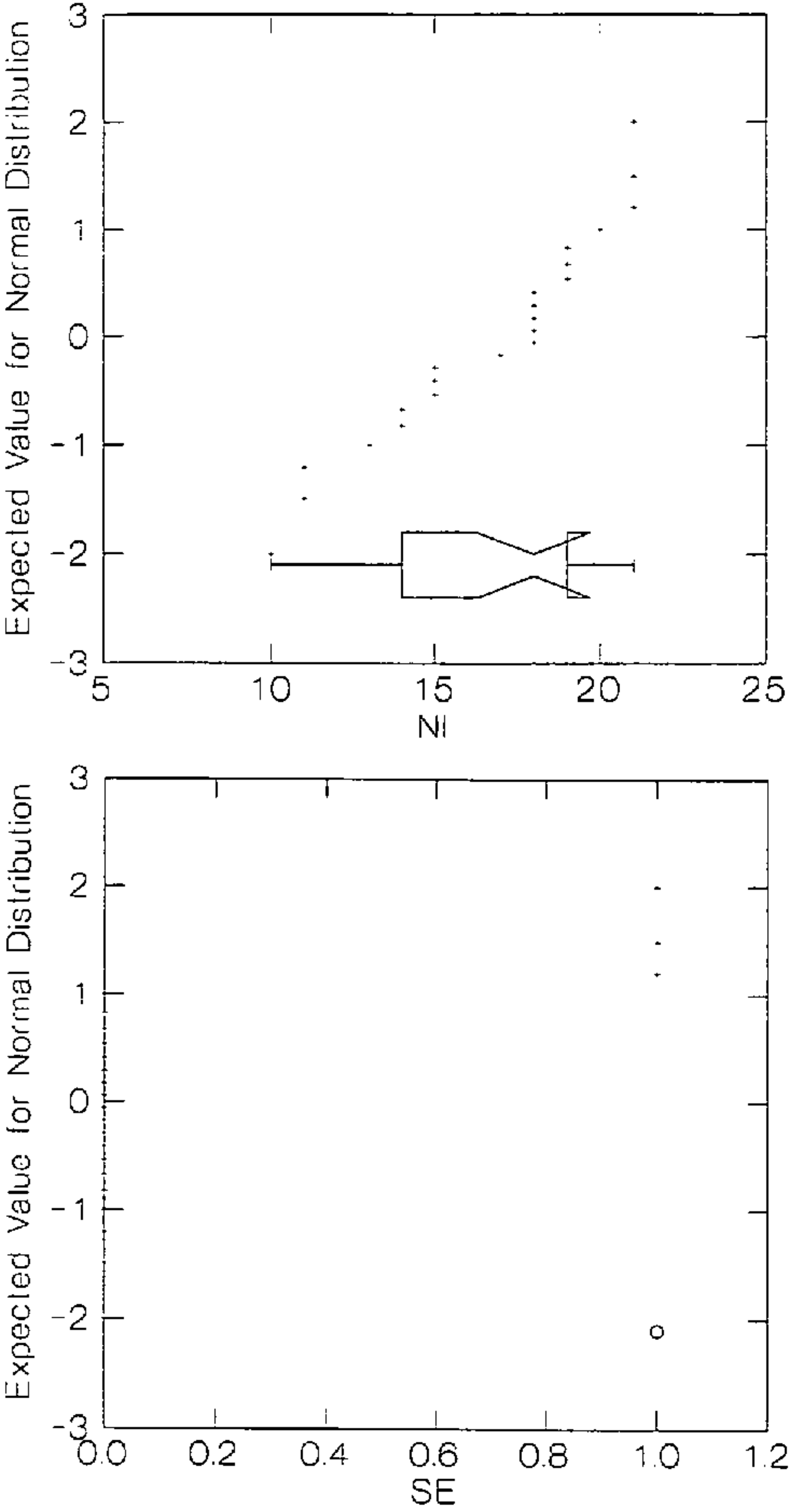
CH2M HILL

C-6

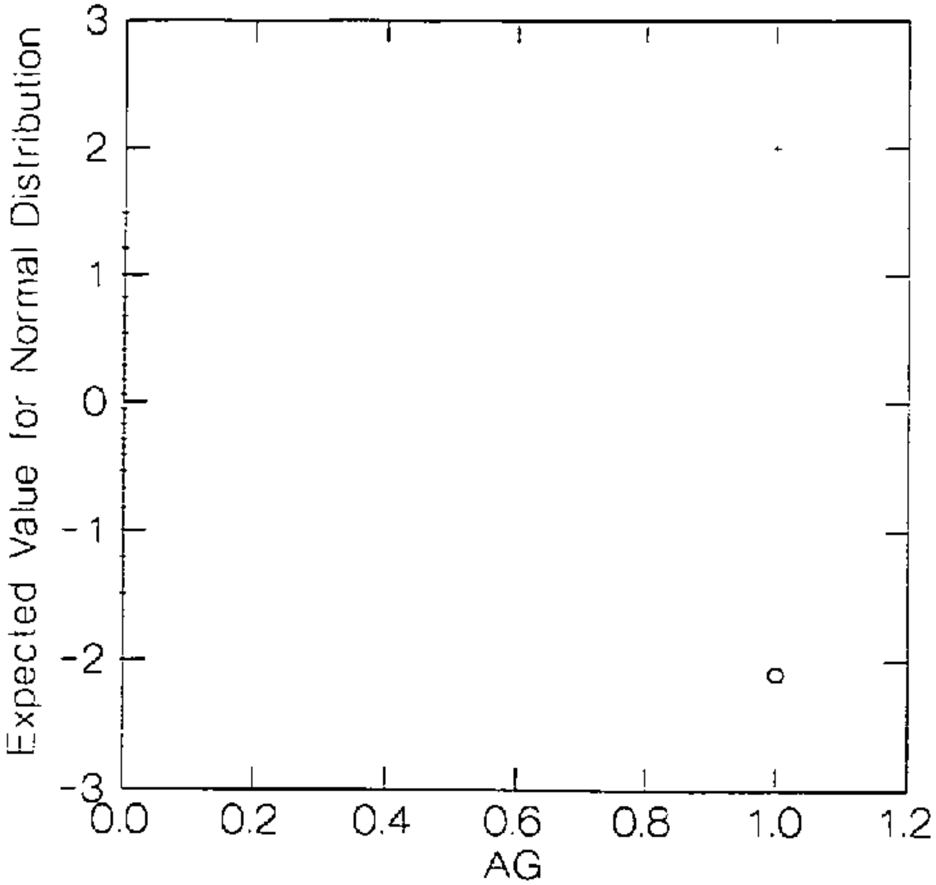


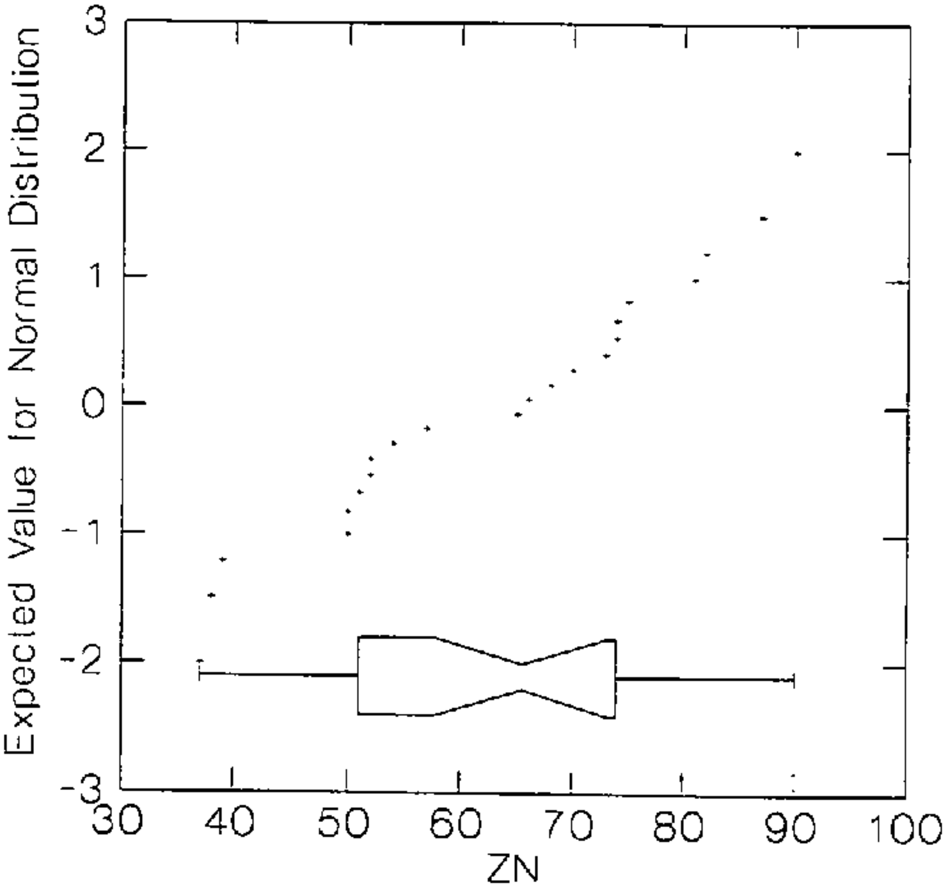


Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

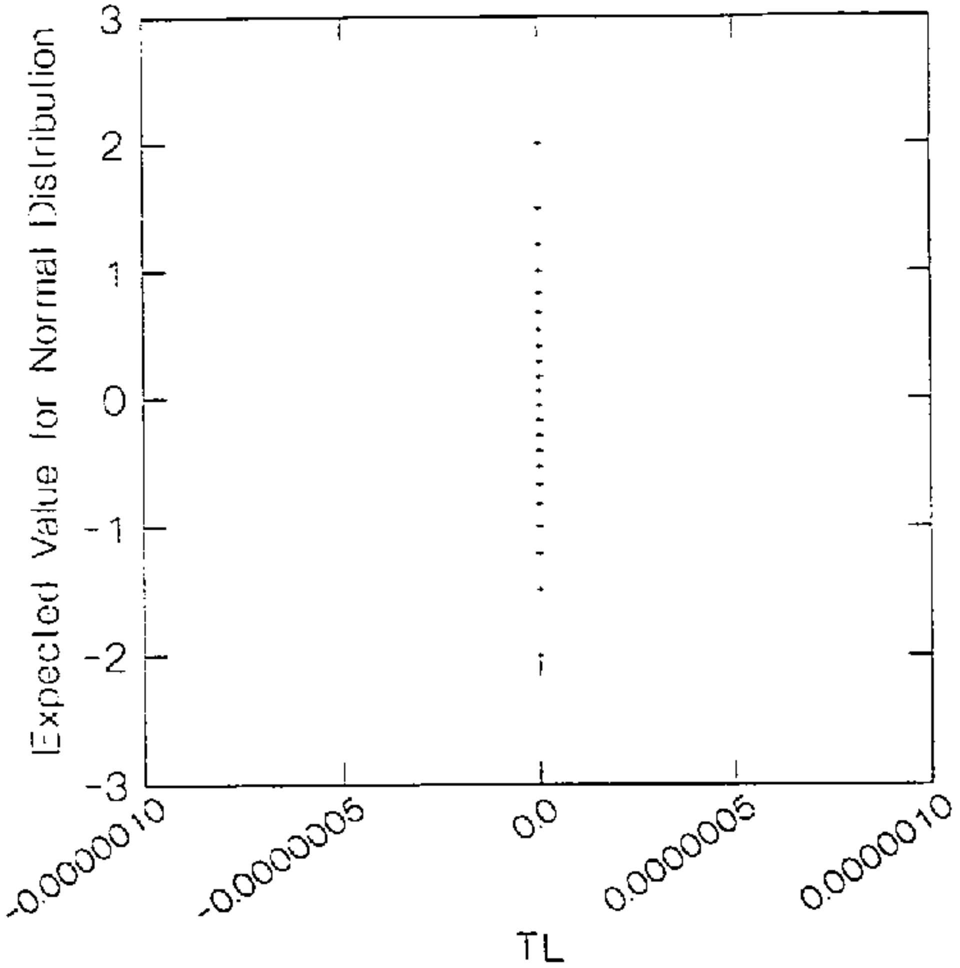


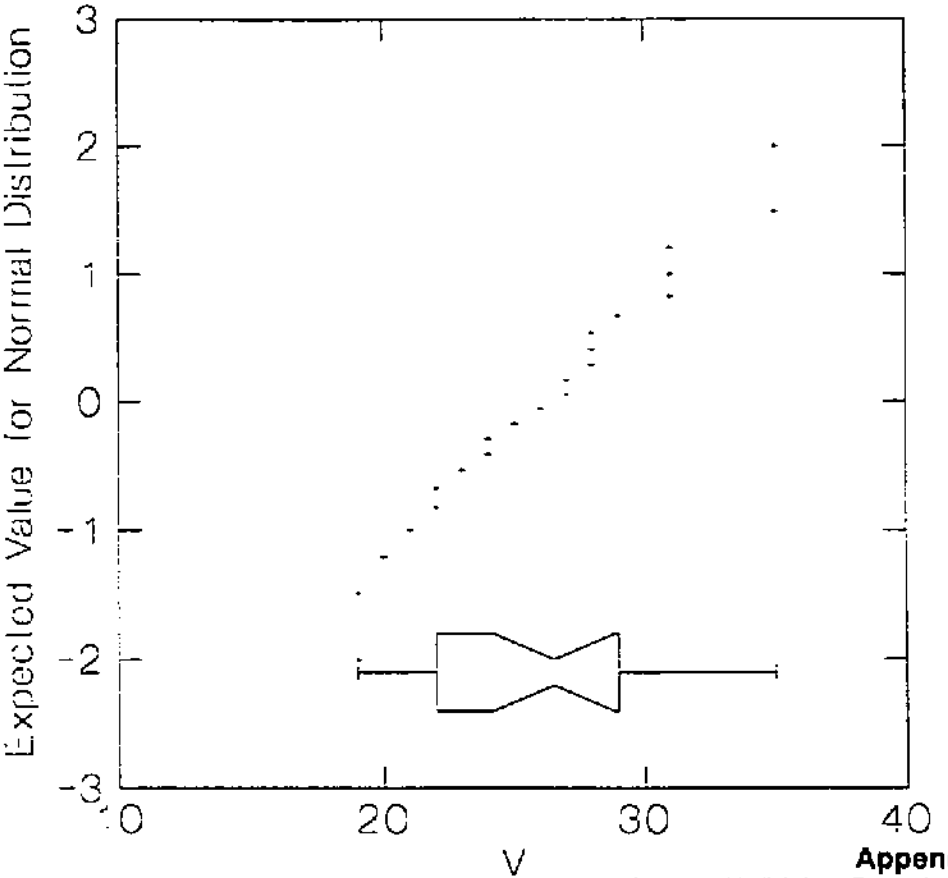
Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations





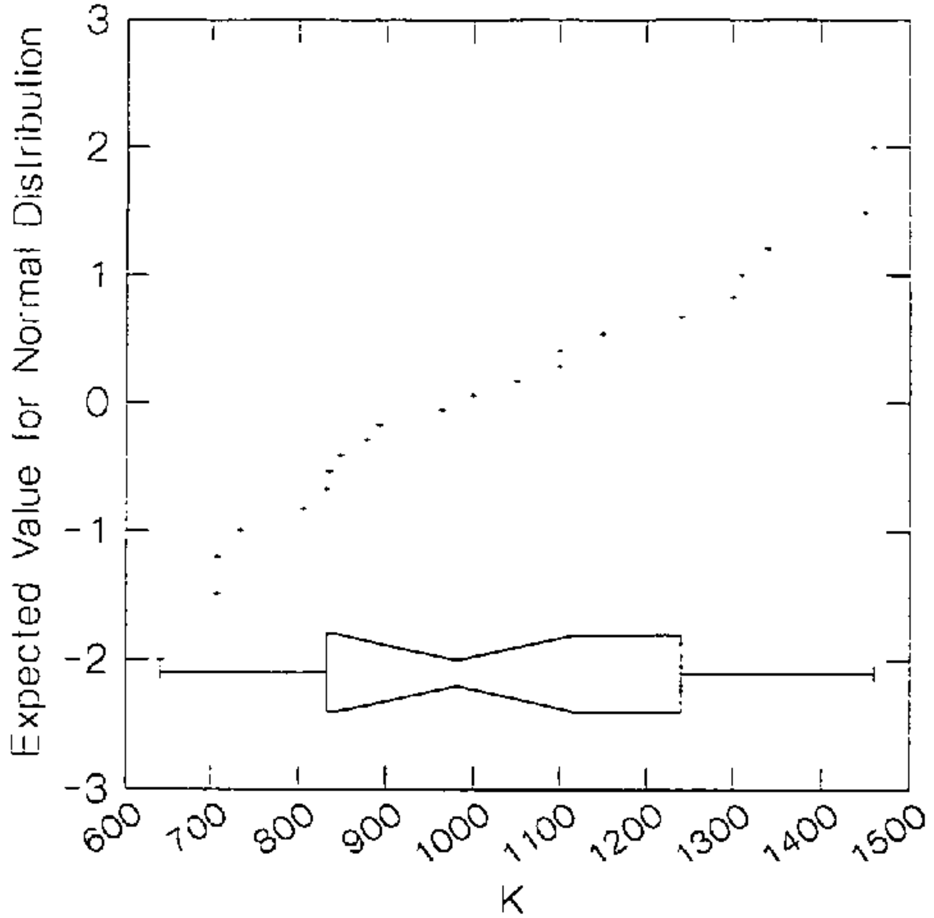
Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

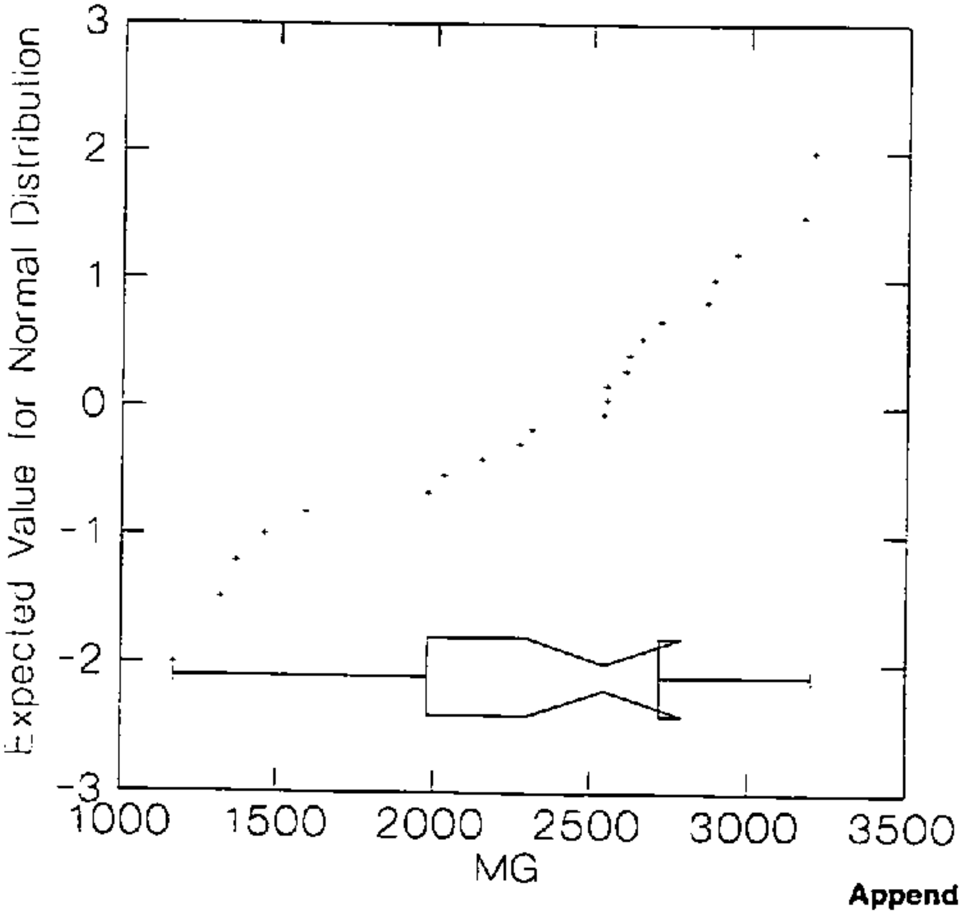




Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

CH2M HILL



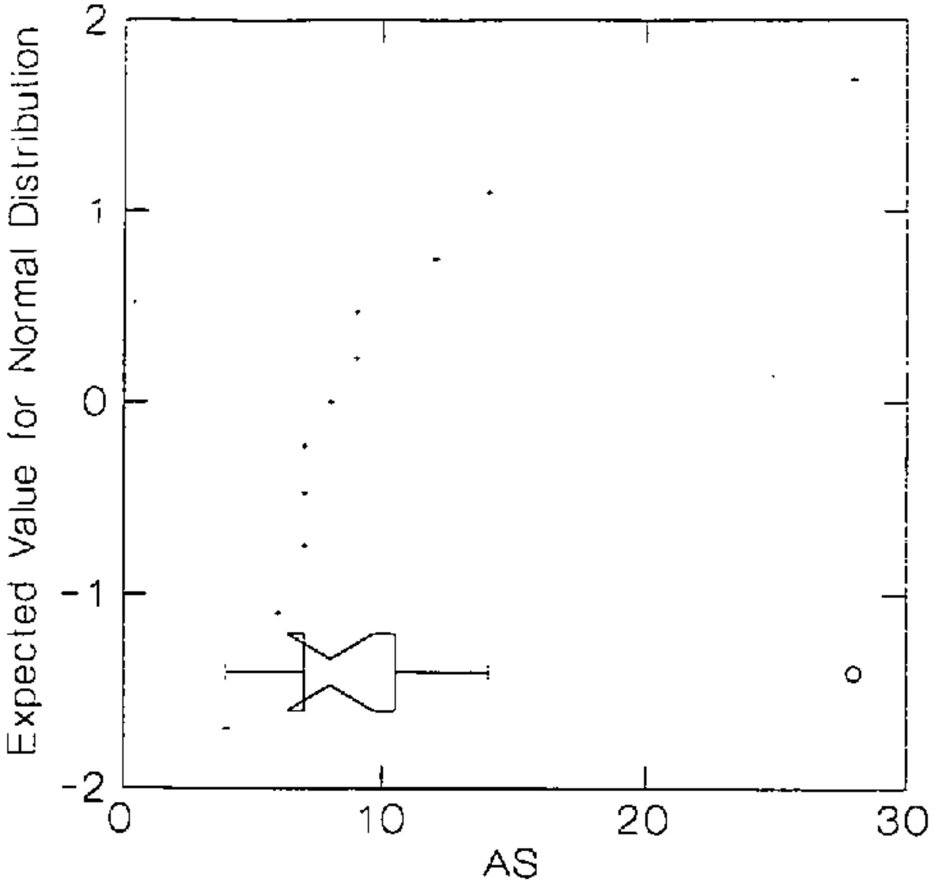


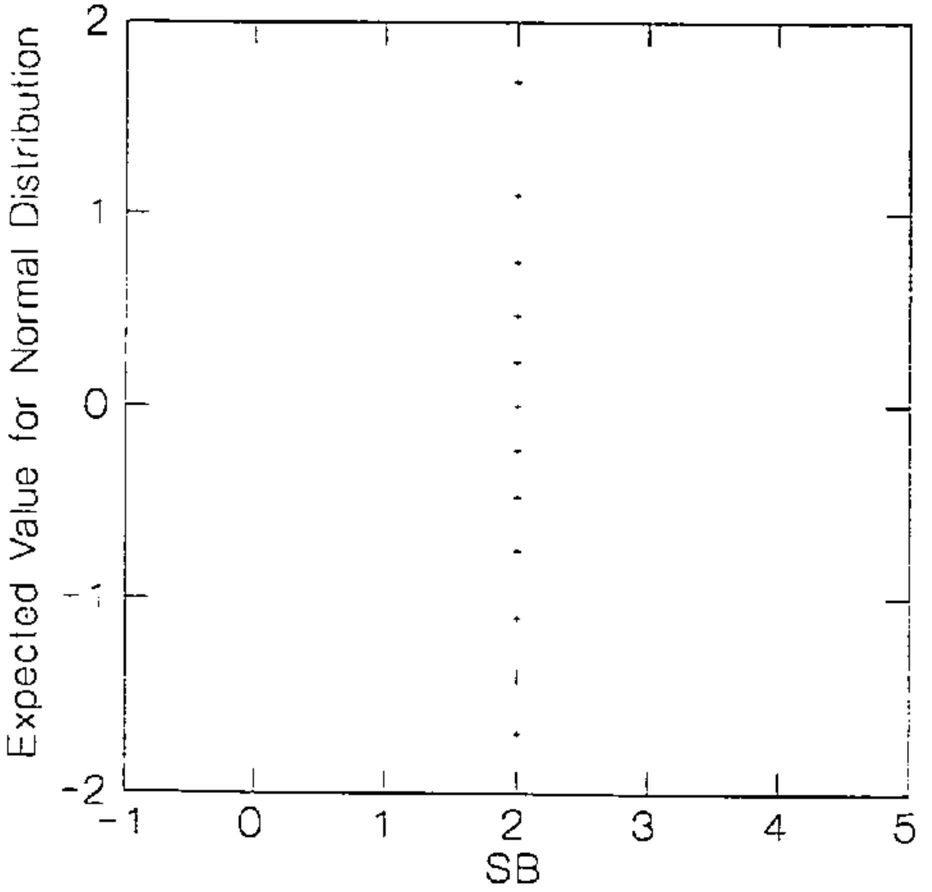
Appendix C-2
Box and Whisker Plots for Metals
All Shallow Soil Locations

CH2M HILL

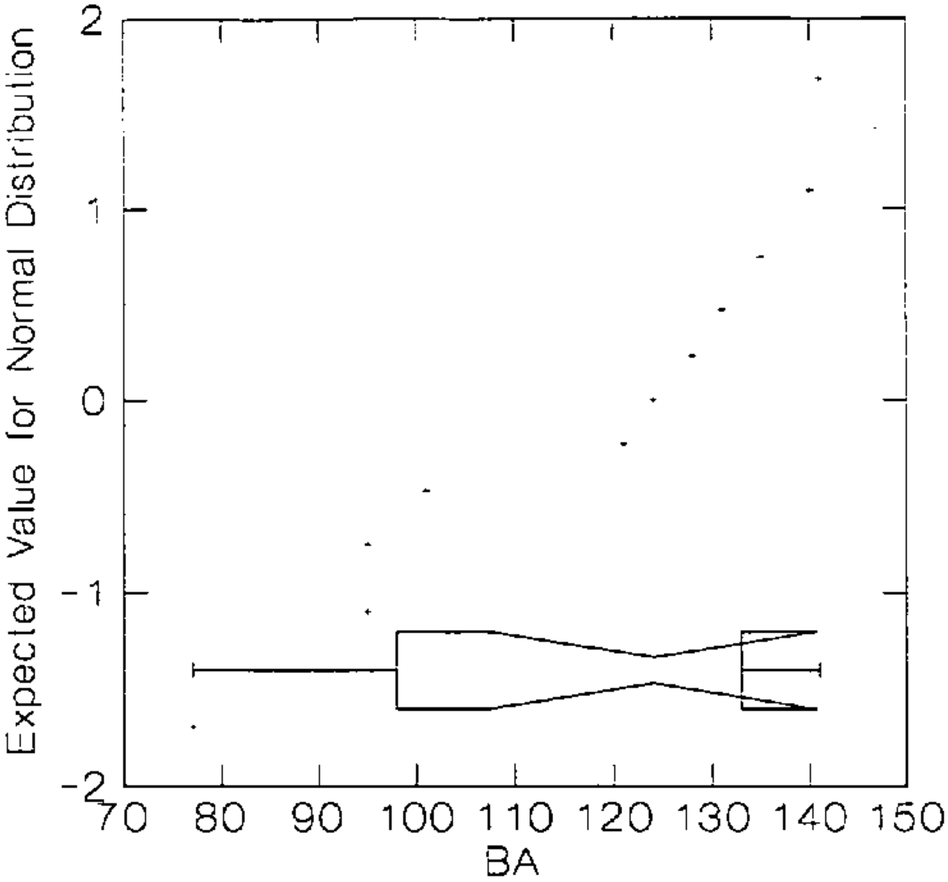
Appendix C-3

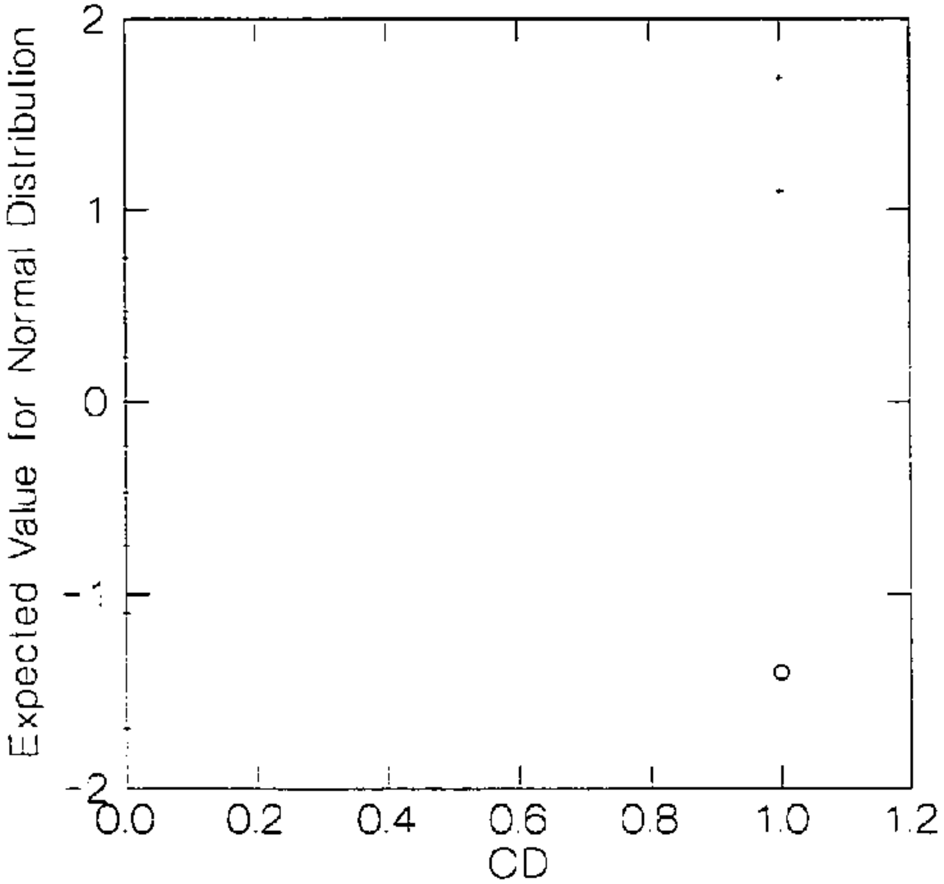
Offsite Shallow Soil Locations



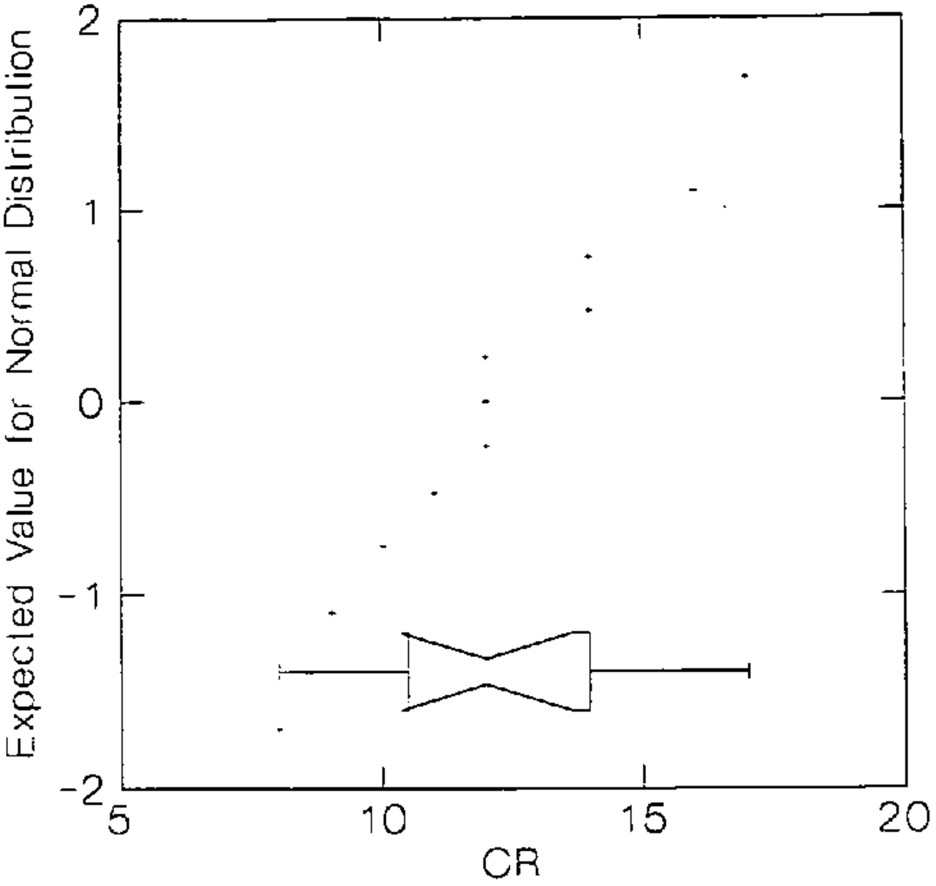


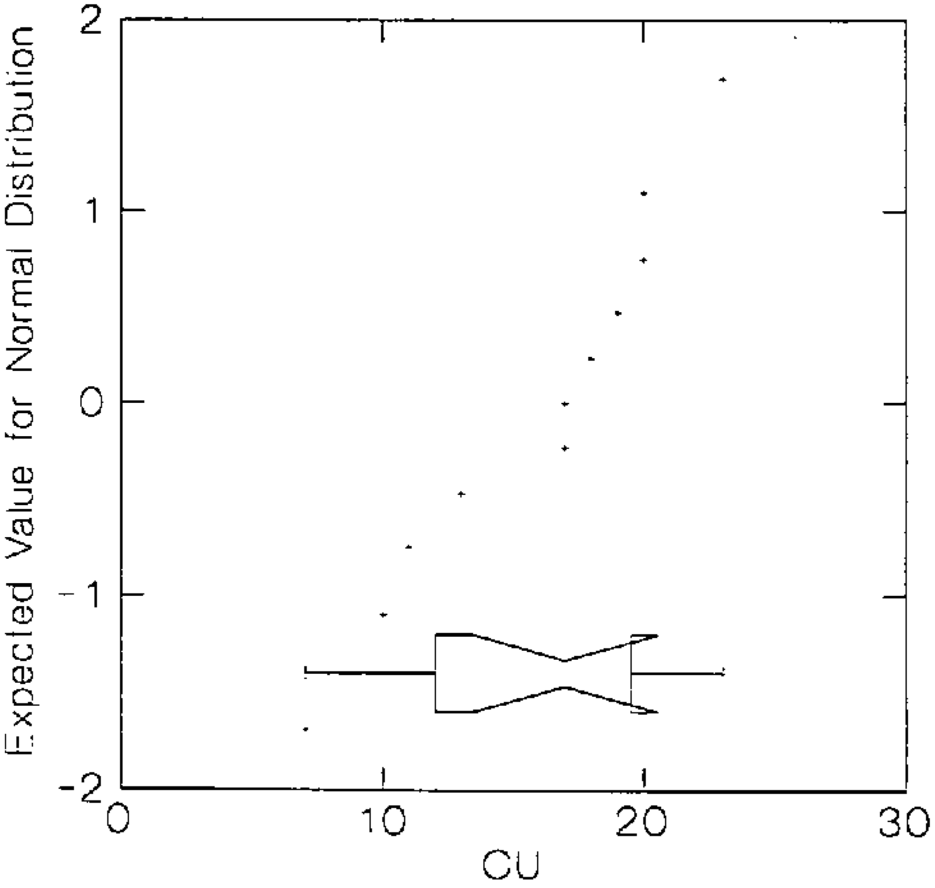
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations





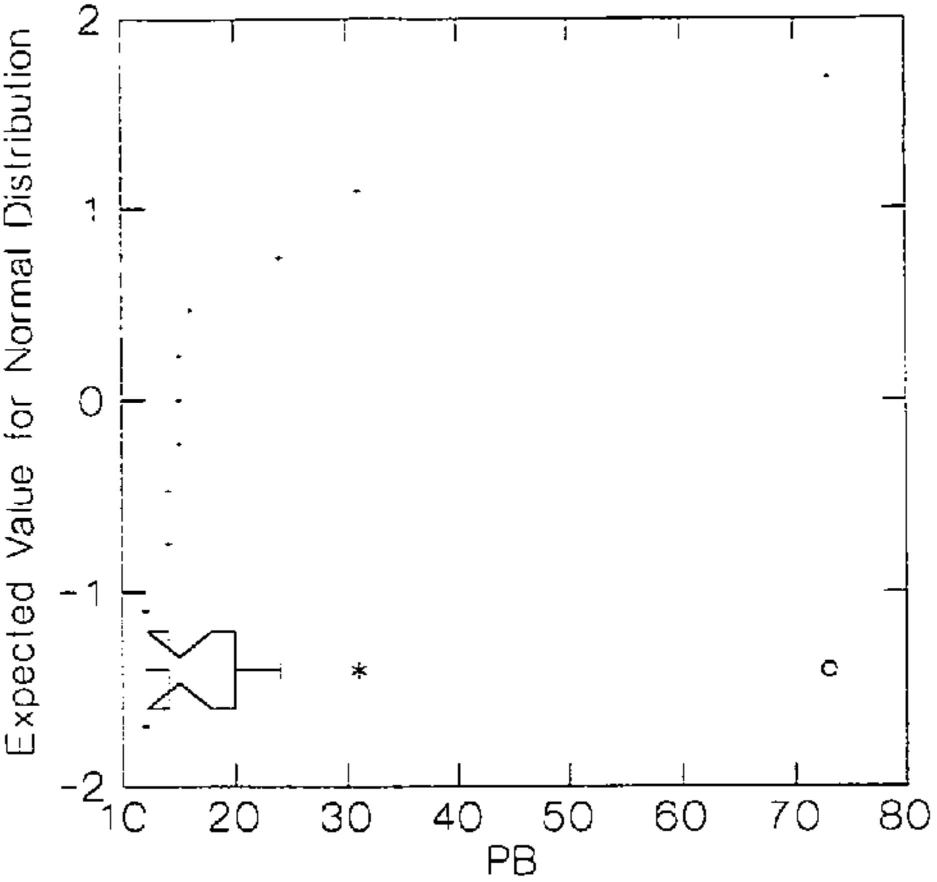
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

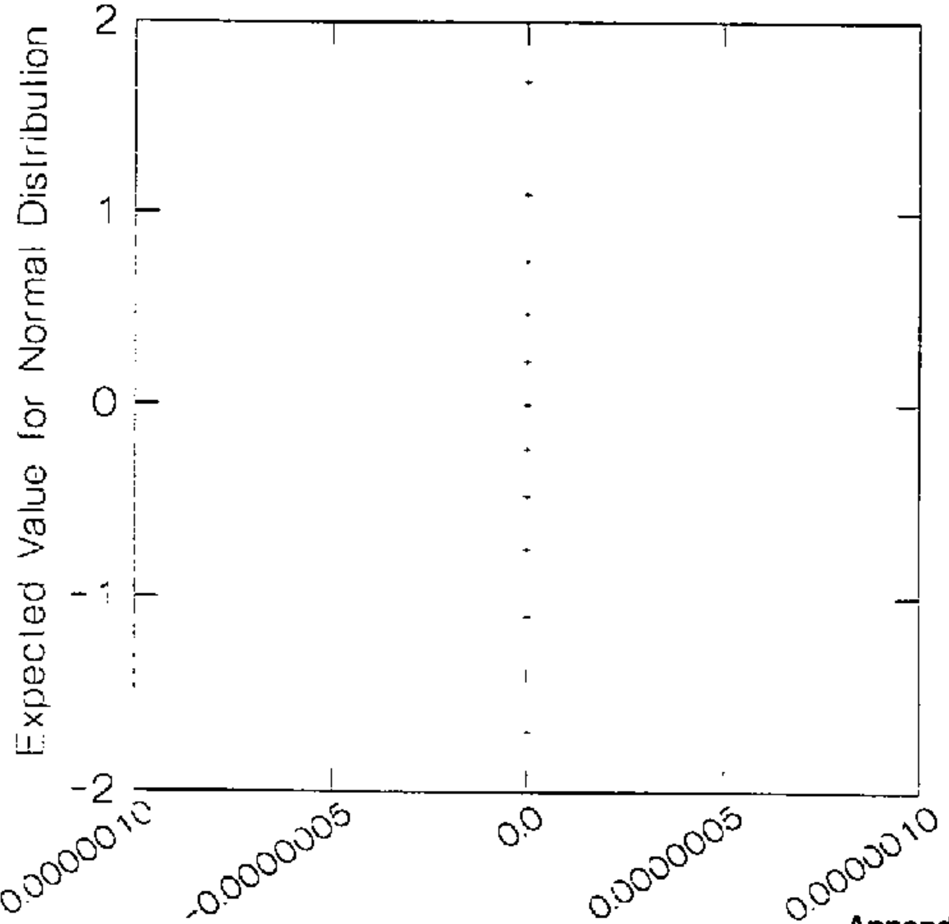




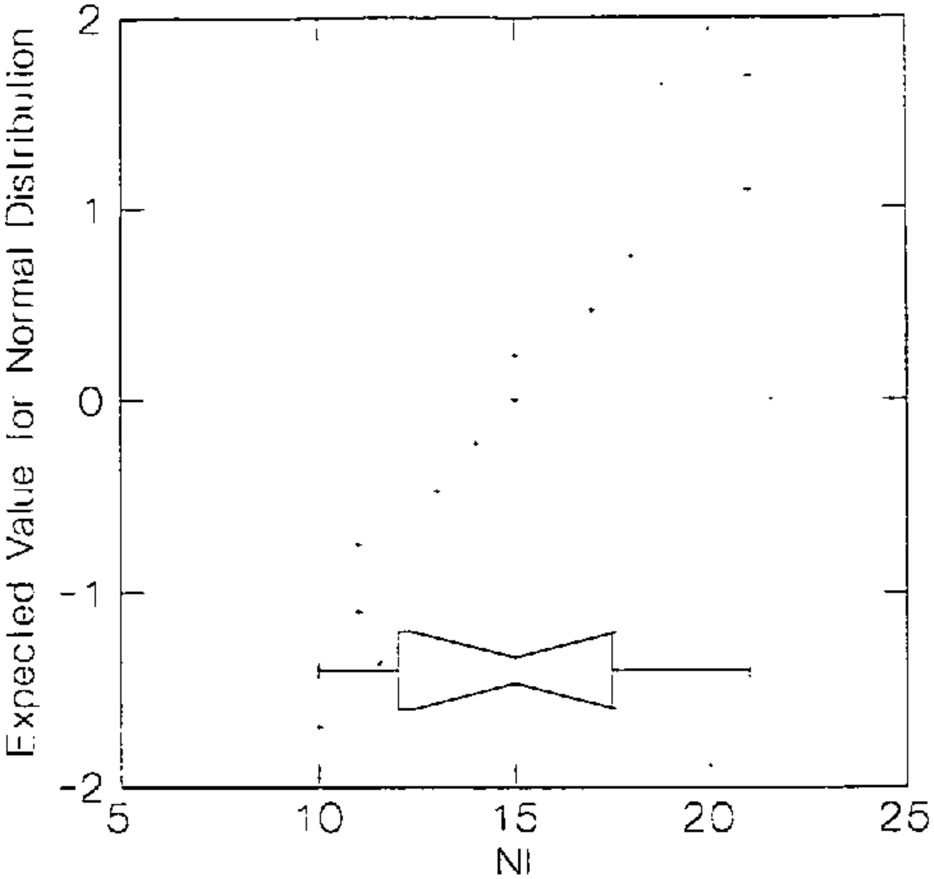
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

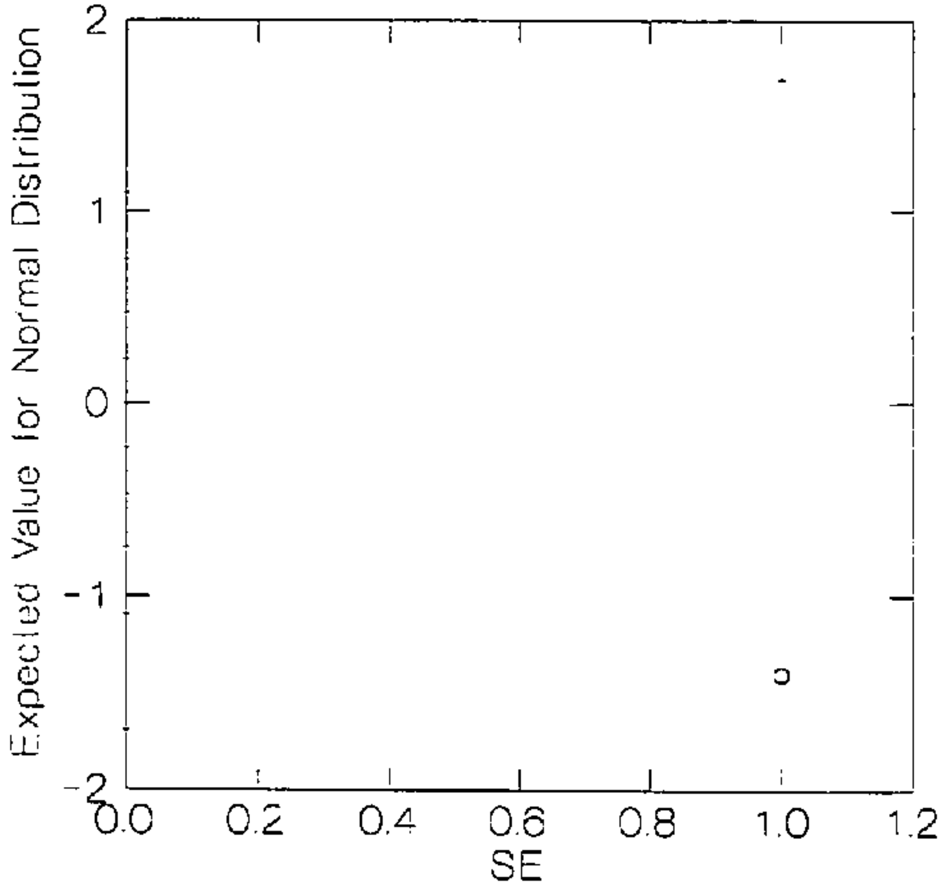
CH2M HILL



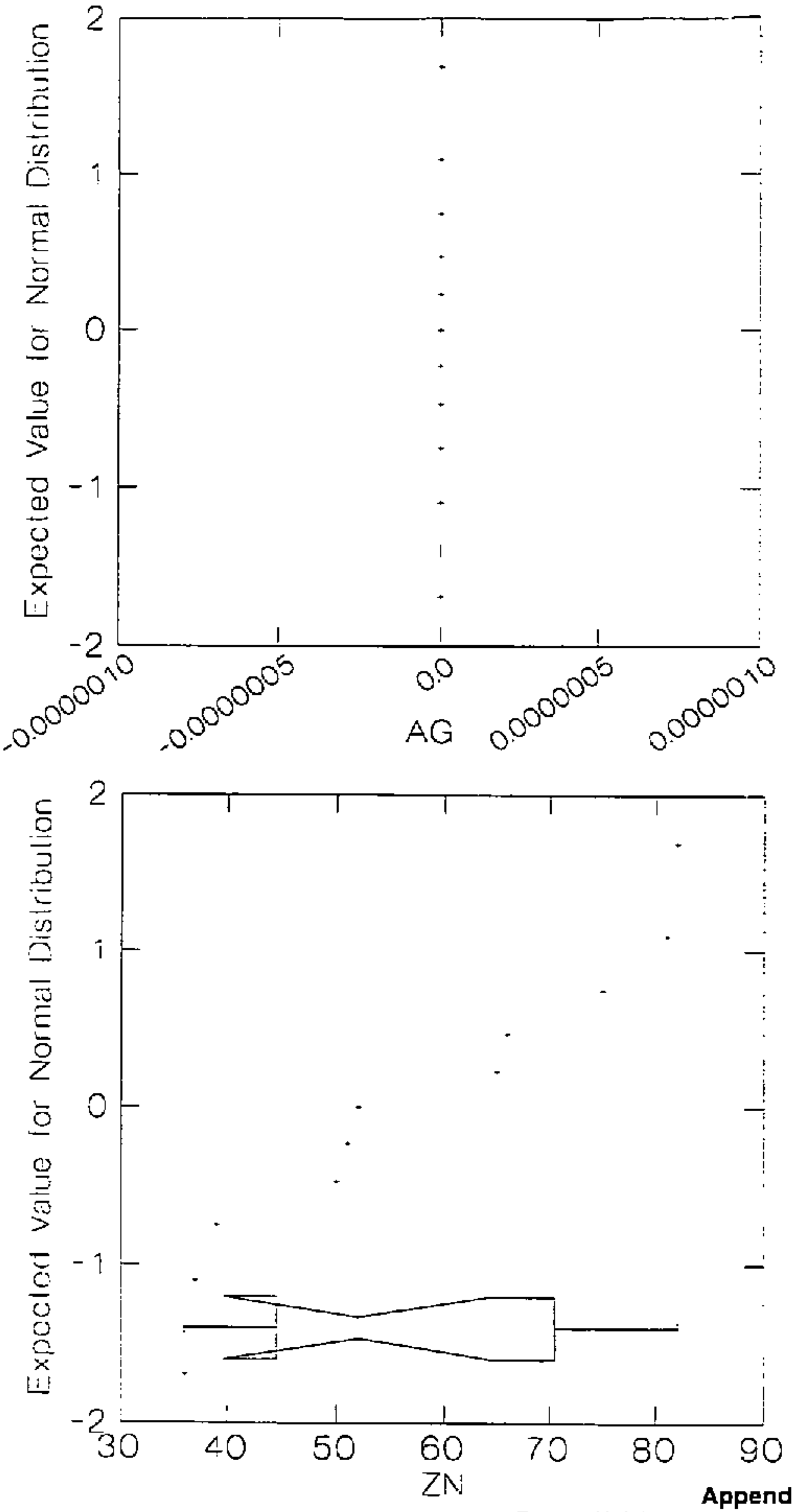


Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations



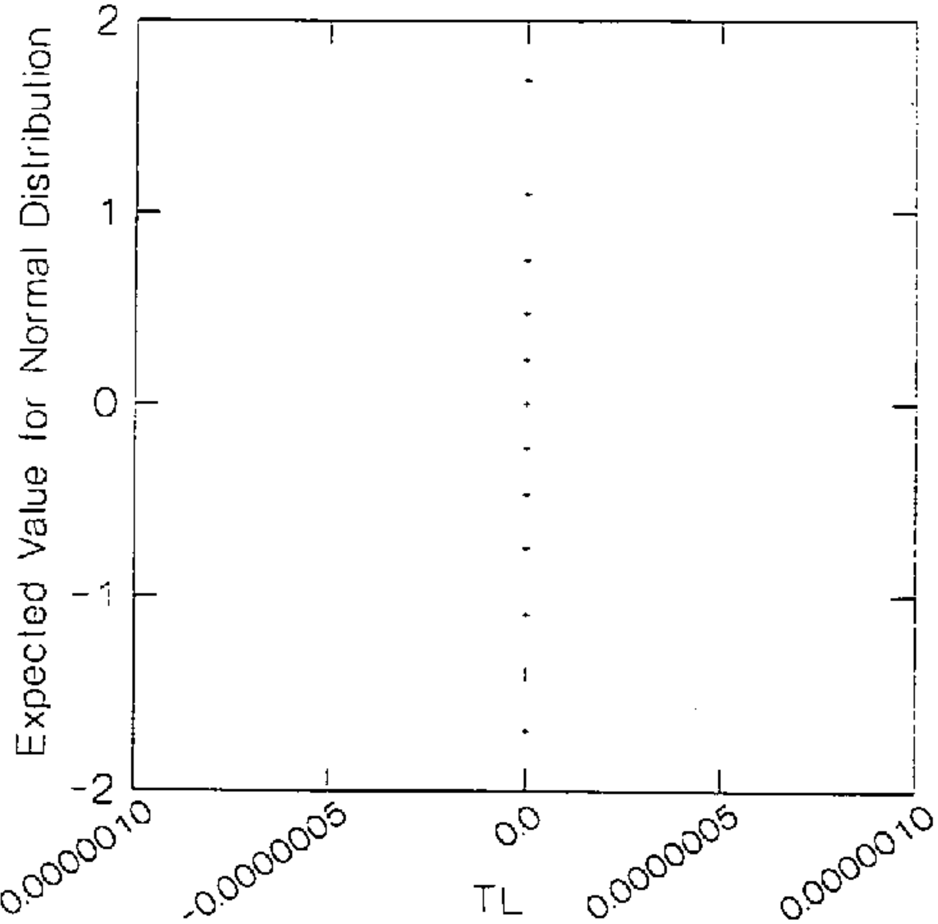


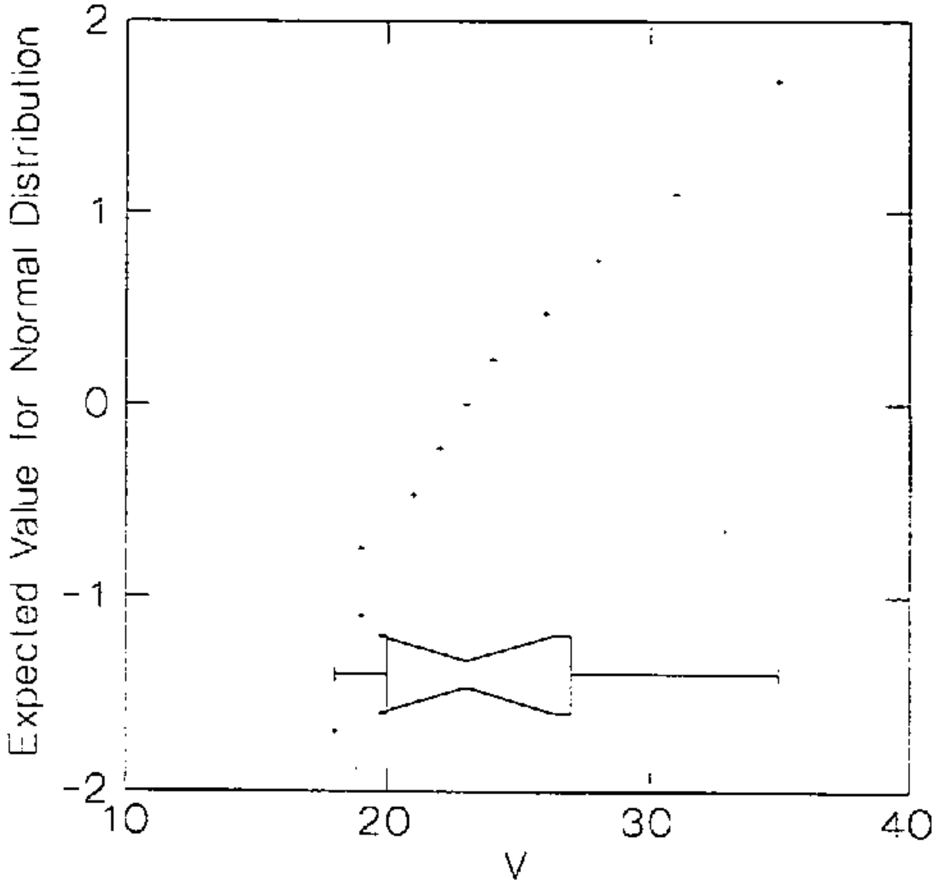
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations



Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

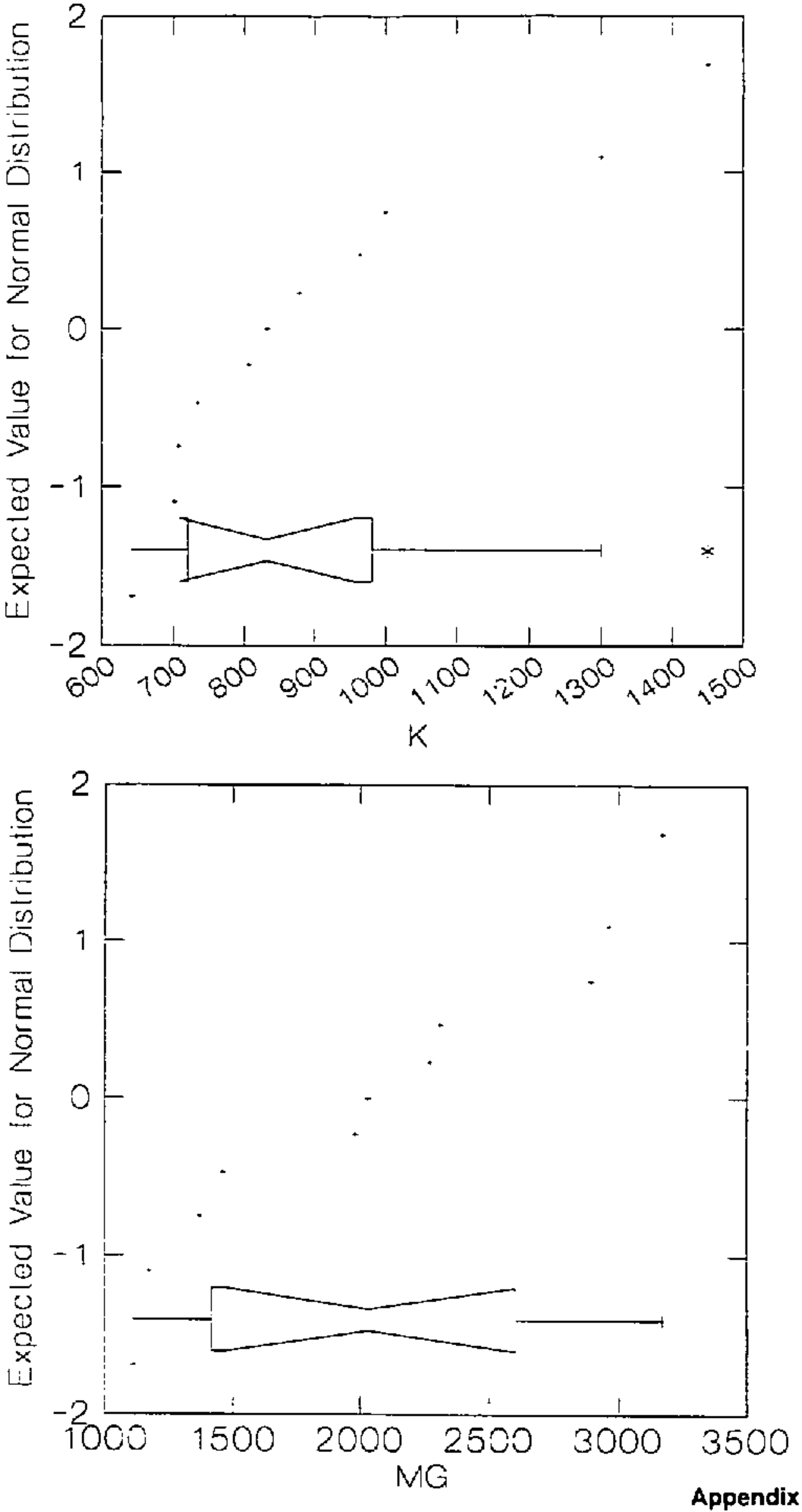
CH2M HILL



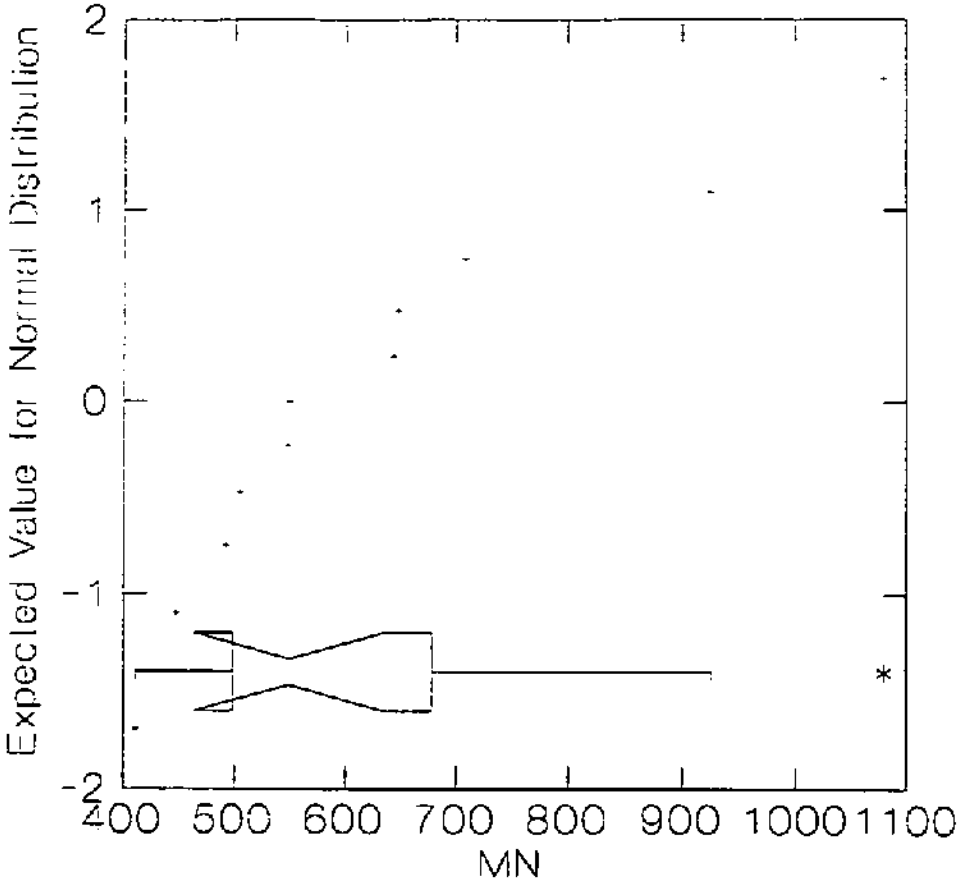


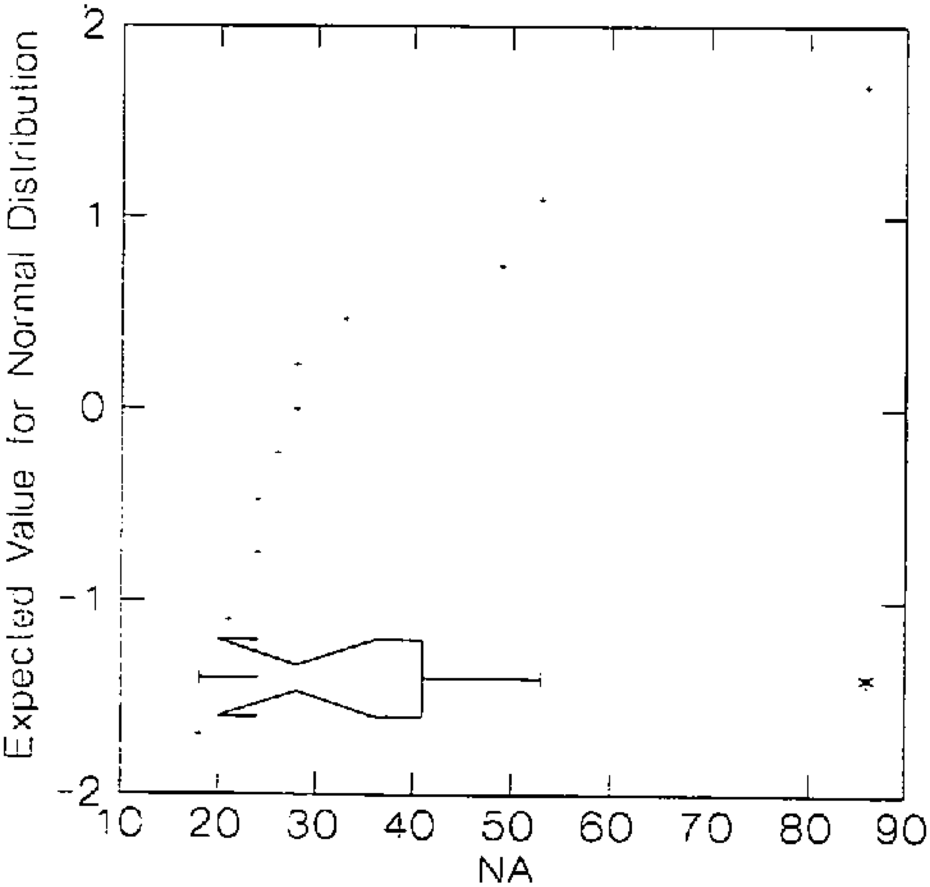
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

C-18



Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

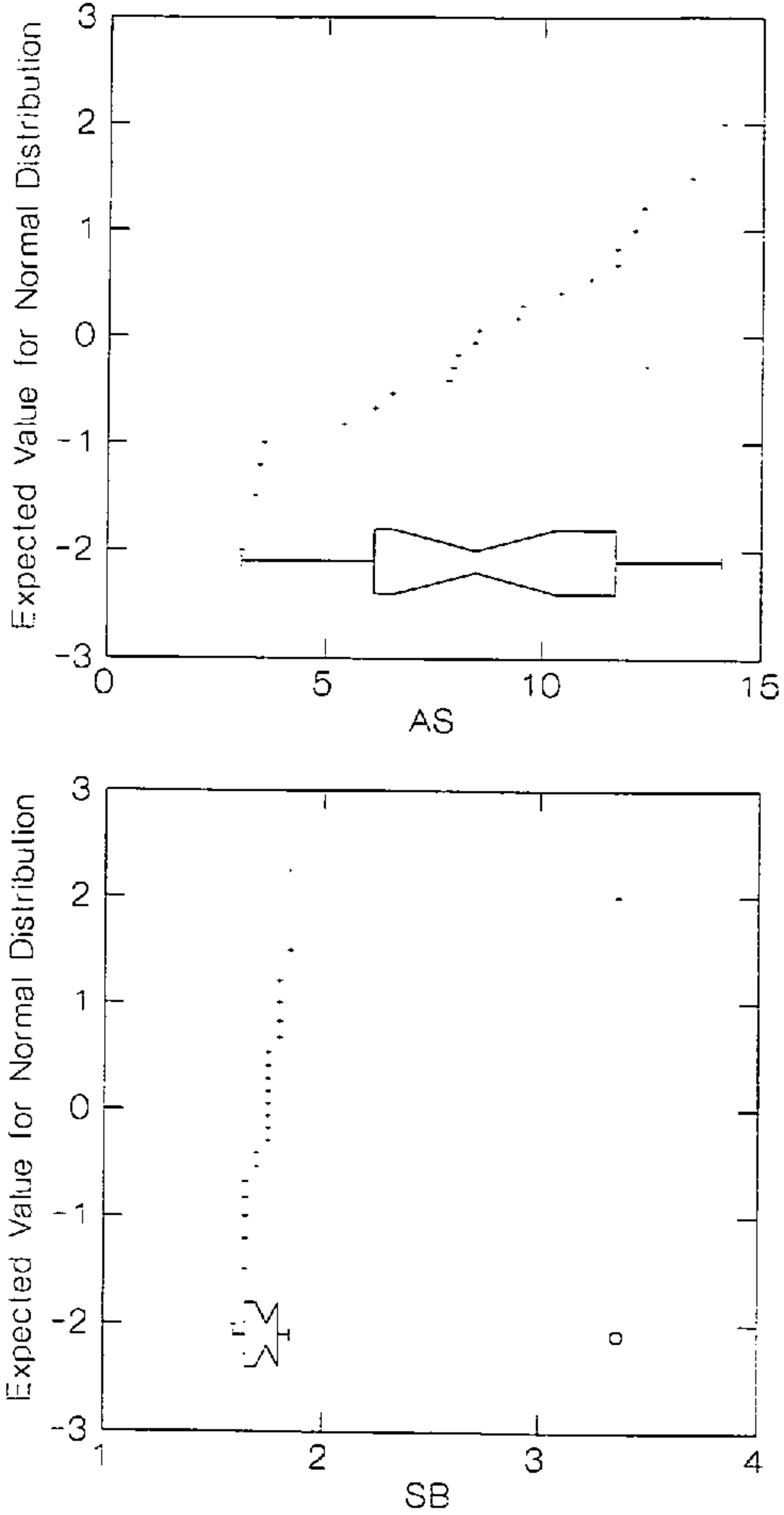




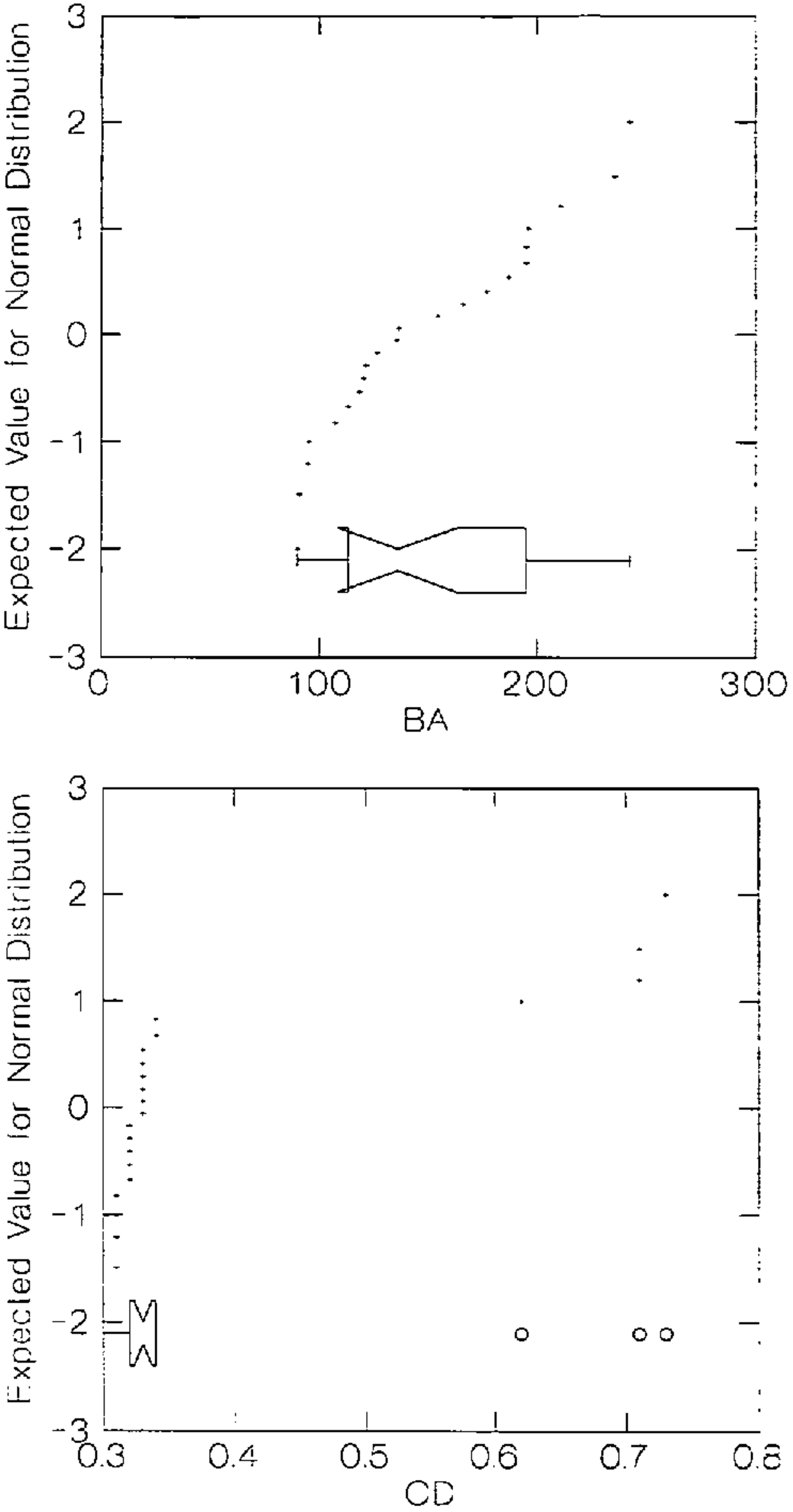
Appendix C-3
Box and Whisker Plots for Metals
Offsite Shallow Soil Locations

Appendix C-4

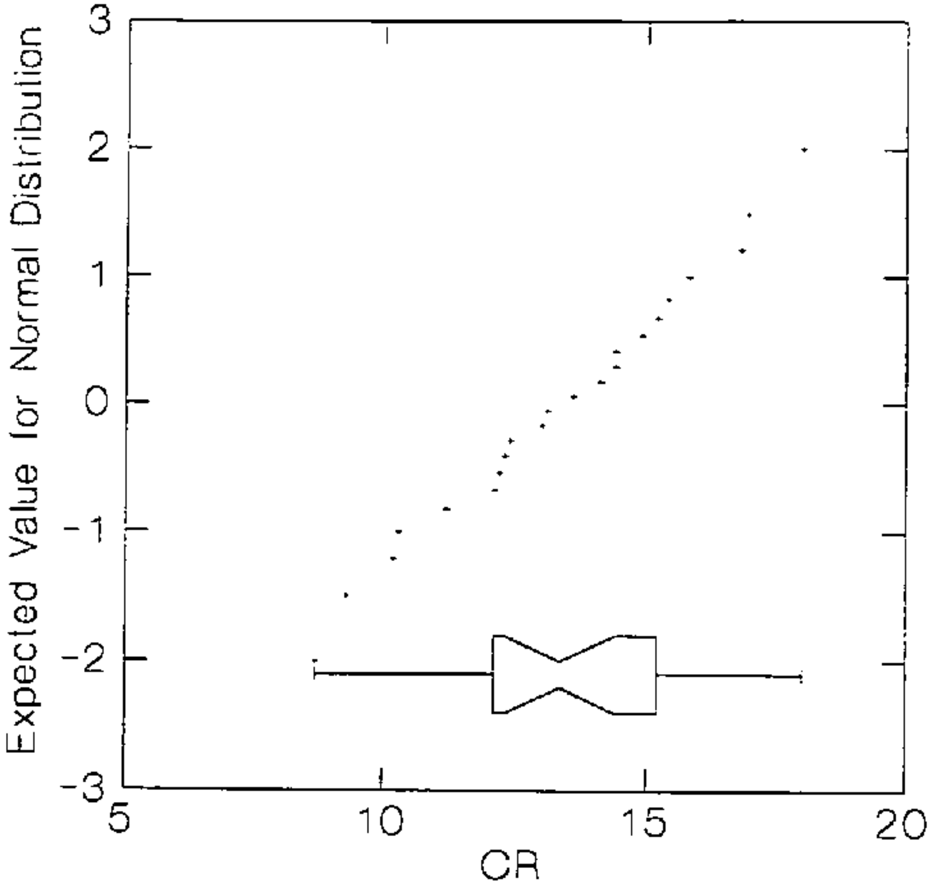
All Deep Soil Locations

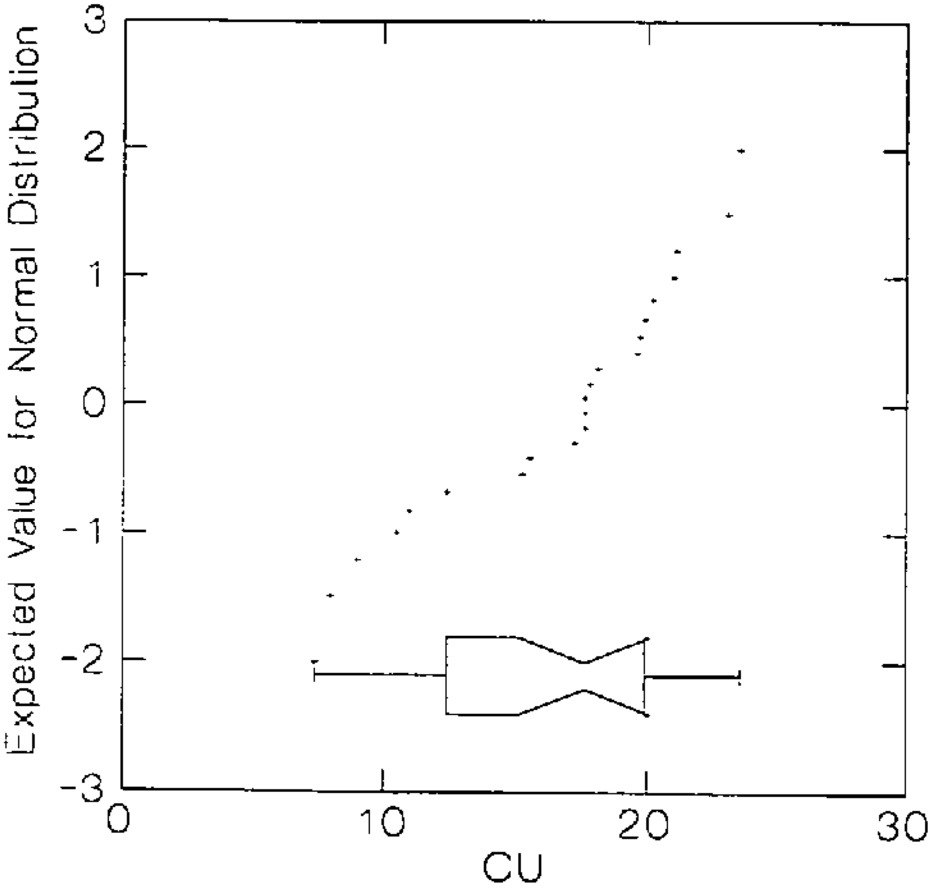


Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

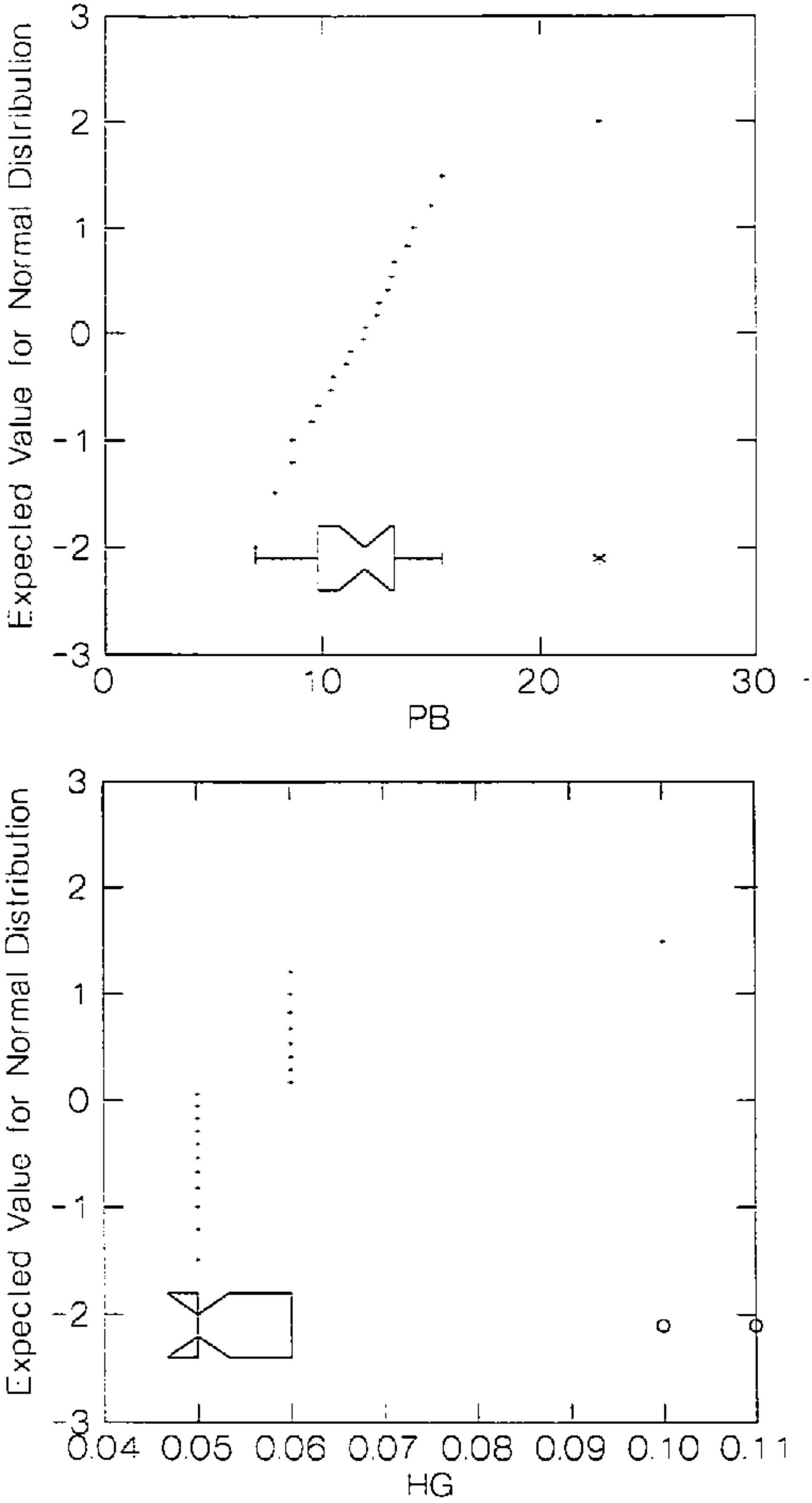


Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations



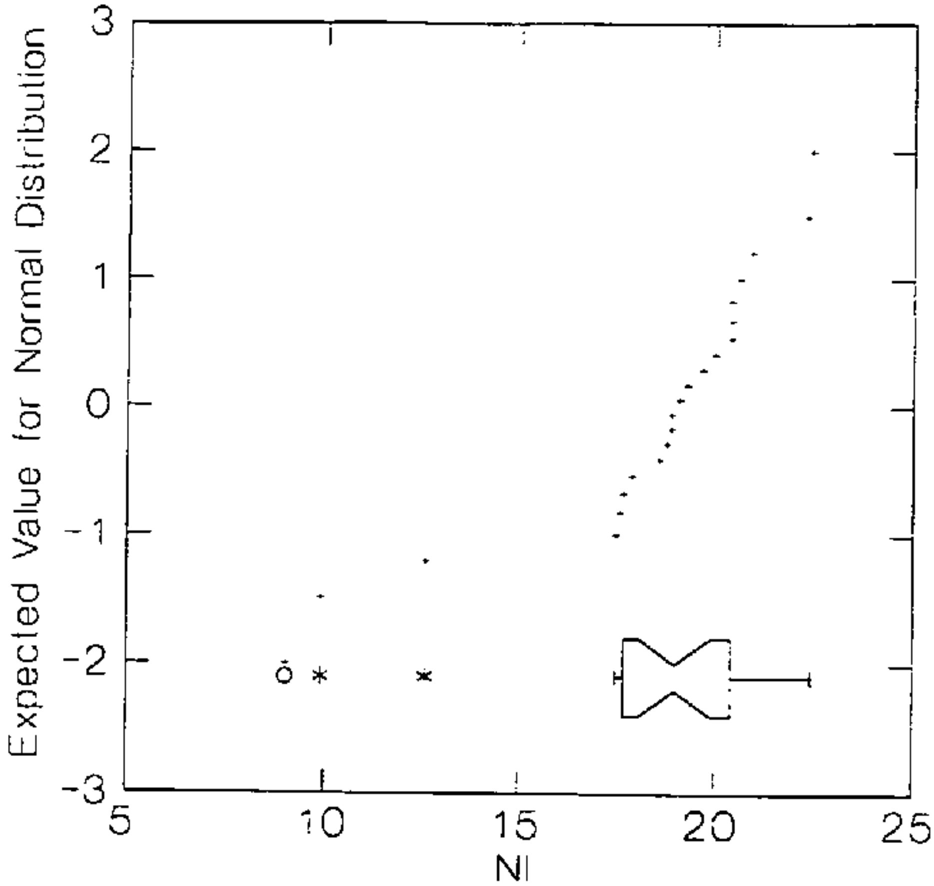


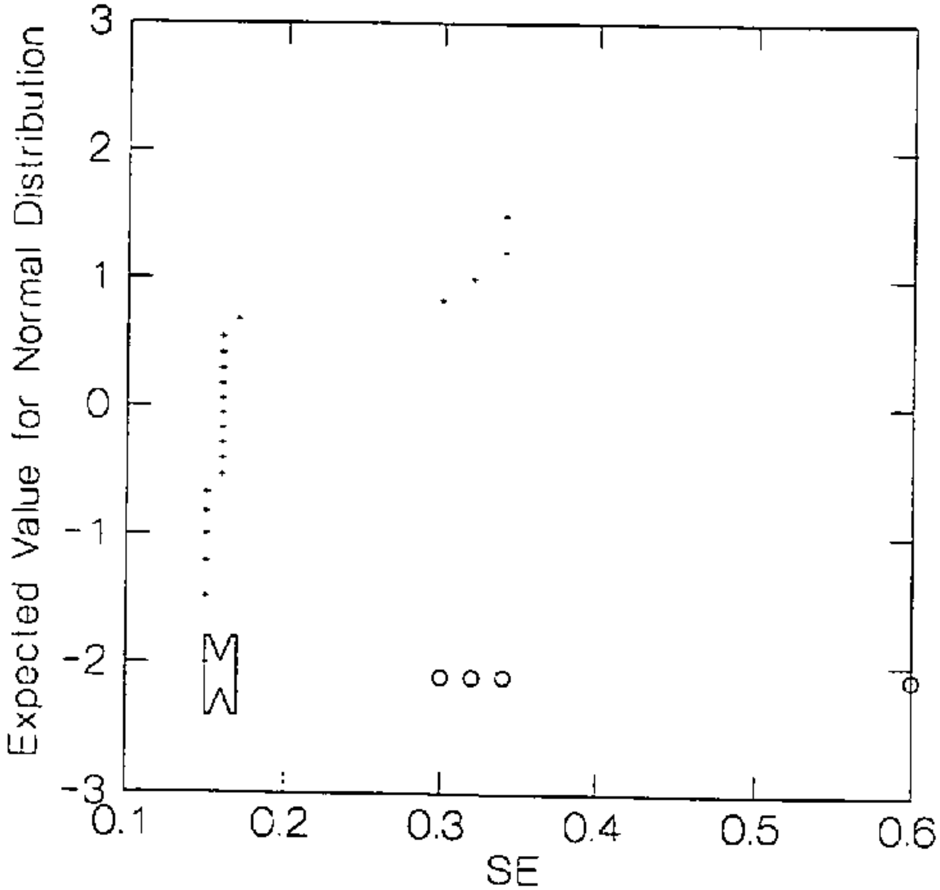
Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations



Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

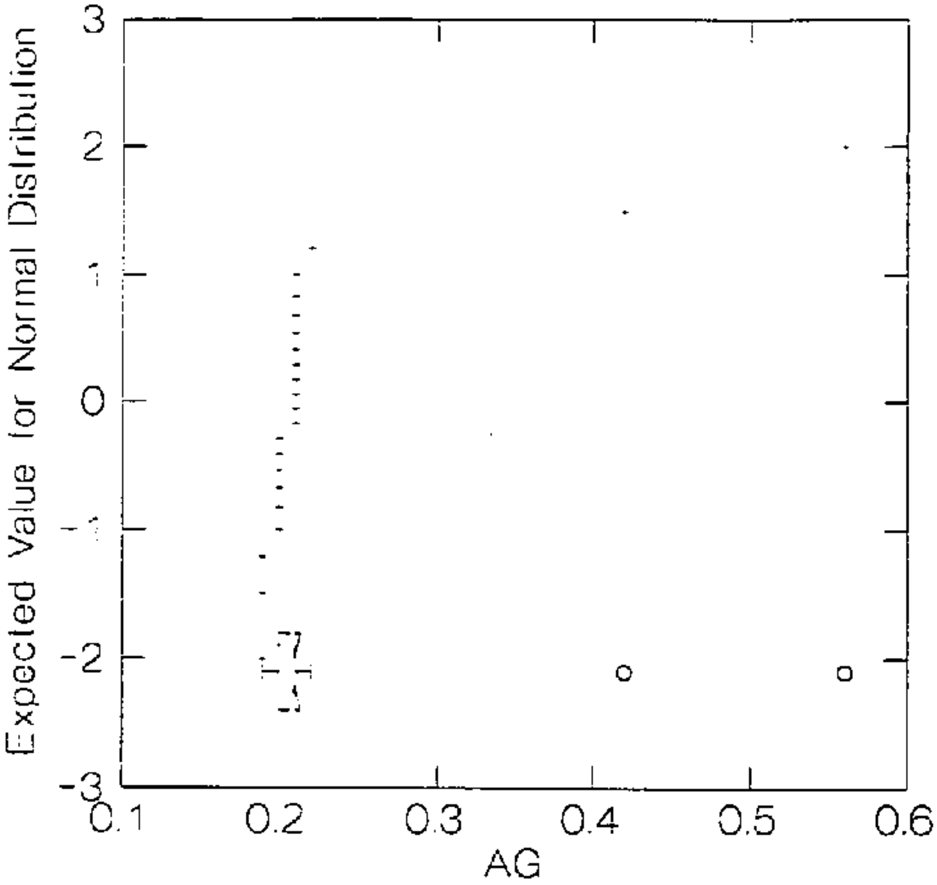
CH2M HILL

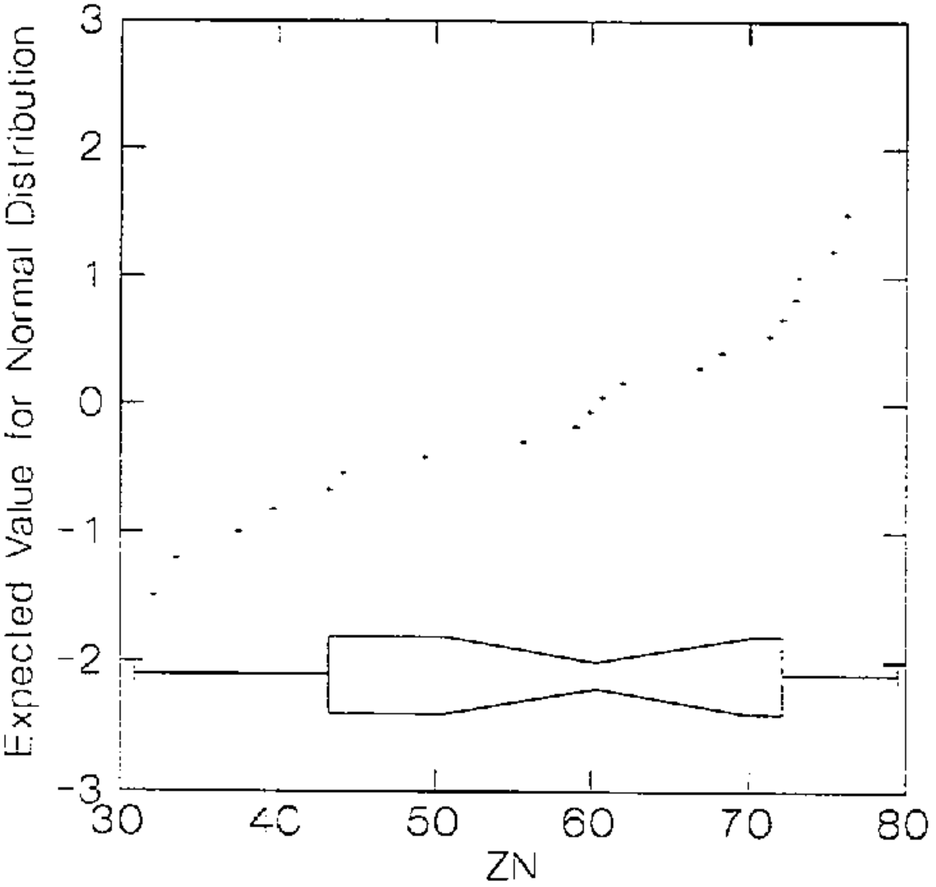




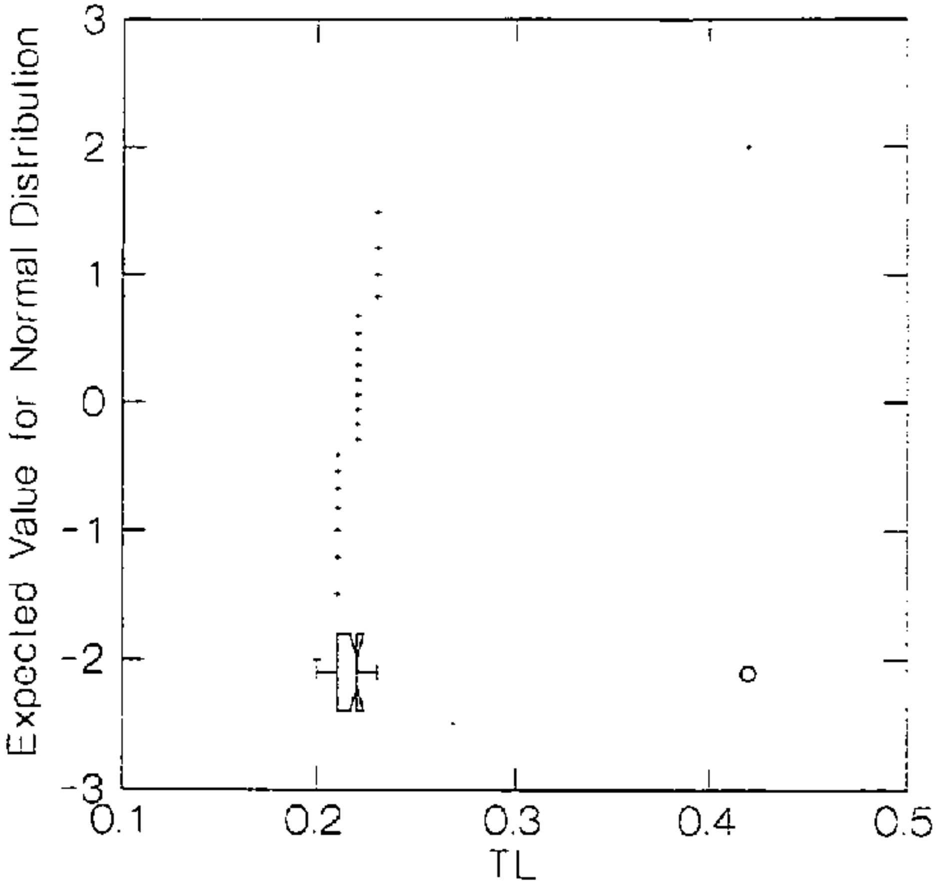
Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

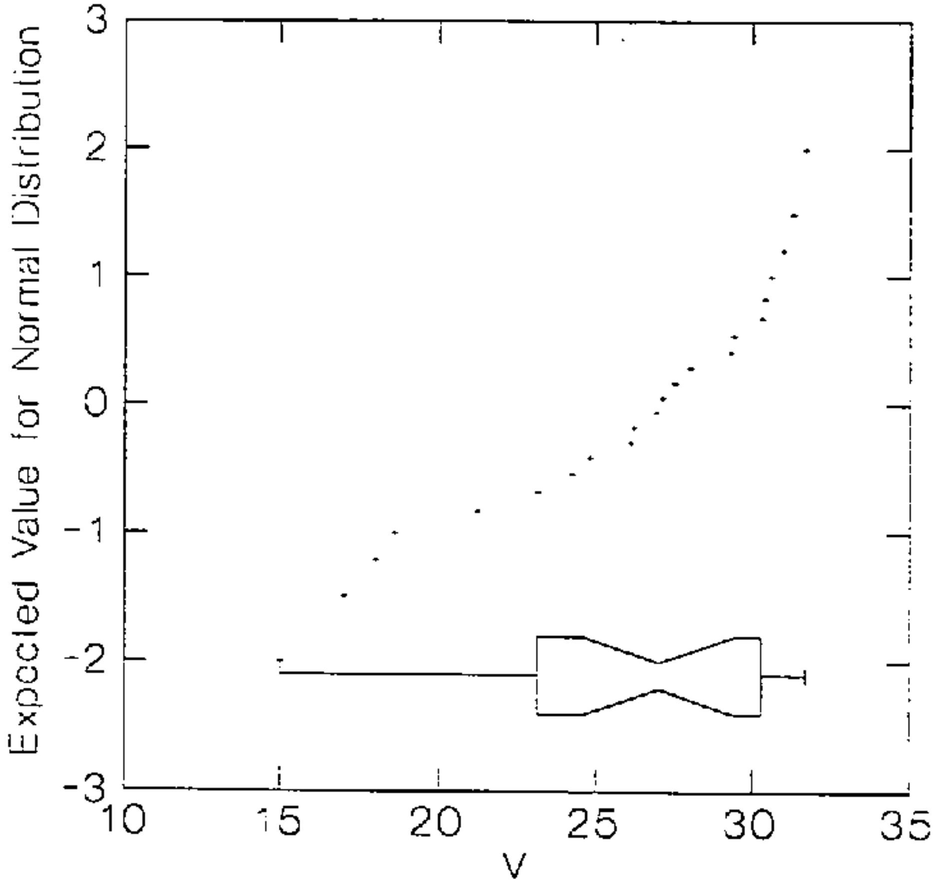
C-25



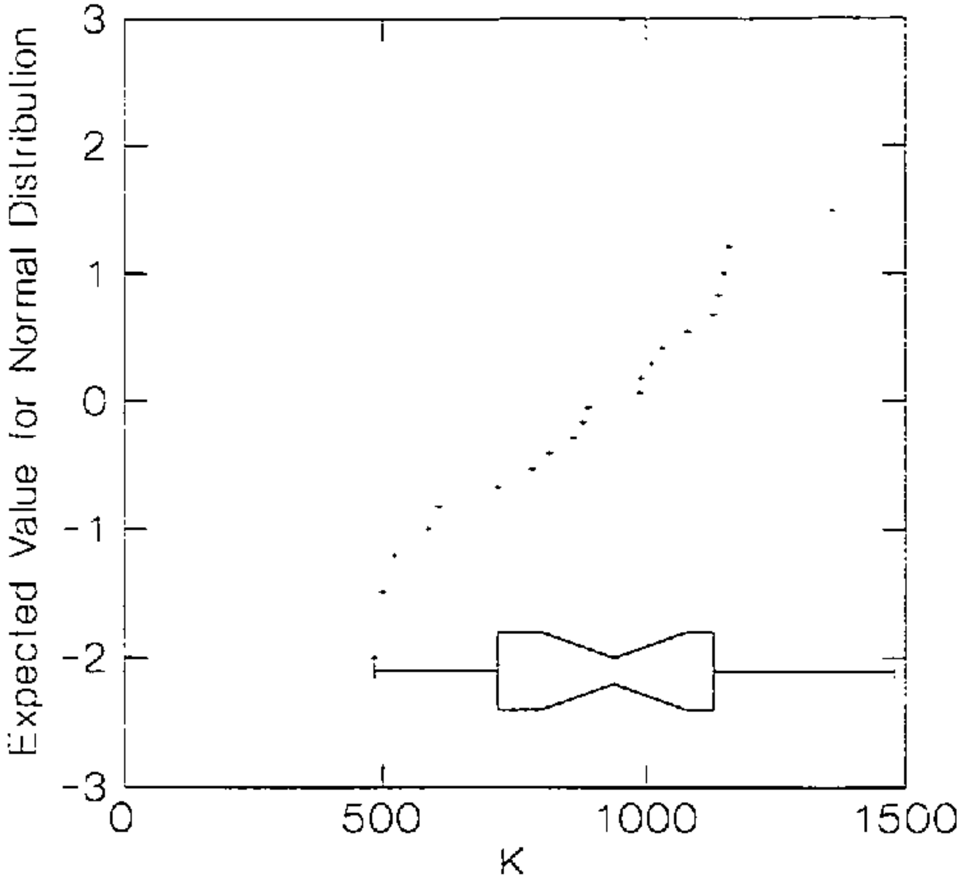


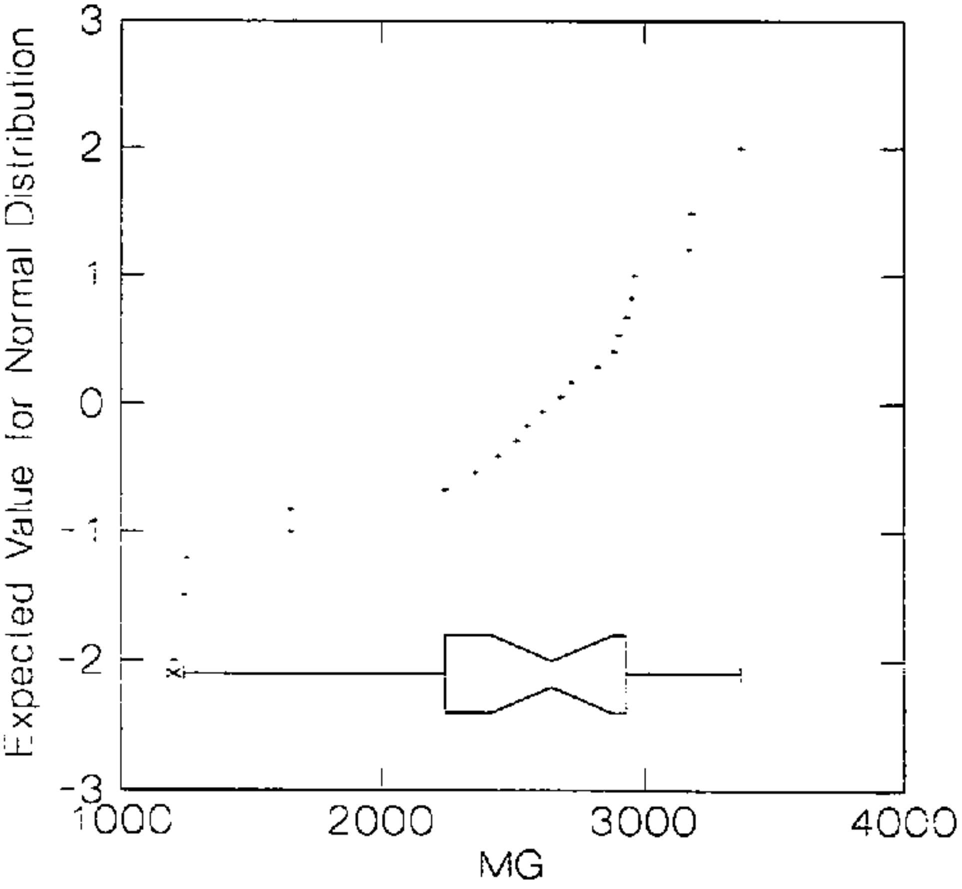
Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations





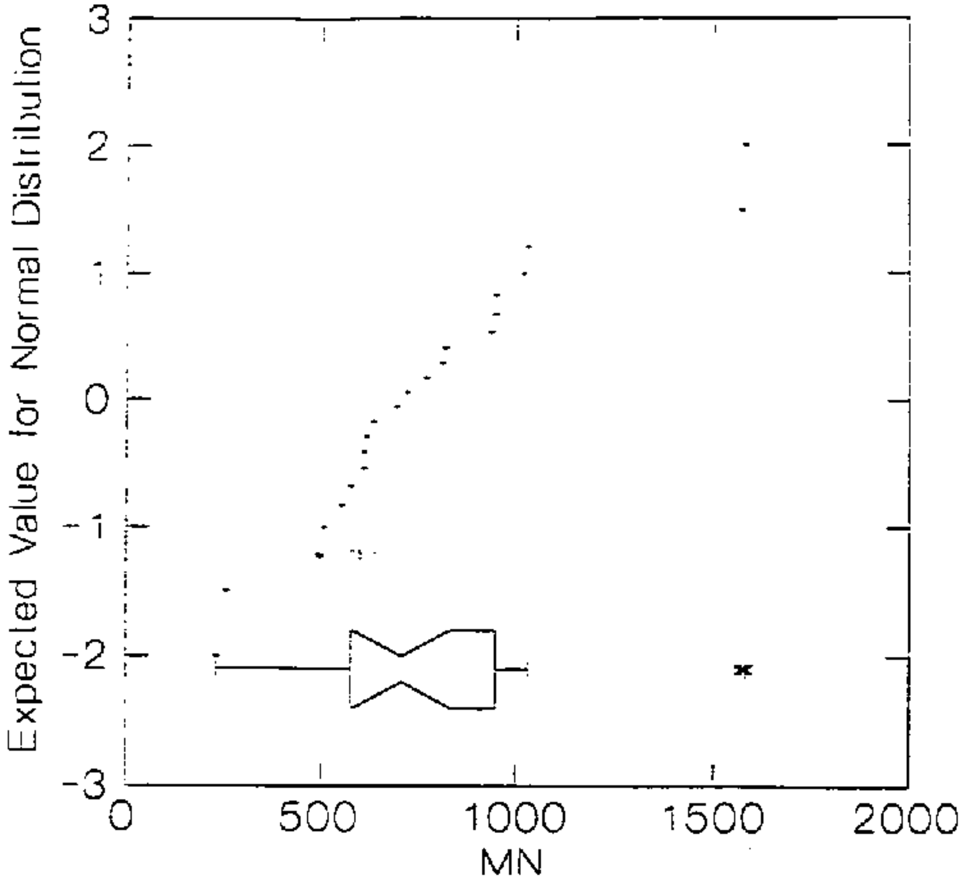
Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

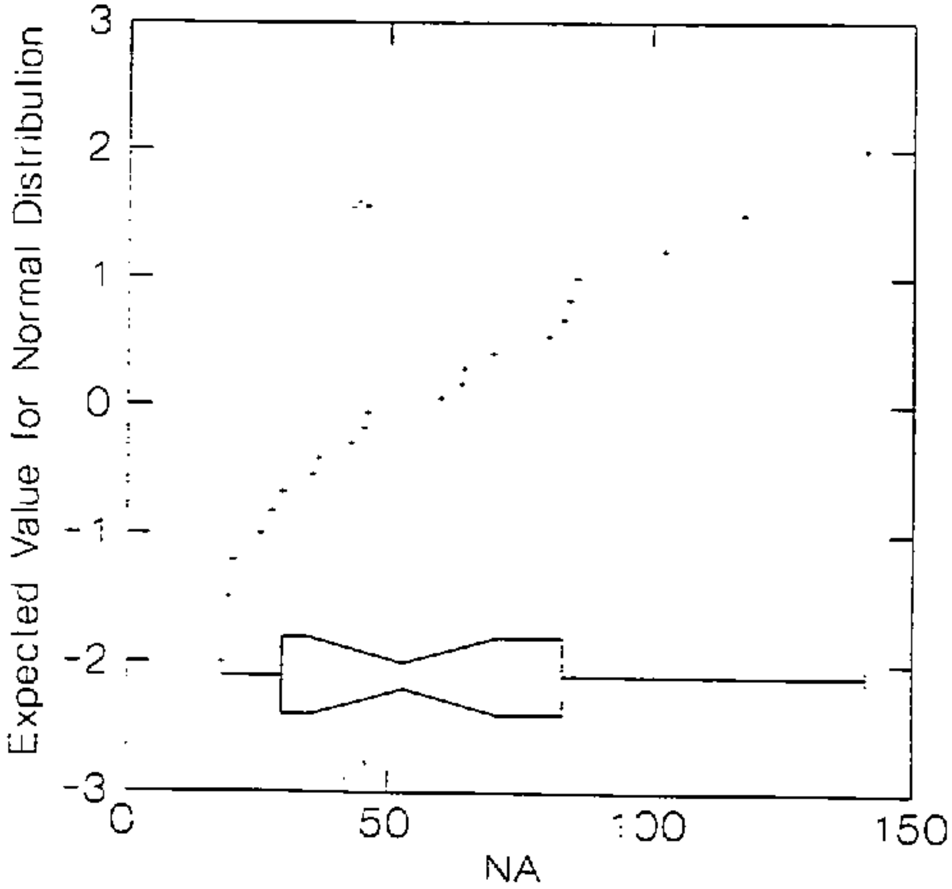




Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

CH2M HILL

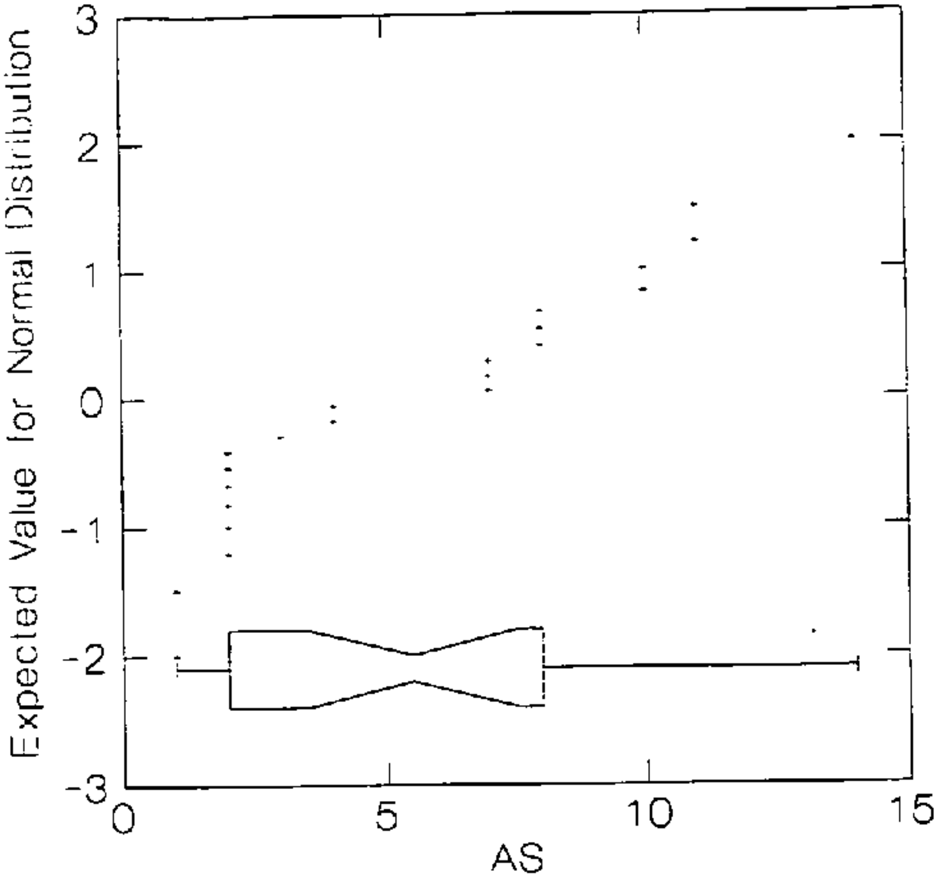


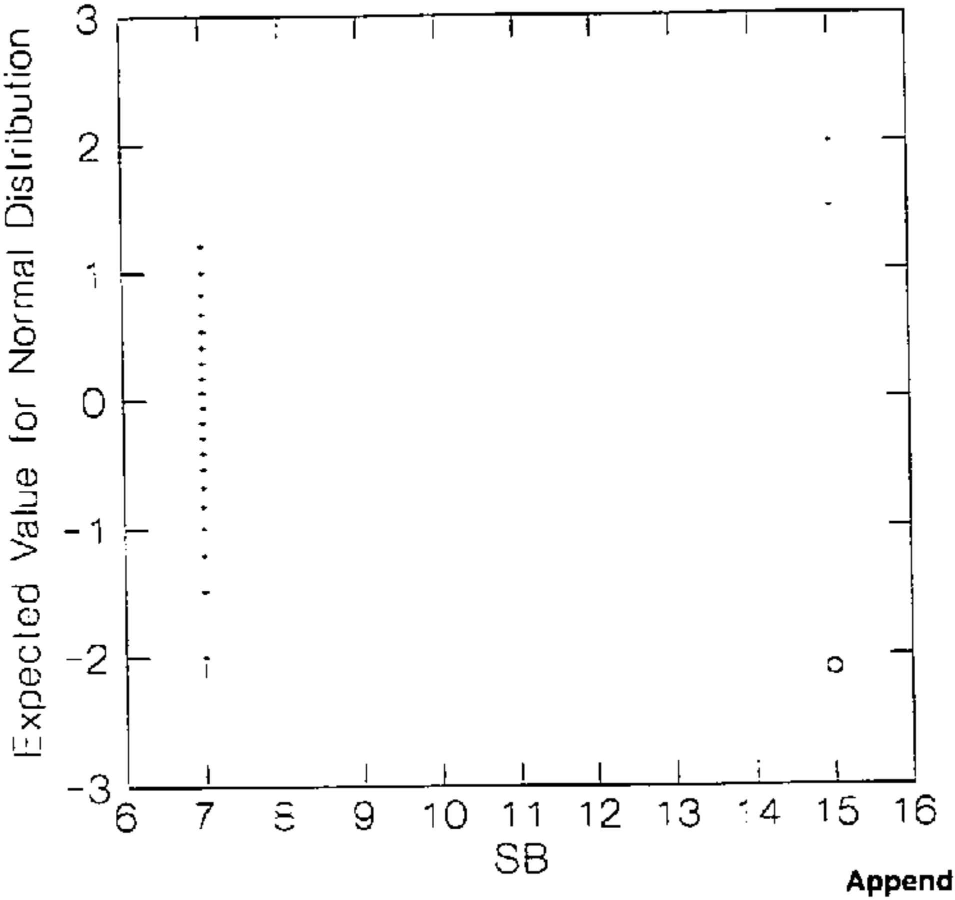


Appendix C-4
Box and Whisker Plots for Metals
All Deep Soil Locations

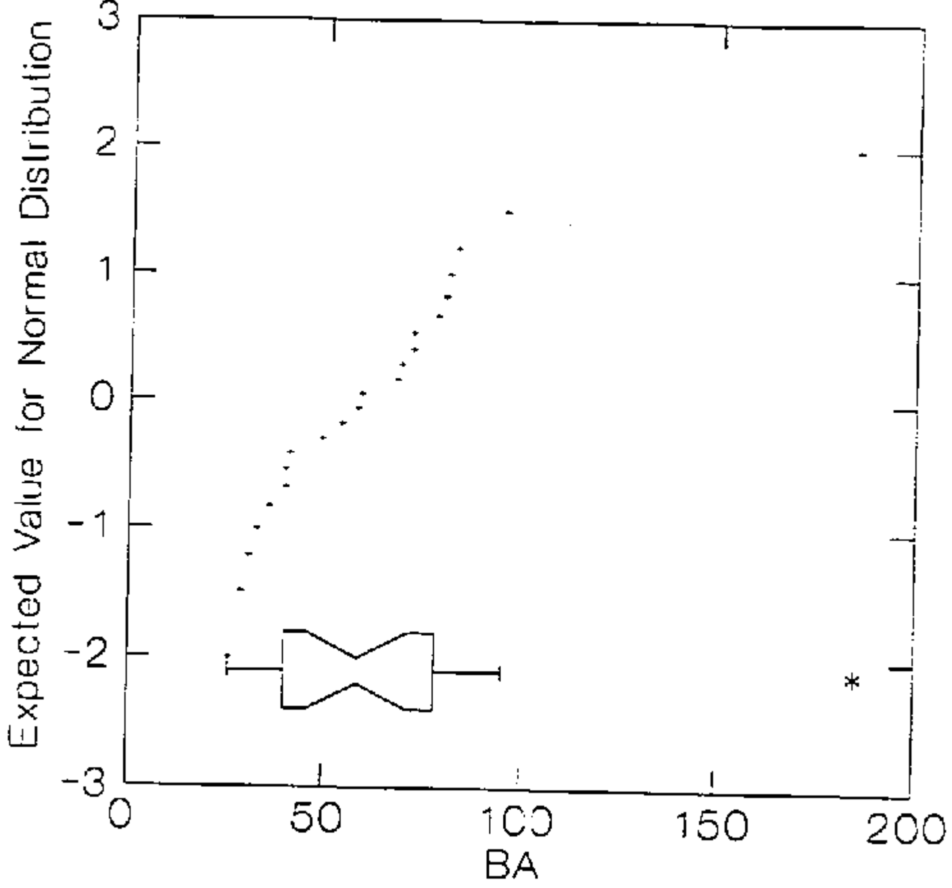
Appendix C-5

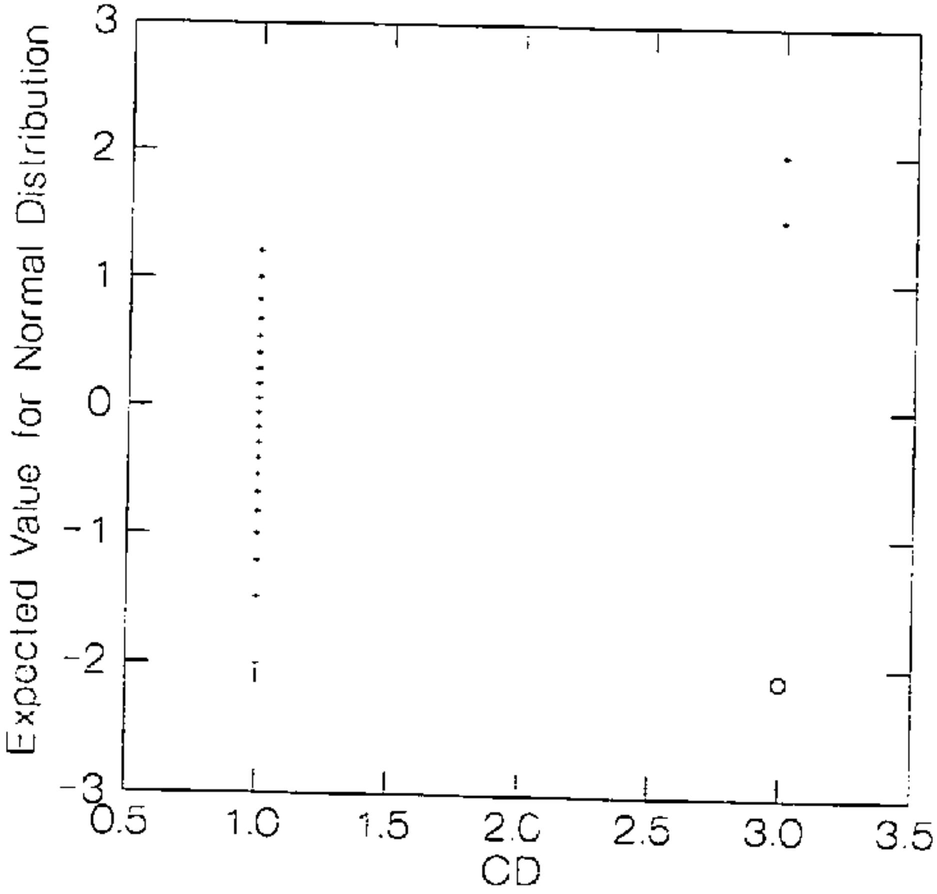
All Surface Water Locations





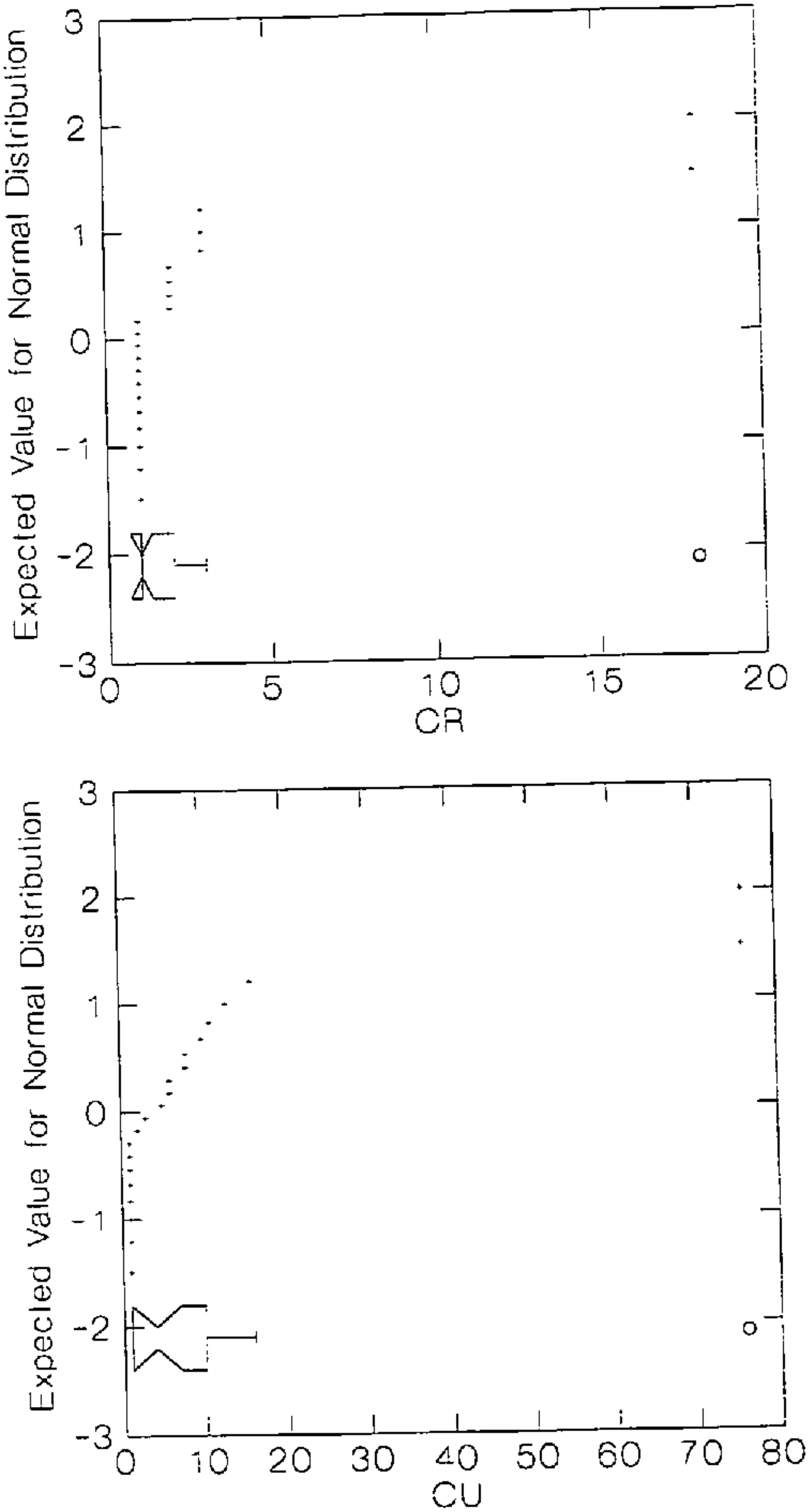
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations



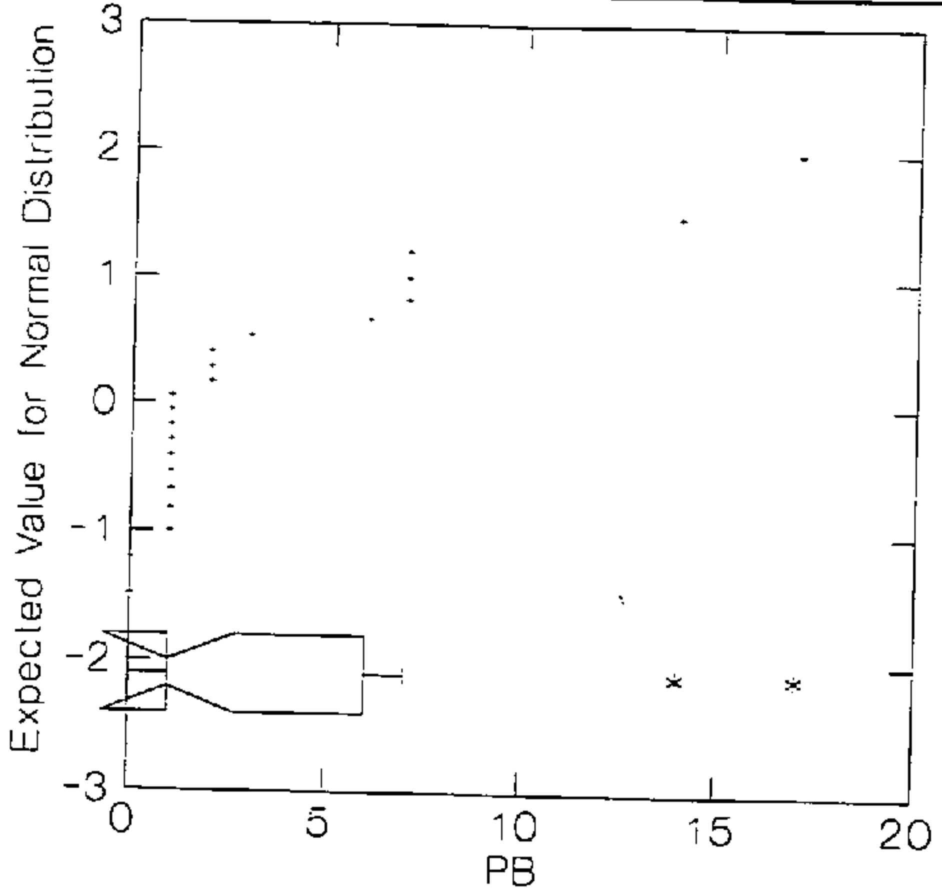


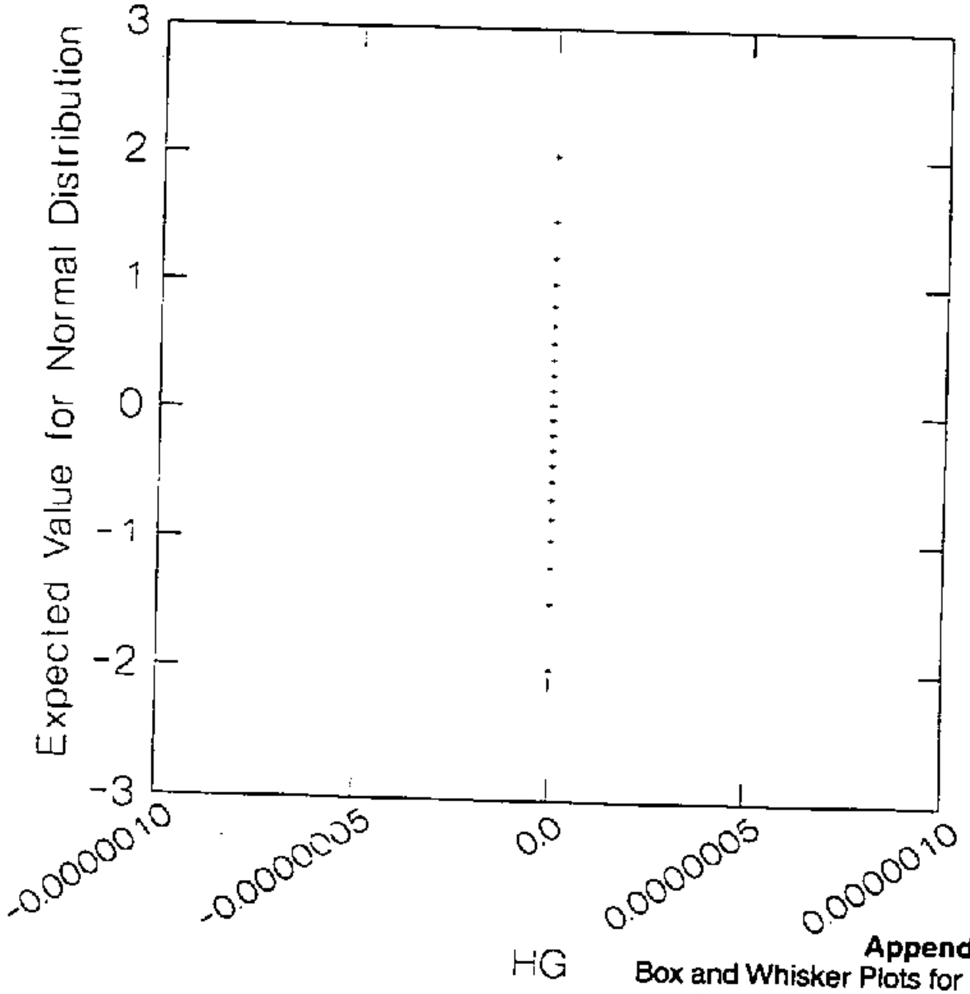
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

C-31



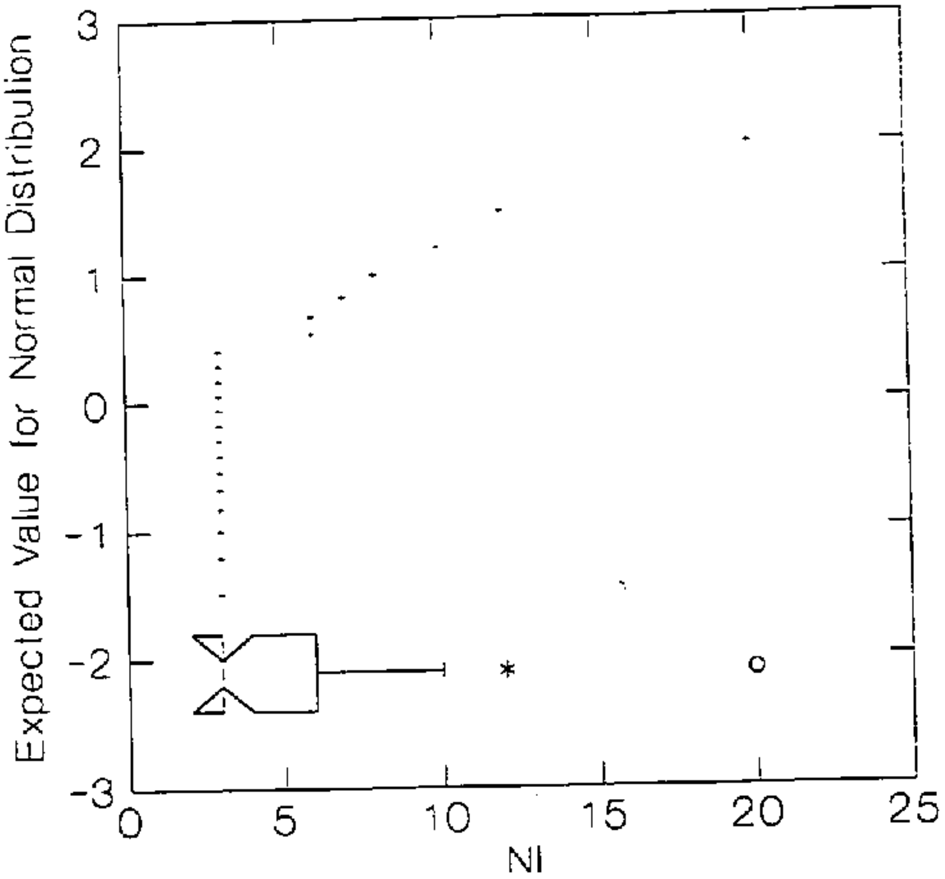
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

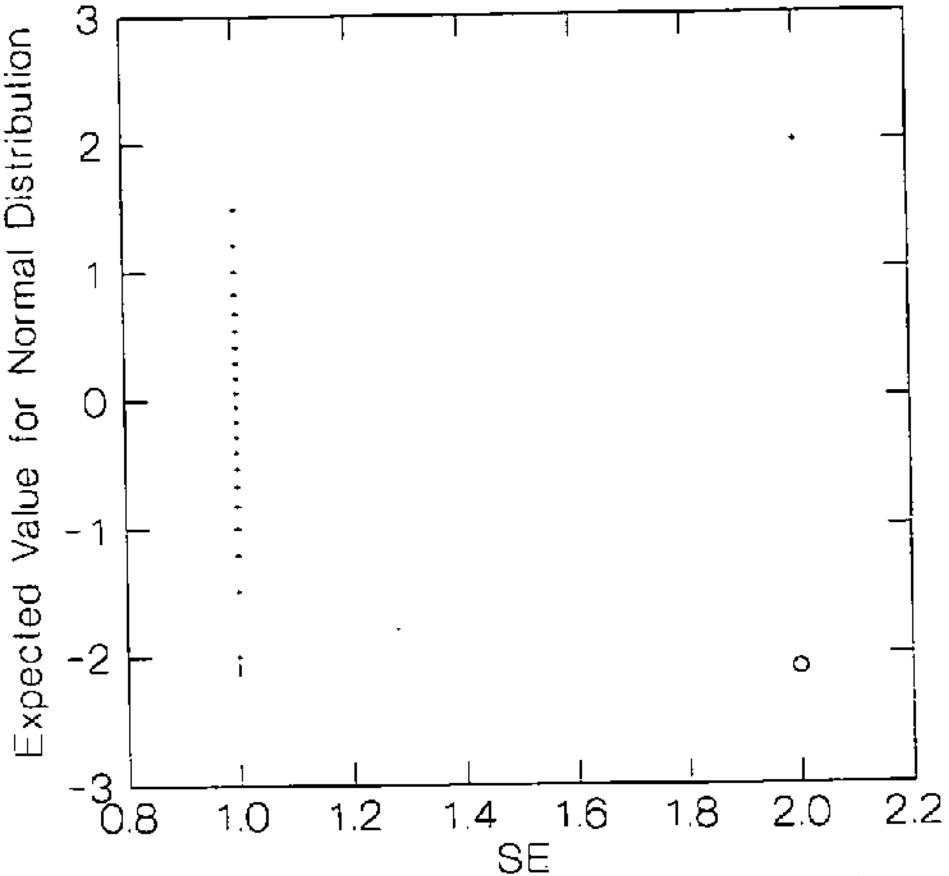




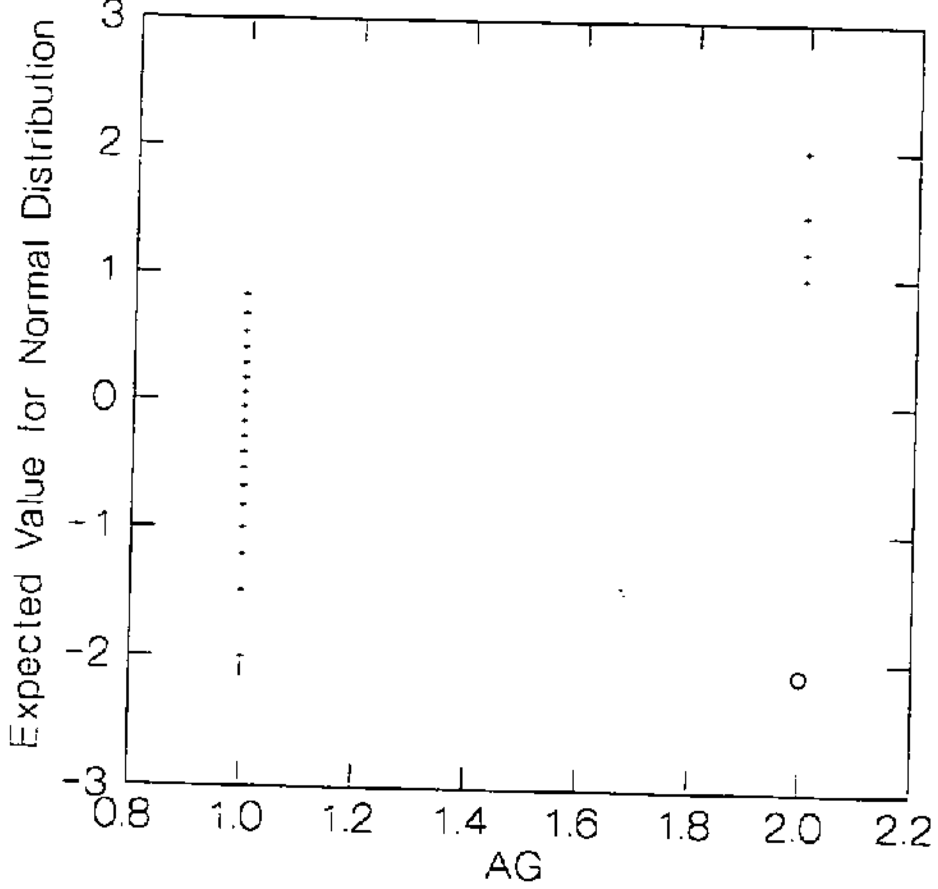
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

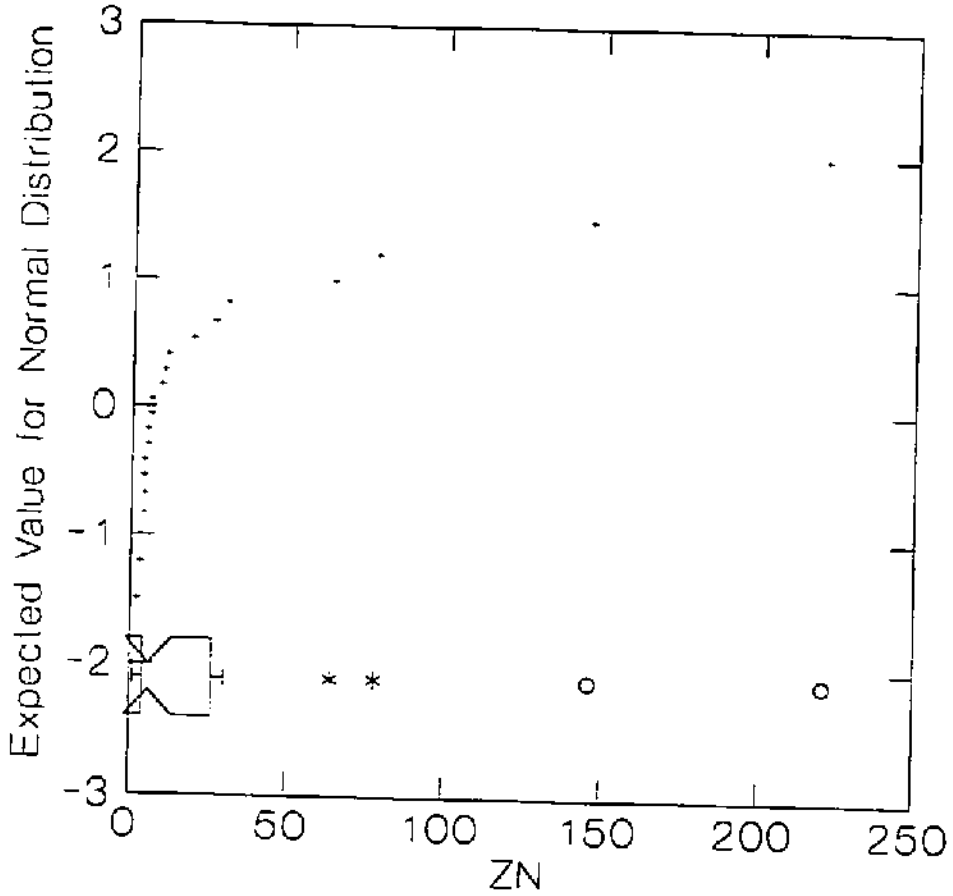
CH2M HILL





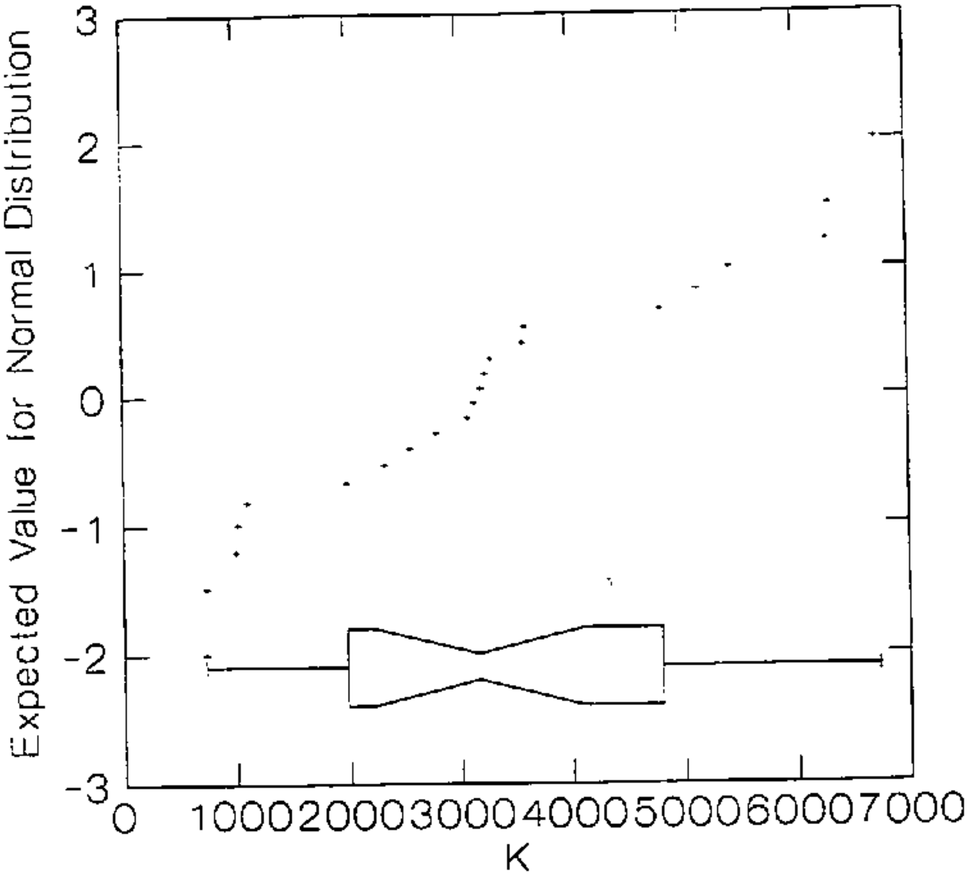
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

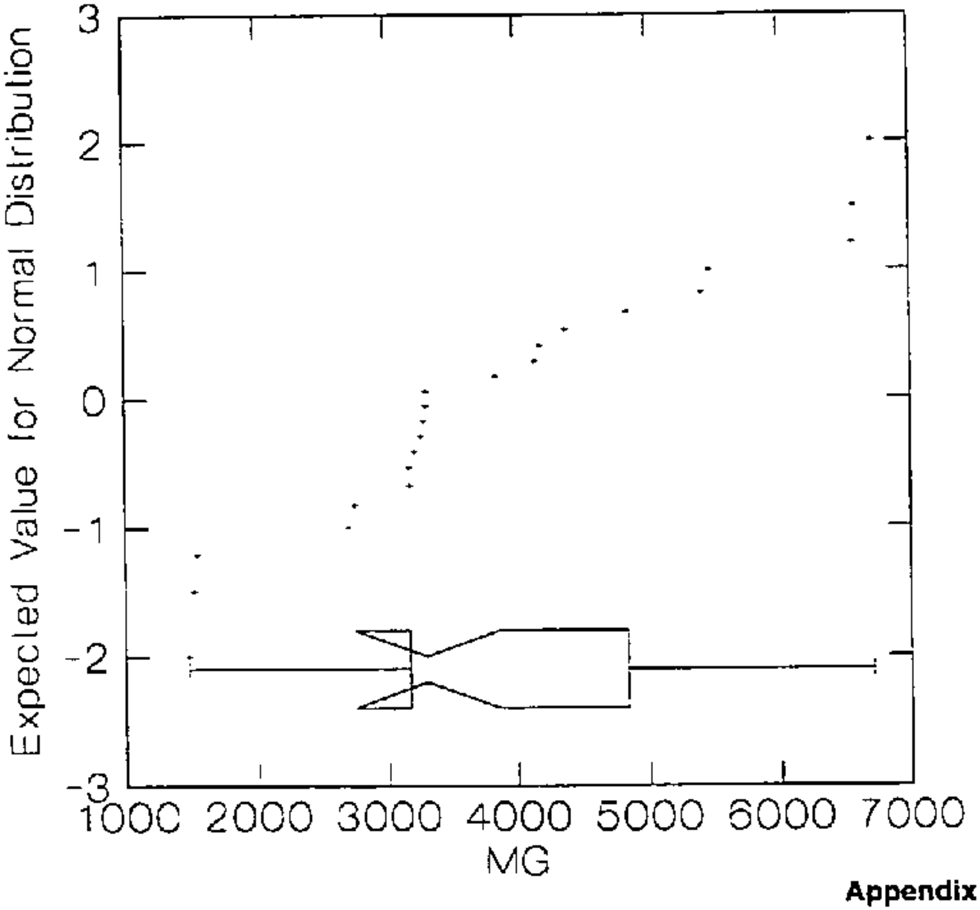




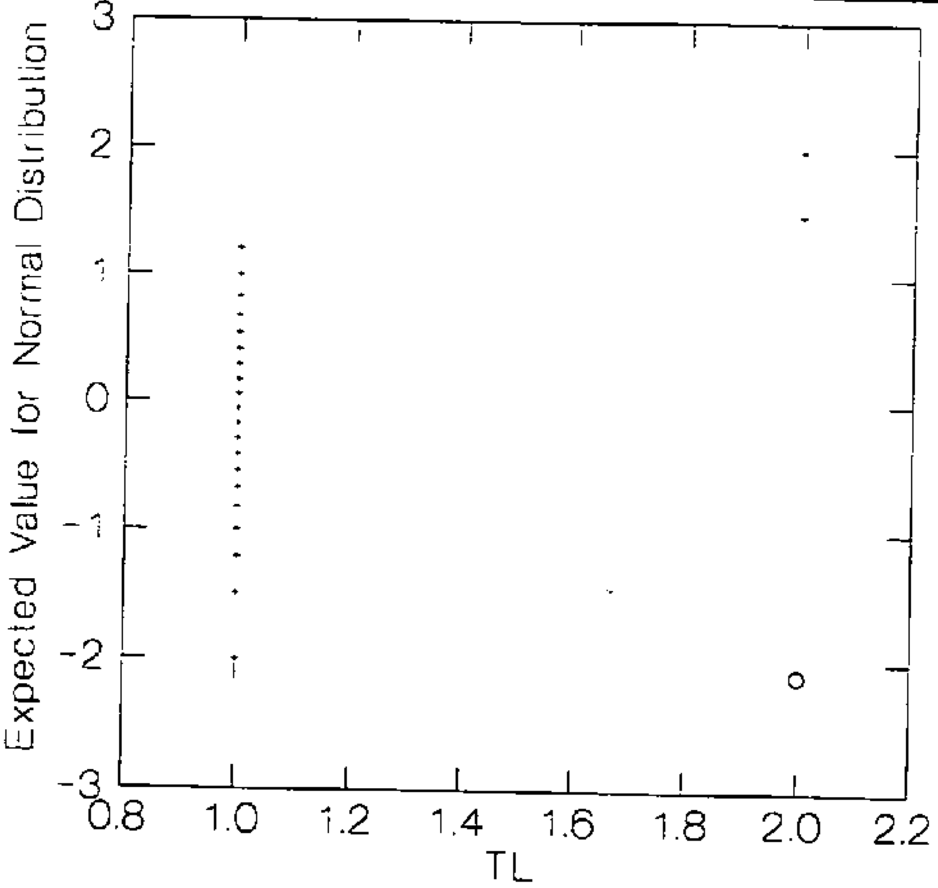
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

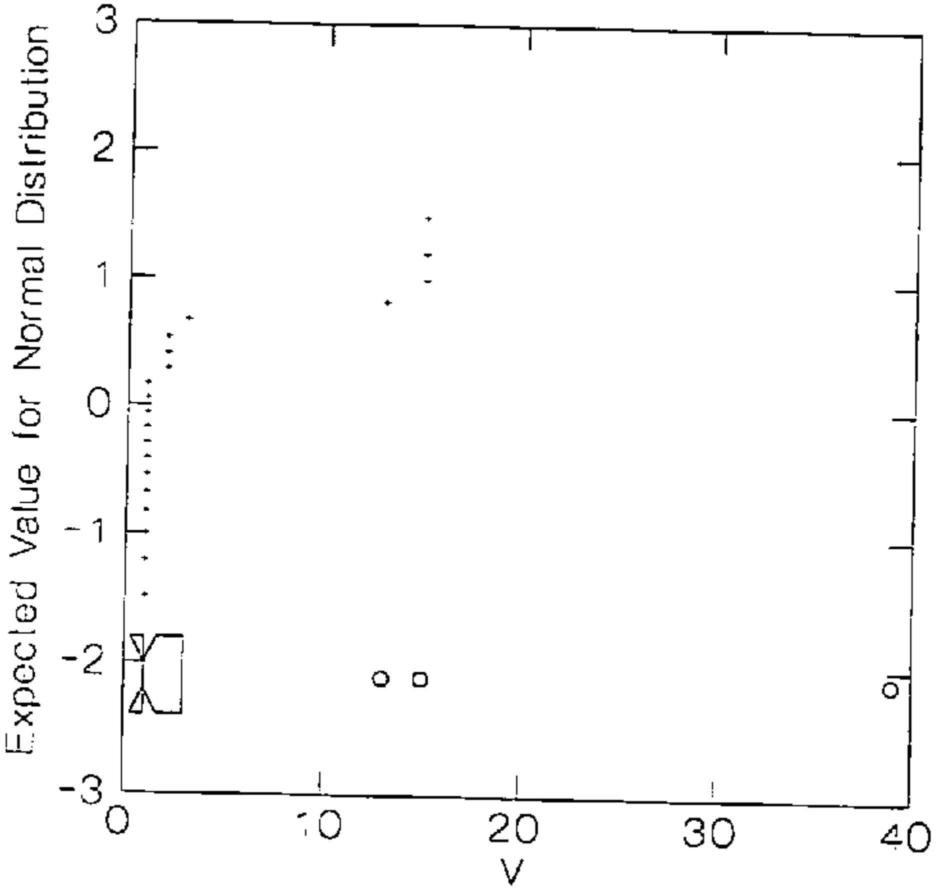
C-35



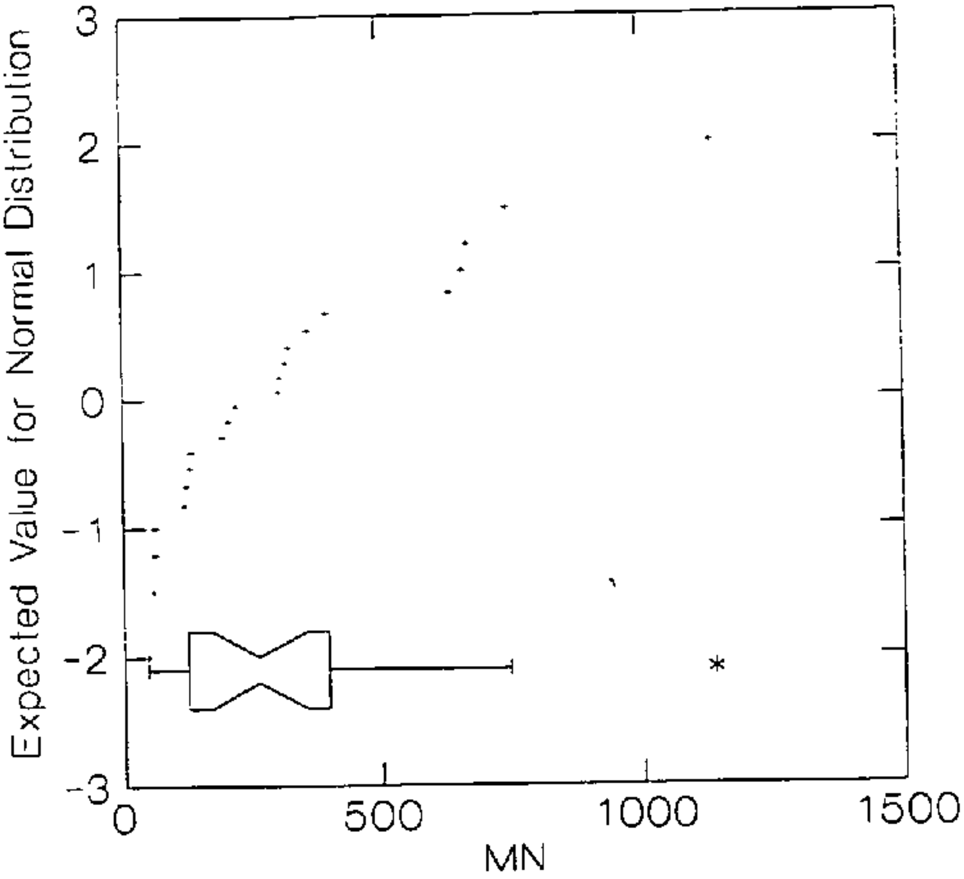


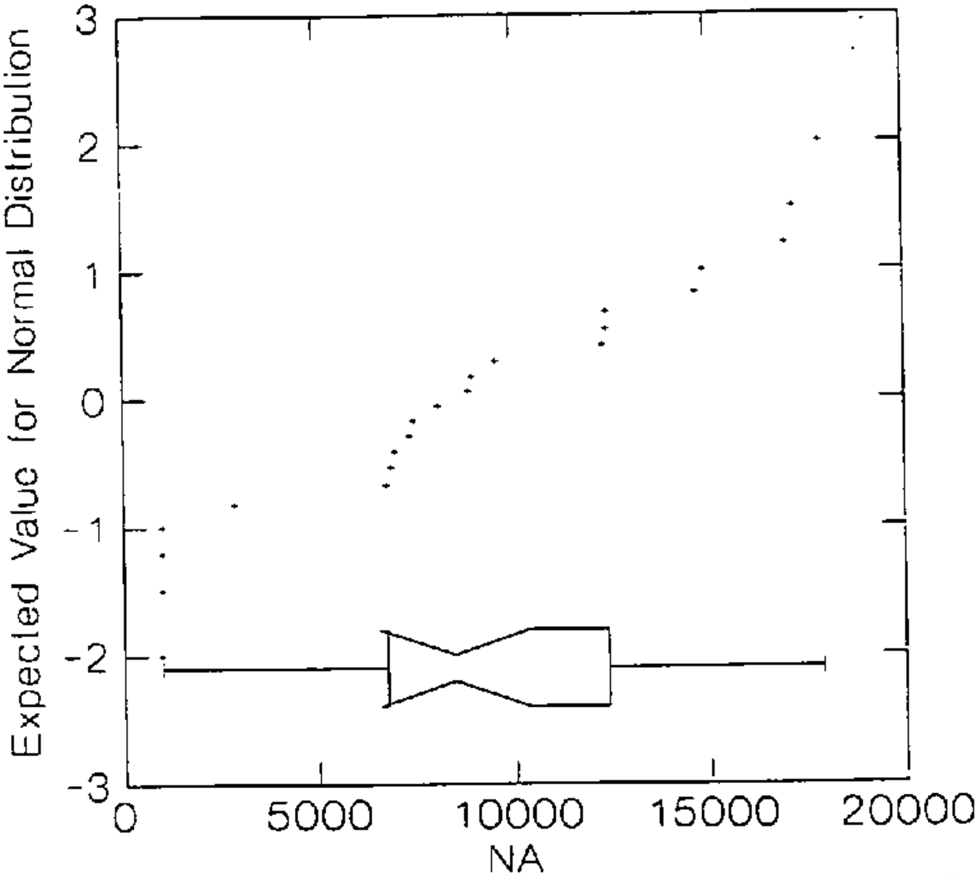
Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations





Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

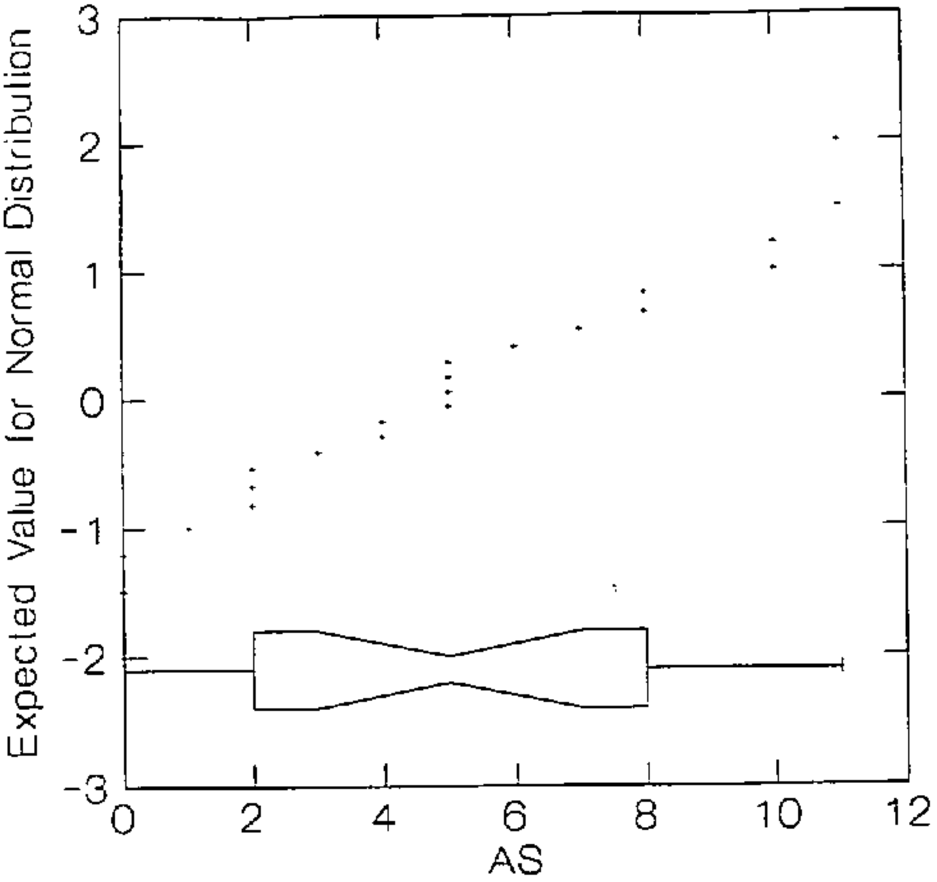


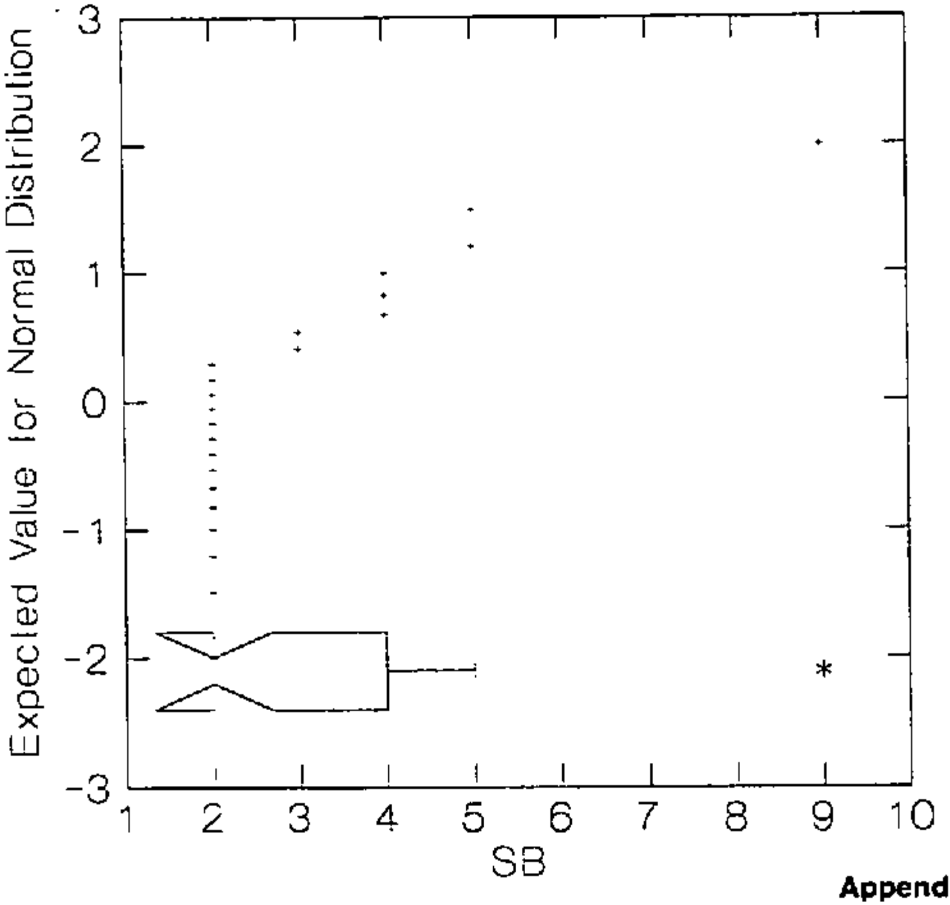


Appendix C-5
Box and Whisker Plots for Metals
All Surface Water Locations

Appendix C-6

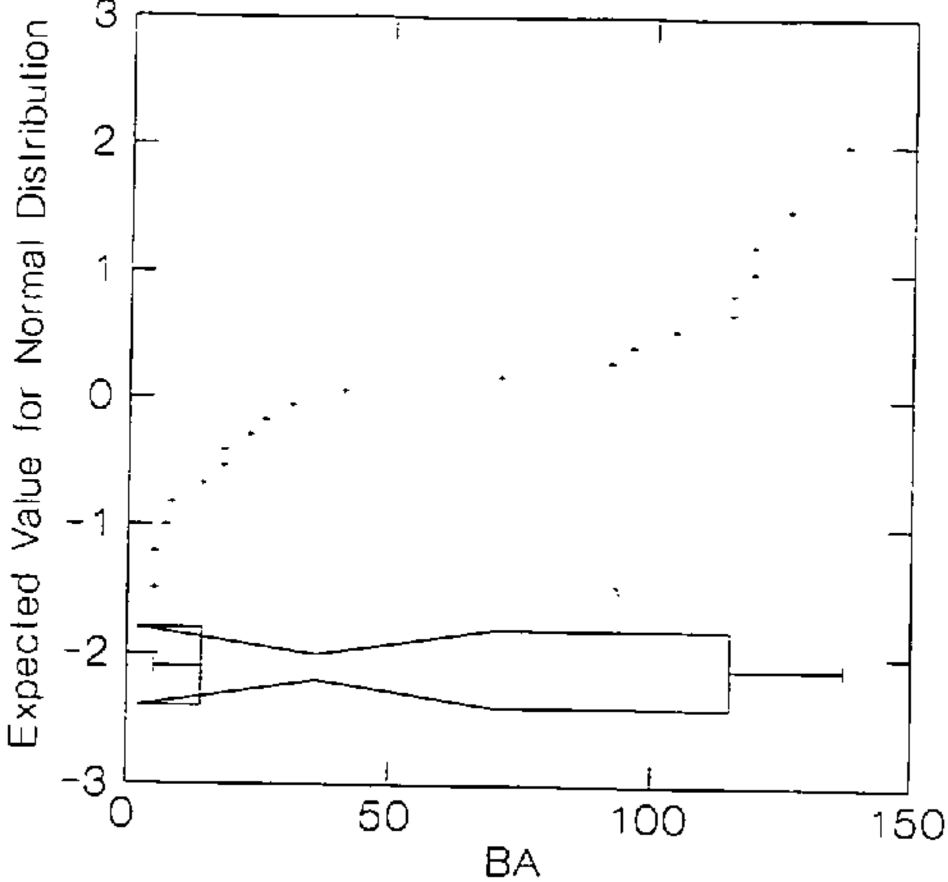
All Sediment Locations

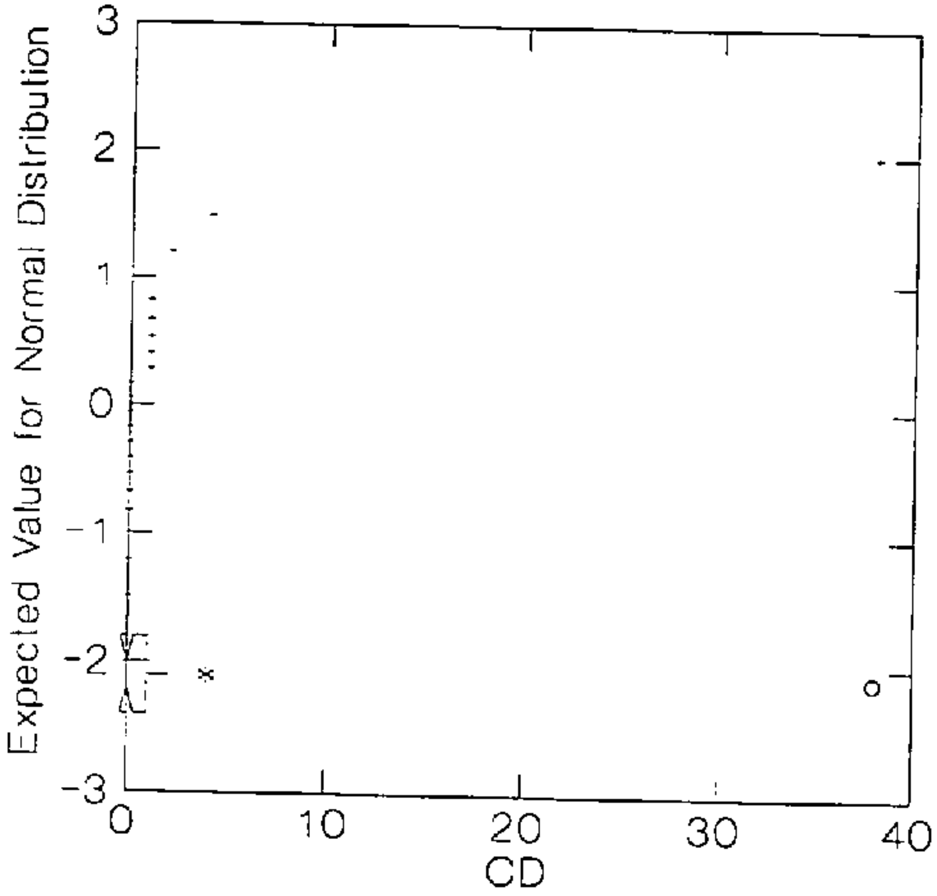




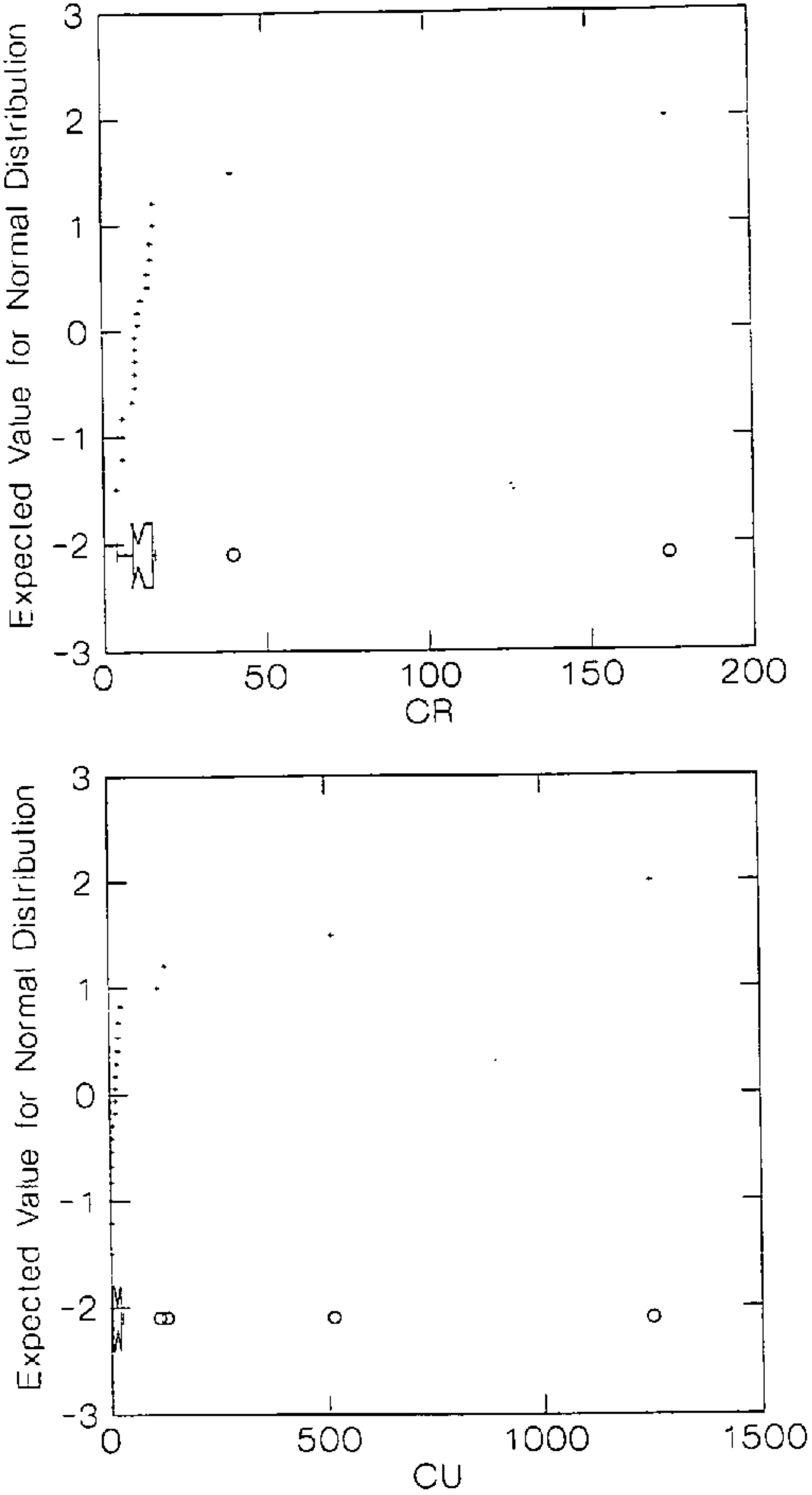
Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

CH2M HILL

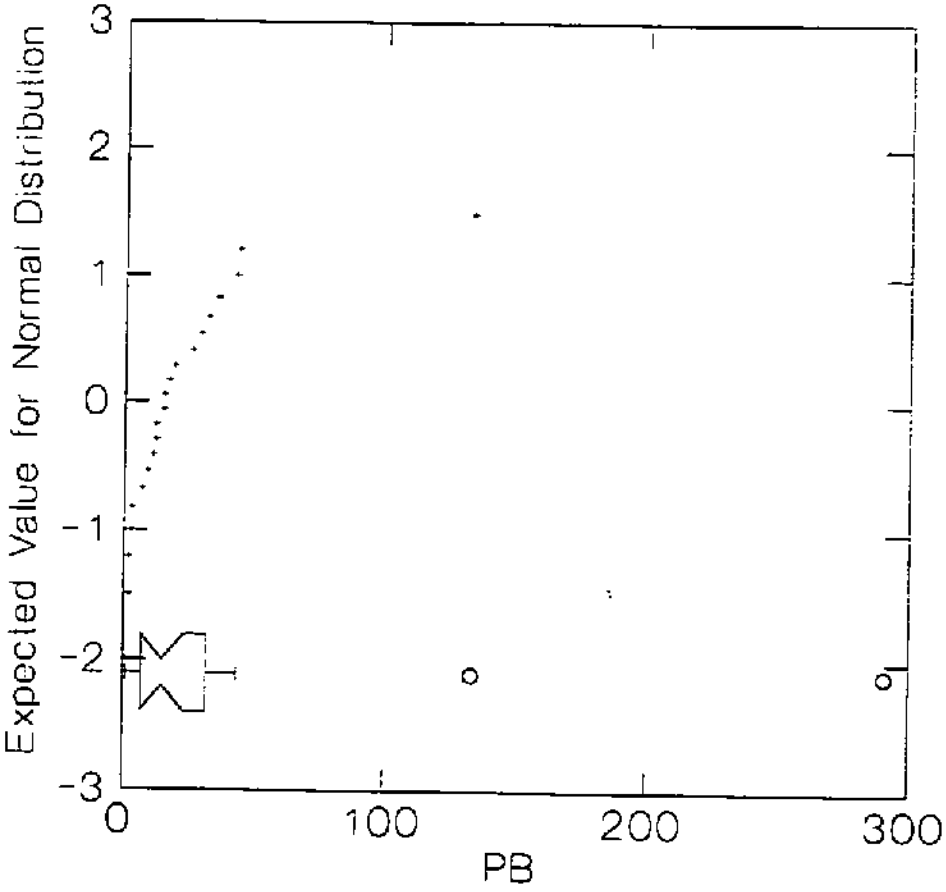


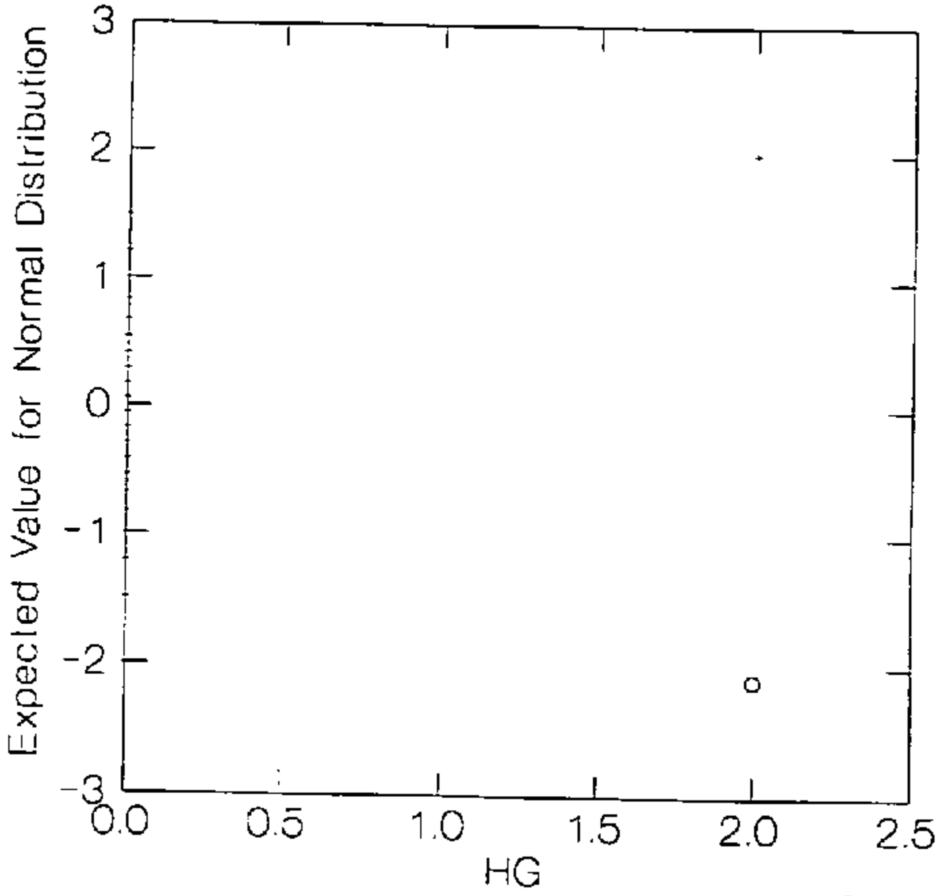


Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

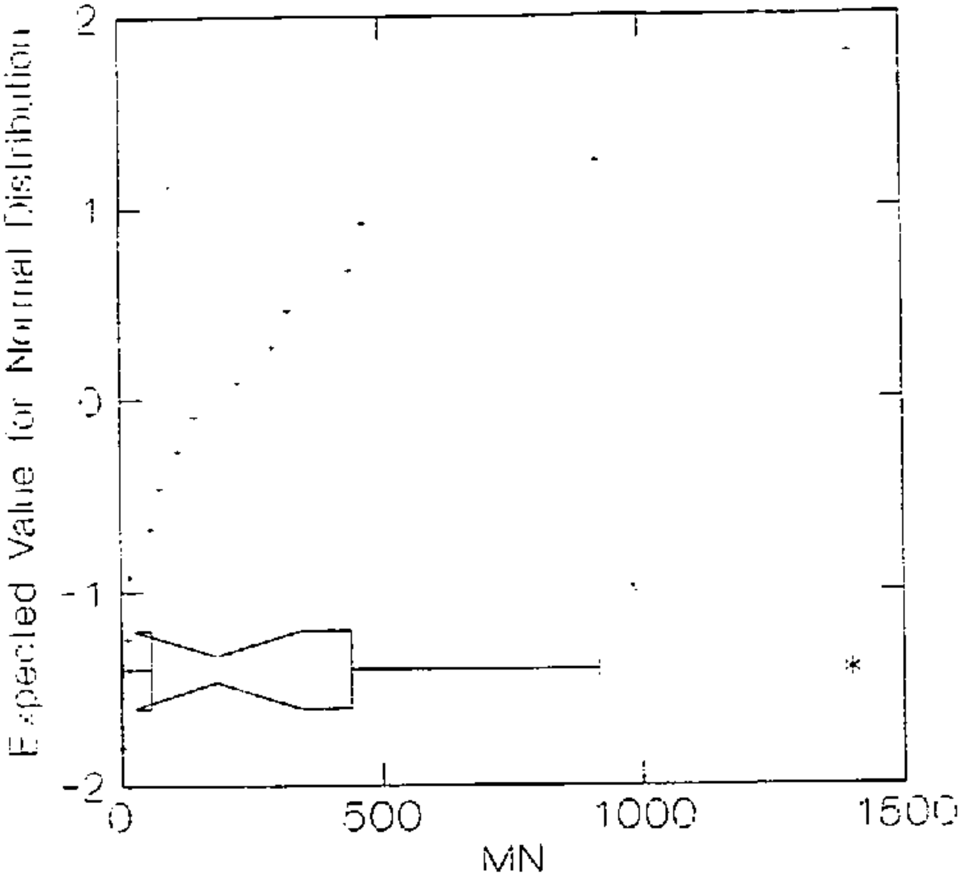


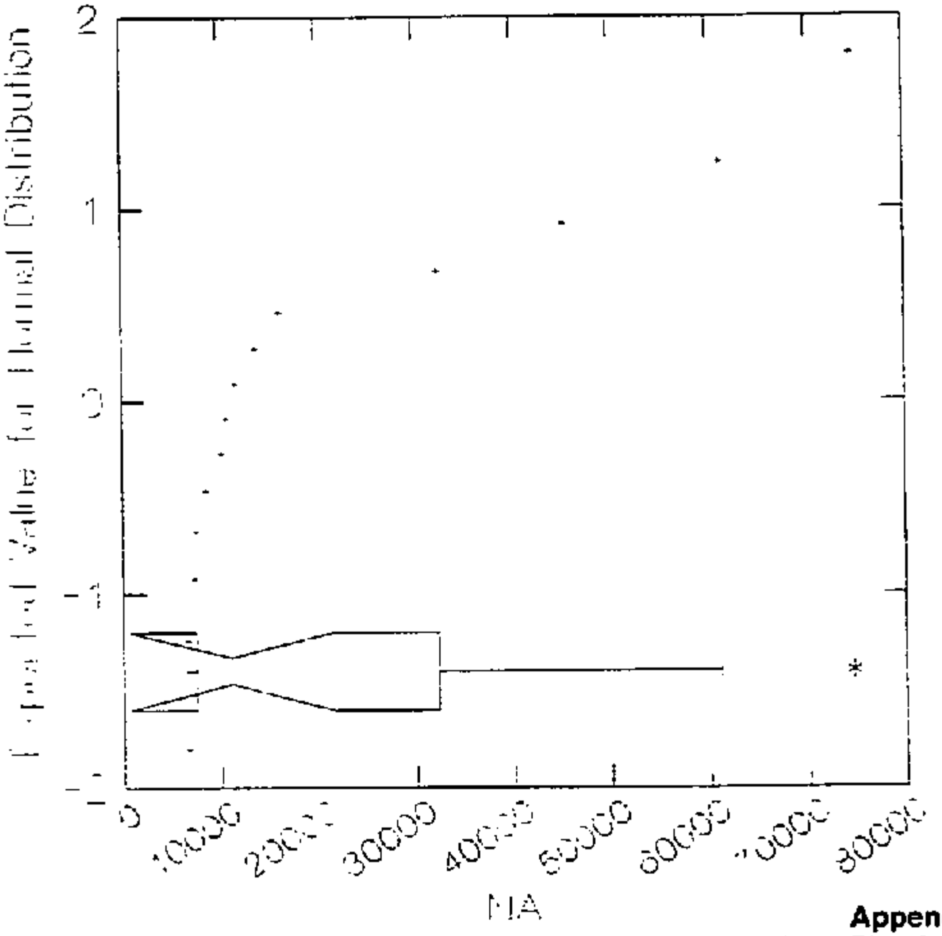
Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations



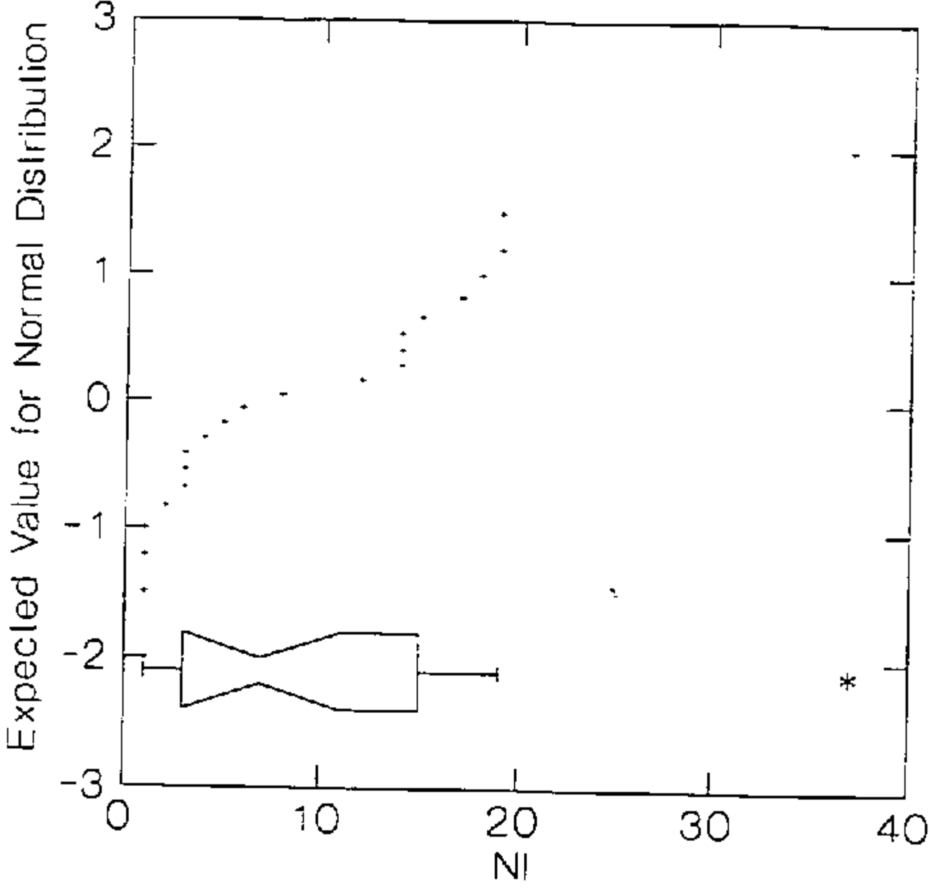


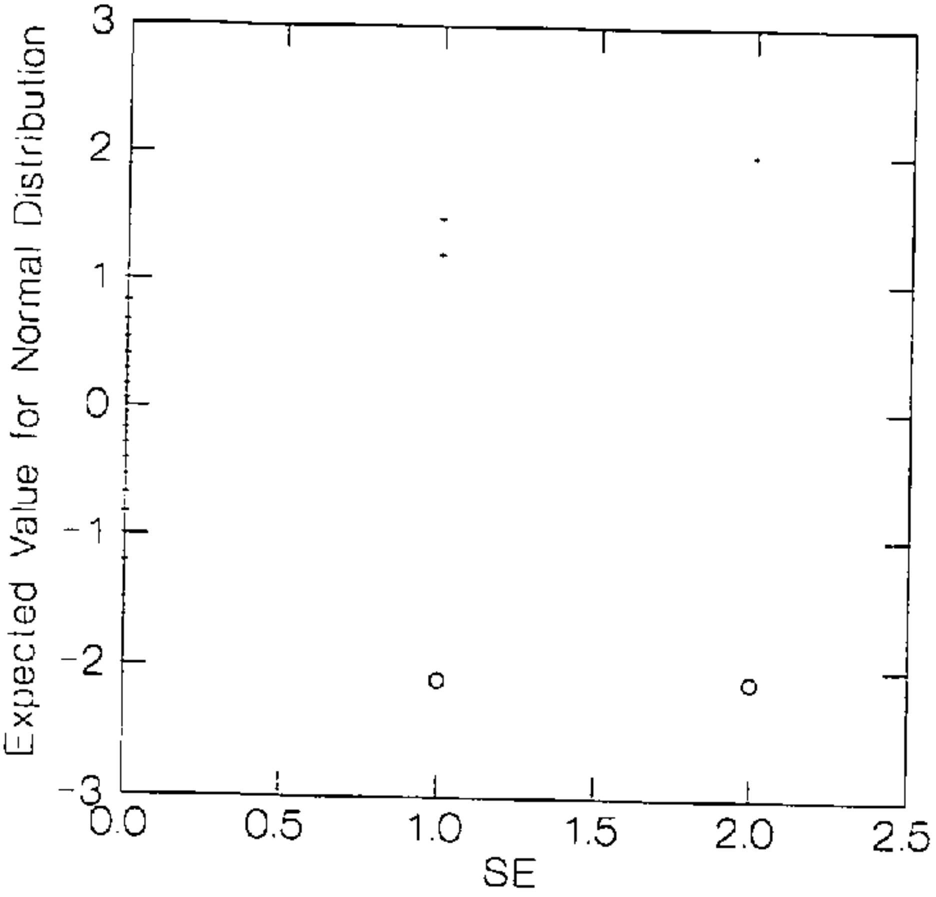
Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations



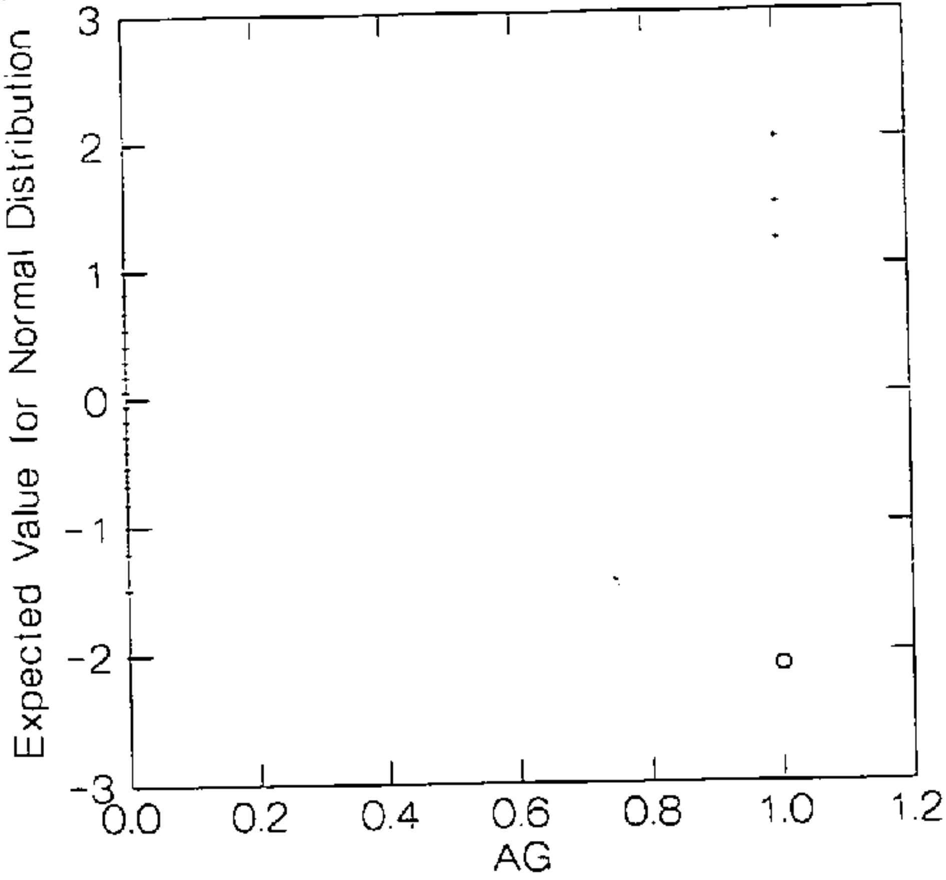


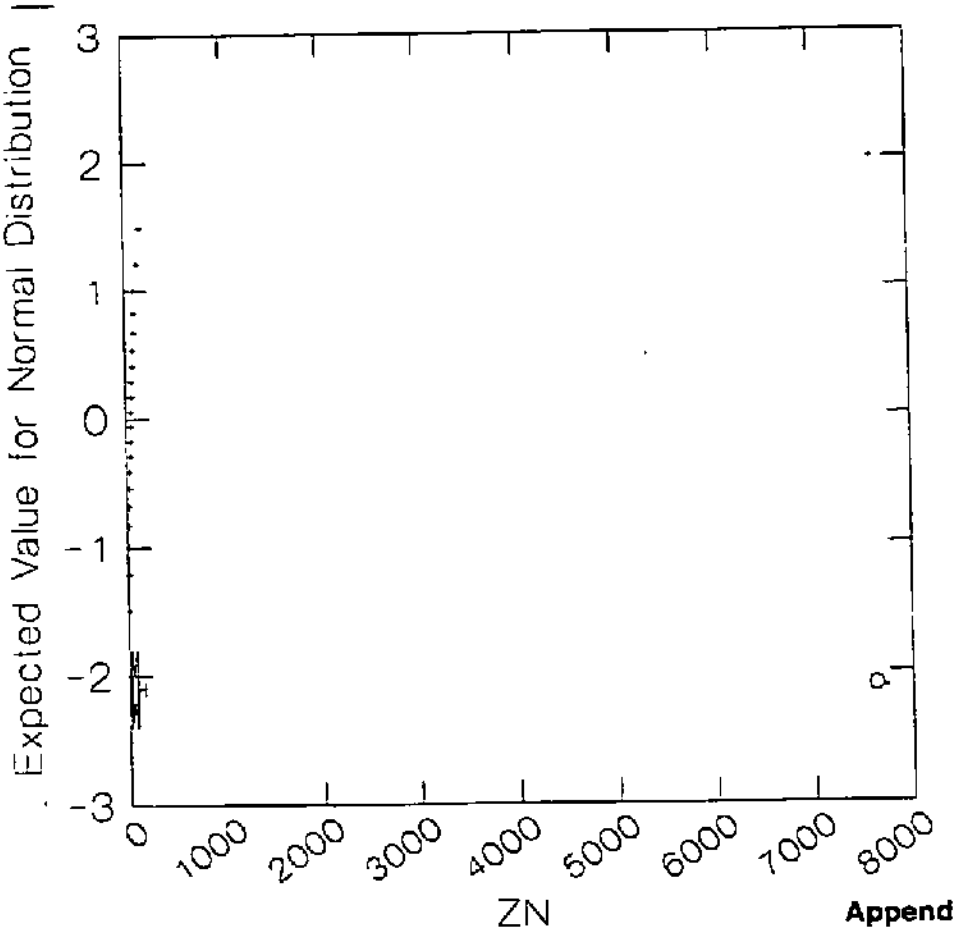
Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations





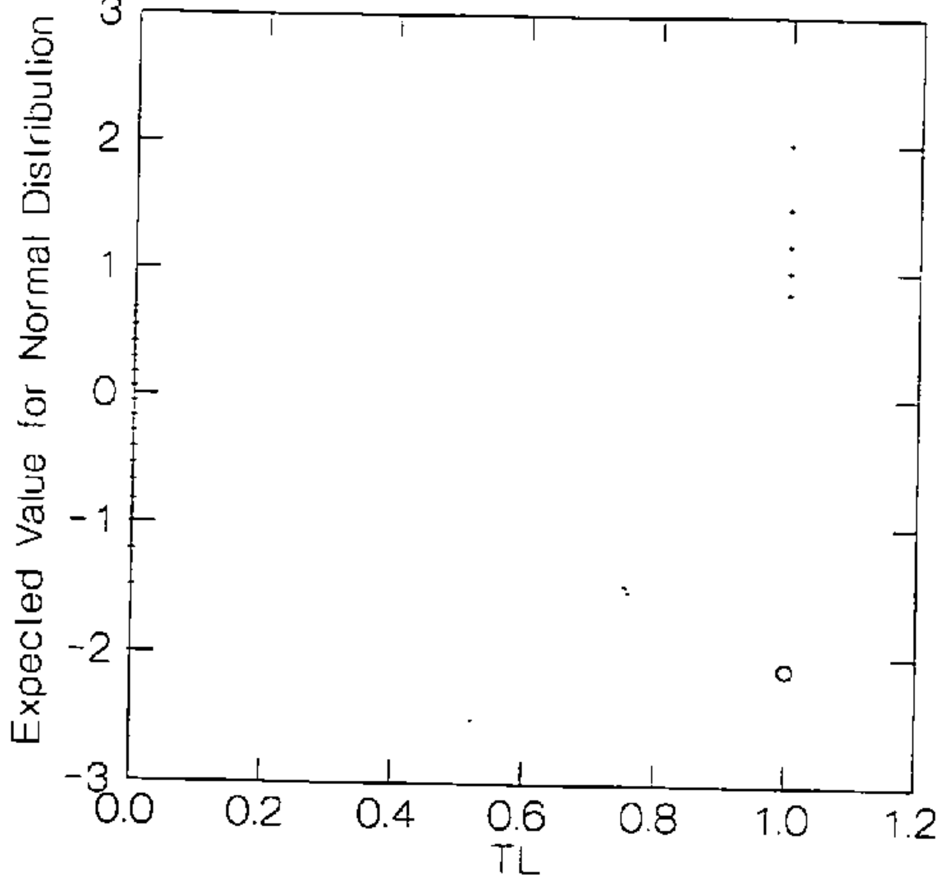
Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

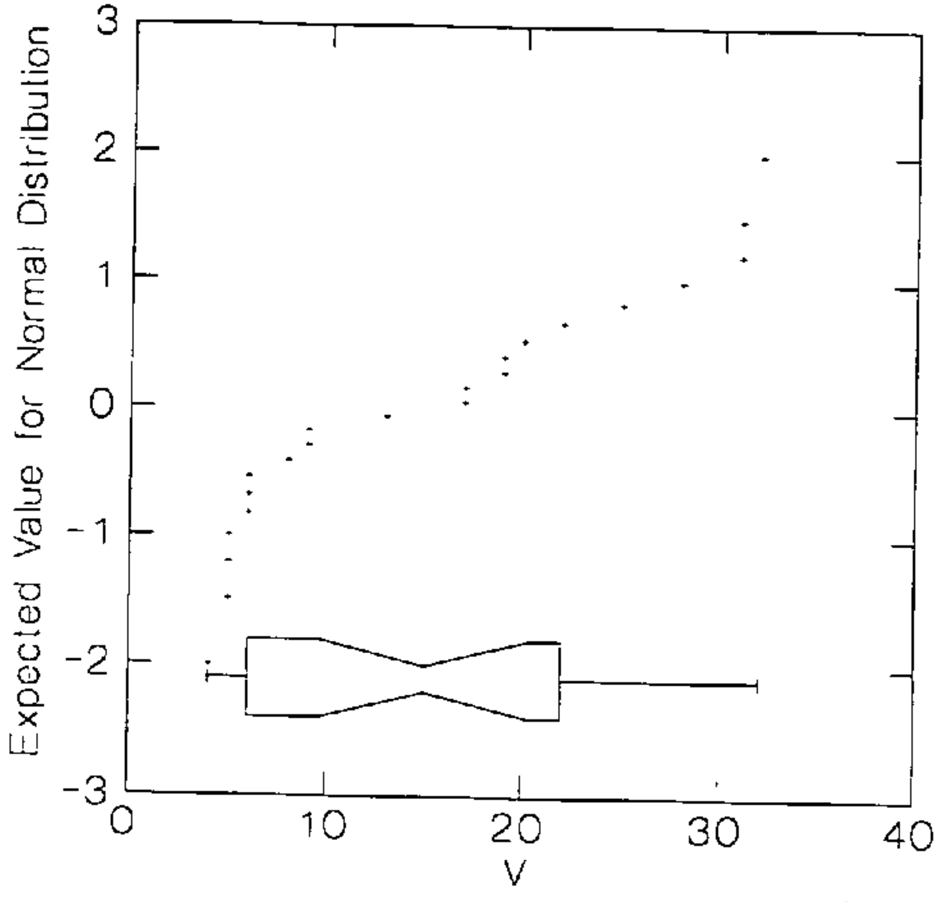




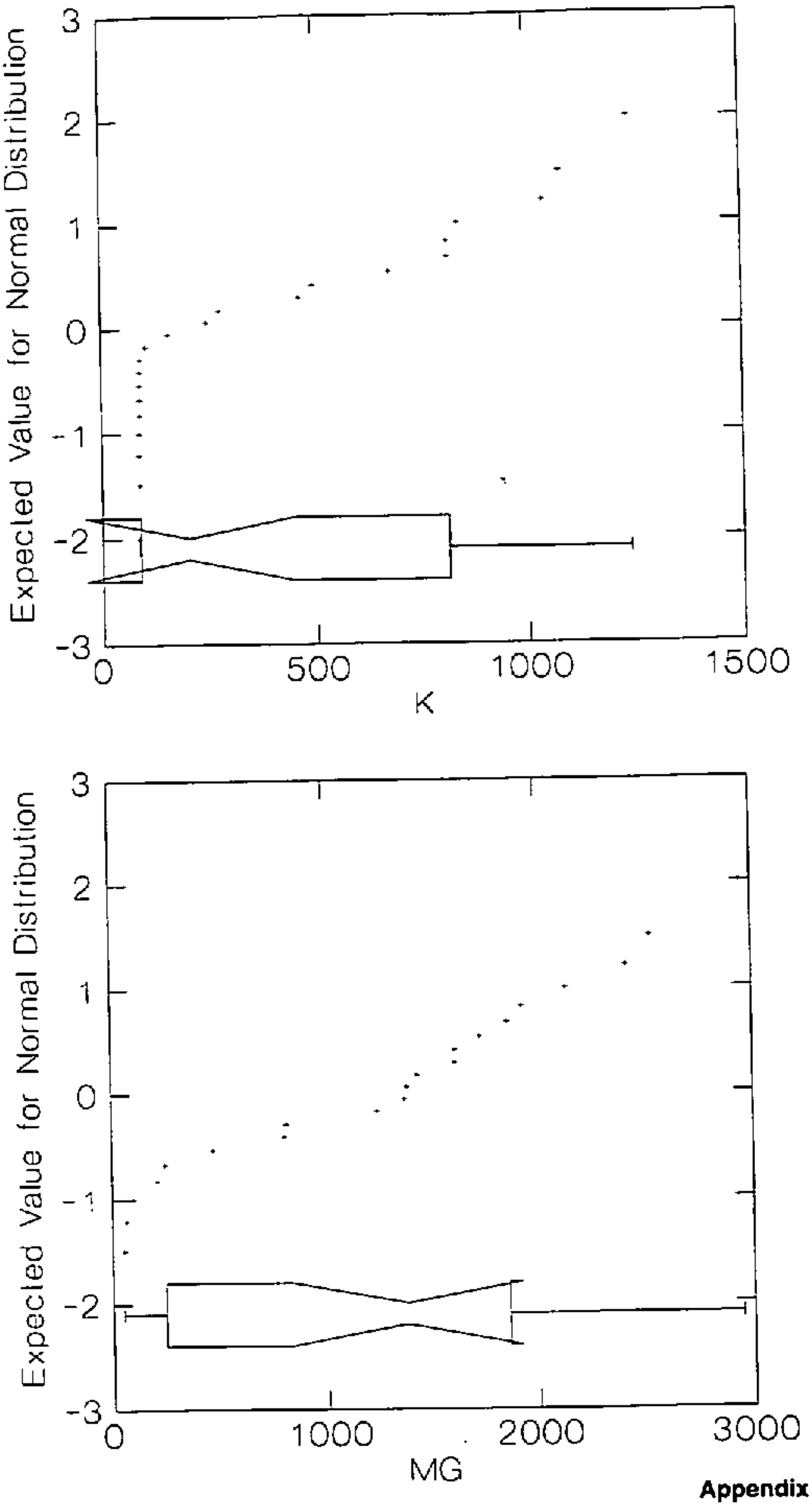
Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

CH2M HILL

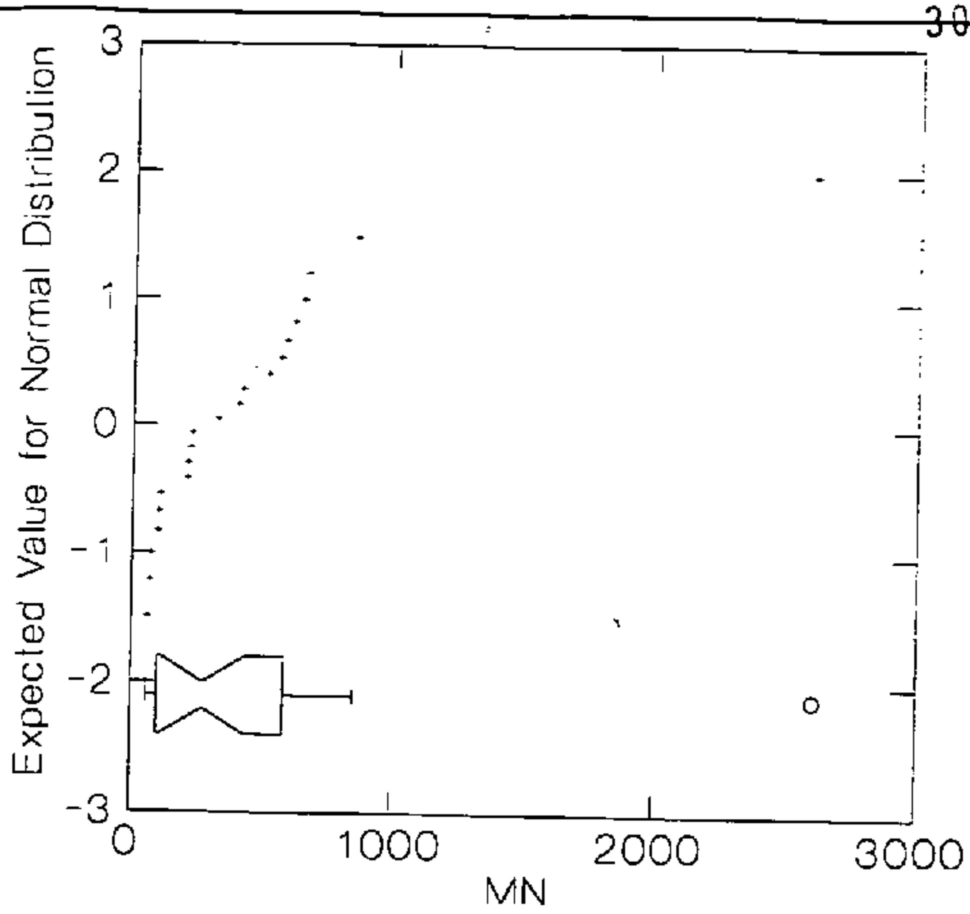


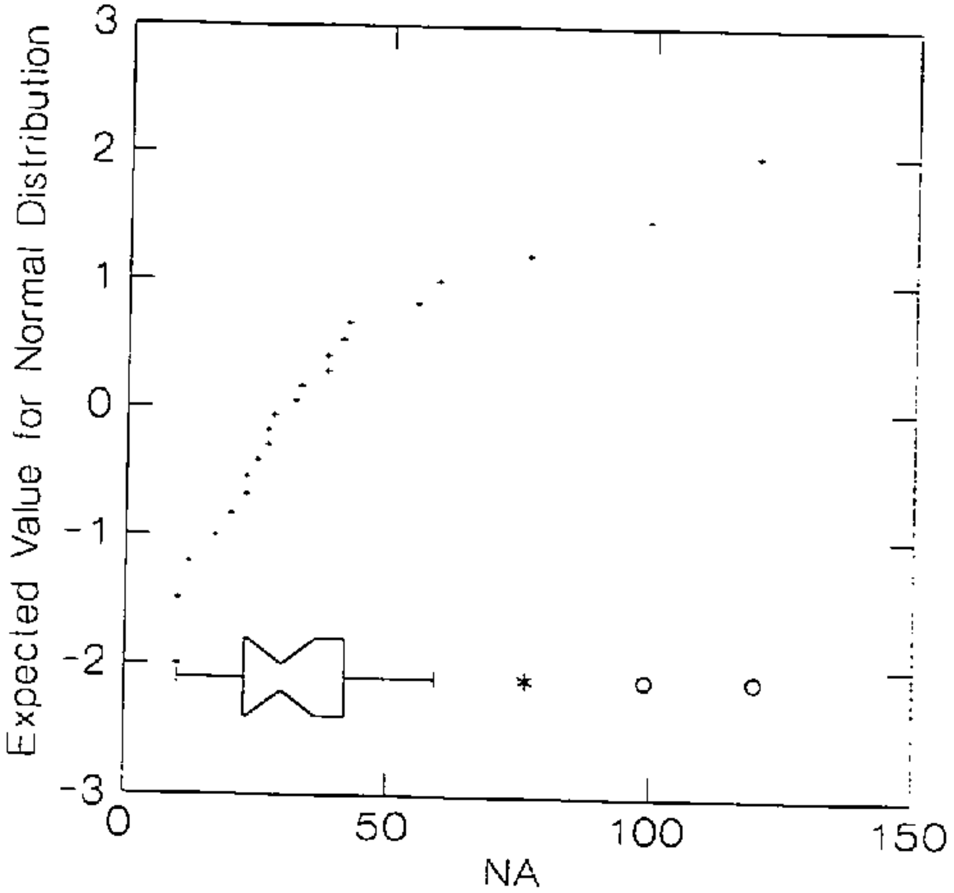


Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations



Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

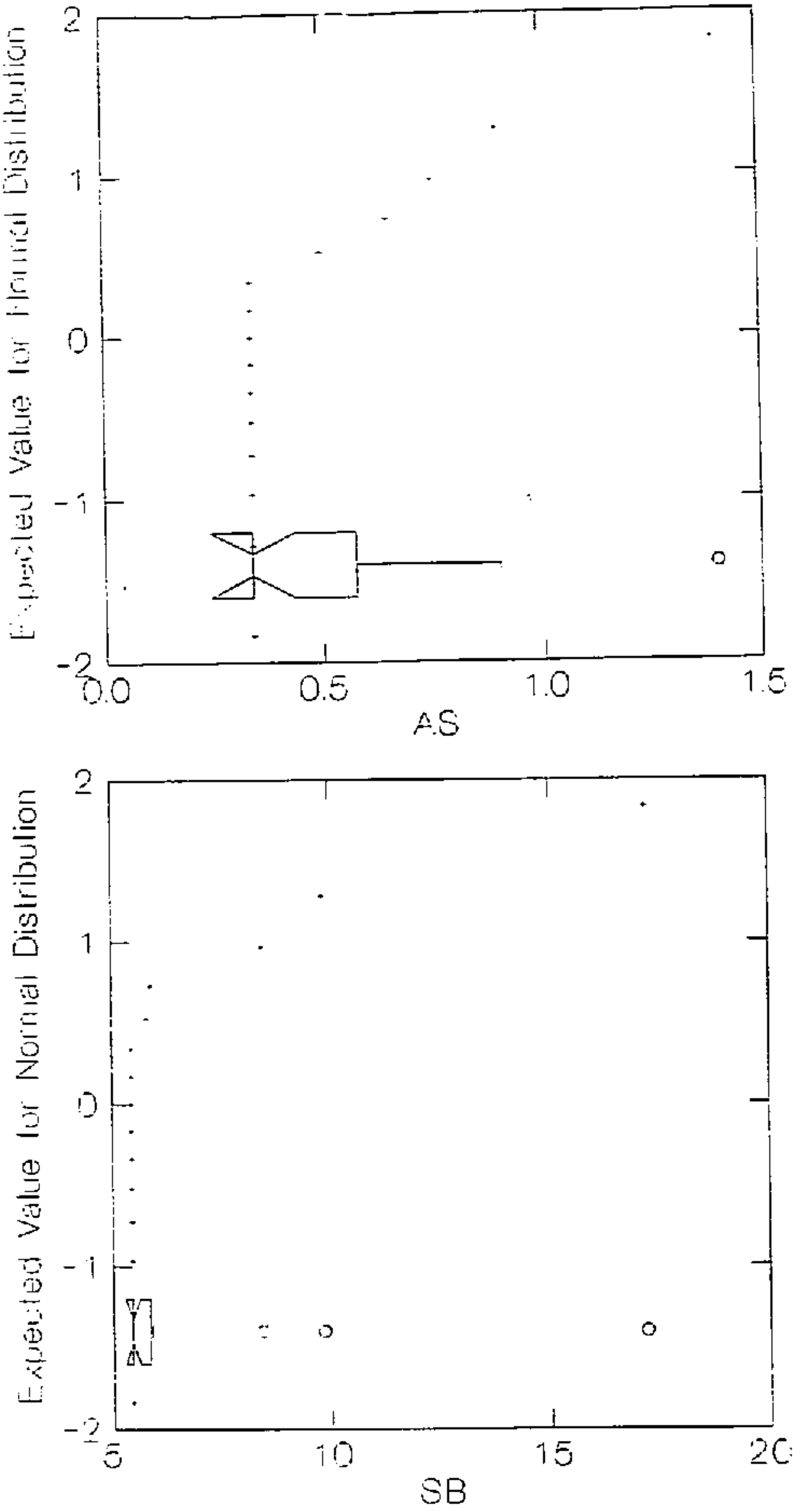




Appendix C-6
Box and Whisker Plots for Metals
All Sediment Locations

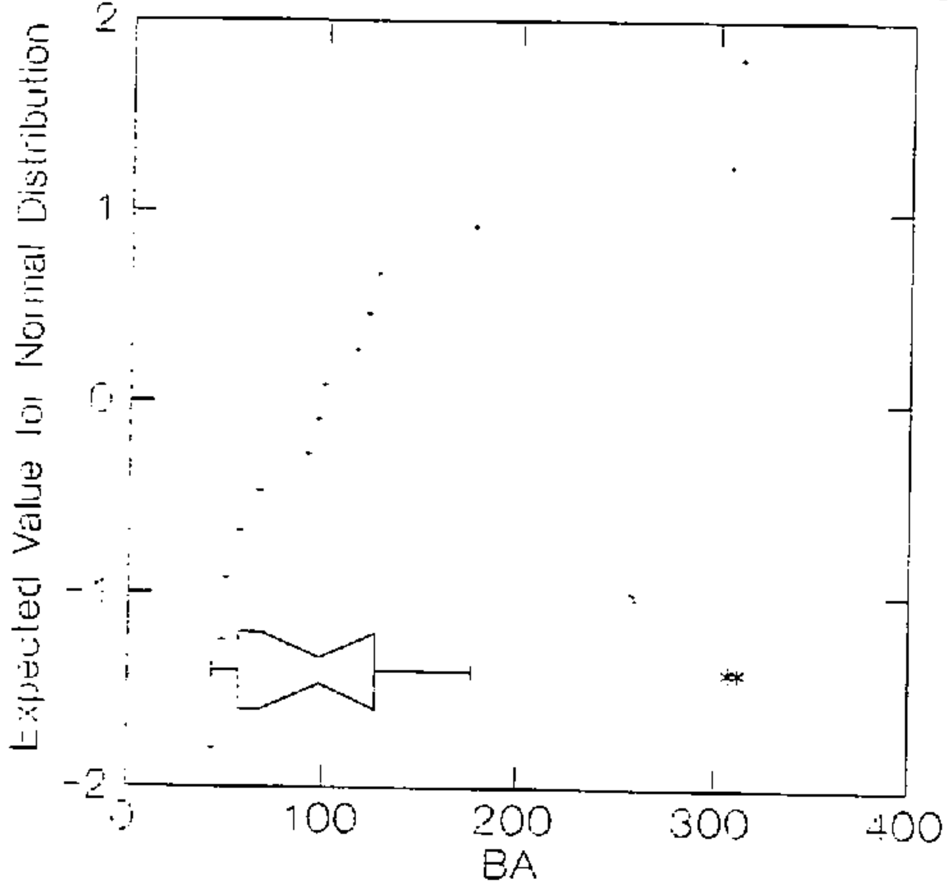
Appendix C-7

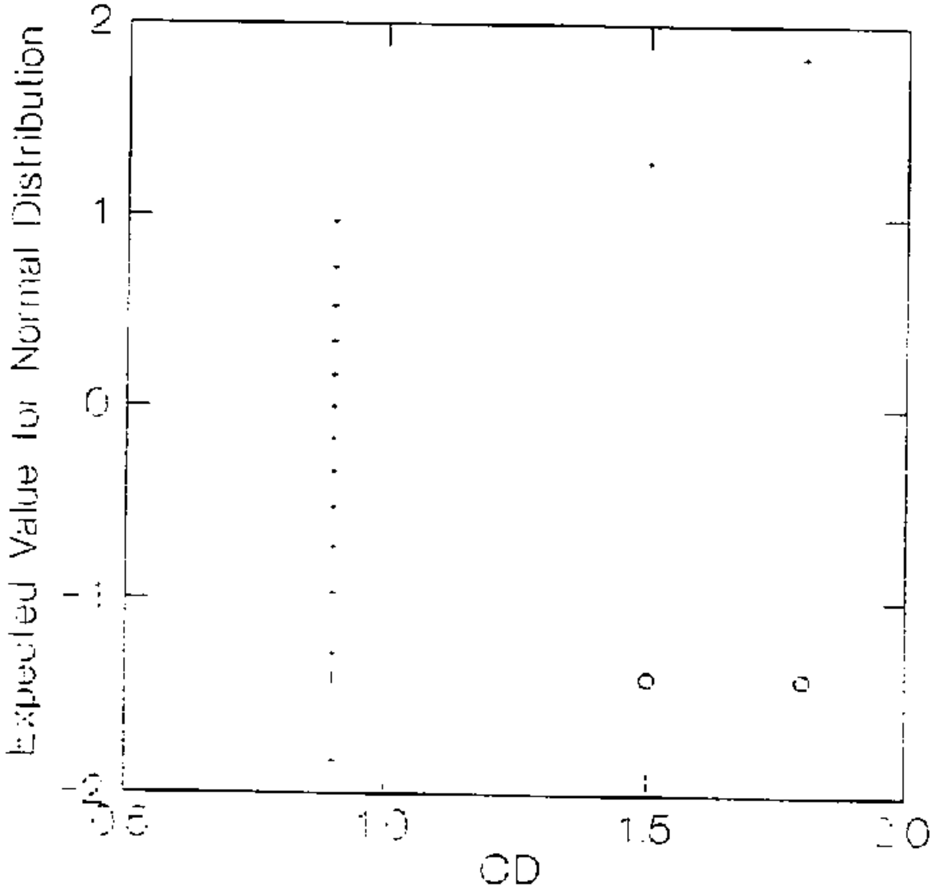
All Groundwater Locations



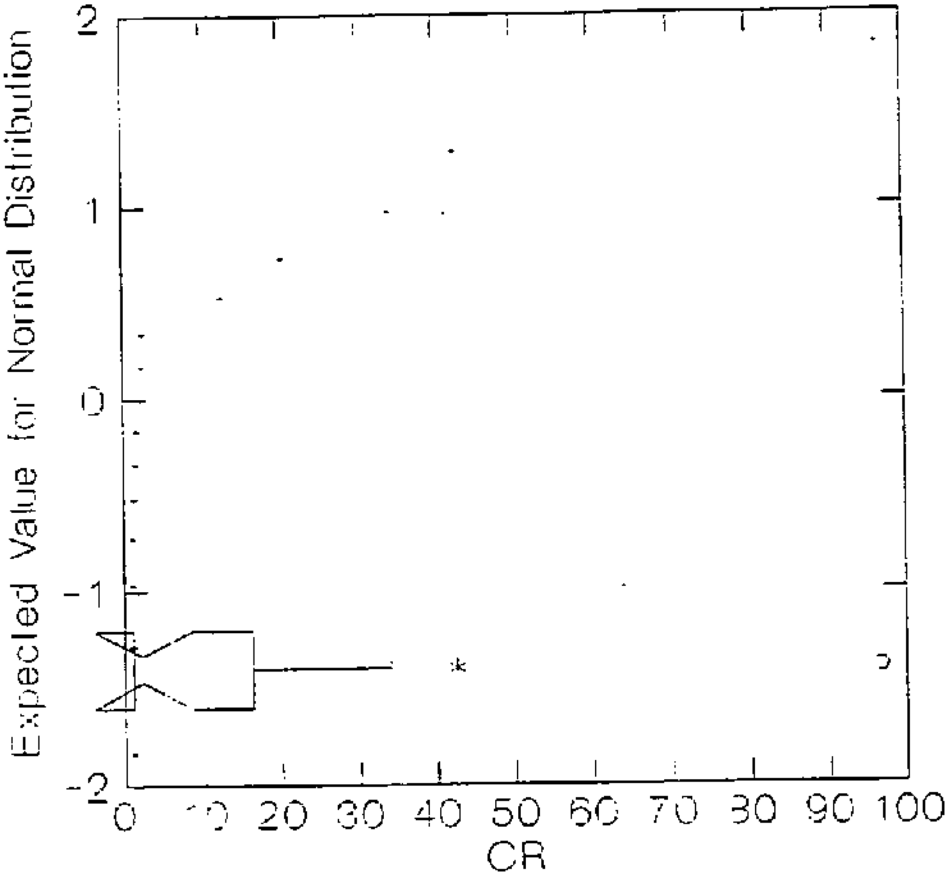
Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations

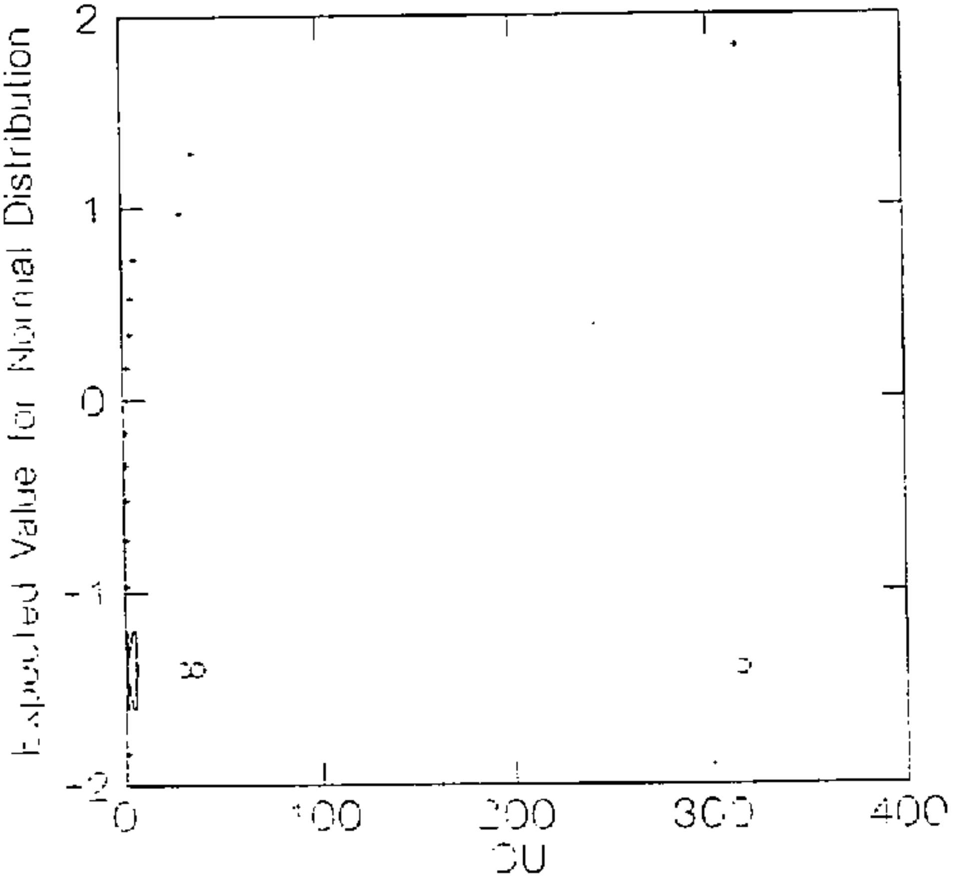
CH2M HILL



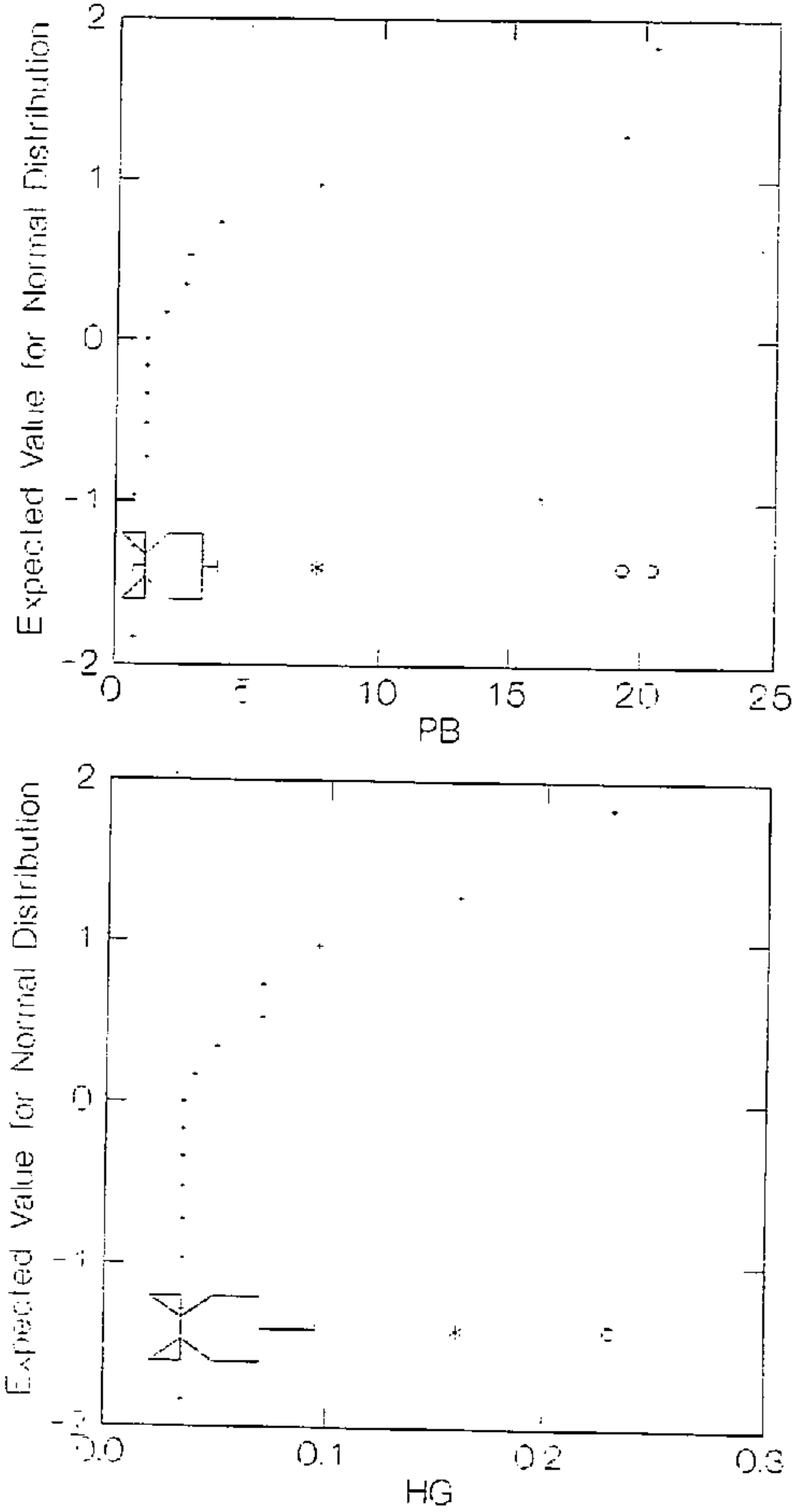


Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations



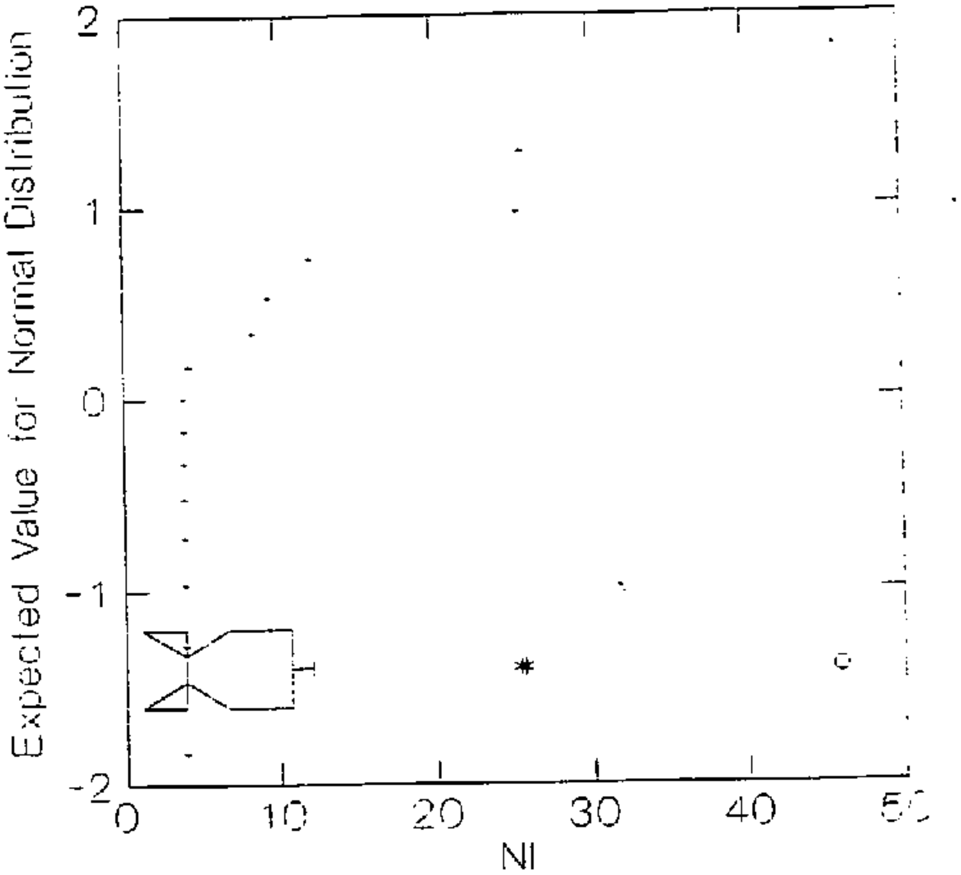


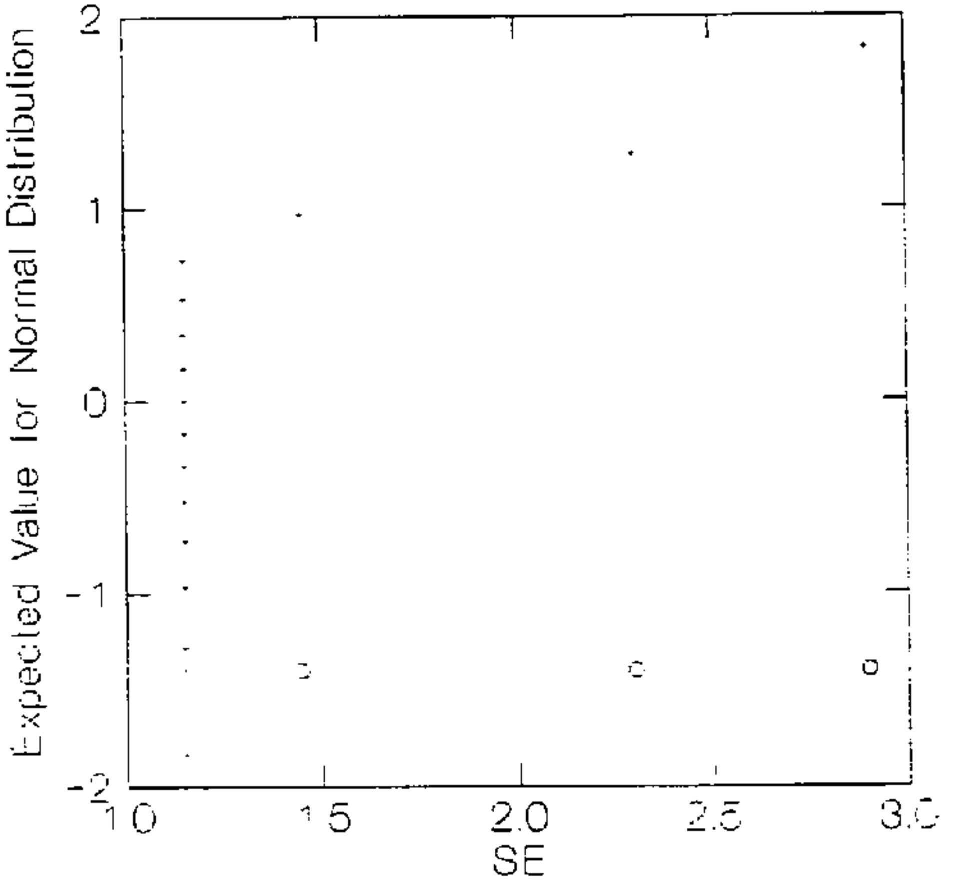
Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations



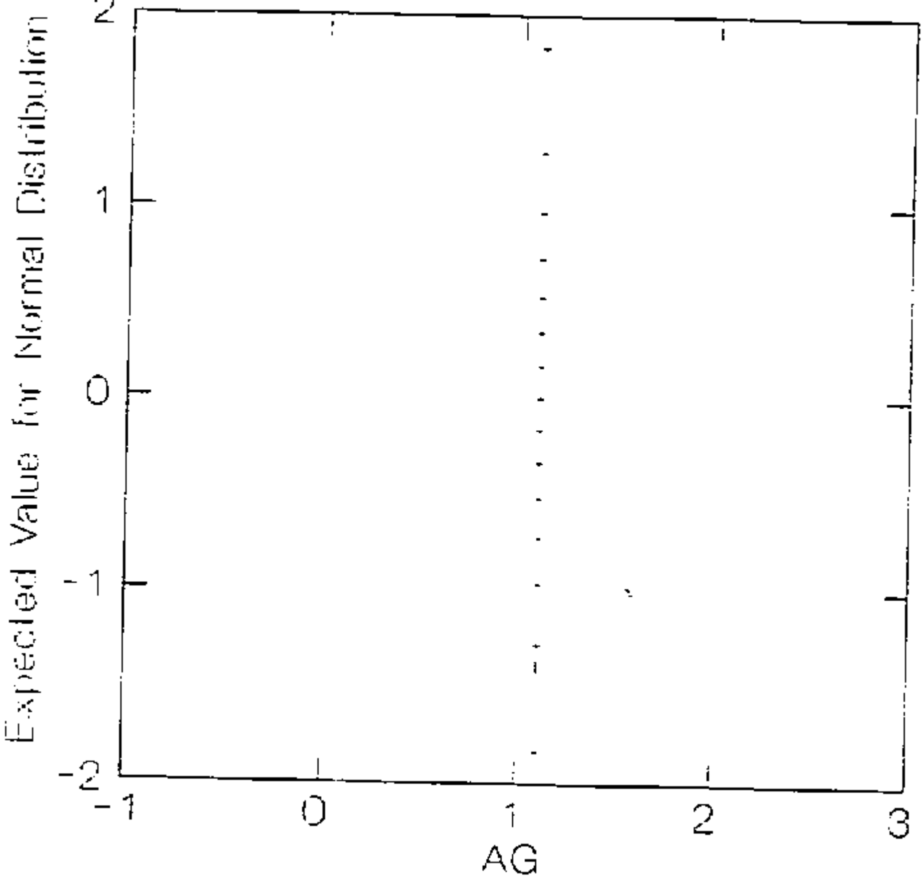
Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations

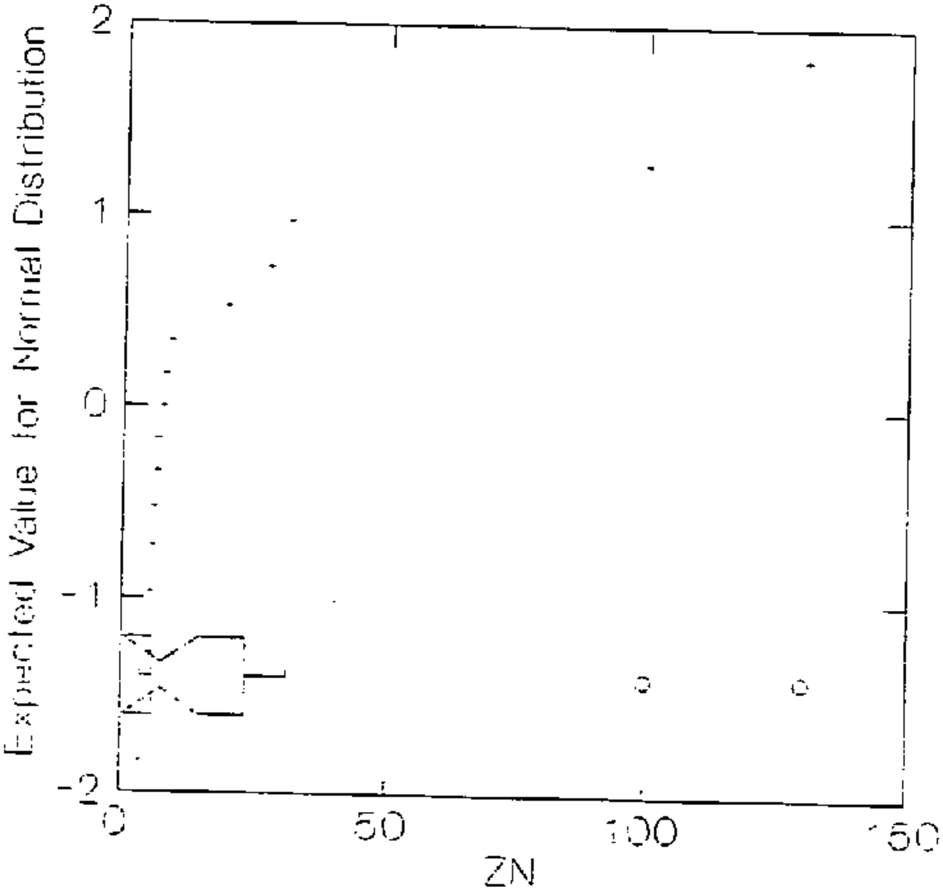
CH2M HILL



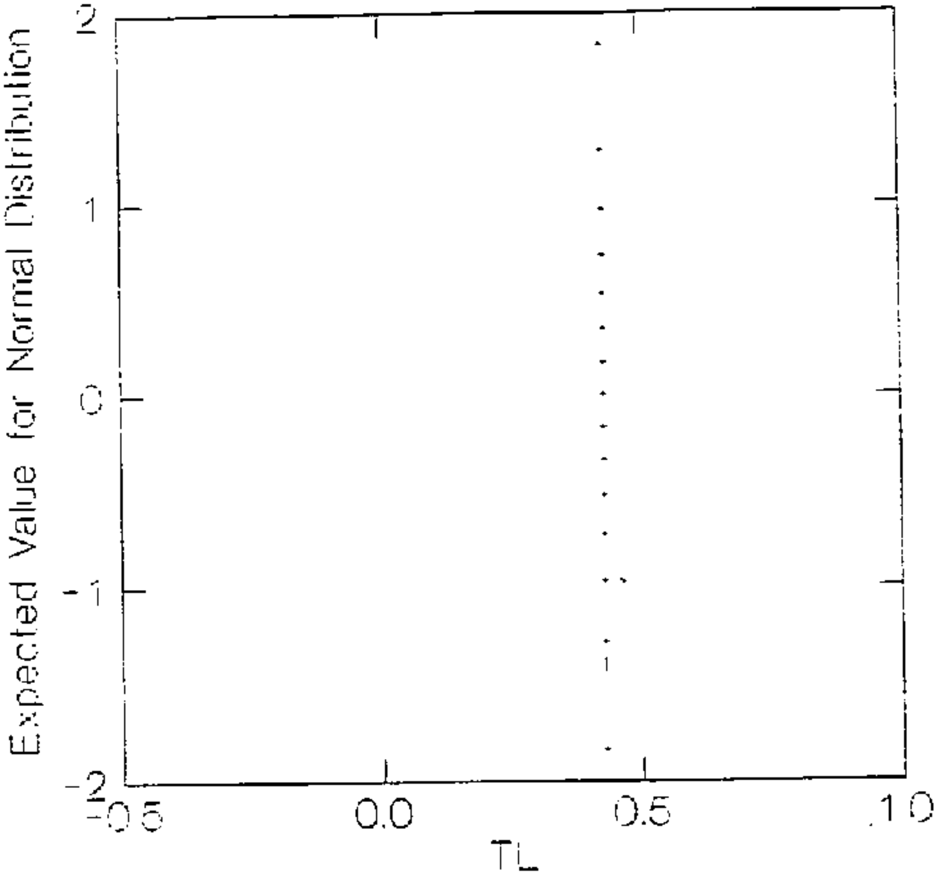


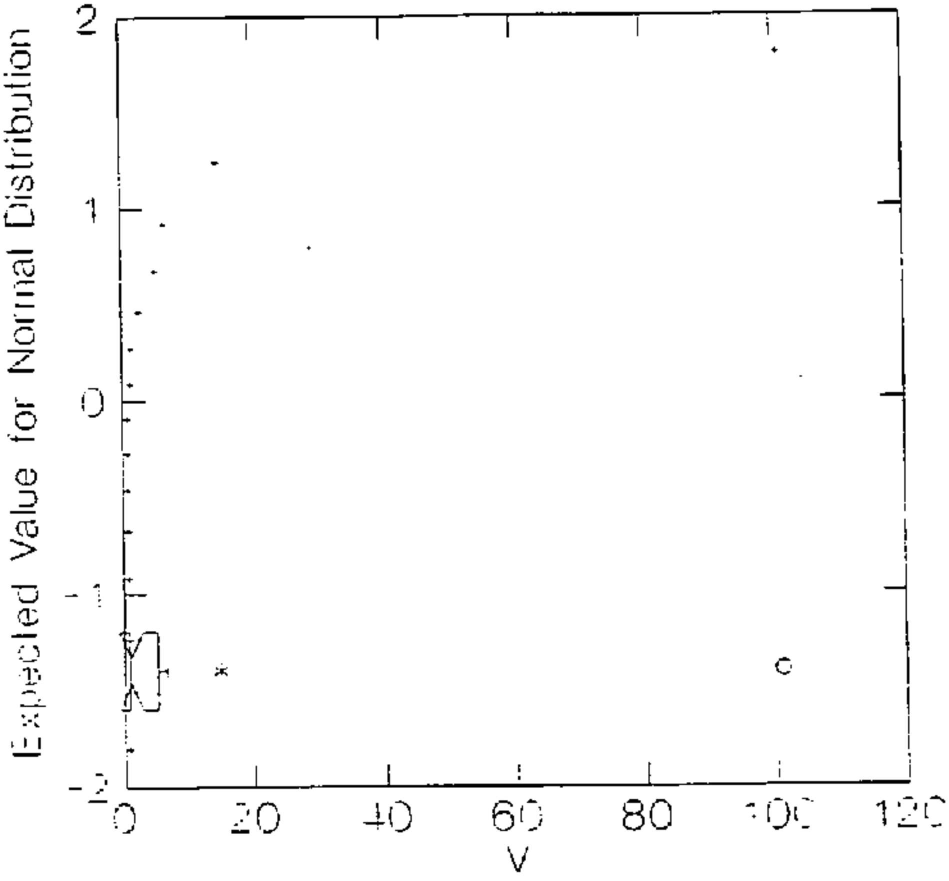
Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations



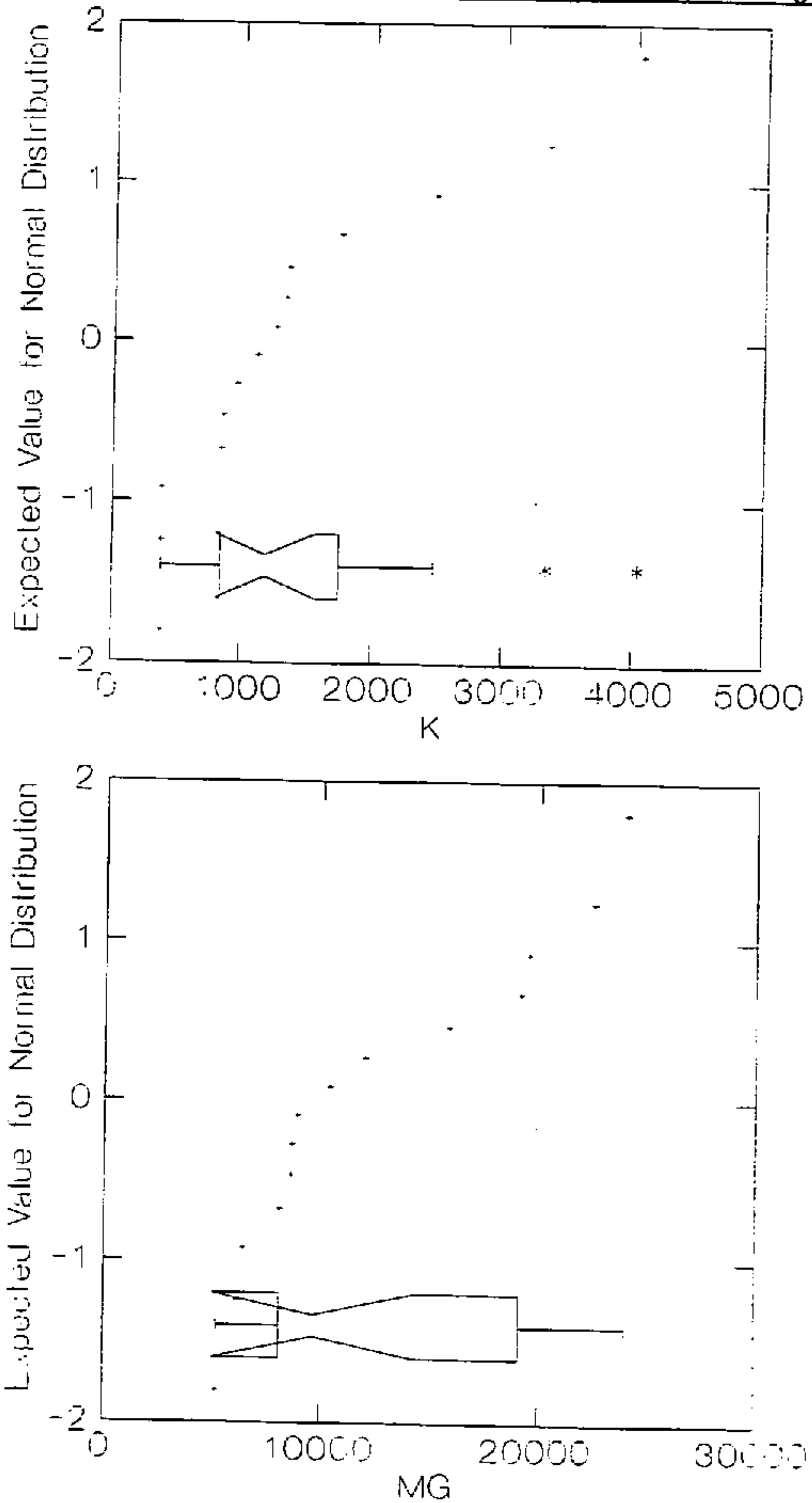


Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations





Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations



Appendix C-7
Box and Whisper Plots for Metals
All Groundwater Locations

CH2M HILL

C-56

TAB

Appendix D

Appendix D

Background Analytical Data

APPENDIX D

Contents

Analytical Data Summary: Surface Water

Group	Parameter	Station ID:	BW01	BW01	BW01	BW01	BW02	BW02	BW03	BW03	BW04	BW04
		Sample ID:	SW17	SW17A	WSSW17	WSSW17A	SW18	WSSW18	SW19	WSSW19	SW20	SW20D
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0	to	0 to 0	to
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95		10/10/95		10/10/95	10/10/95
		Units										
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L	10 U	10 U			10 U		10 U		10 U	10
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L	10 U	10 U			10 U		0.024 J		10 U	10
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.057 J		25 U	25
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L	25 U	25 U			25 U		25 U		25 U	25
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0 U		25 U	25
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.051 U		25 U	25
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.056 U		25 U	25
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L	25 U	25 U			25 U		0.066 U		25 U	25
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L	25 U	25 U			25 U		0 U		0 U	25
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L	25 U	25 U			25 U		0 U		0.012 U	25
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.069 U		25 U	25
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.072 U		25 U	25
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L	0 U	25 U			25 U		0.127 U		0.025 U	25
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L	25 U	25 U			25 U		0.078 J		25 U	25
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L	25 U	25 U			25 U		0.079 U		25 U	25
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L	0 U	0 U			50 U		0.384 J		0.254 J	0 U
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L	50 U	50 U			50 U		50 U		50 U	50
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L	40	40			66		39		44	76
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L	46	41			65		42		49	81
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L	74	61			80		62		80	132
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L	63	63			36		65		74	130
DISSMETAL	Aluminum, Dissolved	UG/L			30 U	39.3 U		47.4 U		43.4 U		
DISSMETAL	Antimony, Dissolved	UG/L			14.6 U	14.6 U		14.6 U		14.6 U		
DISSMETAL	Arsenic, Dissolved	UG/L			4.5 U	3.7 U		2.1 U		1.9 U		
DISSMETAL	Barium, Dissolved	UG/L			39.5 J	41.8 J		58.1 J		48.3 J		
DISSMETAL	Beryllium, Dissolved	UG/L			0.18 U	0.18 U		0.18 U		0.18 U		
DISSMETAL	Cadmium, Dissolved	UG/L			2.7 U	2.7 U		2.7 U		2.7 U		
DISSMETAL	Calcium, Dissolved	UG/L			22000 =	22100 =		23600 =		20800 =		
DISSMETAL	Chromium, Dissolved	UG/L			9.5 UJ	23.3 J		11.5 UJ		4.9 U		
DISSMETAL	Cobalt, Dissolved	UG/L			1.7 U	1.7 U		1.7 U		1.7 U		
DISSMETAL	Copper, Dissolved	UG/L			3.1 U	2.7 U		2.5 U		2.5 U		
DISSMETAL	Iron, Dissolved	UG/L			632 =	432 =		67.2 U		34.4 U		
DISSMETAL	Lead, Dissolved	UG/L			3.3 U	0.86 U		0.86 U		0.86 U		
DISSMETAL	Magnesium, Dissolved	UG/L			3830 J	3910 J		5290 =		4770 J		
DISSMETAL	Manganese, Dissolved	UG/L			340 =	326 =		162 =		68.4 =		
DISSMETAL	Mercury, Dissolved	UG/L			0.18 UJ	0.18 UJ		0.18 UJ		0.18 UJ		
DISSMETAL	Nickel, Dissolved	UG/L			5.9 U	11.5 U		7.1 U		5.9 U		
DISSMETAL	Potassium, Dissolved	UG/L			3590 J	3430 J		4370 J		4600 J		
DISSMETAL	Selenium, Dissolved	UG/L			1.3 UJ	1.3 UJ		1.3 U		1.3 U		
DISSMETAL	Silver, Dissolved	UG/L			1.7 U	1.7 U		1.7 U		1.7 U		
DISSMETAL	Sodium, Dissolved	UG/L			9480 J	9710 J		14300 J		13400 J		
DISSMETAL	Thallium, Dissolved	UG/L			1.8 U	1.8 U		1.8 U		1.8 UJ		
DISSMETAL	Vanadium, Dissolved	UG/L			1.5 U	1.1 U		1.1 U		1.6 U		
DISSMETAL	Zinc, Dissolved	UG/L			5.6 U	3.3 U		3 U		4.3 U		
HERB	DALAPON	UG/L	5 U	5 U			5 U		5 U		5 U	
HERB	DICAMBA	UG/L	0.5 U	0.5 U			0.5 U		0.5 U		0.5 U	
HERB	MCPA	UG/L	250 U	250 U			250 U		250 U		250 U	
HERB	MCPP	UG/L	250 U	250 U			250 U		250 U		250 U	
HERB	DICHLOROPROP	UG/L	2.5 U	2.5 U			2.5 U		2.5 U		2.5 U	

D-1

308 296

Analytical Data Summary: Surface Water

		Station ID:	BW04	BW04	BW05	BW05	BW06	BW06	BW07	BW07	BW08
		Sample ID:	WSSW20	WSSW20D	SW21	WSSW21	SW22	WSSW22	SW23	WSSW23	SW24
		Sample Depth:	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L			0 U		10 U		10 U		10 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L			10 U		10 U		10 U		10 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L			0 U		25 U		25 U		25 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L			0.014 U		25 U		25 U		25 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L			0 U		25 U		25 U		25 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L			0 U		25 U		25 U		25 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U		25 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L			0 U		50 U		50 U		50 U
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L			50 U		50 U		50 U		50 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L			47		75		60		80
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L			50		69		56		77
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L			75		60		63		95
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L			71		74		28		40
DISSMETAL	Aluminum, Dissolved	UG/L	81.5 U	36.62		36.4 U		40.6 U		280 =	
DISSMETAL	Antimony, Dissolved	UG/L	16.4 J	14.6		14.6 U		14.6 U		14.6 U	
DISSMETAL	Arsenic, Dissolved	UG/L	1.7 U	1.54		1.2 UJ		1.4 U		7.4 J	
DISSMETAL	Barium, Dissolved	UG/L	56.6 J	56.02		53.5 J		52.4 J		99.4 J	
DISSMETAL	Beryllium, Dissolved	UG/L	0.18 U	0.18		0.18 U		0.18 U		0.18 U	
DISSMETAL	Cadmium, Dissolved	UG/L	2.7 U	2.7		2.7 U		2.7 U		2.7 U	
DISSMETAL	Calcium, Dissolved	UG/L	27500 =	27270.68		25600 =		25200 =		34200 =	
DISSMETAL	Chromium, Dissolved	UG/L	16.7 J	11		1.1 UJ		12.6 U		10.8 U	
DISSMETAL	Cobalt, Dissolved	UG/L	1.7 U	1.7		1.7 U		1.7 U		1.7 U	
DISSMETAL	Copper, Dissolved	UG/L	2.5 U	2.49		1.9 U		2.1 U		10.8 U	
DISSMETAL	Iron, Dissolved	UG/L	147 U	73.92		105 U		108 U		2040 =	
DISSMETAL	Lead, Dissolved	UG/L	0.86 U	0.86		0.86 U		0.86 U		11.3 =	
DISSMETAL	Magnesium, Dissolved	UG/L	6550 =	6515.41		6270 =		6170 =		4190 J	
DISSMETAL	Manganese, Dissolved	UG/L	48.6 =	46.77		40.3 =		31.9 =		713 =	
DISSMETAL	Mercury, Dissolved	UG/L	0.18 UJ	0.18		0.18 UJ		0.18 UJ		0.18 UJ	
DISSMETAL	Nickel, Dissolved	UG/L	6.5 U	5.9		5.9 U		5.9 U		118 =	
DISSMETAL	Potassium, Dissolved	UG/L	3600 J	3631.41		3120 J		3220 J		6330 =	
DISSMETAL	Selenium, Dissolved	UG/L	1.3 U	1.3		1.3 U		1.6 J		1.4 J	
DISSMETAL	Silver, Dissolved	UG/L	1.7 U	1.7		1.7 U		1.7 U		1.7 U	
DISSMETAL	Sodium, Dissolved	UG/L	17500 J	17334.57		16200 J		16000 J		12200 J	
DISSMETAL	Thallium, Dissolved	UG/L	1.8 UJ	1.81		1.8 UJ		1.8 UJ		1.8 U	
DISSMETAL	Vanadium, Dissolved	UG/L	1.1 U	1.1		1.1 U		1.1 U		2.1 U	
DISSMETAL	Zinc, Dissolved	UG/L	7 U	8.18		8 U		5 U		205 =	
HERB	DALAPON	UG/L			5 U		5 U		5 U		5 U
HERB	DICAMBA	UG/L			0.5 U		0.5 U		0.5 U		0.5 U
HERB	MCPA	UG/L			250 U		250 U		250 U		250 U
HERB	MCPP	UG/L			250 U		250 U		250 U		250 U
HERB	DICHLOROPROP	UG/L			2.5 U		2.5 U		2.5 U		2.5 U

D-2

Analytical Data Summary: Surface Water

Group	Parameter	Units	BW08	BW09	BW09	BW10	BW10	BW11	BW11	BW12	BW12
		Sample ID:	WSSW24	SW23	WSSW25	SW26	WSSW26	SW27	WSSW27	SW28	WSSW28
		Sample Depth:	0 to 0	0 to 0	0 to 0	to	to	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/11/95			10/11/95	10/11/95	10/11/95	10/11/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L		0 U		0 U		0 U		10 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L		10 U		10 U		0.011 J		10 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L		0.016 U		25 U		25 U		25 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L		0.046 U		0.018 U		0.02 U		0.021 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L		0.088 J		25 U		25 U		25 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L		25 U		25 U		25 U		25 U	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L		0.47 U		0.645 J		0.635 J		0.597 J	
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L		50 U		50 U		50 U		50 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L		40		37		43		56	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L		43		38		46		57	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L		68		55		69		72	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L		77		41		51		43	
DISSMETAL	Aluminum, Dissolved	UG/L	37.7 U		43.5 U		66.3 U		180 U		191 J
DISSMETAL	Antimony, Dissolved	UG/L	14.6 U		14.6 U		14.6 U		14.6 U		14.6 U
DISSMETAL	Arsenic, Dissolved	UG/L	7 J		7.2 J		2.1 UJ		1.9 UJ		1.7 UJ
DISSMETAL	Barium, Dissolved	UG/L	48.6 J		50.9 J		34.8 J		34.8 J		34.8 J
DISSMETAL	Beryllium, Dissolved	UG/L	0.18 U		0.18 U		0.18 U		0.18 U		0.18 U
DISSMETAL	Cadmium, Dissolved	UG/L	2.7 U		2.7 U		2.7 U		2.7 U		2.7 U
DISSMETAL	Calcium, Dissolved	UG/L	30800 =		32400 =		7730 =		7860 =		7470 =
DISSMETAL	Chromium, Dissolved	UG/L	17.7 U		16.9 UJ		1.8 U		1.8 U		1.8 U
DISSMETAL	Cobalt, Dissolved	UG/L	1.7 U		1.7 U		1.7 U		1.7 U		1.7 U
DISSMETAL	Copper, Dissolved	UG/L	2.5 U		2.5 U		7.3 U		4.3 U		10.5 U
DISSMETAL	Iron, Dissolved	UG/L	274 =		348 U		46.5 U		272 =		267 =
DISSMETAL	Lead, Dissolved	UG/L	0.86 U		0.86 U		0.86 U		0.86 U		0.86 U
DISSMETAL	Magnesium, Dissolved	UG/L	3980 J		4060 J		2440 J		2470 J		2470 J
DISSMETAL	Manganese, Dissolved	UG/L	137 =		156 =		308 =		351 =		422 =
DISSMETAL	Mercury, Dissolved	UG/L	0.18 UJ		0.18 UJ		0.18 U		0.18 U		0.18 U
DISSMETAL	Nickel, Dissolved	UG/L	8 U		10.4 U		5.9 U		5.9 U		5.9 U
DISSMETAL	Potassium, Dissolved	UG/L	5780 =		6450 =		2520 J		2450 J		2620 J
DISSMETAL	Selenium, Dissolved	UG/L	1.3 UJ		1.3 UJ		1.3 U		1.3 U		1.3 U
DISSMETAL	Silver, Dissolved	UG/L	1.7 U		1.7 U		1.7 U		1.7 U		1.7 U
DISSMETAL	Sodium, Dissolved	UG/L	11600 J		11900 J		2250 UJ		1980 UJ		1990 UJ
DISSMETAL	Thallium, Dissolved	UG/L	1.8 UJ		1.8 U		1.8 U		1.8 U		1.8 U
DISSMETAL	Vanadium, Dissolved	UG/L	2.2 U		1.8 U		1.1 U		1.1 U		1.1 U
DISSMETAL	Zinc, Dissolved	UG/L	7.3 U		8.5 U		3.1 U		3.5 U		4.7 U
HERB	DALAPON	UG/L		5 U		5 U		5 U		5 U	
HERB	DICAMBA	UG/L		0.5 U		0.5 U		0.5 U		0.5 U	
HERB	MCPA	UG/L		250 U		250 U		250 U		250 U	
HERB	MCPP	UG/L		250 U		250 U		250 U		250 U	
HERB	DICHLOROPROP	UG/L		2.5 U		2.5 U		2.5 U		2.5 U	

D-3

Analytical Data Summary: Surface Water

Group	Parameter	Station ID: Sample ID: Sample Depth: Sample Date: Units	BW13 SW29 0 to 0 10/11/95	BW13 WSSW29 0 to 0 10/11/95	BW14 SW30 0 to 0 10/11/95	BW14 WSSW30 0 to 0 10/11/95	BW15 SW31 0 to 0 10/11/95	BW15 WSSW31 0 to 0 10/11/95	BW16 SW32 0 to 0 10/11/95	BW16 WSSW32 0 to 0 10/11/95	BW17 SW33 0 to 0 10/11/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L	0.027 U		0 U		0.029 U		0 U		0 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L	10 U		10 U		10 U		0.013 J		0.031 J
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U		25 U		25 U		0.027 J		0.037 J
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L	25 U		25 U		25 U		0 U		0.046 J
DIOXIN	1,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U		25 U		25 U		0.024 J		0.05 J
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U		25 U		0 U		0.018 U		0.095 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U		25 U		25 U		0.016 U		0.093 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L	25 U		25 U		25 U		0.017 U		0.095 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L	25 U		25 U		0.011 U		0 U		0.123 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L	25 U		25 U		0.013 U		0 U		0.134 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	25 U		25 U		0.005 U		0.014 U		0.125 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L	25 U		25 U		25 U		0.02 U		0.119 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L	0.021 U		25 U		0.025 U		0.036 U		0.313 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L	0.043 J		25 U		25 U		25 U		0.184 J
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L	25 U		25 U		25 U		0 U		0.143 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L	1.225 J		0.843 J		0.206 J		0.232 J		1.135 J
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L	50 U		50 U		50 U		50 U		0 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L	37		47		49		54		55
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L	40		50		51		56		57
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L	39		65		66		79		73
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L	40		42		63		76		77
DISSMETAL	Aluminum, Dissolved	UG/L		63.8 U		61.6 U		13.1 U		16.3 U	
DISSMETAL	Antimony, Dissolved	UG/L		14.6 U		14.6 U		14.6 U		14.6 U	
DISSMETAL	Arsenic, Dissolved	UG/L		2.3 U		1.9 U		1.1 U		1.1 UJ	
DISSMETAL	Barium, Dissolved	UG/L		36 J		35.7 J		23 J		36.5 J	
DISSMETAL	Beryllium, Dissolved	UG/L		0.11 U		0.18 U		0.18 U		0.18 U	
DISSMETAL	Cadmium, Dissolved	UG/L		2.7 U		2.7 U		2.7 U		2.7 U	
DISSMETAL	Calcium, Dissolved	UG/L		7310 =		7380 =		6320 =		6280 =	
DISSMETAL	Chromium, Dissolved	UG/L		1.8 U		1.8 U		1.8 U		1.8 U	
DISSMETAL	Cobalt, Dissolved	UG/L		1.7 U		1.7 U		1.7 U		1.7 U	
DISSMETAL	Copper, Dissolved	UG/L		1.2 U		1.2 U		1.2 U		1.2 U	
DISSMETAL	Iron, Dissolved	UG/L		99.4 U		71.3 U		47.3 U		14.4 U	
DISSMETAL	Lead, Dissolved	UG/L		0.86 U		0.86 U		0.86 U		0.86 U	
DISSMETAL	Magnesium, Dissolved	UG/L		2350 J		2310 J		2620 J		2540 J	
DISSMETAL	Manganese, Dissolved	UG/L		229 =		288 =		39.9 =		33.4 =	
DISSMETAL	Mercury, Dissolved	UG/L		0.11 U		0.18 U		0.18 U		0.18 U	
DISSMETAL	Nickel, Dissolved	UG/L		5.9 U		5.9 U		5.9 U		5.9 U	
DISSMETAL	Potassium, Dissolved	UG/L		3710 J		2460 U		1050 J		716 U	
DISSMETAL	Selenium, Dissolved	UG/L		1.3 U		1.3 U		1.3 UJ		1.3 UJ	
DISSMETAL	Silver, Dissolved	UG/L		1.7 U		1.7 U		1.7 U		1.7 U	
DISSMETAL	Sodium, Dissolved	UG/L		2110 UJ		1880 UJ		9190 J		9030 J	
DISSMETAL	Thallium, Dissolved	UG/L		1.8 U		1.8 U		1.8 U		1.8 U	
DISSMETAL	Vanadium, Dissolved	UG/L		1.1 U		1.1 U		1.1 U		1.1 U	
DISSMETAL	Zinc, Dissolved	UG/L		3.8 U		5.1 U		4 U		3.7 U	
HERB	DALAPON	UG/L	5 U		5 U		5 U		5 U		5 U
HERB	DICAMBA	UG/L	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U
HERB	MCPA	UG/L	250 U		250 U		250 U		250 U		250 U
HERB	MCPP	UG/L	250 U		250 U		250 U		250 U		250 U
HERB	DICHLOROPROP	UG/L	2.5 U		2.5 U		2.5 U		2.5 U		2.5 U

308 298

D-4

Analytical Data Summary: Surface Water

		StationID:	BW17	BW17	BW17	BW18	BW18	BW19	BW19	BW19	BW19
		Sample ID:	SW33A	WSSW33	WSSW33A	SW34	WSSW34	SW35	SW35A	SW35D	WSSW35
		Sample Depth:	0 to 0	0 to 0	m	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0
		Sample Date:	10/11/95	10/11/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L	0.043 U			0 U		0.027 U	0.039 U	0.028 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L	0.007 J			0.01 J		0.007 J	0.016 J	10	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U			25 U		25 U	0.041 J	25	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L	25 U			25 U		25 U	0.04 J	25	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L	25 U			25 U		25 U	0.044 J	25	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L	0.009 U			0 U		0.008 U	0.046 U	0.01 UJ	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	0.006 U			0.007 U		25 U	0.044 U	25	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L	25 U			0.009 U		25 U	0.051 U	25	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L	0.014 U			0.015 U		0 U	0.057 U	25	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L	0 U			0.016 U		0.009 U	0.066 U	25	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L	0 U			0.009 U		25 U	0.057 U	25	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L	0.008 U			25 U		25 U	0.054 U	25	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L	0.024 U			0.031 U		0.023 U	0.096 U	0.024 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L	25 U			0 =		0 U	0.073 J	0 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L	25 U			25 U		25 U	0.054 U	25	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L	0 U			0.669 J		0.192 J	0.909 J	0.944 J	
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L	50 U			50 U		50 U	50 U	50	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L	56			55		53	50	49	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L	56			57		54	51	51	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L	73			76		74	69	73	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L	77			73		79	71	78	
DISSMETAL	Aluminum, Dissolved	UG/L		72.6 U	13.1 U		13.1 U				63.5 U
DISSMETAL	Antimony, Dissolved	UG/L		14.6 U	14.6 U		14.6 U				14.6 U
DISSMETAL	Arsenic, Dissolved	UG/L		1.5 U	1.1 UJ		1.1 U				1.5 U
DISSMETAL	Barium, Dissolved	UG/L		13.2 U	9.3 U		13.6 U				12 U
DISSMETAL	Beryllium, Dissolved	UG/L		0.18 U	0.18 U		0.18 U				0.18 U
DISSMETAL	Cadmium, Dissolved	UG/L		2.7 U	3.4 U		2.7 U				2.7 U
DISSMETAL	Calcium, Dissolved	UG/L		4200 J	3950 J		3710 J				3930 J
DISSMETAL	Chromium, Dissolved	UG/L		1.8 U	1.8 U		1.8 U				1.8 U
DISSMETAL	Cobalt, Dissolved	UG/L		1.7 U	1.7 U		1.7 U				1.7 U
DISSMETAL	Copper, Dissolved	UG/L		1.2 U	1.2 U		1.2 U				1.2 U
DISSMETAL	Iron, Dissolved	UG/L		33.9 U	17.1 U		12 U				67.9 U
DISSMETAL	Lead, Dissolved	UG/L		0.86 U	0.86 U		0.86 U				0.86 U
DISSMETAL	Magnesium, Dissolved	UG/L		1500 J	1380 J		1220 J				1330 J
DISSMETAL	Manganese, Dissolved	UG/L		10.2 U	1.8 U		38.7 =				36.6 =
DISSMETAL	Mercury, Dissolved	UG/L		0.18 U	0.18 U		0.18 U				0.18 U
DISSMETAL	Nickel, Dissolved	UG/L		5.9 U	5.9 U		5.9 U				5.9 U
DISSMETAL	Potassium, Dissolved	UG/L		1330 J	2090 J		1760 J				1600 J
DISSMETAL	Selenium, Dissolved	UG/L		1.3 U	1.3 UJ		1.3 U				1.3 U
DISSMETAL	Silver, Dissolved	UG/L		1.7 U	1.7 U		1.7 U				1.7 U
DISSMETAL	Sodium, Dissolved	UG/L		7160 J	7220 J		6720 J				6720 J
DISSMETAL	Thallium, Dissolved	UG/L		1.8 U	1.8 U		1.8 U				1.8 U
DISSMETAL	Vanadium, Dissolved	UG/L		1.1 U	1.1 U		1.1 U				1.1 U
DISSMETAL	Zinc, Dissolved	UG/L		2.4 U	1.8 U		2.4 U				3.3 U
HERB	DALAPON	UG/L	5 U			5 U		5 U	5 U		
HERB	DICAMBA	UG/L	0.5 U			0.5 U		0.5 U	0.5 U		
HERB	MCPA	UG/L	250 U			250 U		250 U	250 U		
HERB	MCPP	UG/L	250 U			250 U		250 U	250 U		
HERB	DICHLOROPROP	UG/L	2.5 U			2.5 U		2.5 U	2.5 U		

D-5

Analytical Data Summary: Surface Water

Group	Parameter	Station ID: Sample ID: Sample Depth: Sample Date: Units	BW19 WSSW35A to	BW19 WSSW35D to 10/11/95	BW20 SW36 0 to 0 10/12/95	BW20 WSSW36 0 to 0 10/12/95	BW21 SW37 0 to 0 10/12/95	BW21 WSSW37 0 to 0 10/12/95	BW22 SW38 0 to 0 10/12/95	BW22 WSSW38 0 to 0 10/12/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	NG/L			10 U		0.01 U		10 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	NG/L			10 U		0 U		0 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	NG/L			25 U		25 U		25 U	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		0.01 U		0 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		0 U		25 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	NG/L			25 U		25 U		25 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	NG/L			25 U		25 U		0 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	NG/L			25 U		25 U		0.019 U	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NG/L			25 U		0.024 U		0.023 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	NG/L			25 U		0 U		25 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NG/L			25 U		25 U		25 U	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	NG/L			0.299 J		0.374 J		0.262 J	
DIOXIN	OCTACHLORODIBENZOFURAN	NG/L			50 U		50 U		50 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	NG/L			35		47		59	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	NG/L			34		46		59	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	NG/L			73		64		76	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	NG/L			35		48		56	
DISSMETAL	Aluminum, Dissolved	UG/L	35.7 U	70.11		23.6 U		15.2 U		22.3 U
DISSMETAL	Antimony, Dissolved	UG/L	14.6 U	14.6		14.6 U		14.6 U		14.6 U
DISSMETAL	Arsenic, Dissolved	UG/L	1.1 UJ	1.6		5.1 J		5.2 J		5.3 J
DISSMETAL	Barium, Dissolved	UG/L	10.8 U	11.6		33.2 J		33 J		32.3 J
DISSMETAL	Beryllium, Dissolved	UG/L	0.18 U	0.18		0.18 U		0.18 U		0.18 U
DISSMETAL	Cadmium, Dissolved	UG/L	2.7 U	2.7		2.7 U		2.7 U		2.7 U
DISSMETAL	Calcium, Dissolved	UG/L	3890 J	3927.29		8720 =		8950 =		8800 =
DISSMETAL	Chromium, Dissolved	UG/L	1.1 U	1.1		1.1 U		1.8 U		1.1 U
DISSMETAL	Cobalt, Dissolved	UG/L	1.7 U	1.7		2.8 U		2.5 U		1.8 U
DISSMETAL	Copper, Dissolved	UG/L	1.2 U	1.2		1.2 U		5.3 U		5.3 U
DISSMETAL	Iron, Dissolved	UG/L	13.3 U	65.67		37.2 U		35.2 U		118 =
DISSMETAL	Lead, Dissolved	UG/L	0.86 U	0.86		0.86 U		0.86 U		0.86 U
DISSMETAL	Magnesium, Dissolved	UG/L	1300 J	1324.39		3040 J		3080 J		3030 J
DISSMETAL	Manganese, Dissolved	UG/L	1.3 U	36.28		86.9 =		75.1 =		93.2 =
DISSMETAL	Mercury, Dissolved	UG/L	0.18 U	0.18		0.18 U		0.18 U		0.18 U
DISSMETAL	Nickel, Dissolved	UG/L	5.9 U	5.9		5.9 U		3.9 U		5.9 U
DISSMETAL	Potassium, Dissolved	UG/L	1680 J	2115.7		2230 U		1830 U		1770 U
DISSMETAL	Selenium, Dissolved	UG/L	1.3 U	1.3		1.3 U		1.3 UJ		1.3 UJ
DISSMETAL	Silver, Dissolved	UG/L	1.7 U	1.7		1.7 U		1.7 U		1.7 U
DISSMETAL	Sodium, Dissolved	UG/L	6980 J	6757.62		7210 J		7230 J		7730 J
DISSMETAL	Thallium, Dissolved	UG/L	1.8 U	1.81		1.8 U		1.8 U		1.8 U
DISSMETAL	Vanadium, Dissolved	UG/L	1.1 U	1.1		2.5 U		2.4 U		1.1 U
DISSMETAL	Zinc, Dissolved	UG/L	2.1 U	2.12		3 U		4.3 U		6.1 U
HERB	DALAPON	UG/L			5 U		5 U		5 U	
HERB	DICAMBA	UG/L			0.5 U		0.5 U		0.5 U	
HERB	MCPA	UG/L			250 U		250 U		250 U	
HERB	MCPP	UG/L			250 U		250 U		250 U	
HERB	DICHLOROPROP	UG/L			2.5 U		2.5 U		2.5 U	

CPS 8

308 300

D-6

Analytical Data Summary: Surface Water

		StationID:	BW01	BW01	BW01	BW01	BW02	BW02	BW03	BW03	BW04	BW04
		Sample ID:	SW17	SW17A	WSSW17	WSSW17A	SW18	WSSW18	SW19	WSSW19	SW20	SW20D
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0	to	0 to 0	to
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95		10/10/95		10/10/95	10/10/95
Group	Parameter	Units										
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L	2.5 U	2.5 U			2.5 U		2.5 U		2.5 U	
HERB	SILVEX (2,4,5-TP)	UG/L	0.5 U	0.5 U			0.5 U		0.5 U		0.5 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L	0.5 U	0.5 U			0.5 U		0.5 U		0.5 U	
HERB	2,4-DB	UG/L	2.5 U	2.5 U			2.5 U		2.5 U		2.5 U	
HERB	DINOSEB	UG/L	0.5 U	0.5 U			0.5 U		0.5 U		0.5 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L	88	82			81		84		83	
LLSVOA	2-NITROANILINE	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	DIMETHYL PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	3-NITROANILINE	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	2,6-DINITROTOLUENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	ACENAPHTHYLENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	ACENAPHTHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4-DINITROPHENOL	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	4-NITROPHENOL	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	DIBENZOFURAN	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4-DINITROTOLUENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	DIETHYL PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	FLUORENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-NITROANILINE	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	HEXACHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	PENTACHLOROPHENOL	UG/L	5 U	5 U			5 U		5 U		5 U	
LLSVOA	PHENANTHRENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	ANTHRACENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	CARBAZOLE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	FLUORANTHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	PYRENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZO(a)ANTHRACENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	CHRYSENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	DI-n-OCTYL PHTHALATE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZO(b)FLUORANTHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZO(k)FLUORANTHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZO(a)PYRENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2-FLUOROPHENOL	UG/L	77	75			60		70		74	
LLSVOA	PHENOL-D5	UG/L	78	78			65		72		79	
LLSVOA	2-CHLOROPHENOL-D4	UG/L	81	81			66		73		80	
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L	38	51			45		55		45	
LLSVOA	NITROBENZENE-D5	UG/L	85	82			67		83		80	
LLSVOA	2-FLUOROBIPHENYL	UG/L	62	57			46		56		49	
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L	86	89			70		62		73	

D-7

Analytical Data Summary: Surface Water

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BW04 WSSW20 0 to 0 11/10/95	BW04 WSSW20D to 11/10/95	BW05 SW21 0 to 0 11/10/95	BW05 WSSW21 0 to 0 11/10/95	BW06 SW22 0 to 0 11/10/95	BW06 WSSW22 0 to 0 11/10/95	BW07 SW23 0 to 0 11/10/95	BW07 WSSW23 0 to 0 11/10/95	BW08 SW24 0 to 0 11/10/95
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L			2.5 U		2.5 U		2.5 U		2.5 U
HERB	SILVEX (2,4,5-TP)	UG/L			0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L			0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4 DB	UG/L			2.5 U		2.5 U		2.5 U		2.5 U
HERB	DINOSEB	UG/L			0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L			83		88		99		99
LLSVOA	2-NITROANILINE	UG/L			25 U		25 U		25 U		25 U
LLSVOA	DIMETHYL PHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	3-NITROANILINE	UG/L			25 U		25 U		25 U		25 U
LLSVOA	2,6-DINITROTOLUENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	ACENAPHTHYLENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	ACENAPHTHENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4-DINITROPHENOL	UG/L			25 U		25 U		25 U		25 U
LLSVOA	4-NITROPHENOL	UG/L			25 U		25 U		25 U		25 U
LLSVOA	DIBENZOFURAN	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4-DINITROTOLUENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	DIETHYL PHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	FLUORENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-NITROANILINE	UG/L			25 U		25 U		25 U		25 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L			25 U		25 U		25 U		25 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L			10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	PENTACHLOROPHENOL	UG/L			5 U		5 U		5 U		5 U
LLSVOA	PHENANTHRENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	ANTHRACENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	CARBAZOLE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	FLUORANTHENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	PYRENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZO(a)ANTHRACENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	CHRYSENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZO(a)PYRENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2-FLUOROPHENOL	UG/L			69		76		64		84
LLSVOA	PHENOL-D5	UG/L			74		79		66		86
LLSVOA	2-CHLOROPHENOL-D4	UG/L			75		82		68		86
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L			52		51		46		55
LLSVOA	NITROBENZENE-D5	UG/L			77		89		73		92
LLSVOA	2-FLUOROBIPHENYL	UG/L			53		56		54		58
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L			81		88		78		86

D-8

Analytical Data Summary: Surface Water

		StationID:	BW08	BW09	BW09	BW10	BW10	BW11	BW11	BW12	BW12
		Sample ID:	WSSW24	SW25	WSSW25	SW26	WSSW26	SW27	WSSW27	SW28	WSSW28
		Sample Depth:	0 to 0	0 to 0	0 to 0	to	to	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95			10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L		2.5 U		2.5 U		2.5 U		2.5 U	
HERB	SILVEX (2,4,5-TP)	UG/L		0.5 U		0.5 U		0.5 U		0.5 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L		0.5 U		0.5 U		0.5 U		0.5 U	
HERB	2,4 DB	UG/L		2.5 U		2.5 U		2.5 U		2.5 U	
HERB	DINOSEB	UG/L		0.5 U		0.5 U		0.5 U		0.5 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L		90		80		71		81	
LLSVOA	2-NITROANILINE	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	DIMETHYL PHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	3-NITROANILINE	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	2,6-DINITROTOLUENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	ACENAPHTHYLENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	ACENAPHTHENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4-DINITROPHENOL	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	4-NITROPHENOL	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	DIBENZOFURAN	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4-DINITROTOLUENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	DIETHYL PHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	FLUORENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-NITROANILINE	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	HEXACHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	PENTACHLOROPHENOL	UG/L		5 U		5 U		5 U		5 U	
LLSVOA	PHENANTHRENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	ANTHRACENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	CARBAZOLE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	FLUORANTHENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	PYRENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZO(a)ANTHRACENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	CHRYSENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	DI-n-OCTYLPHTHALATE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZO(b)FLUORANTHENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZO(k)FLUORANTHENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZO(a)PYRENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2-FLUOROPHENOL	UG/L		63		69		89		61	
LLSVOA	PHENOL-D5	UG/L		68		69		92		69	
LLSVOA	2-CHLOROPHENOL-D4	UG/L		68		73		93		66	
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L		40		50		69		46	
LLSVOA	NITROBENZENE-D5	UG/L		70		77		84		70	
LLSVOA	2-FLUOROBIPHENYL	UG/L		47		57		63		49	
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L		79		74		87		78	

D-9

Analytical Data Summary: Surface Water

		StationID:	BW13	BW13	BW14	BW14	BW15	BW15	BW16	BW16	BW17
		Sample ID:	SW29	WSSW29	SW30	WSSW30	SW31	WSSW31	SW32	WSSW32	SW33
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L	2.5 U		2.5 U		2.5 U		2.5 U		2.5 U
HERB	SILVEX (2,4,5-TP)	UG/L	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4 DB	UG/L	2.5 U		2.5 U		2.5 U		2.5 U		2.5 U
HERB	DINOSEB	UG/L	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L	80		82		82		80		78
LLSVOA	2-NITROANILINE	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	DIMETHYL PHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	3-NITROANILINE	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	2,6-DINITROTOLUENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	ACENAPHTHYLENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	ACENAPHTHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4-DINITROPHENOL	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	4-NITROPHENOL	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	DIBENZOFURAN	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4-DINITROTOLUENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	DIETHYL PHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	FLUORENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-NITROANILINE	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	PENTACHLOROPHENOL	UG/L	5 U		5 U		5 U		5 U		5 U
LLSVOA	PHENANTHRENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	ANTHRACENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	CARBAZOLE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	FLUORANTHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	PYRENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZO(a)ANTHRACENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	CHRYSENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZO(a)PYRENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2-FLUOROPHENOL	UG/L	70		72		49		61		67
LLSVOA	PHENOL-D5	UG/L	71		77		50		53		65
LLSVOA	2-CHLOROPHENOL-D4	UG/L	74		78		52		66		66
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L	41		64		39		47		46
LLSVOA	NITROBENZENE-D5	UG/L	78		81		54		68		71
LLSVOA	2-FLUOROBIPHENYL	UG/L	63		72		45		57		53
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L	74		85		65		75		52

308 304

D-10

Analytical Data Summary: Surface Water

		Station ID:	BW17	BW17	BW17	BW18	BW18	BW19	BW19	BW19	BW19
		Sample ID:	SW33A	WSSW33	WSSW33A	SW34	WSSW34	SW35	SW35A	SW35D	WSSW35
		Sample Depth:	0 to 0	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0
		Sample Date:	10/11/95	10/11/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L	2.5 U			2.5 U		2.5 U	2.5 U		
HERB	SILVEX (2,4,5-TP)	UG/L	0.5 U			0.5 U		0.5 U	0.5 U		
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L	0.5 U			0.5 U		0.5 U	0.5 U		
HERB	2,4 DB	UG/L	2.5 U			2.5 U		2.5 U	2.5 U		
HERB	DINOSEB	UG/L	0.5 U			0.5 U		0.5 U	0.5 U		
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L	81			82		82	87		
LLSVOA	2-NITROANILINE	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	DIMETHYL PHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	3-NITROANILINE	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	2,6-DINITROTOLUENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	ACENAPHTHYLENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	ACENAPHTHENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4-DINITROPHENOL	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	4-NITROPHENOL	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	DIBENZOFURAN	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4-DINITROTOLUENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	DIETHYL PHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	FLUORENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-NITROANILINE	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	HEXACHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	PENTACHLOROPHENOL	UG/L	5 U			5 U		5 U	5 U		
LLSVOA	PHENANTHRENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	ANTHRACENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	CARBAZOLE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	FLUORANTHENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	PYRENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZO(a)ANTHRACENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	CHRYSENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	bis(2-ETHYLHEXYL)PHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	DI-n-OCTYLPHTHALATE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZO(b)FLUORANTHENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZO(k)FLUORANTHENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZO(a)PYRENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2-FLUOROPHENOL	UG/L	57			59		50	68		
LLSVOA	PHENOL-D5	UG/L	60			61		19	72		
LLSVOA	2-CHLOROPHENOL-D4	UG/L	60			65		56	74		
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L	48			44		39	60		
LLSVOA	NITROBENZENE-D5	UG/L	62			69		60	81		
LLSVOA	2-FLUOROBIPHENYL	UG/L	54			57		49	67		
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L	46			63		41	63		

308 305

D-11

Analytical Data Summary: Surface Water

		StationID:	BW19	BW19	BW20	BW20	BW21	BW21	BW22	BW22
		Sample ID:	WSSW35A	WSSW35D	SW36	WSSW36	SW37	WSSW37	SW38	WSSW38
		Sample Depth:	to	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:		10/11/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units								
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L			2.5 U		2.5 U		2.5 U	
HERB	SILVEX (2,4,5-TP)	UG/L			0.5 U		0.5 U		0.5 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L			0.5 U		0.5 U		0.5 U	
HERB	2,4 DB	UG/L			2.5 U		2.5 U		2.5 U	
HERB	DINOSEB	UG/L			0.5 U		0.5 U		0.5 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/L			131		126		122	
LLSVOA	2-NITROANILINE	UG/L			25 U		25 U		25 U	
LLSVOA	DIMETHYL PHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	3-NITROANILINE	UG/L			25 U		25 U		25 U	
LLSVOA	2,6-DINITROTOLUENE	UG/L			10 U		10 U		10 U	
LLSVOA	ACENAPHTHYLENE	UG/L			10 U		10 U		10 U	
LLSVOA	ACENAPHTHENE	UG/L			10 U		10 U		10 U	
LLSVOA	2,4-DINITROPHENOL	UG/L			25 U		25 UJ		25 U	
LLSVOA	4-NITROPHENOL	UG/L			25 U		25 UJ		25 U	
LLSVOA	DIBENZOFURAN	UG/L			10 U		10 U		10 U	
LLSVOA	2,4-DINITROTOLUENE	UG/L			10 U		10 U		10 U	
LLSVOA	DIETHYL PHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	FLUORENE	UG/L			10 U		10 U		10 U	
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/L			10 U		10 U		10 U	
LLSVOA	4-NITROANILINE	UG/L			25 U		25 U		25 U	
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/L			25 U		25 U		25 U	
LLSVOA	N-NITROSODIPHENYLAMINE	UG/L			10 U		10 U		10 U	
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/L			10 U		10 U		10 U	
LLSVOA	HEXACHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLSVOA	PENTACHLOROPHENOL	UG/L			5 U		5 U		5 U	
LLSVOA	PHENANTHRENE	UG/L			10 U		10 U		10 U	
LLSVOA	ANTHRACENE	UG/L			10 U		10 U		10 U	
LLSVOA	CARBAZOLE	UG/L			10 U		10 U		10 U	
LLSVOA	DI-n-BUTYL PHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	FLUORANTHENE	UG/L			10 U		10 U		10 U	
LLSVOA	PYRENE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZYL BUTYL PHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZO(a)ANTHRACENE	UG/L			10 U		10 U		10 U	
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/L			10 U		10 U		10 U	
LLSVOA	CHRYSENE	UG/L			10 U		10 U		10 U	
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	DI-n-OCTYLPHTHALATE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZO(b)FLUORANTHENE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZO(k)FLUORANTHENE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZO(a)PYRENE	UG/L			10 U		10 U		10 U	
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/L			10 U		10 U		10 U	
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/L			10 U		10 U		10 U	
LLSVOA	BENZO(g,h,i)PERYLENE	UG/L			10 U		10 U		10 U	
LLSVOA	2-FLUOROPHENOL	UG/L			73		54		70	
LLSVOA	PHENOL-D5	UG/L			70		60		73	
LLSVOA	2-CHLOROPHENOL-D4	UG/L			73		55		71	
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/L			61		43		56	
LLSVOA	NITROBENZENE-D5	UG/L			83		61		82	
LLSVOA	2-FLUOROBIPHENYL	UG/L			64		53		64	
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/L			63		76		63	

308 306

D-12

Analytical Data Summary: Surface Water

		Station ID:	BW01	BW01	BW01	BW01	BW02	BW02	BW03	BW03	BW04	BW04
		Sample ID:	SW17	SW17A	WSSW17	WSSW17A	SW18	WSSW18	SW19	WSSW19	SW20	SW20D
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0	to	0 to 0	to
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95		10/10/95		10/10/95	10/10/95
Group	Parameter	Units										
LLSVOA	TERPHENYL-D14	UG/L	78	13			62		89		86	
LLSVOA	PHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2-CHLOROPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	HEXACHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	NITROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	ISOPHORONE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2-NITROPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4-DIMETHYLPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4-DICHLOROPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	NAPHTHALENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-CHLOROANILINE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	HEXACHLOROBUTADIENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2-METHYLNAPHTHALENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L	10 U	10 U			10 U		10 U		10 U	
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L	25 U	25 U			25 U		25 U		25 U	
LLSVOA	2-CHLORONAPHTHALENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	CHLOROMETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L	2 J	1 J			10 U		10 U		10 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	CHLOROFORM	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	CARBON TETRACHLORIDE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	BENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROPROPANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	BROMODICHLOROMETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	VINYL CHLORIDE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	TOLUENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	2-HEXANONE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	CHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	ETHYLBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	BROMOMETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	Total Xylenes	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	STYRENE	UG/L	10 U	10 U			10 U		10 U		10 U	

308 307

D-13

308 308

Analytical Data Summary: Surface Water

Group	Parameter	StationID:	BW04	BW04	BW05	BW05	BW06	BWT6	BW07	BW07	BW08
		Sample ID:	WSSW20	WSSW20D	SW21	WSSW21	SW22	WSSW22	SW23	WSSW23	SW24
		Sample Depth:	0 to 0	10	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
		Units									
LLSVOA	TERPHENYL-D14	UG/L			82		95		74		81
LLSVOA	PHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	bis(2-CHLOROETHYL)ETHER (2-CHLOROETHYL ETHER)	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2-CHLOROPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L			10 U		10 U		10 U		10 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	NITROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	ISOPHORONE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2-NITROPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4-DICHLOROPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	NAPHTHALENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-CHLOROANILINE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROBUTADIENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2-METHYLNAPHTHALENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L			10 U		10 U		10 U		10 U
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L			25 U		25 U		25 U		25 U
LLSVOA	2-CHLORONAPHTHALENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	CHLOROMETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L			10 U		10 U		2 J		2 J
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	CHLOROFORM	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	CARBON TETRACHLORIDE	UG/L			10 U		10 U		10 U		10 U
LLVOA	BENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROPROPANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	BROMODICHLOROMETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	VINYL CHLORIDE	UG/L			10 U		10 U		10 U		10 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L			10 U		10 U		10 U		10 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	TOLUENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	2-HEXANONE	UG/L			10 U		10 U		10 U		10 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L			10 U		10 U		10 U		10 U
LLVOA	DIBROMOCHLOROMETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	CHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	ETHYLBENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	BROMOMETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	Total Xylenes	UG/L			10 U		10 U		10 U		10 U
LLVOA	STYRENE	UG/L			10 U		10 U		10 U		10 U

D-14

Analytical Data Summary: Surface Water

		Station ID:	BW08	BW09	BW09	BW10	BW10	BW11	BW11	BW12	BW12
		Sample ID:	WSSW24	SW25	WSSW25	SW26	WSSW26	SW27	WSSW27	SW28	WSSW28
		Sample Depth:	0 to 0	0 to 0	0 to 0	to	to	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95			10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	TERPHENYL-D14	UG/L		74		51		65		59	
LLSVOA	PHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2-CHLOROPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	HEXACHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	NITROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	ISOPHORONE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2-NITROPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4-DIMETHYLPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4-DICHLOROPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	NAPHTHALENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-CHLOROANILINE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	HEXACHLOROBUTADIENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2-METHYLNAPHTHALENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L		10 U		10 U		10 U		10 U	
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L		25 U		25 U		25 U		25 U	
LLSVOA	2-CHLORONAPHTHALENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	CHLOROMETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L		1 J		10 U		10 U		10 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	CHLOROFORM	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	CARBON TETRACHLORIDE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	BENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,2-DICHLOROPROPANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	BROMODICHLOROMETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	VINYL CHLORIDE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L		10 U		10 U		10 U		10 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	TOLUENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	2-HEXANONE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L		10 U		10 U		10 U		10 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	CHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	ETHYLBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	BROMOMETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	Total Xylenes	UG/L		1 J		10 U		10 U		1 J	
LLVOA	STYRENE	UG/L		10 U		10 U		10 U		10 U	

308 3`9

D-15

Analytical Data Summary: Surface Water

		Station ID:	BW13	BW13	BW14	BW14	BW15	BW15	BW16	BW16	BW17
		Sample ID:	SW29	WSSW29	SW30	WSSW30	SW31	WSSW31	SW32	WSSW32	SW33
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	TERPHENYL-D14	UG/L	52		27		29		92		64
LLSVOA	PHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2-CHLOROPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	NITROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	ISOPHORONE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2-NITROPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4-DICHLOROPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	NAPHTHALENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-CHLOROANILINE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROBUTADIENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2-METHYLNAPHTHALENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L	10 U		10 U		10 U		10 U		10 U
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L	25 U		25 U		25 U		25 U		25 U
LLSVOA	2-CHLORONAPHTHALENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	CHLOROMETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	CHLOROFORM	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	CARBON TETRACHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	BENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROPROPANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	BROMODICHLOROMETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	VINYL CHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	TOLUENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	2-HEXANONE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	DIBROMOCHLOROMETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	CHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	ETHYLBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	BROMOMETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	Total Xylenes	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	STYRENE	UG/L	10 U		10 U		10 U		10 U		10 U

D-16

308 311

Analytical Data Summary: Surface Water

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BW17 SW33A 0 to 0 10/11/95	BW17 WSSW33 0 to 0 10/11/95	BW17 WSSW33A to	BW18 SW34 0 to 0 10/11/95	BW18 WSSW34 0 to 0 10/11/95	BW19 SW35 0 to 0 10/11/95	BW19 SW35A 0 to 0 10/11/95	BW19 SW35D to 10/11/95	BW19 WSSW35 0 to 0 10/11/95
LLSVOA	TERPHENYL-D14	UG/L	60			84		63	70		
LLSVOA	PHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2-CHLOROPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	HEXACHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	NITROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	ISOPHORONE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2-NITROPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4-DIMETHYLPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4-DICHLOROPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	NAPHTHALENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-CHLOROANILINE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	HEXACHLOROBUTADIENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2-METHYLNAPHTHALENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L	10 U			10 U		10 U	10 U		
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L	25 U			25 U		25 U	25 U		
LLSVOA	2-CHLORONAPHTHALENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	CHLOROMETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L	10 U			10 U		10 U	10 U		
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	CHLOROFORM	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1,1-TRICHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	CARBON TETRACHLORIDE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	BENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1-DICHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,2-DICHLOROPROPANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	BROMODICHLOROMETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	VINYL CHLORIDE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L	10 U			10 U		10 U	10 U		
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	TOLUENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1,2-TRICHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	2-HEXANONE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L	10 U			10 U		10 U	10 U		
LLVOA	DIBROMOCHLOROMETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	CHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	ETHYLBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	BROMOMETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	Total Xylenes	UG/L	10 U			10 U		10 U	10 U		
LLVOA	STYRENE	UG/L	10 U			10 U		10 U	10 U		

D-17

Analytical Data Summary: Surface Water

		StationID:	BW19	BW19	BW20	BW20	BW21	BW21	BW22	BW22
		Sample ID:	WSSW35A	WSSW35D	SW36	WSSW36	SW37	WSSW37	SW38	WSSW38
		Sample Depth:	to	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:		10/11/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units								
LLSVOA	TERPHENYL-D14	UG/L			67		58		61	
LLSVOA	PHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L			10 U		10 U		10 U	
LLSVOA	2-CHLOROPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/L			10 U		10 U		10 U	
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L			10 U		10 U		10 U	
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/L			10 U		10 U		10 U	
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/L			10 U		10 U		10 U	
LLSVOA	HEXACHLOROETHANE	UG/L			10 U		10 U		10 U	
LLSVOA	NITROBENZENE	UG/L			10 U		10 U		10 U	
LLSVOA	ISOPHORONE	UG/L			10 U		10 U		10 U	
LLSVOA	2-NITROPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	2,4-DIMETHYLPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/L			10 U		10 U		10 U	
LLSVOA	2,4-DICHLOROPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLSVOA	NAPHTHALENE	UG/L			10 U		10 U		10 U	
LLSVOA	4-CHLOROANILINE	UG/L			10 U		10 U		10 U	
LLSVOA	HEXACHLOROBUTADIENE	UG/L			10 U		10 U		10 U	
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	2-METHYLNAPHTHALENE	UG/L			10 U		10 U		10 U	
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/L			10 U		10 U		10 U	
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/L			10 U		10 U		10 U	
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/L			25 U		25 U		25 U	
LLSVOA	2-CHLORONAPHTHALENE	UG/L			10 U		10 U		10 U	
LLVOA	CHLOROMETHANE	UG/L			10 U		10 U		10 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/L			10 U		1 J		10 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/L			10 U		10 U		10 U	
LLVOA	CHLOROFORM	UG/L			10 U		10 U		10 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/L			10 U		10 U		10 U	
LLVOA	CARBON TETRACHLORIDE	UG/L			10 U		10 U		10 U	
LLVOA	BENZENE	UG/L			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE	UG/L			10 U		10 U		10 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/L			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROPROPANE	UG/L			10 U		10 U		10 U	
LLVOA	BROMODICHLOROMETHANE	UG/L			10 U		10 U		10 U	
LLVOA	VINYL CHLORIDE	UG/L			10 U		10 U		10 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L			10 U		10 U		10 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/L			10 U		10 U		10 U	
LLVOA	TOLUENE	UG/L			10 U		10 U		10 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/L			10 U		10 U		10 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/L			10 U		10 U		10 U	
LLVOA	2-HEXANONE	UG/L			10 U		10 U		10 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/L			10 U		10 U		10 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/L			10 U		10 U		10 U	
LLVOA	CHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLVOA	ETHYLBENZENE	UG/L			10 U		10 U		10 U	
LLVOA	BROMOMETHANE	UG/L			10 U		10 U		10 U	
LLVOA	Total Xylenes	UG/L			10 U		10 U		10 U	
LLVOA	STYRENE	UG/L			10 U		10 U		10 U	

308 312

D-18

Analytical Data Summary: Surface Water

		Station ID: Sample ID: Sample Depth: Sample Date:	BW01 SW17 0 to 0 10/10/95	BW01 SW17A 0 to 0 10/10/95	BW01 WSSW17 0 to 0 10/10/95	BW01 WSSW17A 0 to 0 10/10/95	BW02 SW18 0 to 0 10/10/95	BW02 WSSW18 to	BW03 SW19 0 to 0 10/10/95	BW03 WSSW19 to	BW04 SW20 0 to 0 10/10/95	BW04 SW20D to 10/10/95
Group	Parameter	Units										
LLVOA	BROMOFORM	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/L	91	91			91		91		102	
LLVOA	TOLUENE-D8	UG/L	102	101			102		100		103	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L	102	101			100		100		104	
LLVOA	CHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	ACETONE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,1-DICHLOROETHENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	CARBON DISULFIDE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,3-DICHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,4-DICHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROBENZENE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	METHYLENE CHLORIDE	UG/L	10 U	10 U			10 U		10 U		10 U	
LLVOA	1,1-DICHLOROETHANE	UG/L	10 U	10 U			10 U		10 U		10 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	GAMMA BHC (LINDANE)	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	ALDRIN	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR EPOXIDE	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	ALPHA ENDOSULFAN	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	DIELDRIN	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDE	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	ENDRIN	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	BETA ENDOSULFAN	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDD	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	ENDOSULFAN SULFATE	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDT	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	METHOXYCHLOR	UG/L	0.5 U	0.5 U			0.5 U		0.5 U		0.5 U	
PEST	ENDRIN KETONE	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	ENDRIN ALDEHYDE	UG/L	0.1 U	0.1 U			0.1 U		0.1 U		0.1 U	
PEST	ALPHA-CHLORDANE	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	GAMMA-CHLORDANE	UG/L	0.05 U	0.05 U			0.05 U		0.05 U		0.05 U	
PEST	TOXAPHENE	UG/L	5 U	5 U			5 U		5 U		5 U	
PEST	PCB-1016 (AROCHLOR 1016)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	PCB-1221 (AROCHLOR 1221)	UG/L	2 U	2 U			2 U		2 U		2 U	
PEST	PCB-1232 (AROCHLOR 1232)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	PCB-1242 (AROCHLOR 1242)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	PCB-1248 (AROCHLOR 1248)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	PCB-1254 (AROCHLOR 1254)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	PCB-1260 (AROCHLOR 1260)	UG/L	1 U	1 U			1 U		1 U		1 U	
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L	71	63			76		60		72	
PEST	DECACHLOROBIPHENYL	UG/L	81	85			80		82		90	
TOTMETAL	ALUMINUM	UG/L	279 =	92.8 U			600 =		377 =		164 U	127.91
TOTMETAL	ANTIMONY	UG/L	14.6 U	14.6 U			14.6 U		14.6 U		14.6 U	14.6
TOTMETAL	ARSENIC	UG/L	3.2 U	5.6 U			3.6 U		3.7 U		3.6 U	4.03
TOTMETAL	BARIUM	UG/L	49.1 J	45 J			71.9 J		67.5 J		59.4 J	38.87
TOTMETAL	BERYLLIUM	UG/L	0.18 U	0.18 U			0.2 U		0.18 U		0.18 U	0.18
TOTMETAL	CADMIUM	UG/L	2.7 U	2.7 U			2.7 U		2.7 U		2.7 U	2.7

D-19

308 314

Analytical Data Summary: Surface Water

		Station ID:	BW04	BW04	BW05	BW05	BW06	BW06	BW07	BW07	BW08
		Sample ID:	WSSW20	WSSW20D	SW21	WSSW21	SW22	WSSW22	SW23	WSSW23	SW24
		Sample Depth:	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
LLVOA	BROMOFORM	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/L			98		100		98		98
LLVOA	TOLUENE-D8	UG/L			101		102		103		103
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L			102		98		100		102
LLVOA	CHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
LLVOA	ACETONE	UG/L			10 U		10 U		11 U		12 U
LLVOA	1,1-DICHLOROETHENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	CARBON DISULFIDE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,3-DICHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,4-DICHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROBENZENE	UG/L			10 U		10 U		10 U		10 U
LLVOA	METHYLENE CHLORIDE	UG/L			1 U		10 U		10 U		10 U
LLVOA	1,1-DICHLOROETHANE	UG/L			10 U		10 U		10 U		10 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	GAMMA BHC (LINDANE)	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	HEPTACHLOR	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	ALDRIN	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	HEPTACHLOR EPOXIDE	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	ALPHA ENDOSULFAN	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	DIELDRIN	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDE	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDRIN	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	BETA ENDOSULFAN	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDD	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDOSULFAN SULFATE	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDT	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	METHOXYCHLOR	UG/L			0.5 U		0.5 U		0.5 U		0.5 U
PEST	ENDRIN KETONE	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDRIN ALDEHYDE	UG/L			0.1 U		0.1 U		0.1 U		0.1 U
PEST	ALPHA-CHLORDANE	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	GAMMA-CHLORDANE	UG/L			0.05 U		0.05 U		0.05 U		0.05 U
PEST	TOXAPHENE	UG/L			5 U		5 U		5 U		5 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/L			1 U		1 U		1 U		1 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/L			2 U		2 U		2 U		2 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/L			1 U		1 U		1 U		1 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/L			1 U		1 U		1 U		1 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/L			1 U		1 U		1 U		1 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/L			1 U		1 U		1 U		1 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/L			1 U		1 U		1 U		1 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L			63		78		62		74
PEST	DECACHLOROBIPHENYL	UG/L			88		96		82		86
TOTMETAL	ALUMINUM	UG/L			35.2 U		266 =		53.2 U		145 U
TOTMETAL	ANTIMONY	UG/L			14.6 U		14.6 U		14.6 U		14.6 U
TOTMETAL	ARSENIC	UG/L			4.1 U		3 U		6.8 J		8.4 J
TOTMETAL	BARIUM	UG/L			58 J		68.7 J		54.2 J		81.2 J
TOTMETAL	BERYLLIUM	UG/L			0.18 U		0.24 U		0.2 U		0.18 U
TOTMETAL	CADMIUM	UG/L			2.7 U		2.7 U		2.7 U		2.7 U

D-20

Analytical Data Summary: Surface Water

Group	Parameter	Station ID: Sample ID: Sample Depth: Sample Date: Units	BW08 WSSW24 0 to 0 10/10/95	BW09 SW25 0 to 0 10/10/95	BW09 WSSW25 0 to 0 10/10/95	BW10 SW26 to	BW10 WSSW26 to	BW11 SW27 0 to 0 10/11/95	BW11 WSSW27 0 to 0 10/11/95	BW12 SW28 0 to 0 10/11/95	BW12 WSSW28 0 to 0 10/11/95
LLVOA	BROMOFORM	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/L		99		100		101		98	
LLVOA	TOLUENE-D8	UG/L		102		102		101		100	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L		103		102		102		99	
LLVOA	CHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	ACETONE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,1-DICHLOROETHENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	CARBON DISULFIDE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,3-DICHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,4-DICHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,2-DICHLOROBENZENE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	METHYLENE CHLORIDE	UG/L		10 U		10 U		10 U		10 U	
LLVOA	1,1-DICHLOROETHANE	UG/L		10 U		10 U		10 U		10 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	GAMMA BHC (LINDANE)	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	ALDRIN	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR EPOXIDE	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	ALPHA ENDOSULFAN	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	DIELDRIN	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDE	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	ENDRIN	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	BETA ENDOSULFAN	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDD	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	ENDOSULFAN SULFATE	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDT	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	METHOXYCHLOR	UG/L		0.5 U		0.5 U		0.5 U		0.5 U	
PEST	ENDRIN KETONE	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	ENDRIN ALDEHYDE	UG/L		0.1 U		0.1 U		0.1 U		0.1 U	
PEST	ALPHA-CHLORDANE	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	GAMMA-CHLORDANE	UG/L		0.05 U		0.05 U		0.05 U		0.05 U	
PEST	TOXAPHENE	UG/L		5 U		5 U		5 U		5 U	
PEST	PCB-1016 (AROCHLOR 1016)	UG/L		1 U		1 U		1 U		1 U	
PEST	PCB-1221 (AROCHLOR 1221)	UG/L		2 U		2 U		2 U		2 U	
PEST	PCB-1232 (AROCHLOR 1232)	UG/L		1 U		1 U		1 U		1 U	
PEST	PCB-1242 (AROCHLOR 1242)	UG/L		1 U		1 U		1 U		1 U	
PEST	PCB-1248 (AROCHLOR 1248)	UG/L		1 U		1 U		1 U		1 U	
PEST	PCB-1254 (AROCHLOR 1254)	UG/L		1 U		1 U		1 U		1 U	
PEST	PCB-1260 (AROCHLOR 1260)	UG/L		1 U		1 U		1 U		1 U	
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L		70		70		70		59	
PEST	DECACHLOROBIPHENYL	UG/L		80		80		69		60	
TOTMETAL	ALUMINUM	UG/L		549 =		5640 J		5470 J		5910 J	
TOTMETAL	ANTIMONY	UG/L		14.6 U		14.6 U		14.6 U		14.6 U	
TOTMETAL	ARSENIC	UG/L		9.6 J		8.1 J		11 =		9.6 J	
TOTMETAL	BARIUM	UG/L		95 J		80.4 J		71.9 J		77.5 J	
TOTMETAL	BERYLLIUM	UG/L		0.18 U		0.34 U		0.21 U		0.41 U	
TOTMETAL	CADMIUM	UG/L		2.7 U		2.7 U		2.7 U		2.7 U	

308 315

D-21

Analytical Data Summary: Surface Water

Group	Parameter	Units	BW13	BW13	BW14	BW14	BW15	BW15	BW16	BW16	BW17
		Sample ID:	SW29	WSSW29	SW30	WSSW30	SW31	WSSW31	SW32	WSSW32	SW33
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
LLVOA	BROMOFORM	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/L	102		99		98		98		104
LLVOA	TOLUENE-D8	UG/L	103		101		98		97		98
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L	103		101		99		98		97
LLVOA	CHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	ACETONE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,1-DICHLOROETHENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	CARBON DISULFIDE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,3-DICHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,4-DICHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,2-DICHLOROBENZENE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	METHYLENE CHLORIDE	UG/L	10 U		10 U		10 U		10 U		10 U
LLVOA	1,1-DICHLOROETHANE	UG/L	10 U		10 U		10 U		10 U		10 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	GAMMA BHC (LINDANE)	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	HEPTACHLOR	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	ALDRIN	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	HEPTACHLOR EPOXIDE	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	ALPHA ENDOSULFAN	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	DIELDRIN	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDE	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDRIN	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	BETA ENDOSULFAN	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDD	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDOSULFAN SULFATE	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	p,p'-DDT	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	METHOXYCHLOR	UG/L	0.5 U		0.5 U		0.5 U		0.5 U		0.5 U
PEST	ENDRIN KETONE	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	ENDRIN ALDEHYDE	UG/L	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U
PEST	ALPHA-CHLORDANE	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	GAMMA-CHLORDANE	UG/L	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U
PEST	TOXAPHENE	UG/L	5 U		5 U		5 U		5 U		5 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/L	2 U		2 U		2 U		2 U		2 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/L	1 U		1 U		1 U		1 U		1 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L	70		70		80		65		63
PEST	DECACHLOROBIPHENYL	UG/L	68		130		98		100		82
TOTMETAL	ALUMINUM	UG/L	16900 J		5790 J		527 J		669 J		395 J
TOTMETAL	ANTIMONY	UG/L	14.6 U		14.6 U		14.6 U		14.6 U		14.6 U
TOTMETAL	ARSENIC	UG/L	13.6 =		10.8 =		1.8 U		1.1 UJ		3 UJ
TOTMETAL	BARIUM	UG/L	185 J		82.6 J		33.1 J		35.9 J		27.5 J
TOTMETAL	BERYLLIUM	UG/L	0.78 U		0.34 U		0.18 U		0.18 U		0.25 U
TOTMETAL	CADMIUM	UG/L	2.7 U		2.7 U		2.7 U		2.7 U		2.7 U

308 316

D-22

308 317

Analytical Data Summary: Surface Water

		Station ID:	BW17	BW17	BW17	BW18	BW18	BW19	BW19	BW19	BW19
		Sample ID:	SW33A	WSSW33	WSSW33A	SW34	WSSW34	SW35	SW35A	SW35D	WSSW35
		Sample Depth:	0 to 0	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0
		Sample Date:	10/11/95	10/11/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLVOA	BROMOFORM	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,2-DICHLOROETHANE-D4	UG/L	103			97		102	99		
LLVOA	TOLUENE-D8	UG/L	104			96		104	100		
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L	103			98		102	99		
LLVOA	CHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	ACETONE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1-DICHLOROETHENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	CARBON DISULFIDE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,3-DICHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,4-DICHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,2-DICHLOROBENZENE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	METHYLENE CHLORIDE	UG/L	10 U			10 U		10 U	10 U		
LLVOA	1,1-DICHLOROETHANE	UG/L	10 U			10 U		10 U	10 U		
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	GAMMA BHC (LINDANE)	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	HEPTACHLOR	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	ALDRIN	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	HEPTACHLOR EPOXIDE	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	ALPHA ENDOSULFAN	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	DIELDRIN	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	p,p'-DDE	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	ENDRIN	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	BETA ENDOSULFAN	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	p,p'-DDD	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	ENDOSULFAN SULFATE	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	p,p'-DDT	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	METHOXYCHLOR	UG/L	0.5 U			0.5 U		0.5 U	0.5 U		
PEST	ENDRIN KETONE	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	ENDRIN ALDEHYDE	UG/L	0.1 U			0.1 U		0.1 U	0.1 U		
PEST	ALPHA-CHLORDANE	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	GAMMA-CHLORDANE	UG/L	0.05 U			0.05 U		0.05 U	0.05 U		
PEST	TOXAPHENE	UG/L	5 U			5 U		5 U	5 U		
PEST	PCB-1016 (AROCHLOR 1016)	UG/L	1 U			1 U		1 U	1 U		
PEST	PCB-1221 (AROCHLOR 1221)	UG/L	2 U			2 U		2 U	2 U		
PEST	PCB-1232 (AROCHLOR 1232)	UG/L	1 U			1 U		1 U	1 U		
PEST	PCB-1242 (AROCHLOR 1242)	UG/L	1 U			1 U		1 U	1 U		
PEST	PCB-1248 (AROCHLOR 1248)	UG/L	1 U			1 U		1 U	1 U		
PEST	PCB-1254 (AROCHLOR 1254)	UG/L	1 U			1 U		1 U	1 U		
PEST	PCB-1260 (AROCHLOR 1260)	UG/L	1 U			1 U		1 U	1 U		
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L	48			51		59	60		
PEST	DECACHLOROBIPHENYL	UG/L	73			64		76	75		
TOTMETAL	ALUMINUM	UG/L	611 J			370 J		648 J	494 J	607.12	
TOTMETAL	ANTIMONY	UG/L	14.6 U			14.6 U		14.6 U	14.6 U	14.6	
TOTMETAL	ARSENIC	UG/L	3.5 UJ			3.6 U		3.4 UJ	2.7 U	3.55	
TOTMETAL	BARIUM	UG/L	29.4 J			26.2 J		31.3 J	28.2 J	31.16	
TOTMETAL	BERYLLIUM	UG/L	0.18 U			0.18 U		0.18 U	0.18 U	0.18	
TOTMETAL	CADMIUM	UG/L	2.7 U			2.1 U		2.7 U	2.1 U	2.7	

D-23

Analytical Data Summary: Surface Water

		StationID:	BW19	BW19	BW20	BW20	BW21	BW21	BW22	BW22
		Sample ID:	WSSW35A	WSSW35D	SW36	WSSW36	SW37	WSSW37	SW38	WSSW38
		Sample Depth:	to	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:		10/11/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units								
LLVOA	BROMOFORM	UG/L			10 U		10 U		10 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/L			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/L			99		102		99	
LLVOA	TOLUENE-D8	UG/L			101		101		100	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/L			101		101		101	
LLVOA	CHLOROETHANE	UG/L			10 U		10 U		10 U	
LLVOA	ACETONE	UG/L			10 U		10 U		10 U	
LLVOA	1,1-DICHLOROETHENE	UG/L			10 U		10 U		10 U	
LLVOA	CARBON DISULFIDE	UG/L			10 U		10 U		10 U	
LLVOA	1,3-DICHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLVOA	1,4-DICHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLVOA	1,2-DICHLOROBENZENE	UG/L			10 U		10 U		10 U	
LLVOA	METHYLENE CHLORIDE	UG/L			2 U		1 U		1 U	
LLVOA	1,1-DICHLOROETHANE	UG/L			10 U		10 U		10 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U	
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U	
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L			0.05 U		0.05 U		0.05 U	
PEST	GAMMA BHC (LINDANE)	UG/L			0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR	UG/L			0.05 U		0.05 U		0.05 U	
PEST	ALDRIN	UG/L			0.05 U		0.05 U		0.05 U	
PEST	HEPTACHLOR EPOXIDE	UG/L			0.05 U		0.05 U		0.05 U	
PEST	ALPHA ENDOSULFAN	UG/L			0.05 U		0.05 U		0.05 U	
PEST	DIELDRIN	UG/L			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDE	UG/L			0.1 U		0.1 U		0.1 U	
PEST	ENDRIN	UG/L			0.1 U		0.1 U		0.1 U	
PEST	BETA ENDOSULFAN	UG/L			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDD	UG/L			0.1 U		0.1 U		0.1 U	
PEST	ENDOSULFAN SULFATE	UG/L			0.1 U		0.1 U		0.1 U	
PEST	p,p'-DDT	UG/L			0.1 U		0.1 U		0.1 U	
PEST	METHOXYCHLOR	UG/L			0.5 U		0.5 U		0.5 U	
PEST	ENDRIN KETONE	UG/L			0.1 U		0.1 U		0.1 U	
PEST	ENDRIN ALDEHYDE	UG/L			0.1 U		0.1 U		0.1 U	
PEST	ALPHA-CHLORDANE	UG/L			0.05 U		0.05 U		0.05 U	
PEST	GAMMA-CHLORDANE	UG/L			0.05 U		0.05 U		0.05 U	
PEST	TOXAPHENE	UG/L			5 U		5 U		5 U	
PEST	PCB-1016 (AROCHLOR 1016)	UG/L			1 U		1 U		1 U	
PEST	PCB-1221 (AROCHLOR 1221)	UG/L			2 U		2 U		2 U	
PEST	PCB-1232 (AROCHLOR 1232)	UG/L			1 U		1 U		1 U	
PEST	PCB-1242 (AROCHLOR 1242)	UG/L			1 U		1 U		1 U	
PEST	PCB-1248 (AROCHLOR 1248)	UG/L			1 U		1 U		1 U	
PEST	PCB-1254 (AROCHLOR 1254)	UG/L			1 U		1 U		1 U	
PEST	PCB-1260 (AROCHLOR 1260)	UG/L			1 U		1 U		1 U	
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/L			64		69		66	
PEST	DECACHLOROBIPHENYL	UG/L			83		90		80	
TOTMETAL	ALUMINUM	UG/L			371 J		341 J		389 J	
TOTMETAL	ANTIMONY	UG/L			14.6 U		14.6 U		14.6 U	
TOTMETAL	ARSENIC	UG/L			6.6 J		6.8 J		7.7 J	
TOTMETAL	BARIUM	UG/L			40.4 J		40.2 J		40.9 J	
TOTMETAL	BERYLLIUM	UG/L			0.18 U		0.18 U		0.18 U	
TOTMETAL	CADMIUM	UG/L			2.7 U		2.7 U		2.7 U	

D-24

Analytical Data Summary: Surface Water

Group	Parameter											
		StationID:	BW01	BW01	BW01	BW01	BW02	BW02	BW03	BW03	BW04	BW04
		Sample ID:	SW17	SW17A	WSSW17	WSSW17A	SW18	WSSW18	SW19	WSSW19	SW20	SW20D
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0	to	0 to 0	to
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95		10/10/95		10/10/95	10/10/95
		Units										
TOTMETAL	CALCIUM	UG/L	22200 =	22100 =			24500 =		23400 =		27900 =	27768.8
TOTMETAL	CHROMIUM, TOTAL	UG/L	1.6 U	1.8 U			1.8 U		1.8 U		1.8 U	1.8
TOTMETAL	COBALT	UG/L	1.7 U	1.7 U			1.7 U		2 U		1.7 U	1.7
TOTMETAL	COPPER	UG/L	1.2 U	3.4 U			1.2 U		1.2 U		1.5 U	1.2
TOTMETAL	IRON	UG/L	2130 =	2130 =			1070 =		941 =		628 =	614.07
TOTMETAL	LEAD	UG/L	0.86 U	0.86 U			1.5 U		2.7 U		0.86 U	0.86
TOTMETAL	MAGNESIUM	UG/L	3840 J	3640 J			5470 =		5410 =		6710 =	6714.16
TOTMETAL	MANGANESE	UG/L	399 =	387 =			320 =		326 =		62.4 =	61.5
TOTMETAL	MERCURY	UG/L	0.18 U	0.18 U			0.18 U		0.18 U		0.18 U	0.18
TOTMETAL	NICKEL	UG/L	5.9 U	5.9 U			5.9 U		5.9 U		5.9 U	5.9
TOTMETAL	POTASSIUM	UG/L	3280 J	3000 J			4800 J		5420 =		3070 J	2800.21
TOTMETAL	SELENIUM	UG/L	1.3 U	1.3 UJ			1.3 U		1.3 U		1.3 U	1.3
TOTMETAL	SILVER	UG/L	1.7 U	1.7 U			1.7 U		1.7 U		1.7 U	1.7
TOTMETAL	SODIUM	UG/L	9530 =	8800 =			14700 J		14900 =		17900 =	17880.27
TOTMETAL	THALLIUM	UG/L	1.8 U	1.8 U			1.8 UJ		1.8 U		1.8 U	1.81
TOTMETAL	VANADIUM	UG/L	1.1 U	1.1 U			2 U		2.6 U		1.1 U	1.1
TOTMETAL	ZINC	UG/L	6.8 U	6.2 U			7.9 U		12.6 U		5.3 U	4.59

308 319

D-25

Analytical Data Summary: Surface Water

Group	Parameter	StationID:	BW04	BW04	BW05	BW05	BW06	BW06	BW07	BW07	BW08
		Sample ID:	WSSW20	WSSW20D	SW21	WSSW21	SW22	WSSW22	SW23	WSSW23	SW24
		Sample Depth:	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
		Units									
TOTMETAL	CALCIUM	UG/L			26600 =		27300 =		33400 =		33600 =
TOTMETAL	CHROMIUM, TOTAL	UG/L			1.8 U		1.8 U		1.8 U		1.8 U
TOTMETAL	COBALT	UG/L			1.7 U		1.7 U		1.7 U		1.7 U
TOTMETAL	COPPER	UG/L			1.2 U		1.2 U		1.2 U		1.2 U
TOTMETAL	IRON	UG/L			460 =		808 =		346 =		1420 =
TOTMETAL	LEAD	UG/L			1.3 U		0.86 U		0.86 UJ		3.2 UJ
TOTMETAL	MAGNESIUM	UG/L			6570 =		6560 =		4140 J		4180 J
TOTMETAL	MANGANESE	UG/L			46.5 =		306 =		134 =		308 =
TOTMETAL	MERCURY	UG/L			0.18 U		0.18 U		0.18 U		0.18 U
TOTMETAL	NICKEL	UG/L			5.9 U		5.9 U		5.9 U		5.9 U
TOTMETAL	POTASSIUM	UG/L			3130 J		2790 J		6280 =		6310 =
TOTMETAL	SELENIUM	UG/L			1.3 U		1.3 UJ		1.3 UJ		1.3 UJ
TOTMETAL	SILVER	UG/L			1.7 U		1.7 U		1.7 U		1.7 U
TOTMETAL	SODIUM	UG/L			17200 =		17000 J		12400 J		12300 J
TOTMETAL	THALLIUM	UG/L			1.8 U		1.8 U		1.8 U		1.8 UJ
TOTMETAL	VANADIUM	UG/L			1.1 U		1.4 U		1.3 U		1.8 U
TOTMETAL	ZINC	UG/L			2.5 U		9.4 U		8.4 U		18.5 U

D-26

Analytical Data Summary: Surface Water

		StationID:	BW08	BW09	BW09	BW10	BW10	BW11	BW11	BW12	BW12
		Sample ID:	WSSW24	SW15	WSSW25	SW26	WSSW26	SW27	WSSW27	SW28	WSSW28
		Sample Depth:	0 to 0	0 to 0	0 to 0	to	to	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/10/95	10/10/95	10/11/95			10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
TOTMETAL	CALCIUM	UG/L		34800 =		8830 =		8630 =		8730 =	
TOTMETAL	CHROMIUM, TOTAL	UG/L		3.7 U		18.1 =		6 U		6.7 U	
TOTMETAL	COBALT	UG/L		2.6 U		3.5 U		3.7 U		3.3 U	
TOTMETAL	COPPER	UG/L		16.5 U		9.6 U		12.6 U		35.6 =	
TOTMETAL	IRON	UG/L		1990 =		7350 =		6820 =		7330 =	
TOTMETAL	LEAD	UG/L		13.7 =		6.8 =		5.5 =		6.8 =	
TOTMETAL	MAGNESIUM	UG/L		4380 J		3300 J		3170 J		3300 J	
TOTMETAL	MANGANESE	UG/L		363 =		744 =		635 =		669 =	
TOTMETAL	MERCURY	UG/L		0.18 U		0.18 U		0.18 U		0.18 U	
TOTMETAL	NICKEL	UG/L		5.9 U		11.9 J		10.2 J		6.9 J	
TOTMETAL	POTASSIUM	UG/L		6730 =		3190 J		3230 J		3570 J	
TOTMETAL	SELENIUM	UG/L		1.3 UJ		1.3 UJ		1.3 UJ		1.6 UJ	
TOTMETAL	SILVER	UG/L		1.7 U		1.7 U		1.7 U		1.7 U	
TOTMETAL	SODIUM	UG/L		12400 =		1950 U		1990 U		1970 U	
TOTMETAL	THALLIUM	UG/L		1.8 U		1.8 U		1.8 U		1.8 U	
TOTMETAL	VANADIUM	UG/L		4.1 U		15 J		13.2 J		14.8 J	
TOTMETAL	ZINC	UG/L		64 =		22.2 UJ		51.8 UJ		20.1 UJ	

308 321

D-27

Analytical Data Summary: Surface Water

		StationID:	BW13	BW13	BW14	BW14	BW15	BW15	BW16	BW16	BW17
		Sample ID:	SW29	WSSW29	SW30	WSSW30	SW31	WSSW31	SW32	WSSW32	SW33
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
TOTMETAL	CALCIUM	UG/L	9370 =		8810 =		6300 =		6500 =		4410 J
TOTMETAL	CHROMIUM, TOTAL	UG/L	18 =		5.7 U		1.8 U		1.8 U		1.8 U
TOTMETAL	COBALT	UG/L	8.3 U		3.3 U		1.7 U		1.8 U		1.7 U
TOTMETAL	COPPER	UG/L	76.4 =		11.5 U		1.2 U		2.5 U		31 U
TOTMETAL	IRON	UG/L	20800 =		7470 =		734 =		830 =		1060 =
TOTMETAL	LEAD	UG/L	16.7 =		6.5 =		2.2 U		3.4 U		2.1 U
TOTMETAL	MAGNESIUM	UG/L	4840 J		3260 J		2690 J		3740 J		1500 J
TOTMETAL	MANGANESE	UG/L	1140 =		659 =		58.2 =		61.6 =		192 =
TOTMETAL	MERCURY	UG/L	0.18 U		0.18 U		0.18 U		0.18 U		0.18 U
TOTMETAL	NICKEL	UG/L	19.9 J		8.1 J		5.9 U		5.9 U		5.9 U
TOTMETAL	POTASSIUM	UG/L	5130 =		3590 J		733 J		1000 J		2550 J
TOTMETAL	SELENIUM	UG/L	3.9 U		1.7 U		1.6 UJ		1.3 U		1.3 U
TOTMETAL	SILVER	UG/L	1.7 U		1.8 J		1.7 U		1.8 J		1.7 U
TOTMETAL	SODIUM	UG/L	2890 J		2000 U		8850 =		8940 =		6980 =
TOTMETAL	THALLIUM	UG/L	1.8 U		1.8 U		1.8 U		1.8 U		1.8 U
TOTMETAL	VANADIUM	UG/L	39.4 J		15.2 J		1.1 U		2.4 U		3.6 U
TOTMETAL	ZINC	UG/L	146 J		59.5 UJ		7.2 UJ		12.4 UJ		38.6 UJ

308 322

D-28

Analytical Data Summary: Surface Water

		StationID:	BW17	BW17	BW17	BW18	BW18	BW19	BW19	BW19	BW19
		Sample ID:	SW33A	WSSW33	WSSW33A	SW34	WSSW34	SW35	SW35A	SW35D	WSSW35
		Sample Depth:	0 to 0	0 to 0	to	0 to 0	0 to 0	0 to 0	0 to 0	to	0 to 0
		Sample Date:	10/11/95	10/11/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
TOTMETAL	CALCIUM	UG/L	4380 J			4440 J		4490 J	4410 J	4502.41	
TOTMETAL	CHROMIUM, TOTAL	UG/L	1.8 U			1.8 U		1.8 U	1.8 U	1.8	
TOTMETAL	COBALT	UG/L	1.7 U			1.7 U		1.7 U	1.7 U	1.7	
TOTMETAL	COPPER	UG/L	6.3 U			5.4 U		12.3 U	4.6 U	8.33	
TOTMETAL	IRON	UG/L	1300 =			999 =		1510 =	1250 =	1497.48	
TOTMETAL	LEAD	UG/L	3.2 U			2.2 U		3 U	2.8 U	2.89	
TOTMETAL	MAGNESIUM	UG/L	1510 J			1470 J		1530 J	1500 J	1534.67	
TOTMETAL	MANGANESE	UG/L	209 =			197 =		223 =	205 =	224.09	
TOTMETAL	MERCURY	UG/L	0.18 U			0.18 U		0.18 U	0.18 U	0.18	
TOTMETAL	NICKEL	UG/L	5.9 U			5.9 U		5.9 U	5.9 U	5.9	
TOTMETAL	POTASSIUM	UG/L	2420 J			1980 J		2320 J	2250 J	2239.33	
TOTMETAL	SELENIUM	UG/L	1.3 U			1.3 U		1.3 U	1.4 U	1.3	
TOTMETAL	SILVER	UG/L	1.7 U			1.7 U		1.7 U	1.7 U	1.7	
TOTMETAL	SODIUM	UG/L	6760 =			6770 =		6880 =	6720 =	6889.93	
TOTMETAL	THALLIUM	UG/L	1.8 U			1.8 U		1.8 U	1.8 U	1.81	
TOTMETAL	VANADIUM	UG/L	2.9 U			2.1 U		3.2 U	2.6 U	3.06	
TOTMETAL	ZINC	UG/L	31.6 UJ			221 J		25.3 UJ	33 UJ	77.84	

308 323

D-29

308 324

Analytical Data Summary: Surface Water

Group	Parameter									
		StationID:	BW19	BW19	BW20	BW20	BW21	BW21	BW22	BW22
		Sample ID:	WSSW35A	WSSW35D	SW36	WSSW36	SW37	WSSW37	SW38	WSSW38
		Sample Depth:	to	to	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:		10/11/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
		Units								
TOTMETAL	CALCIUM	UG/L			9170 =		9220 =		9380 =	
TOTMETAL	CHROMIUM, TOTAL	UG/L			3.1 U		1.8 U		1.8 U	
TOTMETAL	COBALT	UG/L			2.8 U		1.7 U		1.7 U	
TOTMETAL	COPPER	UG/L			11 J		10.4 J		12.9 J	
TOTMETAL	IRON	UG/L			803 =		792 =		847 =	
TOTMETAL	LEAD	UG/L			2.2 U		1.8 U		1.6 U	
TOTMETAL	MAGNESIUM	UG/L			3170 J		3280 J		3210 J	
TOTMETAL	MANGANESE	UG/L			125 =		119 =		131 =	
TOTMETAL	MERCURY	UG/L			0.18 U		0.11 U		0.11 U	
TOTMETAL	NICKEL	UG/L			5.9 U		5.9 U		5.9 U	
TOTMETAL	POTASSIUM	UG/L			2210 U		1450 U		2040 U	
TOTMETAL	SELENIUM	UG/L			1.3 UJ		1.3 UJ		1.3 UJ	
TOTMETAL	SILVER	UG/L			1.7 U		1.7 U		1.7 U	
TOTMETAL	SODIUM	UG/L			8090 =		7350 =		7460 =	
TOTMETAL	THALLIUM	UG/L			1.8 U		1.8 U		1.8 U	
TOTMETAL	VANADIUM	UG/L			3.7 U		1.7 U		2.5 U	
TOTMETAL	ZINC	UG/L			4 UJ		5.1 UJ		7.2 UJ	

USE 8v

D-30

Analytical Data Summary: Surface Soil

		StationID:	BS01	BS01	BS01	BS02	BS02	BS03	BS04	BS05	BS05
		Sample ID:	SS51	SS51A	SS51ADL	SS52	SS52DL	SS53	SS54	SS55	SS55DL
		Sample Depth:	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1	0 to 1	to
		Sample Date:	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1 U		1 U		1 U	1 U	1 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1 U		1 U		1 U	1 U	1 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	0 U	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	0 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		0.043 U		2.5 U	2.5 U	2.5 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	0.018 U		0.122 J		0 U	2.5 U	2.5 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U	2.5 U	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	5.632 =	5.489 =		4.108 J		1.391 J	10.614 =	3.122 J	
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5 U		0.05 J		5 U	5 U	5 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	38	42		46		35	55	54	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	47	50		54		46	52	63	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	90	81		81		76	30	80	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	52	77		64		63	23	61	
HERB	DALAPON	UG/KG	220 U	220 U		440 U		440 U	440 U	440 U	
HERB	DICAMBA	UG/KG	22 U	22 U		44 U		44 U	44 U	44 U	
HERB	MCPA	UG/KG	11000 U	11000 U		22000 U		11000 U	22000 U	22000 U	
HERB	MCPP	UG/KG	11000 U	11000 U		22000 U		11000 U	22000 U	22000 U	
HERB	DICHLOROPROP	UG/KG	110 UJ	110 UJ		220 UJ		110 UJ	220 UJ	220 UJ	
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	110 U	110 U		220 U		110 U	220 U	220 U	
HERB	SILVEX (2,4,5-TP)	UG/KG	22 U	22 U		44 U		44 U	44 U	44 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	22 U	22 U		44 U		44 U	44 U	44 U	
HERB	2,4 DB	UG/KG	110 U	110 U		220 U		110 U	220 U	220 U	
HERB	DINOSEB	UG/KG	22 U	22 U		44 U		44 U	44 U	44 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	86	94		104		110	107	131	
LLSVOA	2-NITROANILINE	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	DIMETHYL PHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	3-NITROANILINE	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	2,6-DINITROTOLUENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	ACENAPHTHYLENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	190 J	360 U	
LLSVOA	ACENAPHTHENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,4-DINITROPHENOL	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	4-NITROPHENOL	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	DIBENZOFURAN	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,4-DINITROTOLUENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	DIETHYL PHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	FLUORENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	4-NITROANILINE	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	4600 U	4600 U	9200 R	900 U		900 U	900 U	900 U	
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	

308 326

Analytical Data Summary: Surface Soil

		StationID:	BS06	BS06	BS07	BS08	BS08	BS09	BS09	BS10	BS11
		Sample ID:	SS56	SS56DL	SS57	SS58	SS58DL	SS59	SS59DL	SS60	SS61
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95
Group	Parameter	Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U		1 U	1 U		1 U		1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U		1 U	1 U		1 U		1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	4.576 J		8.781 =	1.257 J		2.942 J		0.919 J	1.274 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U		5 U	5 U		5 U		5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	58		41	46		58		43	41
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	60		36	51		60		45	41
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	56		77	67		70		60	61
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	55		74	77		63		54	40
HERB	DALAPON	UG/KG	440 U		220 U	110 U		440 U		220 U	220 U
HERB	DICAMBA	UG/KG	44 U		22 U	11 U		44 U		22 U	22 U
HERB	MCPA	UG/KG	22000 U		11000 U	57000 U		22000 U		11000 U	11000 U
HERB	MCPP	UG/KG	22000 U		11000 U	5700 U		22000 U		11000 U	11000 U
HERB	DICHLOROPROP	UG/KG	220 UJ		110 UJ	57 UJ		220 UJ		110 UJ	110 U
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	220 U		110 U	170 U		220 U		220 U	110 U
HERB	SILVEX (2,4,5-TP)	UG/KG	44 U		22 U	11 U		44 U		22 U	22 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	44 U		22 U	11 U		44 U		22 U	22 U
HERB	2,4 DB	UG/KG	1100 U		110 U	57 U		220 U		110 U	110 U
HERB	DINOSEB	UG/KG	44 U		22 U	11 U		44 U		22 U	22 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	121		83	97		133		104	90
LLSVOA	2-NITROANILINE	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	3-NITROANILINE	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	ACENAPHTHYLENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	ACENAPHTHENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	4-NITROPHENOL	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	DIBENZOFURAN	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	FLUORENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	4-NITROANILINE	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	880 U	900 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U

D-32

Analytical Data Summary: Surface Soil

		StationID:	BS11	BS12	BS12	BS13	BS14	BS14	BS15	BS16	BS16
		Sample ID:	SS61DL	SS62	SS62RE	SS63	SS64	SS64DL	SS65	SS66	SS66DL
		Sample Depth:	to	0 to 1	to	0 to 1	0 to 1	to	0 to 1	0 to 1	to
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG		0 U		0 U	1 U		1 U	1 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG		0.001 U		1 U	1 U		1 U	1 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG		0.006 U		2.5 U	2.5 U		0 U	2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG		0.004 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG		0.004 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG		0.014 U		2.5 U	0 U		0.1 U	0 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG		0.071 J		2.5 U	0 U		0.39 J	0 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U	2.5 U		2.5 U	2.5 U	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG		4.411 J		6.702 =	0.747 J		5.597 =	0.991 J	
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG		0.045 J		5 U	0 U		0.393 J	5 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG		63		46	46		53	57	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG		62		46	49		53	57	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG		66		61	67		71	76	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG		49		50	61		70	51	
HERB	DALAPON	UG/KG		440 R	440 UJ	440 U	440 U		440 U	440 U	
HERB	DICAMBA	UG/KG		44 R	44 UJ	44 U	44 U		44 U	44 U	
HERB	MCPA	UG/KG		21000 R	21000 UJ	21000 U	22000 U		21000 U	21000 U	
HERB	MCPP	UG/KG		21000 R	21000 UJ	21000 U	22000 U		21000 U	21000 U	
HERB	DICHLOROPROP	UG/KG		210 R	210 UJ	210 U	220 U		210 U	210 U	
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG		210 R	210 UJ	210 U	220 U		210 U	210 U	
HERB	SILVEX (2,4,5-TP)	UG/KG		44 R	44 UJ	44 U	44 U		44 U	44 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG		44 R	44 UJ	44 U	44 U		44 U	44 U	
HERB	2,4 DB	UG/KG		210 R	210 UJ	210 U	220 U		210 U	210 U	
HERB	DINOSEB	UG/KG		44 R	44 UJ	44 U	44 U		44 U	44 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG		0	99	147	50		98	110	
LLSVOA	2-NITROANILINE	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	DIMETHYL PHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	3-NITROANILINE	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	2,6-DINITROTOLUENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	ACENAPHTHYLENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	ACENAPHTHENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,4-DINITROPHENOL	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	4-NITROPHENOL	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	DIBENZOFURAN	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,4-DINITROTOLUENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	DIETHYL PHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	FLUORENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-NITROANILINE	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R

D-33

308 328

Analytical Data Summary: Surface Soil

		StationID:	BS17	BS17	BS18	BS19	BS20	BS21	BS22
		Sample ID:	SS67	SS67D	SS68	SS69	SS70	SS71	SS72
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units							
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1	1 U	1 U	1 U	1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1	1 U	1 U	1 U	1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	0 U	2.5 U	0.016 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	0.046 U	0 U	0.047 U	0.199 J	0.075 J	0.058 U	0.071 J
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	2.136 J	7.417	11.711 =	23.325 =	8.488 =	6.489 =	3.026 =
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5	5 U	5 U	5 U	5 U	0 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	42	39	40	35	53	41	45
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	44	42	47	39	44	47	49
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	72	60	72	67	65	72	67
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	108	92	130	139	110	120	112
HERB	DALAPON	UG/KG	440 U		110 U	330 U	440 U	440 U	440 U
HERB	DICAMBA	UG/KG	44 U		11 U	33 U	44 U	44 U	44 U
HERB	MCPA	UG/KG	21000 U		5500 U	23000 U	22000 U	22000 U	22000 U
HERB	MCPP	UG/KG	21000 U		5500 U	23000 U	22000 U	44000 U	22000 U
HERB	DICHLOROPROP	UG/KG	210 U		55 U	230 U	220 U	220 U	220 U
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	210 U		55 U	230 U	220 U	220 U	220 U
HERB	SILVEX (2,4,5-TP)	UG/KG	44 U		11 U	33 U	44 U	44 U	44 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	44 U		11 U	33 U	44 U	44 U	44 U
HERB	2,4 DB	UG/KG	210 U		55 U	460 U	220 U	220 U	220 U
HERB	DINOSEB	UG/KG	44 U		11 U	33 U	44 U	44 U	44 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	138		98	105	112	103	117
LLSVOA	2-NITROANILINE	UG/KG	890 U		920 U	950 U	940 U	900 U	920 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	350 U		370 U	360 U	370 U	360 U	370 U
LLSVOA	3-NITROANILINE	UG/KG	890 U		920 U	950 U	940 U	900 U	920 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	ACENAPHTHYLENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	ACENAPHTHENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	890 UJ		920 U	950 U	940 UJ	900 UJ	920 UJ
LLSVOA	4-NITROPHENOL	UG/KG	890 UJ		920 U	950 U	940 UJ	900 UJ	920 UJ
LLSVOA	DIBENZOFURAN	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	FLUORENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-NITROANILINE	UG/KG	890 U		920 U	950 U	940 U	900 U	920 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	890 UJ		920 U	950 U	940 UJ	900 UJ	920 UJ
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U

D-34

Analytical Data Summary: Surface Soil

		Station ID:	BS01	BS01	BS01	BS02	BS02	BS03	BS04	BS05	BS05
		Sample ID:	SS51	SS51A	SS51ADL	SS52	SS52DL	SS53	SS54	SS55	SS55DL
		Sample Depth:	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1	0 to 1	to
		Sample Date:	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
LLSVOA	HEXACHLOROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	PENTACHLOROPHENOL	UG/KG	930 U	930 U	1900 R	180 U		180 U	180 U	180 U	
LLSVOA	PHENANTHRENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	610 =	49 J	
LLSVOA	ANTHRACENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	96 J	360 U	
LLSVOA	CARBAZOLE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	67 J	360 U	
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	FLUORANTHENE	UG/KG	1800 U	1800 U	3700 R	49 J		360 U	1600 =	110 J	
LLSVOA	PYRENE	UG/KG	1800 U	1800 U	3700 R	50 J		360 U	1500 =	89 J	
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	710 =	44 J	
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	CHRYSENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	940 =	65 J	
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	900 =	51 J	
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	780 =	45 J	
LLSVOA	BENZO(a)PYRENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	960 =	47 J	
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	700 =	360 U	
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	260 J	360 U	
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	820 =	41 J	
LLSVOA	2-FLUOROPHENOL	UG/KG	57	64	59	56		66	68	58	
LLSVOA	PHENOL-D5	UG/KG	60	66	67	59		70	72	62	
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	60	67	65	58		69	69	60	
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	70	76	68	66		80	75	66	
LLSVOA	NITROBENZENE-D5	UG/KG	62	75	65	62		72	74	61	
LLSVOA	2-FLUOROBIPHENYL	UG/KG	66	73	76	58		68	70	61	
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	50	62	47	56		57	87	64	
LLSVOA	TERPHENYL-D14	UG/KG	77	82	83	76		75	95	67	
LLSVOA	PHENOL	UG/KG	5400 =	19000 ER	20000 =	140 J		52 J	360 U	360 U	
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 UJ	360 UJ	
LLSVOA	2-CHLOROPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 UJ	360 UJ	
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 UJ	360 UJ	
LLSVOA	HEXACHLOROETHANE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	NITROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 UJ	360 U	
LLSVOA	ISOPHORONE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2-NITROPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	NAPHTHALENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	4-CHLOROANILINE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	

Analytical Data Summary: Surface Soil

Group	Parameter										
		StationID:	BS06	BS06	BS07	BS08	BS08	BS09	BS09	BS10	BS11
		Sample ID:	SS56	SS56DL	SS57	SS58	SS58DL	SS59	SS59DL	SS60	SS61
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95
		Units									
LLSVOA	HEXACHLOROBENZENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	180 U		180 U	1900 U	3800 R	920 U	1800 R	180 U	180 U
LLSVOA	PHENANTHRENE	UG/KG	160 J		360 U	3800 U	7600 R	1800 U	3700 R	130 J	360 U
LLSVOA	ANTHRACENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	CARBAZOLE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	FLUORANTHENE	UG/KG	330 J		360 U	3800 U	7600 R	1800 U	3700 R	180 J	360 U
LLSVOA	PYRENE	UG/KG	270 J		360 U	3800 U	7600 R	1800 U	3700 R	140 J	360 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	120 J		360 U	3800 U	7600 R	1800 U	3700 R	73 J	360 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	CHRYSENE	UG/KG	180 J		360 U	3800 U	7600 R	1800 U	3700 R	90 J	360 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	360 U		360 U	3800 UJ	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	DI-n-OCTYL PHTHALATE	UG/KG	360 U		360 U	3800 UJ	7600 R	1800 UJ	3700 R	350 U	360 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	180 J		360 U	3800 UJ	7600 R	1800 UJ	3700 R	140 J	360 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	170 J		360 U	3800 UJ	7600 R	1800 UJ	3700 R	130 J	360 U
LLSVOA	BENZO(a)PYRENE	UG/KG	140 J		360 U	3800 UJ	7600 R	1800 UJ	3700 R	87 J	360 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	130 J		360 U	3800 UJ	7600 R	1800 UJ	3700 R	86 J	360 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	360 U		360 U	3800 UJ	7600 R	1800 UJ	3700 R	36 J	360 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	150 J		360 U	3800 UJ	7600 R	1800 UJ	3700 R	94 J	360 U
LLSVOA	2-FLUOROPHENOL	UG/KG	67		64	49	0	45	59	72	65
LLSVOA	PHENOL-D5	UG/KG	69		68	50	0	45	59	73	63
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	69		66	50	0	48	60	70	63
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	75		72	52	0	49	63	71	65
LLSVOA	NITROBENZENE-D5	UG/KG	75		71	55	0	49	52	71	61
LLSVOA	2-FLUOROBIPHENYL	UG/KG	72		74	64	0	66	61	76	65
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	76		81	54	0	55	47	71	58
LLSVOA	TERPHENYL-D14	UG/KG	74		85	70	0	86	72	79	69
LLSVOA	PHENOL	UG/KG	360 U		360 U	14000 =	14000 R	6600 =	8800 R	350 U	360 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	360 UJ		360 UJ	3800 UJ	7600 R	1800 UJ	3700 R	350 U	360 U
LLSVOA	2-CHLOROPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	360 UJ		360 UJ	3800 UJ	7600 R	1800 UJ	3700 R	350 U	360 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	360 UJ		360 UJ	3800 UJ	7600 R	1800 UJ	3700 R	350 U	360 U
LLSVOA	HEXACHLOROETHANE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	NITROBENZENE	UG/KG	360 U		360 UJ	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	ISOPHORONE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2-NITROPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	NAPHTHALENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	4-CHLOROANILINE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U

308 330

D-36

Analytical Data Summary: Surface Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS11 SS61DL to 10/11/95	BS12 SS62 0 to 1 10/11/95	BS12 SS62RE to 10/11/95	BS13 SS63 0 to 1 10/11/95	BS14 SS64 0 to 1 10/11/95	BS14 SS64DL to 10/11/95	BS15 SS65 0 to 1 10/11/95	BS16 SS66 0 to 1 10/11/95	BS16 SS66DL to 10/11/95
LLSVOA	HEXACHLOROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	PENTACHLOROPHENOL	UG/KG		180 U		180 U	180 U		180 U	180 U	890 R
LLSVOA	PHENANTHRENE	UG/KG		120 J		350 U	79 J		140 J	37 J	1800 R
LLSVOA	ANTHRACENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	CARBAZOLE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	FLUORANTHENE	UG/KG		350 J		90 J	200 J		220 J	76 J	1800 R
LLSVOA	PYRENE	UG/KG		320 J		85 J	180 J		170 J	70 J	1800 R
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	BENZO(a)ANTHRACENE	UG/KG		160 J		43 J	60 J		93 J	350 U	1800 R
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	CHRYSENE	UG/KG		210 J		66 J	100 J		120 J	40 J	1800 R
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG		210 J		39 J	91 J		110 J	350 U	1800 R
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG		200 J		32 J	89 J		110 J	350 U	1800 R
LLSVOA	BENZO(a)PYRENE	UG/KG		200 J		48 J	58 J		94 J	350 U	1800 R
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG		130 J		350 U	63 J		63 J	350 U	1800 R
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG		56 J		350 U	360 U		350 U	350 U	1800 R
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG		150 J		37 J	72 J		68 J	350 U	1800 R
LLSVOA	2-FLUOROPHENOL	UG/KG		37		65	64		65	58	53
LLSVOA	PHENOL-D5	UG/KG		42		69	65		67	63	51
LLSVOA	2-CHLOROPHENOL-D4	UG/KG		39		67	62		66	60	49
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG		45		69	62		69	61	58
LLSVOA	NITROBENZENE-D5	UG/KG		44		69	59		67	62	57
LLSVOA	2-FLUOROBIPHENYL	UG/KG		45		74	64		73	70	59
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG		33		68	62		60	58	38
LLSVOA	TERPHENYL-D14	UG/KG		50		77	76		72	75	57
LLSVOA	PHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2-CHLOROPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	HEXACHLOROETHANE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	NITROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	ISOPHORONE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2-NITROPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,4-DICHLOROPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	NAPHTHALENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-CHLOROANILINE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	HEXACHLOROBUTADIENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2-METHYLNAPHTHALENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R

D-37

Analytical Data Summary: Surface Soil

		StationID:	BS17	BS17	BS18	BS19	BS20	BS21	BS22
		Sample ID:	SS67	SS67D	SS68	SS69	SS70	SS71	SS72
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units							
LLSVOA	HEXACHLOROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	180 U		920 U	190 U	190 U	180 U	180 U
LLSVOA	PHENANTHRENE	UG/KG	350 U		370 U	380 U	110 J	360 U	370 U
LLSVOA	ANTHRACENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	CARBAZOLE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	FLUORANTHENE	UG/KG	350 U		370 U	380 U	200 J	360 U	370 U
LLSVOA	PYRENE	UG/KG	350 U		370 U	380 U	120 J	360 U	370 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	350 U		370 U	380 U	59 J	360 U	370 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	CHRYSENE	UG/KG	350 U		370 U	380 U	86 J	360 U	370 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	350 U		370 U	380 U	130 J	360 U	370 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	350 U		370 U	380 U	150 J	360 U	370 U
LLSVOA	BENZO(a)PYRENE	UG/KG	350 U		370 U	380 U	44 J	360 U	370 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	350 U		370 U	380 U	84 J	360 U	370 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	350 U		370 U	380 U	86 J	360 U	370 U
LLSVOA	2-FLUOROPHENOL	UG/KG	57		58	54	72	55	58
LLSVOA	PHENOL-D5	UG/KG	60		58	56	74	60	60
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	59		59	52	74	58	60
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	63		64	62	82	35	55
LLSVOA	NITROBENZENE-D5	UG/KG	58		65	59	71	48	56
LLSVOA	2-FLUOROBIPHENYL	UG/KG	60		66	59	82	58	65
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	46		50	42	64	54	52
LLSVOA	TERPHENYL-D14	UG/KG	57		69	62	78	68	68
LLSVOA	PHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2-CHLOROPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	HEXACHLOROETHANE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	NITROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	ISOPHORONE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2-NITROPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	NAPHTHALENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-CHLOROANILINE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U

308 332

D-38

Analytical Data Summary: Surface Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS01 SS51 0 to 1 10/9/95	BS01 SS51A 0 to 1 10/9/95	BS01 SS51ADL to 10/9/95	BS02 SS52 0 to 1 10/9/95	BS02 SS52DL to 10/9/95	BS03 SS53 0 to 1 10/9/95	BS04 SS54 0 to 1 10/10/95	BS05 SS55 0 to 1 10/10/95	BS05 SS55DL to 10/10/95
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	4600 U	4600 U	9700 R	900 U		900 U	900 U	900 U	
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLVOA	CHLOROMETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	CHLOROFORM	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	CARBON TETRACHLORIDE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	BENZENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,2-DICHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,2-DICHLOROPROPANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	BROMODICHLOROMETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	VINYL CHLORIDE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	TOLUENE	UG/KG	11 U	1 J		2 J		11 U	11 U	11 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	2-HEXANONE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	CHLOROBENZENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	ETHYLBENZENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	BROMOMETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	Total Xylenes	UG/KG	4 J	3 J		9 J		1 J	4 J	2 J	
LLVOA	STYRENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	BROMOFORM	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	105	105		104		104	106	105	
LLVOA	TOLUENE-D8	UG/KG	111	110		117		108	110	108	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	100	99		90		95	103	100	
LLVOA	CHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	ACETONE	UG/KG	17 UJ	11 UJ		11 UJ		12 UJ	11 UJ	11 UJ	
LLVOA	1,1-DICHLOROETHENE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
LLVOA	CARBON DISULFIDE	UG/KG	11 U	11 U		2 J		11 U	11 U	11 U	
LLVOA	1,3-DICHLOROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLVOA	1,4-DICHLOROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLVOA	1,2-DICHLOROBENZENE	UG/KG	1800 U	1800 U	3700 R	360 U		360 U	360 U	360 U	
LLVOA	METHYLENE CHLORIDE	UG/KG	13 U	12 U		17 U		11 U	13 U	11 U	
LLVOA	1,1-DICHLOROETHANE	UG/KG	11 U	11 U		11 U		11 U	11 U	11 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	GAMMA BHC (LINDANE)	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	HEPTACHLOR	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	ALDRIN	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	HEPTACHLOR EPOXIDE	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	ALPHA ENDOSULFAN	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	3.7 U	18 R
PEST	DIELDRIN	UG/KG	4.9 =	3.1 J		88 R	84 =	24 =	530 J	110 =	100 R

308 333

D-39

Analytical Data Summary: Surface Soil

		StationID:	BS06	BS06	BS07	BS08	BS08	BS09	BS09	BS10	BS11
		Sample ID:	SS56	SS56DL	SS57	SS58	SS58DL	SS59	SS59DL	SS60	SS61
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	900 U		900 U	9500 U	19000 R	4600 U	9200 R	180 U	900 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLVOA	CHLOROMETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	11 U		11 U	11 U		11 U		10 U	2 J
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	CHLOROFORM	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	BENZENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	VINYL CHLORIDE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	TOLUENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	2-HEXANONE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	CHLOROBENZENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	ETHYLBENZENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	BROMOMETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	Total Xylenes	UG/KG	11 U		2 J	2 J		11 U		10 U	11 U
LLVOA	STYRENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	BROMOFORM	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	110		106	104		102		106	102
LLVOA	TOLUENE-D8	UG/KG	114		108	105		102		103	107
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	107		100	97		96		102	91
LLVOA	CHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	ACETONE	UG/KG	11 UJ		11 UJ	11 UJ		11 UJ		10 UJ	12 UJ
LLVOA	1,1-DICHLOROETHENE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	CARBON DISULFIDE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	360 U		360 U	3800 U	7600 R	1800 U	3700 R	350 U	360 U
LLVOA	METHYLENE CHLORIDE	UG/KG	11 U		11 U	14 U		13 U		10 U	11 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	11 U		11 U	11 U		11 U		10 U	11 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	GAMMA BHC (LINDANE)	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	HEPTACHLOR	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	ALDRIN	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	9.2 U	37 R	4.6 U	1.9 U		7.7 J		1.8 U	1.8 U
PEST	ALPHA ENDOSULFAN	UG/KG	9.2 U	37 R	4.6 U	1.9 U		4.7 U		1.8 U	1.8 U
PEST	DIELDRIN	UG/KG	350 ER	360 =	4.4 J	3.6 J		9.1 U		3.3 J	10 ER

308 334

D-40

308 335

Analytical Data Summary: Surface Soil

		StationID:	BS11	BS12	BS12	BS13	BS14	BS14	BS15	BS16	BS16
		Sample ID:	SS61DL	SS62	SS62RE	SS63	SS64	SS64DL	SS65	SS66	SS66DL
		Sample Depth:	to	0 to 1	to	0 to 1	0 to 1	to	0 to 1	0 to 1	to
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG		890 U		890 U	900 U		890 U	890 U	4400 R
LLSVOA	2-CHLORONAPHTHALENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLVOA	CHLOROMETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	CHLOROFORM	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	CARBON TETRACHLORIDE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	BENZENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,2-DICHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,2-DICHLOROPROPANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	BROMODICHLOROMETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	VINYL CHLORIDE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	TOLUENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	2-HEXANONE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	CHLOROBENZENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	ETHYLBENZENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	BROMOMETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	Total Xylenes	UG/KG		11 U		11 U	27 U		2 J	26 U	
LLVOA	STYRENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	BROMOFORM	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG		102		97	110		101	101	
LLVOA	TOLUENE-D8	UG/KG		114		109	105		103	105	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG		90		86	96		90	99	
LLVOA	CHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	ACETONE	UG/KG		11 UJ		11 UJ	27 U		11 U	26 U	
LLVOA	1,1-DICHLOROETHENE	UG/KG		11 U		11 U	27 U		11 U	26 U	
LLVOA	CARBON DISULFIDE	UG/KG		11 U		11 U	27 U		2 J	26 U	
LLVOA	1,3-DICHLOROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLVOA	1,4-DICHLOROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLVOA	1,2-DICHLOROBENZENE	UG/KG		350 U		350 U	360 U		350 U	350 U	1800 R
LLVOA	METHYLENE CHLORIDE	UG/KG		11 U		11 U	29 U		13 U	26 U	
LLVOA	1,1-DICHLOROETHANE	UG/KG		11 U		11 U	27 U		11 U	26 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	GAMMA BHC (LINDANE)	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	HEPTACHLOR	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	ALDRIN	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	HEPTACHLOR EPOXIDE	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	ALPHA ENDOSULFAN	UG/KG	18 R	9 U		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	DIELDRIN	UG/KG	84 =	33 =		3.5 U	160 ER	190 =	66 =	71 ER	73 =

D-41

308 336

Analytical Data Summary: Surface Soil

		Station ID:	BS17	BS17	BS18	BS19	BS20	BS21	BS22
		Sample ID:	SS67	SS67D	SS68	SS69	SS70	SS71	SS72
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units							
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	890 U		920 U	950 U	940 U	900 U	920 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLVOA	CHLOROMETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	CHLOROFORM	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	BENZENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	VINYL CHLORIDE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	TOLUENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	2-HEXANONE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	CHLOROBENZENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	ETHYLBENZENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	BROMOMETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	Total Xylenes	UG/KG	11 U		11 U	1 J	11 U	11 U	1 J
LLVOA	STYRENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	BROMOFORM	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	113		107	102	101	102	103
LLVOA	TOLUENE-D8	UG/KG	118		110	110	114	104	112
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	108		107	101	93	96	100
LLVOA	CHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	ACETONE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,1-DICHLOROETHENE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	CARBON DISULFIDE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	350 U		370 U	380 U	370 U	360 U	370 U
LLVOA	METHYLENE CHLORIDE	UG/KG	12 U		12 U	11 U	11 U	11 U	11 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	11 U		11 U	11 U	11 U	11 U	11 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	GAMMA BHC (LINDANE)	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	HEPTACHLOR	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	ALDRIN	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	ALPHA ENDOSULFAN	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	DIELDRIN	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U

D-42

Analytical Data Summary: Surface Soil

		StationID:	BS01	BS01	BS01	BS02	BS02	BS03	BS04	BS05	BS05
		Sample ID:	SS51	SS51A	SS51ADL	SS52	SS52DL	SS53	SS54	SS55	SS55DL
		Sample Depth:	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1	0 to 1	to
		Sample Date:	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/9/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
PEST	p,p'-DDE	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	120 ER	110 =
PEST	ENDRIN	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	BETA ENDOSULFAN	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	p,p'-DDD	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	ENDOSULFAN SULFATE	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	p,p'-DDT	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	47 =	46 R
PEST	METHOXYCHLOR	UG/KG	19 U	19 U		18 U	180 R	18 U	180 U	37 U	180 R
PEST	ENDRIN KETONE	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	ENDRIN ALDEHYDE	UG/KG	3.7 U	3.7 U		3.5 U	35 R	3.5 U	35 U	7.2 U	36 R
PEST	ALPHA-CHLORDANE	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	5 =	3.6 R
PEST	GAMMA-CHLORDANE	UG/KG	1.9 U	1.9 U		1.8 U	18 R	1.8 U	18 U	2.9 J	3.6 R
PEST	TOXAPHENE	UG/KG	190 U	190 U		180 U	1800 R	180 U	1800 U	370 U	1800 R
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	37 U	37 U		35 U	350 R	35 U	350 U	72 U	360 R
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	74 U	74 U		72 U	720 R	72 U	720 U	150 U	730 R
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	37 U	37 U		35 U	350 R	35 U	350 U	72 U	360 R
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	37 U	37 U		35 U	350 R	35 U	350 U	72 U	360 R
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	37 U	37 U		35 U	350 R	35 U	350 U	72 U	360 R
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	37 U	37 U		35 U	350 R	35 U	350 U	72 U	360 R
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	37 U	37 U		35 U	350 R	35 U	720 U	100 J	360 R
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	74	74		74	77	75	93	87	90
PEST	DECACHLOROBIPHENYL	UG/KG	85	82		86	99	81	249	112	118
TOTMETAL	ALUMINUM	MG/KG	17000 =	17200 =		12900 =		15300 =	14500 =	11600 =	
TOTMETAL	ANTIMONY	MG/KG	3.3 U	4 U		3.9 U		4 U	3.5 J	3.3 U	
TOTMETAL	ARSENIC	MG/KG	11.9 =	10.8 =		10.3 =		8.6 =	11.2 =	20.8 =	
TOTMETAL	BARIUM	MG/KG	117 =	112 =		144 =		146 =	128 =	157 =	
TOTMETAL	BERYLLIUM	MG/KG	0.61 J	0.58 J		0.53 J		0.56 J	0.58 J	0.59 J	
TOTMETAL	CADMIUM	MG/KG	0.61 U	0.6 U		0.57 U		0.61 U	0.58 J	0.59 U	
TOTMETAL	CALCIUM	MG/KG	642 J	728 J		686 J		719 J	2520 J	2030 J	
TOTMETAL	CHROMIUM, TOTAL	MG/KG	17.7 =	17.7 =		14.6 =		14.3 =	15.7 J	14.3 J	
TOTMETAL	COBALT	MG/KG	9.1 J	8.8 J		10.3 J		9.2 J	9.4 J	9.9 J	
TOTMETAL	COPPER	MG/KG	19.7 =	19 =		13.6 =		13.8 =	18.6 J	18.2 J	
TOTMETAL	IRON	MG/KG	26100 =	25000 =		15800 =		18600 =	21500 =	21200 =	
TOTMETAL	LEAD	MG/KG	17.2 =	16.3 =		27.3 =		15.3 =	25.1 J	26.1 J	
TOTMETAL	MAGNESIUM	MG/KG	3200 =	3130 =		1590 =		2150 =	2720 =	2620 =	
TOTMETAL	MANGANESE	MG/KG	524 =	502 =		839 =		699 =	713 =	750 =	
TOTMETAL	MERCURY	MG/KG	0.1 U	0.1 U		0.09 U		0.1 U	0.1 U	0.09 U	
TOTMETAL	NICKEL	MG/KG	18.4 =	18.7 =		14 =		15.3 =	17.9 =	20.9 =	
TOTMETAL	POTASSIUM	MG/KG	1180 =	1240 =		1150 =		1050 J	1100 =	1340 =	
TOTMETAL	SELENIUM	MG/KG	0.29 UJ	0.55 J		0.28 UJ		0.79 UJ	0.42 U	0.39 U	
TOTMETAL	SILVER	MG/KG	0.38 U	0.38 U		0.36 U		0.38 U	0.37 U	0.37 U	
TOTMETAL	SODIUM	MG/KG	71.9 U	61.3 U		43.6 U		52.8 U	59.1 U	87 U	
TOTMETAL	THALLIUM	MG/KG	0.41 U	0.4 U		0.39 U		0.41 U	0.39 U	0.39 U	
TOTMETAL	VANADIUM	MG/KG	34.7 =	34.4 =		26.8 =		29.2 =	31 =	26.8 =	
TOTMETAL	ZINC	MG/KG	66.1 =	67.8 =		50.1 =		51.9 =	73 J	73.8 J	

D-43

308 338

Analytical Data Summary: Surface Soil

		StationID:	BS06	BS06	BS07	BS08	BS08	BS09	BS09	BS10	BS11
		Sample ID:	SS56	SS56DL	SS57	SS58	SS58DL	SS59	SS59DL	SS60	SS61
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	to	0 to 1	to	0 to 1	0 to 1
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95
Group	Parameter	Units									
PEST	p,p'-DDE	UG/KG	160 =	150 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	ENDRIN	UG/KG	18 U	72 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	BETA ENDOSULFAN	UG/KG	18 U	72 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	p,p'-DDD	UG/KG	18 U	72 R	6.7 J	3.7 U		9.1 U		3.5 U	3.5 U
PEST	ENDOSULFAN SULFATE	UG/KG	18 U	72 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	p,p'-DDT	UG/KG	74 =	77 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	METHOXYCHLOR	UG/KG	92 U	370 R	46 U	19 U		47 U		18 U	18 U
PEST	ENDRIN KETONE	UG/KG	18 U	72 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	ENDRIN ALDEHYDE	UG/KG	18 U	72 R	8.9 U	3.7 U		9.1 U		3.5 U	3.5 U
PEST	ALPHA-CHLORDANE	UG/KG	3.5 J	37 R	4 J	1.9 U		29 J		1.8 U	1.8 U
PEST	GAMMA-CHLORDANE	UG/KG	2.3 J	37 R	16 J	1.9 U		26 =		1.8 U	1.8 U
PEST	TOXAPHENE	UG/KG	920 U	3700 R	460 U	190 U		470 U		180 U	180 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	180 U	720 R	89 U	37 U		91 U		35 U	35 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	360 U	1500 R	180 U	76 U		180 U		71 U	72 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	180 U	720 R	89 U	37 U		91 U		35 U	35 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	180 U	720 R	89 U	37 U		91 U		35 U	35 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	180 U	720 R	89 U	37 U		91 U		35 U	35 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	180 U	720 R	89 U	37 U		91 U		35 U	35 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	110 J	720 R	180 U	37 U		91 U		35 U	35 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	88	93	84	76		69		82	74
PEST	DECACHLOROBIPHENYL	UG/KG	106	133	118	89		84		94	86
TOTMETAL	ALUMINUM	MG/KG	12400 =		9410 =	14300 =		10300 =		8810 =	13900 =
TOTMETAL	ANTIMONY	MG/KG	3.2 U		3.1 U	3.3 U		3.1 U		3.1 UJ	3.2 UJ
TOTMETAL	ARSENIC	MG/KG	19.1 =		9.6 =	12.3 =		27.7 =		6.6 =	11.8 =
TOTMETAL	BARIUM	MG/KG	144 =		134 =	160 =		141 =		95 =	135 =
TOTMETAL	BERYLLIUM	MG/KG	0.39 J		0.56 J	0.6 J		0.52 J		0.47 J	0.6 J
TOTMETAL	CADMIUM	MG/KG	0.59 U		0.58 U	0.6 U		0.81 J		0.57 U	0.59 U
TOTMETAL	CALCIUM	MG/KG	1340 J		2050 J	1490 J		686 J		2050 =	699 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	15.9 J		16.1 J	13.5 J		11.1 J		12.2 =	14.5 =
TOTMETAL	COBALT	MG/KG	8.9 J		12.3 =	8.5 J		9.8 J		8.8 J	9.3 J
TOTMETAL	COPPER	MG/KG	19.2 J		17.4 J	20.1 J		19.1 J		17.9 =	23.3 =
TOTMETAL	IRON	MG/KG	21100 =		19400 =	23400 =		12800 =		18400 =	23000 =
TOTMETAL	LEAD	MG/KG	21.9 J		12 J	17.6 J		73.3 J		11.7 =	13.5 =
TOTMETAL	MAGNESIUM	MG/KG	2610 =		2540 =	2870 =		1170 =		2270 =	2960 =
TOTMETAL	MANGANESE	MG/KG	772 =		677 =	330 =		925 =		549 J	548 J
TOTMETAL	MERCURY	MG/KG	0.23 =		0.09 U	0.1 U		0.11 =		0.09 U	0.09 U
TOTMETAL	NICKEL	MG/KG	19.5 =		18.7 =	18.6 =		12.9 =		16.7 =	21.2 =
TOTMETAL	POTASSIUM	MG/KG	1460 =		835 J	1310 =		1300 =		878 J	964 J
TOTMETAL	SELENIUM	MG/KG	0.28 U		0.28 U	0.29 UJ		0.32 U		0.27 UJ	0.28 UJ
TOTMETAL	SILVER	MG/KG	1 J		0.36 U	0.38 U		0.32 U		0.36 U	0.37 U
TOTMETAL	SODIUM	MG/KG	71.1 U		124 U	70.3 U		52 U		66.4 U	103 U
TOTMETAL	THALLIUM	MG/KG	0.39 U		0.39 U	0.4 U		0.39 U		0.38 U	0.39 U
TOTMETAL	VANADIUM	MG/KG	28 =		24.3 =	30.8 =		31.4 =		24 =	28.1 =
TOTMETAL	ZINC	MG/KG	87.3 J		56.9 J	74 J		82.2 J		49.8 J	81.4 J

D-44

Analytical Data Summary: Surface Soil

		StationID:	BS11	BS12	BS12	BS13	BS14	BS14	BS15	BS16	BS16
		Sample ID:	SS61DL	SS62	SS62RE	SS63	SS64	SS64DL	SS65	SS66	SS66DL
		Sample Depth:	to	0 to 1	to	0 to 1	0 to 1	to	0 to 1	0 to 1	to
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
PEST	p,p'-DDE	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	ENDRIN	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	BETA ENDOSULFAN	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	p,p'-DDD	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	ENDOSULFAN SULFATE	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	p,p'-DDT	UG/KG	35 R	9.4 J		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	METHOXYCHLOR	UG/KG	180 R	90 U		18 U	46 U	180 R	90 U	18 U	90 R
PEST	ENDRIN KETONE	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	ENDRIN ALDEHYDE	UG/KG	35 R	18 U		3.5 U	9 U	36 R	18 U	3.5 U	18 R
PEST	ALPHA-CHLORDANE	UG/KG	18 R	5.7 J		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	GAMMA-CHLORDANE	UG/KG	18 R	7.9 J		1.8 U	4.6 U	18 R	9 U	1.8 U	9 R
PEST	TOXAPHENE	UG/KG	1800 R	900 U		180 U	460 U	1800 R	900 U	180 U	900 R
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	720 R	360 U		71 U	180 U	730 R	360 U	71 U	360 R
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	350 R	180 U		35 U	90 U	360 R	180 U	35 U	180 R
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	81	71		64	66	76	82	72	73
PEST	DECACHLOROBIPHENYL	UG/KG	106	96		76	86	101	98	92	107
TOTMETAL	ALUMINUM	MG/KG		11900 =		8160 =	12800 =		9410 =	9940 =	
TOTMETAL	ANTIMONY	MG/KG		3.1 UJ		3.1 UJ	3.2 UJ		3.1 UJ	3.1 UJ	
TOTMETAL	ARSENIC	MG/KG		7.5 =		7.4 =	11.3 =		7.3 =	8.1 =	
TOTMETAL	BARIUM	MG/KG		101 =		77.1 =	127 =		116 =	117 =	
TOTMETAL	BERYLLIUM	MG/KG		0.54 J		0.39 U	0.53 J		0.45 J	0.51 J	
TOTMETAL	CADMIUM	MG/KG		0.51 U		0.57 U	0.59 U		0.58 U	0.68 J	
TOTMETAL	CALCIUM	MG/KG		7490 =		668 J	1410 =		30600 =	1960 =	
TOTMETAL	CHROMIUM, TOTAL	MG/KG		14.4 =		9.4 =	14.1 =		14.9 =	13 =	
TOTMETAL	COBALT	MG/KG		9 J		10.6 =	11.7 =		7 J	9.7 J	
TOTMETAL	COPPER	MG/KG		20.1 =		10.7 =	21.2 =		13.9 =	18.4 =	
TOTMETAL	IRON	MG/KG		19100 =		12000 =	21400 =		13700 =	18900 =	
TOTMETAL	LEAD	MG/KG		30.5 =		24.2 =	28.8 =		22.5 =	15.2 =	
TOTMETAL	MAGNESIUM	MG/KG		2310 =		1370 =	2660 =		2550 =	2590 =	
TOTMETAL	MANGANESE	MG/KG		305 J		492 J	781 J		625 J	654 J	
TOTMETAL	MERCURY	MG/KG		0.09 U		0.41 =	0.1 U		0.09 U	0.09 U	
TOTMETAL	NICKEL	MG/KG		15.2 =		10.6 =	17.6 =		17.5 =	18.1 =	
TOTMETAL	POTASSIUM	MG/KG		999 J		707 J	1100 =		893 J	848 J	
TOTMETAL	SELENIUM	MG/KG		0.28 UJ		0.27 UJ	0.28 UJ		0.3 J	1.1 UJ	
TOTMETAL	SILVER	MG/KG		0.36 U		0.36 U	0.37 U		0.36 U	0.36 U	
TOTMETAL	SODIUM	MG/KG		98.2 U		42.5 U	47.1 U		65.9 U	62.6 U	
TOTMETAL	THALLIUM	MG/KG		0.39 U		0.38 U	0.39 U		0.39 U	0.39 U	
TOTMETAL	VANADIUM	MG/KG		26.4 =		19.1 =	27.6 =		22 =	25.4 =	
TOTMETAL	ZINC	MG/KG		75 J		37.4 J	89.5 J		70.4 J	54.2 J	

D-45

308 340

Analytical Data Summary: Surface Soil

		StationID:	BS17	BS17	BS18	BS19	BS20	BS21	BS22
		Sample ID:	SS67	SS67D	SS68	SS69	SS70	SS71	SS72
		Sample Depth:	0 to 1	to	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units							
PEST	p,p'-DDE	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	ENDRIN	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	BETA ENDOSULFAN	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	p,p'-DDD	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	ENDOSULFAN SULFATE	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	p,p'-DDT	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	METHOXYCHLOR	UG/KG	18 U		19 U	19 U	19 U	18 U	19 U
PEST	ENDRIN KETONE	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	ENDRIN ALDEHYDE	UG/KG	3.5 U		3.6 U	3.7 U	3.7 U	3.6 U	3.6 U
PEST	ALPHA-CHLORDANE	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	GAMMA-CHLORDANE	UG/KG	1.8 U		1.9 U	1.9 U	1.9 U	1.8 U	1.9 U
PEST	TOXAPHENE	UG/KG	180 U		190 U	190 U	190 U	180 U	190 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	71 U		74 U	76 U	75 U	73 U	74 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	35 U		36 U	37 U	37 U	36 U	36 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	68		82	69	77	70	67
PEST	DECACHLOROBIPHENYL	UG/KG	83		93	82	83	80	75
TOTMETAL	ALUMINUM	MG/KG	8930 =	10105.1	13500 =	18500 =	10800 =	9190 =	8360 =
TOTMETAL	ANTIMONY	MG/KG	3.2 UJ	3.1705	3.2 UJ	3.3 UJ	3.3 UJ	3.2 UJ	3.3 UJ
TOTMETAL	ARSENIC	MG/KG	4.2 =	3.6113	13.9 =	8.8 =	9 =	6.5 =	6.2 =
TOTMETAL	BARIUM	MG/KG	124 =	113.9435	121 =	140 =	131 =	128 =	95.1 =
TOTMETAL	BERYLLIUM	MG/KG	0.47 U	0.4083	0.65 U	0.67 U	0.51 U	0.49 U	0.42 U
TOTMETAL	CADMIUM	MG/KG	0.59 U	0.5863	0.6 U	0.61 U	0.61 U	0.66 J	0.6 U
TOTMETAL	CALCIUM	MG/KG	424 J	433.0793	940 J	1030 J	1580 =	1360 =	863 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	8.4 =	8.9338	17 =	16.3 =	12.4 =	11.8 =	10.1 =
TOTMETAL	COBALT	MG/KG	7.6 J	12.6189	11.4 =	9.4 J	6.7 J	6.8 J	5.7 J
TOTMETAL	COPPER	MG/KG	7.3 =	8.2519	20 =	17 =	13 =	17 =	9.8 =
TOTMETAL	IRON	MG/KG	10800 =	12649.97	24500 =	22800 =	15900 =	14800 =	12300 =
TOTMETAL	LEAD	MG/KG	12.1 =	12.0738	14.8 =	15.1 =	15 =	13.5 =	13.9 =
TOTMETAL	MAGNESIUM	MG/KG	1110 =	1320.295	3170 =	2890 =	2030 =	1980 =	1460 =
TOTMETAL	MANGANESE	MG/KG	1080 =	1178.317	644 =	447 =	708 =	648 =	411 =
TOTMETAL	MERCURY	MG/KG	0.1 J	0.0968	0.09 U	0.1 U	0.1 U	0.1 U	0.1 U
TOTMETAL	NICKEL	MG/KG	11.1 =	10.7296	17.8 =	21.4 =	14.6 =	14.4 =	10.4 =
TOTMETAL	POTASSIUM	MG/KG	701 J	706.6232	832 J	1450 =	806 J	734 J	641 J
TOTMETAL	SELENIUM	MG/KG	0.28 UJ	0.2823	0.5 J	0.3 U	0.29 UJ	0.28 U	0.41 J
TOTMETAL	SILVER	MG/KG	0.37 U	0.3692	0.38 U	0.39 U	0.38 U	0.37 U	0.38 U
TOTMETAL	SODIUM	MG/KG	36.6 U	37.1574	172 U	48.2 U	48.3 U	55.8 U	56.4 U
TOTMETAL	THALLIUM	MG/KG	0.39 U	0.3931	0.4 U	0.41 U	0.41 U	0.39 U	0.4 U
TOTMETAL	VANADIUM	MG/KG	17.7 =	20.1068	30.9 =	35.2 =	23.2 =	21.5 =	19.2 =
TOTMETAL	ZINC	MG/KG	35.6 J	37.6308	65.3 J	65.6 J	51.4 J	51.7 J	39.1 J

D-46

Analytical Data Summary: Sediment

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BW01 SD060 0 to .5 10/10/95	BW01 SD06A0 0 to .5 10/10/95	BW02 SD070 0 to .5 10/10/95	BW03 SD080 0 to .5 10/10/95	BW04 SD090 0 to .5 10/10/95	BW04 SD090D 0 to .5 10/10/95	BW05 SD100 0 to .5 10/10/95	BW06 SD110 0 to .5 10/10/95	BW07 SD120 0 to .5 10/10/95	BW08 SD130 0 to .5 10/10/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	0 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	5 U	5 U	5 U	5 U	5 U	0.034	5 U	5 U	0.431 J	0.413 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	76	57	71	57	79	44	56	64	81	88
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	78	59	69	61	82	57	63	66	74	80
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	114	88	97	90	120	92	105	97	60	91
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	21	18	62	15	23	53	23	63	41	54
HERB	DALAPON	UG/KG	260 U	240 U	120 U	120 U	110 U		120 U	120 U	480 U	480 U
HERB	DICAMBA	UG/KG	26 U	24 U	12 U	12 U	11 U		12 U	12 U	48 U	48 U
HERB	MCPA	UG/KG	13000 U	12000 U	30000 U	6000 U	5600 U		5800 U	29000 U	24000 U	24000 U
HERB	MCPP	UG/KG	13000 U	12000 U	6000 U	6000 U	5600 U		5800 U	5800 U	24000 U	24000 U
HERB	DICHLOROPROP	UG/KG	130 UJ	120 UJ	60 UJ	60 UJ	56 UJ		58 UJ	58 UJ	240 UJ	240 UJ
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	130 U	120 U	60 U	60 U	56 U		58 U	58 U	240 U	240 U
HERB	SILVEX (2,4,5-TP)	UG/KG	26 U	24 U	12 U	12 U	11 U		12 U	12 U	48 U	48 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	26 U	24 U	12 U	12 U	11 U		12 U	12 U	48 U	48 U
HERB	2,4 DB	UG/KG	130 U	120 U	60 U	60 U	56 U		58 U	58 U	240 U	240 U
HERB	DINOSEB	UG/KG	26 U	24 U	12 U	12 U	11 U		12 U	12 U	48 U	48 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	91	94	88	87	77		84	83	101	93
LLSVOA	2-NITROANILINE	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	3-NITROANILINE	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	ACENAPHTHYLENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	ACENAPHTHENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	370 J
LLSVOA	2,4-DINITROPHENOL	UG/KG	1000 U	1000 U	1000 UJ	990 U	940 U		970 U	970 UJ	1000 UJ	2900 UJ
LLSVOA	4-NITROPHENOL	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	DIBENZOFURAN	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	380 J
LLSVOA	2,4-DINITROTOLUENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	FLUORENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	870 J
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	4-NITROANILINE	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U

D-47

Analytical Data Summary: Sediment

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BW09 SD140 0 to .5 10/10/95	BW10 SD150 na	BW11 SD160 0 to .5 10/11/95	BW12 SD170 0 to .5 10/11/95	BW13 SD180 0 to .5 10/11/95	BW14 SD190 0 to .5 10/11/95	BW15 SD200 0 to .5 10/11/95	BW16 SD210 0 to .5 10/11/95	BW17 SD220 0 to .5 10/11/95	BW17 SD220A 0 to .5 10/11/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1 U	1 U	1 U	1 U	1 U	0 U	0 U	0.003 U	0.003 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1 U	1 U	1 U	1 U	1 U	0.001 U	1 U	0.001 U	0 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0 U	2.5 U	0.001 U	0.001 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.003 U	2.5 U	0 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0 U	0.002 U	0.002 U	0.002 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0 U	0.002 U	0.002 U	0.002 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.005 U	0.005 U	0.008 U	0.007 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.017 U	0.067 J	0.064 J	0.064 J
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	0 U	0.761 J	1.484 J	5 U	0 U	5 U	1.1 J	3.655 J	2.536 J	1.748 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	84	75	99	82	79	84	53	69	62	68
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	83	74	91	67	73	78	58	71	65	70
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	100	101	117	113	89	95	82	93	89	91
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	18	80	22	78	53	41	95	93	95	89
HERB	DALAPON	UG/KG	480 U	1200 U	800 U	1000 U	720 U	480 U	340 U	280 U	600 U	640 U
HERB	DICAMBA	UG/KG	48 U	120 U	80 U	100 U	72 U	48 U	34 U	28 U	60 U	64 U
HERB	MCPA	UG/KG	24000 U	64000 U	39000 U	52000 U	36000 U	24000 U	17000 U	14000 U	30000 U	31000 U
HERB	MCPP	UG/KG	24000 U	64000 U	39000 U	52000 U	36000 U	24000 U	17000 U	14000 U	30000 U	31000 U
HERB	DICHLOROPROP	UG/KG	240 UJ	640 UJ	390 UJ	520 UJ	360 UJ	240 UJ	170 UJ	140 UJ	300 UJ	310 UJ
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	240 U	640 U	390 U	520 U	360 U	240 U	170 U	140 U	300 U	310 U
HERB	SILVEX (2,4,5-TP)	UG/KG	48 U	120 U	80 U	100 U	72 U	48 U	34 U	28 U	60 U	64 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	48 U	120 U	80 U	100 U	72 U	48 U	34 U	28 U	60 U	64 U
HERB	2,4 DB	UG/KG	240 U	640 U	390 U	520 U	360 U	240 U	170 U	140 U	300 U	310 U
HERB	DINOSEB	UG/KG	48 U	120 U	80 U	100 U	72 U	48 U	34 U	28 U	60 U	64 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	106	87	87	89	98	72	81	80	99	90
LLSVOA	2-NITROANILINE	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	3-NITROANILINE	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	ACENAPHTHYLENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	ACENAPHTHENE	UG/KG	39 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	4-NITROPHENOL	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	DIBENZOFURAN	UG/KG	42 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	FLUORENE	UG/KG	130 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-NITROANILINE	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1200 U	1300 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U

308 342

D-48

308 343

Analytical Data Summary: Sediment

		StationID:	BW18	BW18	BW19	BW19	BW19	BW20	BW21	BW22
		Sample ID:	SD230	SD230DL	SD240	SD240A	SD240D	SD250	SD260	SD270
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units								
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	0.004 U		1 U	0 U	1	1 U	1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	0.004 U		0.001 U	0.001 U	1	1 U	1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	0 U		2.5 U	0.002 J	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	0.002 U		2.5 U	0 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	0.002 J		2.5 U	0.003 J	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	0.003 U		0.001 U	0.004 U	0.001	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	0.001 U		2.5 U	0.004 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	0.003 U		2.5 U	0.003 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	0.013 U		0.001 U	0.005 U	0.001	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	0.008 U		0.002 U	0.005 U	0.002	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	0.003 U		0.001 U	0.005 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U		2.5 U	0.004 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	0.07 U		0.003 U	0.01 U	0 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	0.583 J		0.043 U	0.047 U	0.048	0.049 U	2.5 U	0 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	0.003 U		2.5 U	0.005 U	2.5	2.5 U	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	7.707 =		8.556 =	8.837 =	11.654	1.608 J	0 U	0.498 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	0 U		5 U	5 U	5	5 U	5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	73		52	52	51	55	57	70
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	73		59	55	55	51	56	73
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	97		86	90	89	59	80	91
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	106		99	80	88	55	51	63
HERB	DALAPON	UG/KG	560 U		300 U	280 U		3000 U	4200 U	5000 U
HERB	DICAMBA	UG/KG	56 U		30 U	28 U		300 U	420 U	500 U
HERB	MCPA	UG/KG	28000 U		15000 U	14000 U		150000 U	210000 U	250000 U
HERB	MCPP	UG/KG	140000 U		15000 U	14000 U		150000 U	210000 U	250000 U
HERB	DICHLOROPROP	UG/KG	280 UJ		150 UJ	140 UJ		1500 UJ	2100 UJ	2500 UJ
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	280 U		150 U	140 U		1500 U	2100 U	2500 U
HERB	SILVEX (2,4,5-TP)	UG/KG	56 U		30 U	28 U		300 U	420 U	500 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	56 U		30 U	28 U		300 U	420 U	500 U
HERB	2,4 DB	UG/KG	280 U		150 U	140 U		1500 U	2100 U	2500 U
HERB	DINOSEB	UG/KG	56 U		30 U	28 U		300 U	420 U	500 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	88		81	76		96	117	110
LLSVOA	2-NITROANILINE	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	3-NITROANILINE	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	ACENAPHTHYLENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	ACENAPHTHENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	4-NITROPHENOL	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	DIBENZOFURAN	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	FLUORENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	4-NITROANILINE	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U

D-49

Analytical Data Summary: Sediment

		Station ID:	BW01	BW01	BW02	BW03	BW04	BW04	BW05	BW06	BW07	BW08
		Sample ID:	SD060	SD06A0	SD070	SD080	SD090	SD090D	SD100	SD110	SD120	SD130
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units										
LLSVOA	HEXACHLOROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	210 U	200 U	200 U	200 U	190 U		190 U	190 U	200 U	590 U
LLSVOA	PHENANTHRENE	UG/KG	420 U	400 U	68 J	400 U	370 U		390 U	390 U	17 J	6900 =
LLSVOA	ANTHRACENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1600 =
LLSVOA	CARBAZOLE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1100 J
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	53 U	400 U	1200 U
LLSVOA	FLUORANTHENE	UG/KG	420 U	68 J	150 J	400 U	370 U		60 J	390 U	180 J	7100 =
LLSVOA	PYRENE	UG/KG	420 U	62 J	150 J	400 U	370 U		43 J	390 U	170 J	6800 =
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	420 U	400 U	65 J	400 U	370 U		390 U	390 U	64 J	2900 =
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	CHRYSENE	UG/KG	420 U	43 J	88 J	400 U	370 U		390 U	390 U	110 J	3200 =
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	420 U	530 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	420 U	400 U	47 J	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	420 U	400 U	59 J	400 U	370 U		390 U	390 U	82 J	2600 =
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	420 U	400 U	75 J	400 U	370 U		390 U	390 U	81 J	2300 =
LLSVOA	BENZO(a)PYRENE	UG/KG	420 U	400 U	64 J	400 U	370 U		390 U	390 U	75 J	2500 =
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	420 U	400 U	42 J	400 U	370 U		390 U	390 U	54 J	1700 =
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	700 J
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	420 U	400 U	48 J	400 U	370 U		390 U	390 U	69 J	1800 =
LLSVOA	2-FLUOROPHENOL	UG/KG	64	58	61	59	63		65	62	52	62
LLSVOA	PHENOL-D5	UG/KG	68	61	63	63	66		67	67	59	67
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	69	62	66	64	67		69	66	56	64
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	74	66	68	66	70		74	70	54	66
LLSVOA	NITROBENZENE-D5	UG/KG	64	58	64	62	63		61	66	55	58
LLSVOA	2-FLUOROBIPHENYL	UG/KG	67	58	64	65	69		59	67	64	64
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	73	60	59	64	69		56	64	64	57
LLSVOA	TERPHENYL-D14	UG/KG	91	68	78	73	84		64	78	74	78
LLSVOA	PHENOL	UG/KG	51 J	400 U	400 U	76 J	200 J		51 J	390 U	400 U	1200 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2-CHLOROPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	HEXACHLOROETHANE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	NITROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	ISOPHORONE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2-NITROPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	NAPHTHALENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	130 J
LLSVOA	4-CHLOROANILINE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U

Analytical Data Summary: Sediment

	StationID:	BW09	BW10	BW11	BW12	BW13	BW14	BW15	BW16	BW17	BW17
	Sample ID:	SD140	SD150	SD160	SD170	SD180	SD190	SD200	SD210	SD220	SD220A
	Sample Depth:	0 to .5	to	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
	Sample Date:	10/10/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	HEXACHLOROBENZENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	200 U	2000 U	3300 U	2100 U	1500 U	990 U	280 U	230 U	250 U	260 U
LLSVOA	PHENANTHRENE	UG/KG	1100 =	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	ANTHRACENE	UG/KG	310 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	CARBAZOLE	UG/KG	83 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	FLUORANTHENE	UG/KG	1500 =	4000 U	6500 U	4200 U	3000 U	220 J	560 U	460 U	500 U	520 U
LLSVOA	PYRENE	UG/KG	1400 =	4000 U	6500 U	4200 U	3000 U	260 J	560 U	460 U	500 U	520 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	770 =	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	CHRYSENE	UG/KG	830 =	4000 U	6500 U	4200 U	3000 U	200 J	560 U	460 U	92 J	520 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	400 U	480 J	6500 U	4200 U	3000 U	2000 U	560 U	460 U	63 U	74 U
LLSVOA	DI-n-OCTYL PHTHALATE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	530 =	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	350 J	520 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	390 =	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	200 J	520 U
LLSVOA	BENZO(a)PYRENE	UG/KG	590 =	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	84 J	520 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	360 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	130 J	520 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	130 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	320 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	140 J	520 U
LLSVOA	2-FLUOROPHENOL	UG/KG	78	50	59	62	70	72	64	60	63	57
LLSVOA	PHENOL-D5	UG/KG	81	57	66	65	71	75	68	61	68	60
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	83	50	60	63	69	71	66	58	65	57
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	87	52	63	62	71	74	70	65	67	60
LLSVOA	NITROBENZENE-D5	UG/KG	85	49	57	65	71	73	68	63	66	60
LLSVOA	2-FLUOROBIPHENYL	UG/KG	81	55	66	69	70	75	67	64	66	62
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	84	61	62	66	70	73	60	60	66	57
LLSVOA	TERPHENYL-D14	UG/KG	84	76	76	76	79	79	71	74	76	70
LLSVOA	PHENOL	UG/KG	51 J	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	400 U	4000 UJ	6500 UJ	4200 UJ	3000 UJ	2000 UJ	560 U	460 U	500 U	520 U
LLSVOA	2-CHLOROPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	400 U	4000 UJ	6500 UJ	4200 UJ	3000 UJ	2000 UJ	560 U	460 U	500 U	520 U
LLSVOA	HEXACHLOROETHANE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	NITROBENZENE	UG/KG	400 U	4000 UJ	6500 UJ	4200 UJ	3000 UJ	2000 UJ	560 U	460 U	500 U	520 U
LLSVOA	ISOPHORONE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2-NITROPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	NAPHTHALENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-CHLOROANILINE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U

308 346

Analytical Data Summary: Sediment

Group	Parameter	StationID:	BW18	BW18	BW19	BW19	BW19	BW20	BW21	BW22
		Sample ID:	SD230	SD230DL	SD240	SD240A	SD240D	SD250	SD260	SD270
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/12/95	10/12/95	10/12/95
		Units								
LLSVOA	HEXACHLOROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	230 U		240 UJ	230 U		1300 U	1800 U	2100 U
LLSVOA	PHENANTHRENE	UG/KG	150 J		490 U	470 U		1600 J	3500 U	4200 U
LLSVOA	ANTHRACENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	CARBAZOLE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	FLUORANTHENE	UG/KG	330 J		490 U	470 U		2500 J	400 J	500 J
LLSVOA	PYRENE	UG/KG	300 J		490 U	470 U		2500 J	1200 J	780 J
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	130 J		490 U	470 U		990 J	3500 U	4200 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	CHRYSENE	UG/KG	160 J		490 U	470 U		1200 J	3500 U	4200 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	120 J		490 U	470 U		940 J	3500 U	4200 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	140 J		490 U	470 U		980 J	3500 U	4200 U
LLSVOA	BENZO(a)PYRENE	UG/KG	130 J		490 U	470 U		980 J	3500 U	4200 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	92 J		490 U	470 U		620 J	3500 U	4200 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	110 J		490 U	470 U		680 J	3500 U	4200 U
LLSVOA	2-FLUOROPHENOL	UG/KG	68		58	58		66	56	56
LLSVOA	PHENOL-D5	UG/KG	71		63	63		71	61	59
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	68		63	58		66	59	55
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	70		75	62		70	48	59
LLSVOA	NITROBENZENE-D5	UG/KG	68		70	62		76	61	66
LLSVOA	2-FLUOROBIPHENYL	UG/KG	68		67	59		77	70	65
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	67		62	57		52	50	48
LLSVOA	TERPHENYL-D14	UG/KG	74		82	70		79	76	66
LLSVOA	PHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2-CHLOROPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	470 U		490 UJ	470 U		2600 U	3500 U	4200 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	470 U		490 UJ	470 U		2600 U	3500 U	4200 U
LLSVOA	HEXACHLOROETHANE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	NITROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	ISOPHORONE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2-NITROPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	NAPHTHALENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	4-CHLOROANILINE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U

D-52

Analytical Data Summary: Sediment

		StationID:	BW01	BW01	BW02	BW03	BW04	BW04	BW05	BW06	BW07	BW08
		Sample ID:	SD060	SD06AD	SD070	SD080	SD090	SD090D	SD100	SD110	SD120	SD130
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units										
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	1000 U	1000 U	1000 U	990 U	940 U		970 U	970 U	1000 U	2900 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLVOA	CHLOROMETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	12 U	2 J	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	CHLOROFORM	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	BENZENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	VINYL CHLORIDE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	TOLUENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	2-HEXANONE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	CHLOROBENZENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	ETHYLBENZENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	BROMOMETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	Total Xylenes	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	STYRENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	BROMOFORM	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	110	109	101	107	108		106	99	102	104
LLVOA	TOLUENE-D8	UG/KG	109	107	104	105	104		103	101	104	103
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	105	100	100	105	106		103	99	99	100
LLVOA	CHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	ACETONE	UG/KG	10 UJ	12 UJ	12 U	12 UJ	11 UJ		12 UJ	12 U	25 U	13 U
LLVOA	1,1-DICHLOROETHENE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	CARBON DISULFIDE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	420 U	400 U	400 U	400 U	370 U		390 U	390 U	400 U	1200 U
LLVOA	METHYLENE CHLORIDE	UG/KG	10 U	12 U	12 U	10 U	11 U		15 U	12 U	13 U	12 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	12 U	12 U	12 U	12 U	11 U		12 U	12 U	12 U	12 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	GAMMA BHC (LINDANE)	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	HEPTACHLOR	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	ALDRIN	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	ALPHA ENDOSULFAN	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	5 U
PEST	DIELDRIN	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	11 =	9.7 U

308 347

D-53

Analytical Data Summary: Sediment

DE 80C

Group	Parameter	Station ID: Sample ID: Sample Depth: Sample Date: Units	BW09 SD140 0 to .5 10/10/95	BW10 SD150 to	BW11 SD160 0 to .5 10/11/95	BW12 SD170 0 to .5 10/11/95	BW13 SD180 0 to .5 10/11/95	BW14 SD190 0 to .5 10/11/95	BW15 SD200 0 to .5 10/11/95	BW16 SD210 0 to .5 10/11/95	BW17 SD220 0 to .5 10/11/95	BW17 SD220A 0 to .5 10/11/95
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	990 U	9900 U	16000 U	10000 U	7400 U	5000 U	1400 U	1100 U	1700 U	1300 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLVOA	CHLOROMETHANE	UG/KG	3 J	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	1 J	7 J	4 J	10 J	7 J	2 J	17 U	4 J	3 J	2 J
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	12 U	26 U	20 U	25 U	22 U	17 U	17 U	14 U	16 U	16 U
LLVOA	CHLOROFORM	UG/KG	12 U	26 U	20 U	25 U	22 U	17 U	17 U	14 U	16 U	16 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	BENZENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	VINYL CHLORIDE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	TOLUENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	2-HEXANONE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	CHLOROBENZENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	ETHYLBENZENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	BROMOMETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	Total Xylenes	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	STYRENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	BROMOFORM	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	121	110	109	120	104	104	100	100	110	106
LLVOA	TOLUENE-D8	UG/KG	107	110	109	108	104	106	101	106	113	104
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	99	96	103	96	95	99	102	101	97	95
LLVOA	CHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	ACETONE	UG/KG	12 UJ	33 U	20 U	39 U	26 U	12 U	17 U	22 U	16 U	16 U
LLVOA	1,1-DICHLOROETHENE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	CARBON DISULFIDE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	400 U	4000 U	6500 U	4200 U	3000 U	2000 U	560 U	460 U	500 U	520 U
LLVOA	METHYLENE CHLORIDE	UG/KG	15 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	12 U	26 U	20 U	25 U	22 U	12 U	17 U	14 U	16 U	16 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	GAMMA BHC (LINDANE)	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	HEPTACHLOR	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	ALDRIN	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	ALPHA ENDOSULFAN	UG/KG	10 U	13 U	8.3 U	11 U	7.6 U	5.1 U	2.8 U	2.3 U	2.5 U	2.7 U
PEST	DIELDRIN	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U

308 348

D-54

Analytical Data Summary: Sediment

Group	Parameter	Station ID:	BW18	BW18	BW19	BW19	BW19	BW20	BW21	BW22
		Sample ID:	SD230	SD230DL	SD240	SD240A	SD240D	SD250	SD260	SD270
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/12/95	10/12/95	10/12/95
		Units								
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	1200 U		1200 U	1200 U		6400 U	8800 U	10000 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLVOA	CHLOROMETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	5 J		15 U	14 U		42 U	5 J	91 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	CHLOROFORM	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	BENZENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	VINYL CHLORIDE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	TOLUENE	UG/KG	2 J		15 U	14 U		42 U	14 J	10 J
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	2-HEXANONE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	CHLOROBENZENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	ETHYLBENZENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	BROMOMETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	Total Xylenes	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	STYRENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	BROMOFORM	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	102		98	98		101	108	114
LLVOA	TOLUENE-D8	UG/KG	103		102	103		106	104	104
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	102		104	101		96	94	98
LLVOA	CHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	ACETONE	UG/KG	19 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,1-DICHLOROETHENE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	CARBON DISULFIDE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	470 U		490 U	470 U		2600 U	3500 U	4200 U
LLVOA	METHYLENE CHLORIDE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	14 U		15 U	14 U		42 U	21 U	91 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	GAMMA BHC (LINDANE)	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	HEPTACHLOR	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	ALDRIN	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	230 =	280 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	ALPHA ENDOSULFAN	UG/KG	48 U	480 R	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	DIELDRIN	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U

D-55

Analytical Data Summary: Sediment

		StationID:	BW01	BW01	BW02	BW03	BW04	BW04	BW05	BW06	BW07	BW08
		Sample ID:	SD060	SD06AD	SD070	SD080	SD090	SD090D	SD100	SD110	SD120	SD130
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units										CC
PEST	p,p'-DDE	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	ENDRIN	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	BETA ENDOSULFAN	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	p,p'-DDD	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	6.1 J
PEST	ENDOSULFAN SULFATE	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	p,p'-DDT	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	METHOXYCHLOR	UG/KG	21 U	20 U	40 U	20 U	19 U		20 U	20 U	20 U	50 U
PEST	ENDRIN KETONE	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	ENDRIN ALDEHYDE	UG/KG	4.1 U	4 U	8 U	3.9 U	3.7 U		3.8 U	3.8 U	4 U	9.7 U
PEST	ALPHA-CHLORDANE	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	4.3 J
PEST	GAMMA-CHLORDANE	UG/KG	2.1 U	2 U	4 U	2 U	1.9 U		2 U	2 U	2 U	13 =
PEST	TOXAPHENE	UG/KG	210 U	200 U	400 U	200 U	190 U		200 U	200 U	210 U	500 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	84 U	81 U	160 U	80 U	75 U		78 U	78 U	81 U	200 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	41 U	40 U	80 U	39 U	37 U		38 U	38 U	40 U	97 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	74	80	81	78	85		79	72	69	74
PEST	DECACHLOROBIPHENYL	UG/KG	93	116	86	88	92		84	85	80	94
TOTMETAL	ALUMINUM	MG/KG	1490 =	1180 =	553 J	592 =	517 =	653.8949	537 =	490 J	796 J	879 J
TOTMETAL	ANTIMONY	MG/KG	3.6 U	3.5 U	3.6 U	3.4 U	3.9 J	3.1982	3.5 U	3.5 U	10.9 U	3.5 U
TOTMETAL	ARSENIC	MG/KG	1.5 J	1.4 J	1.6 J	0.62 UJ	0.78 U	0.7842	0.59 U	0.98 U	3.8 =	4.9 =
TOTMETAL	BARIUM	MG/KG	17.9 J	12 J	6.8 J	4.7 J	3.7 J	5.0821	4.9 J	7.7 J	23.1 J	18.2 J
TOTMETAL	BERYLLIUM	MG/KG	0.1 U	0.09 U	0.07 U	0.18 U	0.23 U	0.3033	0.16 U	0.12 U	0.16 U	0.14 U
TOTMETAL	CADMIUM	MG/KG	0.67 U	0.64 U	0.66 U	0.64 U	0.59 U	0.5915	0.66 U	0.66 U	38.2 =	0.65 U
TOTMETAL	CALCIUM	MG/KG	290 J	260 J	426 J	127 UJ	134 J	2787.0756	118 UJ	289 J	20000 J	14200 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	4.1 J	4.2 J	5.3 J	5.6 J	4.8 J	10.8938	14.1 J	4.1 J	11.4 J	9.8 J
TOTMETAL	COBALT	MG/KG	1.3 U	0.78 U	1.2 U	1.2 J	1.8 U	1.9715	1.1 U	1.3 U	7 J	4.2 J
TOTMETAL	COPPER	MG/KG	2.9 U	2.3 U	1.7 U	1.7 J	2.6 U	3.6911	1.9 U	1.1 U	21.7 =	7.1 =
TOTMETAL	IRON	MG/KG	3330 =	2850 =	3480 =	5410 =	6480 =	9177.9693	4980 =	4080 =	16700 =	13400 =
TOTMETAL	LEAD	MG/KG	3.2 J	2.9 J	1.7 J	2.3 J	2.9 J	1.034	1.6 UJ	43.8 J	133 J	16.5 J
TOTMETAL	MAGNESIUM	MG/KG	211 J	155 J	101 J	51.2 J	57.7 J	246.8171	54.7 J	66.6 J	803 J	812 J
TOTMETAL	MANGANESE	MG/KG	108 =	83.9 =	73.3 =	70.2 =	100 =	100.6725	61 =	99.1 =	2610 =	422 =
TOTMETAL	MERCURY	MG/KG	0.11 U	0.1 U	0.11 U	0.1 U	0.09 U	0.0966	0.1 U	0.1 U	0.11 U	0.1 U
TOTMETAL	NICKEL	MG/KG	1.9 U	5.2 U	2.7 U	2 U	3.5 U	3.0269	2.4 U	1.4 U	6.8 U	5 U
TOTMETAL	POTASSIUM	MG/KG	177 U	170 U	175 U	169 U	157 U	156.8456	174 U	174 U	177 U	174 U
TOTMETAL	SELENIUM	MG/KG	0.32 U	0.31 UJ	0.32 U	0.31 U	0.28 U	0.2848	0.32 U	0.33 U	0.32 U	0.37 J
TOTMETAL	SILVER	MG/KG	0.42 U	0.4 U	0.41 U	0.4 U	0.37 U	0.3724	0.41 U	0.42 U	0.63 U	0.41 U
TOTMETAL	SODIUM	MG/KG	49.9 U	44.7 U	20.6 U	23.7 U	27.2 U	99.1987	45.4 U	19.1 U	39.5 U	109 U
TOTMETAL	THALLIUM	MG/KG	0.45 U	0.43 U	0.44 U	0.43 U	0.4 UJ	0.3965	0.44 U	0.44 U	0.45 U	0.44 U
TOTMETAL	VANADIUM	MG/KG	4.7 J	4 J	4.9 J	4.4 J	5.6 J	5.4326	9.2 J	4.5 J	7.5 J	6.1 J
TOTMETAL	ZINC	MG/KG	12.3 J	9.2 J	15.6 J	10.4 J	12.3 J	31.9825	9.7 J	8.4 J	7630 J	19.9 J

D-56

Analytical Data Summary: Sediment

Group	Parameter											
		StationID:	BW09	BW10	BW11	BW12	BW13	BW14	BW15	BW16	BW17	BW17
		Sample ID:	SD140	SD150	SD160	SD170	SD180	SD190	SD200	SD210	SD220	SD220A
		Sample Depth:	0 to .5	to	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/10/95		10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
		Units										
PEST	p,p'-DDE	UG/KG	20 U	26 U	16 U	21 U	5.1 J	9.8 U	5.5 U	7.2 =	4.9 U	5.2 U
PEST	ENDRIN	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	BETA ENDOSULFAN	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	p,p'-DDD	UG/KG	20 U	26 U	16 U	21 U	6 J	9.8 U	5.5 U	2.8 J	4.9 U	5.2 U
PEST	ENDOSULFAN SULFATE	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	p,p'-DDT	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	METHOXYCHLOR	UG/KG	100 U	130 U	83 U	110 U	76 U	51 U	28 U	23 U	25 U	27 U
PEST	ENDRIN KETONE	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	ENDRIN ALDEHYDE	UG/KG	20 U	26 U	16 U	21 U	15 U	9.8 U	5.5 U	4.5 U	4.9 U	5.2 U
PEST	ALPHA-CHLORDANE	UG/KG	5.2 J	13 U	4.9 J	11 U	7.6 U	3.6 J	2.8 U	2.3 U	2.5 U	2.7 U
PEST	GAMMA-CHLORDANE	UG/KG	58 J	13 U	6.1 J	11 U	7.6 U	7.9 =	2.8 U	2.3 U	2.5 U	2.7 U
PEST	TOXAPHENE	UG/KG	1000 U	1300 U	830 U	1100 U	760 U	510 U	280 U	230 U	250 U	270 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	200 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	400 U	520 U	330 U	420 U	300 U	200 U	110 U	93 U	100 U	100 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	200 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	200 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	200 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	400 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	400 U	260 U	160 U	210 U	150 U	98 U	55 U	45 U	49 U	52 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	86	73	60	65	69	81	64	64	77	74
PEST	DECACHLOROBIPHENYL	UG/KG	265	137	58	60	127	81	79	72	84	88
TOTMETAL	ALUMINUM	MG/KG	1220 =	11600 =	6580 =	10100 =	9840 =	1440 =	12100 =	9460 =	3880 =	2620 =
TOTMETAL	ANTIMONY	MG/KG	3.7 J	6.3 U	4.6 U	4.4 U	5 U	3.6 U	3.7 U	4 U	4.1 U	3.9 U
TOTMETAL	ARSENIC	MG/KG	3.4 =	7.1 J	5.7 J	3.9 J	5.1 J	2.4 J	7.6 J	11.1 J	3.8 UJ	4.9 J
TOTMETAL	BARIUM	MG/KG	30.6 J	126 =	70.9 =	119 =	115 =	23.9 J	104 =	119 =	40.7 J	29.6 J
TOTMETAL	BERYLLIUM	MG/KG	0.23 U	0.7 J	0.38 U	0.52 J	0.77 J	0.18 U	0.65 J	0.5 U	0.39 U	0.25 U
TOTMETAL	CADMIUM	MG/KG	1.3 =	1.5 U	0.84 U	0.81 U	0.92 U	1.7 U	0.69 U	0.87 U	0.73 U	0.73 U
TOTMETAL	CALCIUM	MG/KG	27800 J	3060 =	1680 =	1160 J	1340 J	56800 =	1480 =	1900 =	1150 J	845 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	39.7 J	16.1 =	9.8 =	14.2 =	15.7 =	11.5 =	15.4 =	10.4 =	8.8 =	9.5 =
TOTMETAL	COBALT	MG/KG	5.3 J	10.8 J	6.9 J	9.7 J	9.4 J	3.5 J	7.6 J	7.8 J	4.2 J	3.8 J
TOTMETAL	COPPER	MG/KG	112 =	26.6 =	13.9 =	14.2 =	16.5 =	2.8 J	12.6 =	12.1 =	4.2 U	4.9 U
TOTMETAL	IRON	MG/KG	30700 =	19300 =	12000 =	16300 =	19500 =	1210 =	18100 =	12900 =	7920 =	6800 =
TOTMETAL	LEAD	MG/KG	291 J	25.5 J	10.6 J	12.2 J	12.4 J	8.6 J	19 J	29.3 J	14 J	15.1 J
TOTMETAL	MAGNESIUM	MG/KG	1730 =	2530 =	1240 J	1930 =	1860 =	2420 =	1610 =	1430 =	474 J	410 J
TOTMETAL	MANGANESE	MG/KG	213 =	566 =	328 =	406 =	618 =	853 =	631 =	587 =	227 =	131 =
TOTMETAL	MERCURY	MG/KG	0.11 U	0.18 U	0.13 U	0.13 U	0.14 U	0.11 U	0.1 U	0.12 U	0.12 U	0.11 U
TOTMETAL	NICKEL	MG/KG	37.4 =	18.1 =	13.4 J	14 =	16.6 =	5.3 J	13.9 =	13.9 =	5.8 J	6.3 J
TOTMETAL	POTASSIUM	MG/KG	177 U	1080 J	494 J	1040 J	812 J	179 U	838 J	811 J	269 J	276 J
TOTMETAL	SELENIUM	MG/KG	0.33 U	1.5 J	0.41 UJ	0.39 UJ	1.1 J	0.32 UJ	0.33 UJ	0.36 UJ	0.36 UJ	0.35 UJ
TOTMETAL	SILVER	MG/KG	0.42 U	0.89 J	0.53 U	0.51 U	0.58 U	0.42 U	0.44 U	0.47 U	0.47 U	0.46 U
TOTMETAL	SODIUM	MG/KG	76.8 U	76 U	82.3 U	56.5 U	53.2 U	54.7 U	65.4 U	83.2 U	45.6 U	46 U
TOTMETAL	THALLIUM	MG/KG	0.45 U	0.79 U	0.57 U	0.54 U	0.62 U	0.45 U	0.52 J	0.5 U	0.56 J	0.49 U
TOTMETAL	VANADIUM	MG/KG	8.6 J	31.5 J	18.9 J	25.3 J	31 J	13.4 J	27.8 J	19.9 J	13.7 J	17.4 J
TOTMETAL	ZINC	MG/KG	90.5 J	87.9 =	59.4 =	49.4 =	59.9 =	161 =	46.8 =	33.5 =	19.5 =	18.4 =

308 351

D-57

Analytical Data Summary: Sediment

		StationID:	BW11	BW18	BW19	BW19	BW19	BW20	BW21	BW22
		Sample ID:	SD230	SD230DL	SD240	SD240A	SD240D	SD250	SD260	SD270
		Sample Depth:	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5	0 to .5
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units								
PEST	p,p'-DDE	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	ENDRIN	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	BETA ENDOSULFAN	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	p,p'-DDD	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	ENDOSULFAN SULFATE	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	p,p'-DDT	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	METHOXYCHLOR	UG/KG	480 U	4800 R	25 U	24 U		65 U	180 U	110 U
PEST	ENDRIN KETONE	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	ENDRIN ALDEHYDE	UG/KG	93 U	930 R	4.9 U	4.6 U		13 U	34 U	21 U
PEST	ALPHA-CHLORDANE	UG/KG	2100 ER	2400 =	2.5 U	2.4 U		6.5 U	8.9 U	11 U
PEST	GAMMA-CHLORDANE	UG/KG	1800 ER	2000 =	2.5 U	2.4 U		70 U	8.9 U	11 U
PEST	TOXAPHENE	UG/KG	4800 U	48000 R	250 U	240 U		650 U	890 U	1100 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	930 U	9300 R	49 U	46 U		130 U	170 U	210 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	1900 U	19000 R	99 U	94 U		260 U	350 U	420 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	930 U	9300 R	49 U	46 U		130 U	170 U	210 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	930 U	9300 R	49 U	46 U		130 U	170 U	210 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	930 U	9300 R	49 U	46 U		130 U	170 U	210 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	930 U	9300 R	49 U	46 U		260 U	350 U	420 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	930 U	9300 R	49 U	46 U		260 U	350 U	420 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	65	0	74	78		72	54	63
PEST	DECACHLOROBIPHENYL	UG/KG	81	0	88	87		79	58	67
TOTMETAL	ALUMINUM	MG/KG	8720 =		14200 =	14600 =	12890.26	6920 =	1140 =	8460 =
TOTMETAL	ANTIMONY	MG/KG	4.4 U		4.1 U	4.1 U	4.0896	10 UJ	4.2 UJ	18.8 UJ
TOTMETAL	ARSENIC	MG/KG	10.8 J		10 J	7.6 J	7.9132	7.8 =	4.7 =	10.3 J
TOTMETAL	BARIUM	MG/KG	137 =		93.2 =	90.1 =	91.3641	96 J	14.3 J	115 J
TOTMETAL	BERYLLIUM	MG/KG	0.45 U		0.57 J	0.56 J	0.5714	0.29 U	0.08 U	0.35 U
TOTMETAL	CADMIUM	MG/KG	3.9 =		0.76 U	0.75 U	0.7927	1.8 U	0.78 U	3.5 U
TOTMETAL	CALCIUM	MG/KG	950 J		710 J	823 J	679.8431	3450 =	7650 =	4120 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	174 =		14.3 =	15.1 =	13.0644	9 =	5.8 =	9.6 J
TOTMETAL	COBALT	MG/KG	8.4 J		8.8 J	10.7 J	8.5686	3.4 U	1.1 U	2.4 U
TOTMETAL	COPPER	MG/KG	19.1 =		13.5 =	20.8 =	12.5854	512 J	129 J	1250 J
TOTMETAL	IRON	MG/KG	11800 =		18000 =	19900 =	18755.04	7950 =	3790 =	9520 =
TOTMETAL	LEAD	MG/KG	31.5 J		14.6 J	11.4 J	10.8571	35.9 =	7.3 =	43 =
TOTMETAL	MAGNESIUM	MG/KG	1380 J		2060 =	2140 =	1973.039	1370 J	2950 =	1610 J
TOTMETAL	MANGANESE	MG/KG	667 =		433 =	522 =	450.9216	221 =	59.3 =	210 =
TOTMETAL	MERCURY	MG/KG	2 =		0.12 U	0.12 U	0.1146	0.28 U	0.13 U	0.57 U
TOTMETAL	NICKEL	MG/KG	14.5 =		19.1 =	14.2 =	16.8571	8.1 J	3.8 U	19.1 J
TOTMETAL	POTASSIUM	MG/KG	674 J		997 J	1240 J	893.3754	494 U	206 U	924 U
TOTMETAL	SELENIUM	MG/KG	0.39 UJ		0.37 J	0.36 UJ	0.3641	0.89 U	0.48 UJ	1.7 U
TOTMETAL	SILVER	MG/KG	0.52 U		0.48 U	0.47 U	0.4763	1.2 U	0.49 U	2.2 U
TOTMETAL	SODIUM	MG/KG	63.4 U		67.8 U	76.3 U	58.8179	151 UJ	34.1 UJ	120 J
TOTMETAL	THALLIUM	MG/KG	0.55 U		0.51 U	0.5 U	0.507	1.2 U	0.52 U	2.3 U
TOTMETAL	VANADIUM	MG/KG	18.8 J		28.9 J	30.9 J	27.2941	17.3 J	6.4 J	22.1 J
TOTMETAL	ZINC	MG/KG	78.1 =		43.7 =	47.6 =	44.7255	73.7 =	27.8 =	129 =

308 352

D-58

Analytical Data Summary: Deep Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS01 SB095 5 to 6 10/9/95	BS02 SB105 5 to 6 10/9/95	BS03 SB115 5 to 6 10/9/95	BS04 SB125 5 to 6 10/10/95	BS04 SB125DL 5 to 6 10/10/95	BS05 SB135 5 to 6 10/10/95	BS06 SB145 5 to 6 10/10/95	BS07 SB155 5 to 6 10/10/95	BS07 SB155A 5 to 6 10/10/95
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1 U	1 U	1 U		1 U	1 U	1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	0.014 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U	2.5 U	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	4.445 J	0.17 U	1.249 J	2.948 J		5 U	1.643 J	1.75 J	1.285 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5 U	5 U	5 U		5 U	5 U	5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	38	37	41	42		42	44	48	37
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	49	49	49	43		56	52	53	41
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	78	81	81	61		74	73	80	65
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	74	59	60	45		54	70	96	71
HERB	DALAPON	UG/KG	120 U	220 U	240 U	240 U		240 U	220 U	120 U	130 U
HERB	DICAMBA	UG/KG	12 U	22 U	24 U	24 U		24 U	22 U	12 U	13 U
HERB	MCPA	UG/KG	6000 U	11000 U	12000 U	12000 U		12000 U	11000 U	6200 U	6300 U
HERB	MCPP	UG/KG	6000 U	11000 U	12000 U	12000 U		12000 U	11000 U	6200 U	6300 U
HERB	DICHLOROPROP	UG/KG	60 UJ	110 UJ	120 UJ	120 UJ		120 UJ	110 UJ	62 UJ	63 UJ
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	60 U	110 U	120 U	120 U		120 U	110 U	62 U	63 U
HERB	SILVEX (2,4,5-TP)	UG/KG	12 U	22 U	24 U	24 U		24 U	22 U	12 U	13 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	12 U	22 U	24 U	24 U		24 U	22 U	12 U	13 U
HERB	2,4 DB	UG/KG	60 U	110 U	120 U	120 U		120 U	110 U	62 U	63 U
HERB	DINOSEB	UG/KG	12 U	22 U	24 U	24 U		24 U	22 U	12 U	13 U
HERB	2,6-DICHLOROPHENYLACETIC ACID	UG/KG	74	86	85	110		117	113	90	102
LLSVOA	2-NITROANILINE	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	3-NITROANILINE	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	ACENAPHTHYLENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	ACENAPHTHENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	4-NITROPHENOL	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	DIBENZOFURAN	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	FLUORENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	4-NITROANILINE	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U

D-59

CCE

Analytical Data Summary: Deep Soil

Group	Parameter	StationID:	BS07	BS08	BS08	BS09	BS09	BS10	BS10	BS11	BS12
		Sample ID:	SB155DL	SB165	SB165DL	SB173	SB175DL	SB184	SB184D	SB195	SB205
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	4 to 6	4 to 6	5 to 6	5 to 6
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95	10/11/95	10/11/95
		Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG		1 U		1 U		1 U	1	0 U	0 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG		1 U		1 U		1 U	1	1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	0 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG		2.5 U		2.5 U		2.5 U	2.5	2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG		5 U		3.439 J		9.435 J	10.444	0.209 J	1.683 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG		5 U		5 U		5 U	5	5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG		41		50		57	51	50	47
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG		46		64		57	52	49	46
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG		63		90		77	67	66	68
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG		73		107		61	31	60	61
HERB	DALAPON	UG/KG		120 U		110 U		220 U		220 U	240 R
HERB	DICAMBA	UG/KG		12 U		11 U		22 U		22 U	24 R
HERB	MCPA	UG/KG		31000 U		5700 U		11000 U		11000 U	12000 R
HERB	MCPP	UG/KG		6200 U		5700 U		11000 U		11000 U	12000 R
HERB	DICHLOROPROP	UG/KG		62 UJ		57 UJ		110 U		110 U	120 R
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG		62 U		57 U		110 U		110 U	120 R
HERB	SILVEX (2,4,5-TP)	UG/KG		12 U		11 U		22 U		22 U	24 R
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG		12 U		11 U		22 U		22 U	24 R
HERB	2,4 DB	UG/KG		62 U		57 U		110 U		110 U	120 R
HERB	DINOSEB	UG/KG		12 U		11 U		22 U		22 U	24 R
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG		113		89		102		111	0
LLSVOA	2-NITROANILINE	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	3-NITROANILINE	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	ACENAPHTHYLENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	ACENAPHTHENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	4-NITROPHENOL	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	DIBENZOFURAN	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	FLUORENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	4-NITROANILINE	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	20000 R	2000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U

308 354

D-60

308 355

Analytical Data Summary: Deep Soil

Group	Parameter	StationID:	BS12	BS12	BS13	BS13	BS14	BS15	BS15	BS16	BS16
		Sample ID:	SB205DL	SB205RE	SB215	SB215DL	SB225	SB235	SB235DL	SB245	SB245DL
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
		Units									
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG			1 U		1 U	1 U		1 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG			1 U		1 U	1 U		1 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG			2.5 U		2.5 U	0.0143 U		2.5 U	
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG			2.5 U		2.5 U	2.5 U		2.5 U	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG			2.141 J		0.645 J	5.432 •		5 U	
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG			5 U		5 U	5 U		5 U	
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG			43		37	38		49	
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG			44		46	37		48	
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG			72		77	71		76	
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG			81		111	67		59	
HERB	DALAPON	UG/KG		240 UJ	120 U		110 U	240 U		120 U	
HERB	DICAMBA	UG/KG		24 UJ	12 U		11 U	24 U		12 U	
HERB	MCPA	UG/KG		12000 UJ	6000 U		5700 U	12000 U		6000 U	
HERB	MCPP	UG/KG		12000 UJ	6000 U		5700 U	12000 U		6000 U	
HERB	DICHLOROPROP	UG/KG		120 UJ	60 U		57 U	120 U		60 U	
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG		120 UJ	60 U		57 U	120 U		60 U	
HERB	SILVEX (1,4,5-TP)	UG/KG		24 UJ	12 U		11 U	24 U		12 U	
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG		24 UJ	12 U		11 U	24 U		12 U	
HERB	2,4 DB	UG/KG		120 UJ	60 U		57 U	120 U		60 U	
HERB	DINOSEB	UG/KG		24 UJ	12 U		11 U	24 U		12 U	
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG		85	99		109	106		86	
LLSVOA	2-NITROANILINE	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	DIMETHYL PHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	3-NITROANILINE	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	2,6-DINITROTOLUENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	ACENAPHTHYLENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	ACENAPHTHENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,4-DINITROPHENOL	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	4-NITROPHENOL	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	DIBENZOFURAN	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,4-DINITROTOLUENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	DIETHYL PHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	FLUORENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-NITROANILINE	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R

D-61

308 356

Analytical Data Summary: Deep Soil

		Station ID:	BS17	BS18	BS18	BS19	BS19	BS19	BS20	BS20	BS21	BS22
		Sample ID:	SB255	SB265	SB265A	SB275	SB275A	SB275DL	SB285	SB285DL	SB295	SB305
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units										
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	UG/KG	1 U	1 U	1 U	1 U	1 U		1 U		1 U	1 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN	UG/KG	1 U	1 U	1 U	1 U	1 U		1 U		1 U	1 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	2,3,4,7,8-PENTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	UG/KG	0 U	2.5 U	2.5 U	0 U	0.017 U		0 U		0.015 U	0.028 U
DIOXIN	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	UG/KG	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U		2.5 U		2.5 U	2.5 U
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN	UG/KG	2.869 J	0.165 U	0.515 J	7.619 =	4.493 J		2.498 J		1.376 J	1.458 J
DIOXIN	OCTACHLORODIBENZOFURAN	UG/KG	5 U	5 U	5 U	5 U	5 U		5 U		5 U	5 U
DIOXIN	2,3,7,8-TETRACHLORODIBENZOFURAN-C13	UG/KG	43	30	33	37	33		34		38	36
DIOXIN	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13	UG/KG	55	49	43	46	44		43		46	49
DIOXIN	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13	UG/KG	85	79	70	74	74		75		79	83
DIOXIN	OCTACHLORODIBENZO-p-DIOXIN-C13	UG/KG	64	59	56	55	55		45		52	59
HERB	DALAPON	UG/KG	480 U	220 U	220 U	220 U	220 U		480 U		480 U	240 U
HERB	DICAMBA	UG/KG	41 U	22 U	22 U	22 U	22 U		48 U		48 U	24 U
HERB	MCPA	UG/KG	24000 U	11000 U	11000 U	11000 U	11000 U		23000 U		24000 U	12000 U
HERB	MCPP	UG/KG	24000 U	11000 U	11000 U	11000 U	11000 U		23000 U		24000 U	12000 U
HERB	DICHLOROPROP	UG/KG	240 U	110 U	110 U	110 U	110 U		230 U		240 U	120 U
HERB	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/KG	240 U	110 U	110 U	110 U	110 U		230 U		240 U	120 U
HERB	SILVEX (2,4,5-TP)	UG/KG	41 U	22 U	22 U	22 U	22 U		48 U		48 U	24 U
HERB	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/KG	41 U	22 U	22 U	22 U	22 U		48 U		48 U	24 U
HERB	2,4 DB	UG/KG	240 U	110 U	110 U	110 U	110 U		230 U		240 U	120 U
HERB	DINOSEB	UG/KG	41 U	22 U	22 U	22 U	22 U		48 U		48 U	24 U
HERB	2,4-DICHLOROPHENYLACETIC ACID	UG/KG	116	109	102	110	114		130		106	117
LLSVOA	2-NITROANILINE	UG/KG	980 U	900 U	900 U	1000 R	1000 U	5100 U	970 R	4800 U	950 U	990 U
LLSVOA	DIMETHYL PHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	3-NITROANILINE	UG/KG	980 U	900 U	900 U	1000 R	1000 U	5100 U	970 R	4800 U	990 U	990 U
LLSVOA	2,6-DINITROTOLUENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	ACENAPHTHYLENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	ACENAPHTHENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,4-DINITROPHENOL	UG/KG	980 UJ	900 UJ	900 UJ	1000 R	1000 UJ	5100 UJ	970 R	4800 UJ	990 UJ	990 UJ
LLSVOA	4-NITROPHENOL	UG/KG	980 UJ	900 UJ	900 UJ	1000 R	1000 UJ	5100 UJ	970 R	4800 UJ	990 UJ	990 UJ
LLSVOA	DIBENZOFURAN	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,4-DINITROTOLUENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	DIETHYL PHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	FLUORENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-CHLOROPHENYL PHENYL ETHER	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-NITROANILINE	UG/KG	980 U	900 U	900 U	1000 R	1000 U	5100 U	970 R	4800 U	990 U	990 U
LLSVOA	4,6-DINITRO-2-METHYLPHENOL	UG/KG	980 UJ	900 UJ	900 U	1000 R	1000 U	5100 U	970 R	4800 U	990 UJ	990 UJ
LLSVOA	N-NITROSODIPHENYLAMINE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-BROMOPHENYL PHENYL ETHER	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U

D-62

Analytical Data Summary: Deep Soil

		Station ID:	BS01	BS02	BS03	BS04	BS04	BS05	BS06	BS07	BS07
		Sample ID:	SB095	SB105	SB115	SB125	SB125DL	SB135	SB145	SB155	SB155A
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/9/95	10/9/95	10/9/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
LLSVOA	HEXACHLOROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	200 U	190 U	200 U	200 U		200 U	190 U	2000 U	210 U
LLSVOA	PHENANTHRENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	ANTHRACENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	CARBAZOLE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	FLUORANTHENE	UG/KG	400 U	370 U	390 U	45 J		410 U	380 U	4100 U	420 U
LLSVOA	PYRENE	UG/KG	400 U	370 U	390 U	42 J		410 U	380 U	4100 U	420 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	CHRYSENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	BENZO(a)PYRENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 UJ	420 U
LLSVOA	2-FLUOROPHENOL	UG/KG	59	55	54	71		63	62	50	39
LLSVOA	PHENOL-D5	UG/KG	64	60	60	76		66	66	51	39
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	64	59	58	76		64	63	50	38
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	75	66	66	78		68	69	48	42
LLSVOA	NITROBENZENE-D5	UG/KG	68	59	62	74		68	70	54	39
LLSVOA	2-FLUOROBIPHENYL	UG/KG	67	57	57	70		66	70	60	43
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	62	46	49	75		70	74	51	30
LLSVOA	TERPHENYL-D14	UG/KG	86	65	69	81		78	78	61	46
LLSVOA	PHENOL	UG/KG	840 =	370 U	390 U	410 U		410 U	380 U	19000 =	420 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	400 U	370 U	390 U	410 UJ		410 UJ	380 UJ	4100 UJ	420 UJ
LLSVOA	2-CHLOROPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	400 U	370 U	390 U	410 UJ		410 UJ	380 UJ	4100 UJ	420 UJ
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	400 U	370 U	390 U	410 UJ		410 UJ	380 UJ	4100 UJ	420 UJ
LLSVOA	HEXACHLOROETHANE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	NITROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	ISOPHORONE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2-NITROPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	NAPHTHALENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	4-CHLOROANILINE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U

308 357

D-63

Analytical Data Summary: Deep Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS07 SB155DL 5 to 6 10/10/95	BS04 SB165 5 to 6 10/10/95	BS08 SB165DL 5 to 6 10/10/95	BS09 SB175 5 to 6 10/10/95	BS09 SB175DL 5 to 6 10/10/95	BS10 SB184 4 to 6 10/11/95	BS10 SB184D 4 to 6 10/11/95	BS11 SB195 5 to 6 10/11/95	BS12 SD205 5 to 6 10/11/95
LLSVOA	HEXACHLOROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	4100 R	410 U	1000 R	190 U	950 R	190 U		190 U	200 U
LLSVOA	PHENANTHRENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	ANTHRACENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	CARBAZOLE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	FLUORANTHENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	PYRENE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	CHRYSENE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	8200 R	820 U	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	BENZO(a)PYRENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	INDENO(1,2,3-cd)PYRENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 UJ		370 UJ	400 UJ
LLSVOA	2-FLUOROPHENOL	UG/KG	0	60	73	55	56	65		62	64
LLSVOA	PHENOL-D5	UG/KG	0	64	75	54	57	68		66	70
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	0	61	70	56	56	63		62	64
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	0	64	75	62	62	67		65	67
LLSVOA	NITROBENZENE-D5	UG/KG	0	68	74	63	60	63		64	62
LLSVOA	2-FLUOROBIPHENYL	UG/KG	0	71	73	75	63	64		68	66
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	0	74	68	70	55	61		59	63
LLSVOA	TERPHENYL-D14	UG/KG	0	131	116	112	81	76		95	81
LLSVOA	PHENOL	UG/KG	20000 R	3900 =	4600 R	580 =	600 R	380 U		370 U	400 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	2-CHLOROPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	8200 R	820 UJ	2000 R	380 UJ	1900 R	380 U		370 U	400 U
LLSVOA	HEXACHLOROETHANE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	NITROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	ISOPHORONE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2-NITROPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	NAPHTHALENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	4-CHLOROANILINE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U

D-64

308 359

Analytical Data Summary: Deep Soil

		StationID:	BS12	BS12	BS13	BS13	BS14	BS15	BS15	BS16	BS16
		Sample ID:	SB205DL	SB205RE	SB215	SB215DL	SB225	SB235	SB235DL	SB245	SB245DL
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	HEXACHLOROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	PENTACHLOROPHENOL	UG/KG	1000 R		200 U	1000 R	190 U	190 U	970 R	200 U	1000 R
LLSVOA	PHENANTHRENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	ANTHRACENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	CARBAZOLE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	FLUORANTHENE	UG/KG	2000 R		400 U	2000 R	380 U	44 J	1900 R	400 U	2000 R
LLSVOA	PYRENE	UG/KG	2000 R		400 U	2000 R	380 U	39 J	1900 R	400 U	2000 R
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	CHRYSENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	bis(2-ETHYLHEXYL) PHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	BENZO(a)PYRENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	2000 R		400 UJ	2000 R	380 U	390 U	1900 R	400 R	2000 U
LLSVOA	2-FLUOROPHENOL	UG/KG	64		67	66	53	57	52	61	61
LLSVOA	PHENOL-D5	UG/KG	69		70	66	58	63	50	65	63
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	64		69	64	55	60	49	60	59
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	70		72	70	55	62	58	70	71
LLSVOA	NITROBENZENE-D5	UG/KG	64		68	64	57	60	53	70	65
LLSVOA	2-FLUOROBIPHENYL	UG/KG	64		72	68	62	67	53	87	66
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	43		59	36	57	49	30	64	46
LLSVOA	TERPHENYL-D14	UG/KG	73		86	76	84	72	59	140	103
LLSVOA	PHENOL	UG/KG	2000 R		400 U	2000 R	770 =	390 U	1900 R	680 =	670 R
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2-CHLOROPHENOL	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	HEXACHLOROETHANE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	NITROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	ISOPHORONE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2-NITROPHENOL	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	NAPHTHALENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-CHLOROANILINE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	1000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R

D-65

Analytical Data Summary: Deep Soil

		StationID:	BS17	BS18	BS18	BS19	BS19	BS19	BS20	BS20	BS21	BS22
		Sample ID:	SB255	SB265	SB265A	SB275	SB275A	SB275DL	SB285	SB285DL	SB295	SB305
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units										
LLSVOA	HEXACHLOROBENZENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	PENTACHLOROPHENOL	UG/KG	200 U	180 U	180 U	200 R	200 U	1000 U	190 R	970 U	200 U	200 U
LLSVOA	PHENANTHRENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	ANTHRACENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	CARBAZOLE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	DI-n-BUTYL PHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	FLUORANTHENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	PYRENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	BENZYL BUTYL PHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	BENZO(a)ANTHRACENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	3,3'-DICHLOROBENZIDINE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	CHRYSENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	bis(2-ETHYLHEXYL)PHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	DI-n-OCTYLPHTHALATE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	BENZO(b)FLUORANTHENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	BENZO(k)FLUORANTHENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	BENZO(a)PYRENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	INDENO(1,2,3-c,d)PYRENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	DIBENZ(a,h)ANTHRACENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	BENZO(g,h,i)PERYLENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 UJ	400 U	400 U
LLSVOA	2-FLUOROPHENOL	UG/KG	61	61	56	62	58	58	56	51	58	57
LLSVOA	PHENOL-D5	UG/KG	63	66	60	65	74	66	56	56	67	64
LLSVOA	2-CHLOROPHENOL-D4	UG/KG	63	63	58	66	67	60	60	52	62	61
LLSVOA	1,2-DICHLOROBENZENE-D4	UG/KG	67	69	69	74	74	72	66	62	63	64
LLSVOA	NITROBENZENE-D5	UG/KG	66	68	66	69	76	66	65	64	60	62
LLSVOA	2-FLUOROBIPHENYL	UG/KG	66	69	64	79	70	69	73	64	60	65
LLSVOA	2,4,6-TRIBROMOPHENOL	UG/KG	59	56	50	59	66	46	58	41	52	54
LLSVOA	TERPHENYL-D14	UG/KG	64	64	63	113	74	75	103	66	63	62
LLSVOA	PHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2-CHLOROPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2-METHYLPHENOL (o-CRESOL)	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-METHYLPHENOL (p-CRESOL)	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	N-NITROSODI-n-PROPYLAMINE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	HEXACHLOROETHANE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	NITROBENZENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	ISOPHORONE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2-NITROPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,4-DIMETHYLPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	bis(2-CHLOROETHOXY) METHANE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,4-DICHLOROPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	1,2,4-TRICHLOROBENZENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	NAPHTHALENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-CHLOROANILINE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	HEXACHLOROBUTADIENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	4-CHLORO-3-METHYLPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2-METHYLNAPHTHALENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	HEXACHLOROCYCLOPENTADIENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLSVOA	2,4,6-TRICHLOROPHENOL	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U

308 360

D-66

Analytical Data Summary: Deep Soil

		StationID:	BS01	BS02	BS03	BS04	BS04	BS05	BS06	BS11	BS07
		Sample ID:	SB095	SB105	SB115	SB125	SB125DL	SB135	SB145	SB155	SB155A
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/9/95	10/9/95	10/9/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95
Group	Parameter	Units									
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	990 U	940 U	980 U	1000 U		1000 U	950 U	10000 U	1000 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLVOA	CHLOROMETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	CHLOROFORM	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	BENZENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	VINYL CHLORIDE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	TOLUENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	2-HEXANONE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	CHLOROBENZENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	ETHYLBENZENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	BROMOMETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	Total Xylenes	UG/KG	2 J	11 U	12 U	2 J		12 U	11 U	12 U	13 U
LLVOA	STYRENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	BROMOFORM	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	110	109	104	101		103	100	101	101
LLVOA	TOLUENE-D8	UG/KG	110	110	103	102		102	101	97	98
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	108	105	101	98		103	98	100	99
LLVOA	CHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	ACETONE	UG/KG	12 UJ	11 UJ	12 UJ	12 UJ		12 UJ	11 UJ	12 UJ	13 UJ
LLVOA	1,1-DICHLOROETHENE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
LLVOA	CARBON DISULFIDE	UG/KG	12 U	11 U	12 U	2 J		12 U	11 U	12 U	13 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	400 U	370 U	390 U	410 U		410 U	380 U	4100 U	420 U
LLVOA	METHYLENE CHLORIDE	UG/KG	15 U	11 U	12 U	16 U		13 U	12 U	13 U	17 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	12 U	11 U	12 U	12 U		12 U	11 U	12 U	13 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	GAMMA BHC (LINDANE)	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	HEPTACHLOR	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	ALDRIN	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	ALPHA ENDOSULFAN	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	DIELDRIN	UG/KG	3.9 U	3.7 U	3.9 U	330 ER	370 =	4.1 U	3.5 J	4.1 U	4.2 U

308 362

.01 [illegible]

Analytical Data Summary: Deep Soil

		Station ID:	BS07	BS08	BS08	BS09	BS09	BS10	BS10	BS11	BS12
		Sample ID:	SB155DL	SB165	SB165DL	SB175	SB175DL	SB184	SB184D	SB195	SB205
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	4 to 6	4 to 6	5 to 6	5 to 6
		Sample Date:	10/10/95	10/10/95	10/11/95	10/10/95	10/10/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	20000 R	7000 U	5100 R	950 U	4700 R	960 U		940 U	1000 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLVOA	CHLOROMETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	CHLOROFORM	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	CARBON TETRACHLORIDE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	BENZENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,2-DICHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	BROMODICHLOROMETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	VINYL CHLORIDE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	TOLUENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	2-HEXANONE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	CHLOROBENZENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	ETHYLBENZENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	BROMOMETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	Total Xylenes	UG/KG		1 J		11 U		11 U		11 U	12 U
LLVOA	STYRENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	BROMOFORM	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG		101		96		97		105	99
LLVOA	TOLUENE-D8	UG/KG		100		99		103		105	114
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG		100		96		96		103	89
LLVOA	CHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	ACETONE	UG/KG		12 UJ		11 UJ		11 UJ		11 UJ	11 UJ
LLVOA	1,1-DICHLOROETHENE	UG/KG		12 U		11 U		11 U		11 U	12 U
LLVOA	CARBON DISULFIDE	UG/KG		1 J		11 U		11 U		11 U	12 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	8200 R	820 U	2000 R	380 U	1900 R	380 U		370 U	400 U
LLVOA	METHYLENE CHLORIDE	UG/KG		17 U		13 U		11 U		11 U	11 U
LLVOA	1,1-DICHLOROETHANE	UG/KG		12 U		11 U		11 U		11 U	12 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	GAMMA BHC (LINDANE)	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	HEPTACHLOR	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	ALDRIN	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	HEPTACHLOR EPOXIDE	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	ALPHA ENDOSULFAN	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	DIELDRIN	UG/KG		6 =		3.7 U		3.8 U		3.7 U	4 U

D-68

Analytical Data Summary: Deep Soil

Group	Parameter	Station ID:	BS12	BS12	BS13	BS13	BS14	BS15	BS15	BS16	BS16
		Sample ID:	SB205DL	SB205RE	SB215	SB215DL	SB225	SB235	SB235DL	SB245	SB245DL
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
		Units									
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	5000 R		1000 U	5000 R	950 U	970 U	4800 R	1000 U	5000 R
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLVOA	CHLOROMETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	CHLOROFORM	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	CARBON TETRACHLORIDE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	BENZENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,2-DICHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,2-DICHLOROPROPANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	BROMODICHLOROMETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	VINYL CHLORIDE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	TOLUENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	2-HEXANONE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	DIBROMOCHLOROMETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	CHLOROBENZENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	ETHYLBENZENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	BROMOMETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	Total Xylenes	UG/KG			12 U		11 U	1 J		12 U	
LLVOA	STYRENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	BROMOFORM	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG			100		96	97		102	
LLVOA	TOLUENE-D8	UG/KG			100		99	101		104	
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG			97		98	93		100	
LLVOA	CHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	ACETONE	UG/KG			12 UJ		11 U	12 U		12 U	
LLVOA	1,1-DICHLOROETHENE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	CARBON DISULFIDE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,3-DICHLOROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLVOA	1,4-DICHLOROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLVOA	1,2-DICHLOROBENZENE	UG/KG	2000 R		400 U	2000 R	380 U	390 U	1900 R	400 U	2000 R
LLVOA	METHYLENE CHLORIDE	UG/KG			12 U		11 U	12 U		12 U	
LLVOA	1,1-DICHLOROETHANE	UG/KG			12 U		11 U	12 U		12 U	
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	GAMMA BHC (LINDANE)	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	HEPTACHLOR	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	ALDRIN	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	HEPTACHLOR EPOXIDE	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	ALPHA ENDOSULFAN	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	DIELDRIN	UG/KG			4 U		3.7 U	3.8 U		4 U	

308 363

D-69

308 364

Analytical Data Summary: Deep Soil

		Station ID:	BS17	BS18	BS18	BS19	BS19	BS19	BS20	BS20	BS21	BS22
		Sample ID:	SB255	SB265	SB265A	SB275	SB275A	SB275DL	SB285	SB285DL	SB295	SB305
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95	10/12/95
Group	Parameter	Units										
LLSVOA	2,4,5-TRICHLOROPHENOL	UG/KG	980 U	900 U	900 U	1000 R	1000 U	5100 U	970 R	4800 U	990 U	990 U
LLSVOA	2-CHLORONAPHTHALENE	UG/KG	390 U	360 U	360 U	410 R	410 U	2000 U	390 R	1900 U	400 U	400 U
LLVOA	CHLOROMETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	METHYL ETHYL KETONE (2-BUTANONE)	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	TOTAL 1,2-DICHLOROETHENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	CHLOROFORM	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,1,1-TRICHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	CARBON TETRACHLORIDE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	BENZENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,2-DICHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	TRICHLOROETHYLENE (TCE)	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,2-DICHLOROPROPANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	BROMODICHLOROMETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	VINYL CHLORIDE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	cis-1,3-DICHLOROPROPENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	TOLUENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	trans-1,3-DICHLOROPROPENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,1,2-TRICHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	2-HEXANONE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	TETRACHLOROETHYLENE(PCE)	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	DIBROMOCHLOROMETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	CHLOROBENZENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	ETHYLBENZENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	BROMOMETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	Total Xylenes	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	STYRENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	BROMOFORM	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,1,2,2-TETRACHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,2-DICHLOROETHANE-D4	UG/KG	100	105	107	102	105		106		101	103
LLVOA	TOLUENE-D8	UG/KG	103	108	111	102	108		114		104	108
LLVOA	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)	UG/KG	100	106	108	102	107		103		99	97
LLVOA	CHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	ACETONE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,1-DICHLOROETHENE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	CARBON DISULFIDE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,3-DICHLOROBENZENE	UG/KG	390 U	360 U	360 U	410 U	410 U	2000 R	390 U	1900 R	400 U	400 U
LLVOA	1,4-DICHLOROBENZENE	UG/KG	390 U	360 U	360 U	410 U	410 U	2000 R	390 U	1900 R	400 U	400 U
LLVOA	1,2-DICHLOROBENZENE	UG/KG	390 U	360 U	360 U	410 U	410 U	2000 R	390 U	1900 R	400 U	400 U
LLVOA	METHYLENE CHLORIDE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
LLVOA	1,1-DICHLOROETHANE	UG/KG	12 U	11 U	11 U	12 U	12 U		12 U		12 U	12 U
PEST	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	GAMMA BHC (LINDANE)	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	HEPTACHLOR	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	ALDRIN	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	HEPTACHLOR EPOXIDE	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	ALPHA ENDOSULFAN	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2 U
PEST	DIELDRIN	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U

D-70

Analytical Data Summary: Deep Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS01 SB095 5 to 6 10/9/95	BS02 SB105 5 to 6 10/9/95	BS03 SB115 5 to 6 10/9/95	BS04 SB125 5 to 6 10/10/95	BS04 SB125DL 5 to 6 10/10/95	BS05 SB135 5 to 6 10/10/95	BS06 SB145 5 to 6 10/10/95	BS07 SB155 5 to 6 10/10/95	BS07 SB155A 5 to 6 10/10/95
PEST	p,p'-DDE	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	1.3 J	4.1 U	4.2 U
PEST	ENDRIN	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	BETA ENDOSULFAN	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	p,p'-DDD	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	ENDOSULFAN SULFATE	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	p,p'-DDT	UG/KG	3.9 U	3.7 U	3.9 U	7.2 J	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	METHOXYCHLOR	UG/KG	20 U	19 U	20 U	41 U	410 R	21 U	19 U	21 U	22 U
PEST	ENDRIN KETONE	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	ENDRIN ALDEHYDE	UG/KG	3.9 U	3.7 U	3.9 U	8 U	80 R	4.1 U	3.7 U	4.1 U	4.2 U
PEST	ALPHA-CHLORDANE	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	GAMMA-CHLORDANE	UG/KG	2 U	1.9 U	2 U	4.1 U	41 R	2.1 U	1.9 U	2.1 U	2.2 U
PEST	TOXAPHENE	UG/KG	200 U	190 U	200 U	410 U	4100 R	210 U	190 U	210 U	220 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	80 U	75 U	79 U	160 U	1600 R	83 U	76 U	83 U	85 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	39 U	37 U	39 U	80 U	800 R	41 U	37 U	41 U	42 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	78	86	77	83	83	69	82	76	75
PEST	DECACHLOROBIPHENYL	UG/KG	90	93	85	100	120	106	100	90	93
TOTMETAL	ALUMINUM	MG/KG	11800 =	13300 =	13900 =	14500 =		13700 =	11500 =	9820 =	8310 =
TOTMETAL	ANTIMONY	MG/KG	3.5 U	3.3 U	3.5 U	3.6 U		3.6 U	3.3 U	3.6 U	3.6 U
TOTMETAL	ARSENIC	MG/KG	10.4 =	9.4 =	11.7 =	12.1 =		14.1 =	8.3 =	4.9 =	5.4 =
TOTMETAL	BARIUM	MG/KG	154 =	211 =	166 =	120 =		243 =	195 =	90.8 =	83.1 =
TOTMETAL	BERYLLIUM	MG/KG	0.57 J	0.62 J	0.67 J	0.59 J		0.69 J	0.59 J	0.49 U	0.48 U
TOTMETAL	CADMIUM	MG/KG	0.64 U	0.61 U	0.64 U	0.66 U		0.67 U	0.61 U	0.71 J	0.66 U
TOTMETAL	CALCIUM	MG/KG	983 J	745 J	1130 J	623 J		1420 J	1070 J	2200 J	2010 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	13 =	16.8 =	14.4 =	15.2 J		15.4 J	12.4 J	13.6 J	11.8 J
TOTMETAL	COBALT	MG/KG	8.9 J	9.4 J	11.6 J	11.4 J		20.4 =	9.2 J	8 J	6.6 J
TOTMETAL	COPPER	MG/KG	17.6 =	17.6 =	21.1 =	19.9 J		23.1 J	17.6 J	15.5 J	15 J
TOTMETAL	IRON	MG/KG	22200 =	22600 =	24900 =	22900 =		24700 =	20300 =	17500 =	16200 =
TOTMETAL	LEAD	MG/KG	11.9 =	13 =	13.2 =	22.7 J		14.3 J	12.6 J	7.7 J	8.6 J
TOTMETAL	MAGNESIUM	MG/KG	2720 =	2880 =	3170 =	2930 =		3370 =	2510 =	2550 =	2310 =
TOTMETAL	MANGANESE	MG/KG	609 =	494 =	936 =	695 =		949 =	812 =	721 =	573 =
TOTMETAL	MERCURY	MG/KG	0.1 U	0.1 U	0.1 U	0.11 U		0.11 U	0.11 J	0.11 U	0.11 U
TOTMETAL	NICKEL	MG/KG	20.4 =	20.6 =	22.3 =	17.9 =		22.4 =	19.3 =	18.9 =	17 =
TOTMETAL	POTASSIUM	MG/KG	889 J	1360 =	1010 J	1140 J		1150 J	987 J	879 J	686 J
TOTMETAL	SELENIUM	MG/KG	0.31 UJ	0.3 UJ	0.32 J	0.32 U		0.32 U	0.29 U	0.32 U	0.32 U
TOTMETAL	SILVER	MG/KG	0.4 U	0.39 U	0.4 U	0.42 U		0.42 U	0.38 U	0.42 U	0.42 U
TOTMETAL	SODIUM	MG/KG	128 U	59.1 U	120 U	85.2 U		235 U	140 U	167 U	144 U
TOTMETAL	THALLIUM	MG/KG	0.43 U	0.41 U	0.43 U	0.44 U		0.43 U	0.41 U	0.45 U	0.44 U
TOTMETAL	VANADIUM	MG/KG	26.1 =	30.3 =	31 =	30.6 =		30.4 =	24.8 =	26.2 =	21.3 =
TOTMETAL	ZINC	MG/KG	62 =	60.7 =	73.1 =	68.3 J		75.3 J	39.9 J	43.2 J	42.7 J

308 365

D-71

Analytical Data Summary: Deep Soil

Group	Parameter	Units	BS07	BS08	BS08	BS09	BS09	BS10	BS10	BS11	BS12
		Sample ID:	SB135DL	SB165	SB165DL	SB175	SB175DL	SB184	SB184D	SB195	SB205
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	4 to 6	4 to 6	5 to 6	5 to 6
		Sample Date:	10/10/95	10/10/95	10/10/95	10/10/95	10/10/95	10/11/95	10/11/95	10/11/95	10/11/95
PEST	p,p'-DDE	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	ENDRIN	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	BETA ENDOSULFAN	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	p,p'-DDD	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	ENDOSULFAN SULFATE	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	p,p'-DDT	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	METHOXYCHLOR	UG/KG		21 U		19 U		20 U		19 U	20 U
PEST	ENDRIN KETONE	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	ENDRIN ALDEHYDE	UG/KG		4.1 U		3.7 U		3.8 U		3.7 U	4 U
PEST	ALPHA-CHLORDANE	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	GAMMA-CHLORDANE	UG/KG		2.1 U		1.9 U		2 U		1.9 U	2 U
PEST	TOXAPHENE	UG/KG		210 U		190 U		200 U		190 U	200 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG		83 U		76 U		77 U		75 U	81 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG		41 U		37 U		38 U		37 U	40 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG		77		76		78		68	80
PEST	DECACHLOROBIPHENYL	UG/KG		94		94		91		86	94
TOTMETAL	ALUMINUM	MG/KG		10000 =		14300 =		14900 =	14472.625	9070 =	8200 =
TOTMETAL	ANTIMONY	MG/KG		3.7 U		3.3 U		3.4 UJ	3.3563	3.3 UJ	3.5 UJ
TOTMETAL	ARSENIC	MG/KG		7.9 =		11.7 =		9.5 =	9.3241	8.4 =	3.5 =
TOTMETAL	BARIUM	MG/KG		107 =		95 =		113 =	69.8966	176 =	236 =
TOTMETAL	BERYLLIUM	MG/KG		0.51 J		0.54 J		0.54 J	0.4989	0.53 J	0.65 J
TOTMETAL	CADMIUM	MG/KG		0.68 U		0.71 J		0.62 U	0.6207	0.61 U	0.65 U
TOTMETAL	CALCIUM	MG/KG		1240 J		587 J		730 J	632.2184	1450 =	2630 =
TOTMETAL	CHROMIUM, TOTAL	MG/KG		14.1 J		14.4 J		16.3 =	16.9379	11.2 =	10.2 =
TOTMETAL	COBALT	MG/KG		9.8 J		9.8 J		20.2 =	10.7655	8.8 J	7.6 J
TOTMETAL	COPPER	MG/KG		17.8 J		20.2 J		19.7 =	16.7747	11.1 =	8 =
TOTMETAL	IRON	MG/KG		20900 =		23900 =		23500 =	21502.703	20300 =	10300 =
TOTMETAL	LEAD	MG/KG		11.3 J		13.9 J		15 =	13.9494	11.1 =	10.4 =
TOTMETAL	MAGNESIUM	MG/KG		2440 =		2960 =		2310 =	2354.3287	2610 =	1250 =
TOTMETAL	MANGANESE	MG/KG		634 =		772 =		1030 J	552.4919	552 J	1570 J
TOTMETAL	MERCURY	MG/KG		0.11 U		0.11 U		0.1 U	0.0985	0.09 U	0.1 U
TOTMETAL	NICKEL	MG/KG		18.9 =		18.6 =		17.5 =	15.2667	20.4 =	17.7 =
TOTMETAL	POTASSIUM	MG/KG		1160 J		1480 =		990 J	955.7747	814 J	716 J
TOTMETAL	SELENIUM	MG/KG		0.33 U		0.29 U		0.3 UJ	0.2989	0.29 UJ	0.31 UJ
TOTMETAL	SILVER	MG/KG		0.43 U		0.42 J		0.56 J	0.3908	0.38 U	0.41 U
TOTMETAL	SODIUM	MG/KG		70.4 U		72.8 U		66.2 U	80.577	129 U	55.1 U
TOTMETAL	THALLIUM	MG/KG		0.46 U		0.41 U		0.42 U	0.4161	0.41 U	0.44 U
TOTMETAL	VANADIUM	MG/KG		26.9 =		29.3 =		31.3 =	29.5448	23.1 =	17 =
TOTMETAL	ZINC	MG/KG		55.6 J		66.9 J		79.5 J	56.7241	76.2 J	37.5 J

308 366

D-72

Analytical Data Summary: Deep Soil

		StationID:	BS12	BS12	BS13	BS13	BS14	BS15	BS15	BS16	BS16
		Sample ID:	SB205DL	SB205RE	SB215	SB215DL	SB225	SB235	SB235DL	SB245	SB245DL
		Sample Depth:	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6
		Sample Date:	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95	10/11/95
Group	Parameter	Units									
PEST	p,p'-DDE	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	ENDRIN	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	BETA ENDOSULFAN	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	p,p'-DDD	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	ENDOSULFAN SULFATE	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	p,p'-DDT	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	METHOXYCHLOR	UG/KG			20 U		19 U	20 U		20 U	
PEST	ENDRIN KETONE	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	ENDRIN ALDEHYDE	UG/KG			4 U		3.7 U	3.8 U		4 U	
PEST	ALPHA-CHLORDANE	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	GAMMA-CHLORDANE	UG/KG			2 U		1.9 U	2 U		2 U	
PEST	TOXAPHENE	UG/KG			200 U		190 U	200 U		200 U	
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG			40 U		37 U	38 U		40 U	
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG			81 U		76 U	78 U		81 U	
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG			40 U		37 U	38 U		40 U	
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG			40 U		37 U	38 U		40 U	
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG			40 U		37 U	38 U		40 U	
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG			40 U		37 U	38 U		40 U	
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG			40 U		37 U	38 U		40 U	
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG			83		77	60		73	
PEST	DECACHLOROBIPHENYL	UG/KG			100		95	69		87	
TOTMETAL	ALUMINUM	MG/KG			12400 =		10200 =	7600 =		12300 =	
TOTMETAL	ANTIMONY	MG/KG			3.5 UJ		3.3 UJ	3.4 UJ		3.5 UJ	
TOTMETAL	ARSENIC	MG/KG			13.4 =		8 =	6.1 =		3.6 =	
TOTMETAL	BARIUM	MG/KG			187 =		135 =	111 =		89.9 =	
TOTMETAL	BERYLLIUM	MG/KG			0.63 J		0.49 J	0.4 U		0.59 J	
TOTMETAL	CADMIUM	MG/KG			0.63 U		0.73 J	0.62 U		0.64 U	
TOTMETAL	CALCIUM	MG/KG			1090 J		1550 =	1040 J		1590 =	
TOTMETAL	CHROMIUM, TOTAL	MG/KG			12.1 =		12.2 =	9.3 =		15.8 =	
TOTMETAL	COBALT	MG/KG			9.8 J		12.2 =	6.5 J		9.3 J	
TOTMETAL	COPPER	MG/KG			21 =		17.2 =	12.4 =		11 =	
TOTMETAL	IRON	MG/KG			23200 =		19800 =	12300 =		15800 =	
TOTMETAL	LEAD	MG/KG			15.5 =		9.8 =	10.5 =		7.8 =	
TOTMETAL	MAGNESIUM	MG/KG			2900 =		2680 =	1650 =		2240 =	
TOTMETAL	MANGANESE	MG/KG			1020 J		609 J	331 J		576 J	
TOTMETAL	MERCURY	MG/KG			0.11 U		0.1 U	0.1 U		0.1 U	
TOTMETAL	NICKEL	MG/KG			19.7 =		19.1 =	11.6 =		17.6 =	
TOTMETAL	POTASSIUM	MG/KG			861 J		1080 J	781 J		522 J	
TOTMETAL	SELENIUM	MG/KG			0.31 UJ		0.3 UJ	0.3 UJ		1.2 UJ	
TOTMETAL	SILVER	MG/KG			0.41 U		0.39 U	0.39 U		0.41 U	
TOTMETAL	SODIUM	MG/KG			169 U		91.5 U	50.7 U		90 U	
TOTMETAL	THALLIUM	MG/KG			0.44 U		0.41 U	0.42 UJ		0.43 U	
TOTMETAL	VANADIUM	MG/KG			28 =		24.2 =	18 =		31.7 =	
TOTMETAL	ZINC	MG/KG			71.3 J		59 J	44.1 J		33.5 J	

308 368

Analytical Data Summary: Deep Soil

Group	Parameter	StationID: Sample ID: Sample Depth: Sample Date: Units	BS17 SB255 5 to 6 10/12/95	BS18 SB265 5 to 6 10/12/95	BS18 SB265A 5 to 6 10/12/95	BS19 SB275 5 to 6 10/12/95	BS19 SB275A 5 to 6 10/12/95	BS19 SB275DL 5 to 6 10/12/95	BS20 SB285 5 to 6 10/12/95	BS20 SB285DL 5 to 6 10/12/95	BS21 SB295 5 to 6 10/12/95	BS22 SB305 5 to 6 10/12/95
PEST	p,p'-DDE	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	ENDRIN	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	BETA ENDOSULFAN	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	p,p'-DDD	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	ENDOSULFAN SULFATE	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	p,p'-DDT	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	METHOXYCHLOR	UG/KG	20 U	18 U	18 U	21 U	21 U		20 U		20 U	20 U
PEST	ENDRIN KETONE	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	ENDRIN ALDEHYDE	UG/KG	3.9 U	3.6 U	3.6 U	4 U	4 U		3.8 U		3.9 U	3.9 U
PEST	ALPHA-CHLORDANE	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2.6 =
PEST	GAMMA-CHLORDANE	UG/KG	2 U	1.8 U	1.8 U	2.1 U	2.1 U		2 U		2 U	2.2 =
PEST	TOXAPHENE	UG/KG	200 U	180 U	180 U	210 U	210 U		200 U		200 U	200 U
PEST	PCB-1016 (AROCHLOR 1016)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	PCB-1221 (AROCHLOR 1221)	UG/KG	79 U	73 U	73 U	82 U	82 U		77 U		80 U	80 U
PEST	PCB-1232 (AROCHLOR 1232)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	PCB-1242 (AROCHLOR 1242)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	PCB-1248 (AROCHLOR 1248)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	PCB-1254 (AROCHLOR 1254)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	PCB-1260 (AROCHLOR 1260)	UG/KG	39 U	36 U	36 U	40 U	40 U		38 U		39 U	39 U
PEST	2,4,5,6-TETRACHLORO-META-XYLENE	UG/KG	73	74	69	62	66		72		64	71
PEST	DECACHLOROBIPHENYL	UG/KG	85	86	84	74	83		84		81	84
TOTMETAL	ALUMINUM	MG/KG	10800 =	8200 =	7540 =	11200 =	12700 =		6820 =		8230 =	7380 =
TOTMETAL	ANTIMONY	MG/KG	3.5 UJ	3.2 UJ	3.2 UJ	3.6 UJ	3.6 UJ		3.4 UJ		3.5 UJ	3.5 UJ
TOTMETAL	ARSENIC	MG/KG	11.1 =	7.7 =	7.8 =	12.3 =	11.9 =		3.4 =		6.5 =	3.1 =
TOTMETAL	BARIUM	MG/KG	177 =	121 =	121 =	191 =	195 =		136 =		196 =	94.7 =
TOTMETAL	BERYLLIUM	MG/KG	0.68 U	0.42 U	0.39 U	0.61 U	0.67 U		0.4 U		0.61 U	0.41 U
TOTMETAL	CADMIUM	MG/KG	0.64 U	0.59 U	0.59 U	0.66 U	0.66 U		0.63 U		0.65 U	0.65 U
TOTMETAL	CALCIUM	MG/KG	1510 =	1650 =	1610 =	1140 J	1430 =		765 J		1100 J	511 J
TOTMETAL	CHROMIUM, TOTAL	MG/KG	12.3 =	13.1 =	12.8 =	11.8 =	14.9 =		8.7 =		18 =	10.3 =
TOTMETAL	COBALT	MG/KG	10.5 J	7.6 J	7.1 J	8.7 J	8.3 J		5.2 J		14.3 =	5 J
TOTMETAL	COPPER	MG/KG	19.6 =	15 =	15.2 =	20 =	23.6 =		7.4 =		10.5 =	9 =
TOTMETAL	IRON	MG/KG	22400 =	18800 =	17900 =	22100 =	22700 =		9380 =		17200 =	8340 =
TOTMETAL	LEAD	MG/KG	13.3 =	9.3 =	9.4 =	12.5 =	11.8 =		6.9 =		13 =	8.6 =
TOTMETAL	MAGNESIUM	MG/KG	2950 =	2820 =	2720 =	2850 =	3160 =		1200 =		1630 =	1240 =
TOTMETAL	MANGANESE	MG/KG	831 =	506 =	488 =	948 =	800 =		616 =		1580 =	256 =
TOTMETAL	MERCURY	MG/KG	0.11 U	0.1 U	0.09 U	0.1 U	0.11 U		0.1 U		0.1 U	0.11 U
TOTMETAL	NICKEL	MG/KG	20.4 =	18.8 =	17.4 =	20.2 =	20.9 =		9.9 =		20 =	9 J
TOTMETAL	POTASSIUM	MG/KG	1030 J	586 J	506 J	817 J	1130 J		606 J		483 J	499 J
TOTMETAL	SELENIUM	MG/KG	0.31 U	0.29 UJ	0.34 J	0.32 UJ	0.34 J		0.31 U		0.31 U	0.31 U
TOTMETAL	SILVER	MG/KG	0.41 U	0.37 U	0.37 U	0.42 U	0.42 U		0.4 U		0.41 U	0.41 U
TOTMETAL	SODIUM	MG/KG	172 U	282 U	262 U	180 U	205 U		36 U		40.3 U	38.4 U
TOTMETAL	THALLIUM	MG/KG	0.43 U	0.4 U	0.4 U	0.45 U	0.44 U		0.42 U		0.43 U	0.43 U
TOTMETAL	VANADIUM	MG/KG	27.1 =	21.2 =	19.2 =	25.9 =	29.4 =		15 =		27.5 =	18.6 =
TOTMETAL	ZINC	MG/KG	72.9 J	49.3 J	48.6 J	70 J	72.1 J		32.1 J		39.7 J	30.9 J

D-74

308 369

Analytical Data Summary: Groundwater

Group	Parameter	Units	MW16		MW19		MW19		MW24		MW24		MW28		MW30		MW45		MW46		MW48		MW49		MW50		MW52		MW33	
		Sample ID:	MW161		MW191		MW191RE		MW241		MW241A		MW281		MW301		MW451		MW461		MW481		MW491		MW501		MW521		MW331	
		Sample Depth:	0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0		0 to 0	
		Sample Date:	2/13/96		2/7/96		2/7/96		2/10/96		2/10/96		2/7/96		2/10/96		2/8/96		2/9/96		2/8/96		2/9/96		2/11/96		2/11/96		2/13/96	
Group	Parameter	Units																												
Herb	DALAPON	UG/L	5	U	5	U			5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Herb	DICAMBA	UG/L	0.5	U	0.5	U			0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Herb	MCPA	UG/L	250	U	250	U			250	U	250	U	250	U	250	U	250	U	250	U	250	U	250	U	250	U	250	U	250	U
Herb	MCPP	UG/L	250	U	250	U			250	U	250	U	250	U	250	U	250	U	250	U	1000	U	250	U	250	U	250	U	250	U
Herb	DICHLORPROP	UG/L	2.5	U	2.5	U			2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Herb	2,4-D (DICHLOROPHENOXYACETIC ACID)	UG/L	2.5	U	2.5	U			2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Herb	SILVEX (2,4,5-TP)	UG/L	0.5	U	0.5	U			0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Herb	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	UG/L	0.5	U	0.5	U			0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Herb	2,4-DB	UG/L	2.5	U	2.5	U			2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Herb	DINOSEB	UG/L	0.5	U	0.5	U			0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Metals TAL	ALUMINUM	UG/L	2670	=	235	J			718	J	973	J	287	J	166	UJ	586	J	101	UJ	192	UJ	86.2	UJ	174	UJ	111	UJ	203	U
Metals TAL	ANTIMONY	UG/L	10.9	U	16.9	U			10.9	U	10.9	U	19.7	U	11.8	U	17.2	J	10.9	U	10.9	U	10.9	U	10.9	U	10.9	U	10.9	U
Metals TAL	ARSENIC	UG/L	1.5	UJ	1.3	U			0.68	U	0.68	U	0.68	U	0.68	U	1	UJ	0.68	U	0.68	UJ	0.68	U	0.68	U	0.68	U	0.68	UJ
Metals TAL	BERYLLIUM	UG/L	0.15	U	0.15	U			0.15	U	0.15	J	0.21	J	0.15	U	0.35	J	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
Metals TAL	CADMIUM	UG/L	1.8	U	1.8	U			1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	3.6	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Metals TAL	CHROMIUM, TOTAL	UG/L	34	=	2.2	U			20.3	=	24.1	=	2.2	U	2.2	U	4.9	U	4.6	U	2.6	U	3	U	4.8	U	3.3	U	2.2	U
Metals TAL	COPPER	UG/L	12.3	U	315	=			4	U	5.6	U	4.4	J	2	U	3.8	J	2	U	2	J	2	U	2	U	2	U	2	U
Metals TAL	LEAD	UG/L	7.6	=	3.9	=			5.5	U	5.1	U	1.4	U	1.4	U	2.3	UJ	2.3	U	2.3	UJ	2.6	J	2.3	UJ	2.3	UJ	1.4	U
Metals TAL	MERCURY	UG/L	0.07	U	0.1	U			0.08	UJ	0.36	UJ	0.14	U	0.07	U	0.19	U	0.07	UJ	0.07	U	0.07	UJ	0.07	U	0.07	U	0.07	U
Metals TAL	NICKEL	UG/L	25.6	J	12.1	J			9.4	J	15.9	J	7.7	U	7.7	U	7.7	U	7.7	U	7.7	U	7.7	U	7.7	U	8.4	U	7.7	U
Metals TAL	SELENIUM	UG/L	2.3	UJ	2.3	UJ			2.3	UJ	2.3	UJ	4.6	UJ	2.3	UJ	2.3	UJ	2.3	UJ	2.3	U	2.3	UJ	2.9	UJ	2.3	UJ	2.9	J
Metals TAL	SILVER	UG/L	2.2	U	2.2	UJ			2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	UJ	2.2	U
Metals TAL	THALLIUM	UG/L	0.86	UJ	0.86	UJ			0.86	UJ	0.86	UJ	0.86	UJ	0.86	UJ	0.86	UJ	0.86	U	0.86	UJ	0.86	U	0.86	UJ	0.86	UJ	0.86	UJ
Metals TAL	ZINC	UG/L	38.9	U	62.4	U			10.8	U	14	U	17.8	U	12.9	U	12.2	U	54.9	U	11.3	U	15	U	13.2	U	7.2	U	10.4	U
Metals TAL	BARIUM	UG/L	66.7	J	42.9	J			49.5	J	50.5	J	47.6	J	116	J	127	J	99.3	J	91.1	J	96.4	J	307	=	177	J	122	J
Metals TAL	CALCIUM	UG/L	44900	=	17800	=			9950	=	9980	=	14000	=	22900	=	34700	=	17400	=	16500	=	16500	=	49200	=	41700	=	29700	=
Metals TAL	COBALT	UG/L	12.3	J	6	U			2.2	J	4.2	J	6.1	U	1.8	U	9.5	J	8.5	U	4.6	U	1.5	U	10.6	U	18.2	J	19.6	J
Metals TAL	IRON	UG/L	3970	=	155	UJ			5190	=	7450	=	598	J	340	UJ	2200	J	648	=	1120	J	328	U	4900	=	7960	=	3610	=
Metals TAL	MAGNESIUM	UG/L	19100	=	6160	=			5250	=	5270	=	6470	=	12000	=	19500	=	8660	=	8690	=	8140	=	24000	=	22500	=	15800	=
Metals TAL	MANGANESE	UG/L	143	=	296	=			17.2	=	19.3	=	75.6	=	3.2	U	326	=	228	=	112	=	57.6	=	441	=	467	=	917	=
Metals TAL	POTASSIUM	UG/L	1300	J	4010	J			962	J	953	J	767	U	767	U	849	J	858	J	1350	J	1260	J	3330	J	1750	J	767	U
Metals TAL	SODIUM	UG/L	45200	J	13200	UJ			21300	UJ	21600	UJ	15000	UJ	17000	UJ	20300	UJ	27400	U	23100	UJ	14600	U	61200	=	74600	=	32300	J
Metals TAL	VANADIUM	UG/L	6.5	J	2.6	J			2.8	U	2.3	U	5.1	J	1.6	U	14.8	J	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U	1.6	U
Pest/PCB	ENDRIN KETONE	UG/L	0.1	U	0.1	U	0.1	R	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Pest/PCB	ENDRIN ALDEHYDE	UG/L	0.1	U	0.1	U	0.1	R	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Pest/PCB	ALPHA-CHLORDANE	UG/L	0.05	U	0.05	U	0.05	R	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Pest/PCB	GAMMA-CHLORDANE	UG/L	0.05	U	0.05	U	0.05	R	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Pest/PCB	TOXAPHENE	UG/L	5	U	5	U	5	R	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Pest/PCB	PCB-1016 (AROCHLOR 1016)	UG/L	1	U	1	U	1	R	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Pest/PCB	PCB-1221 (AROCHLOR 1221)	UG/L	2	U	2	U	2	R	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Pest/PCB	PCB-1232 (AROCHLOR 1232)	UG/L	1	U	1	U	1	R	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U

D-75

308 370

c08 8

Analytical Data Summary: Groundwater

		Station ID:	MW16	MW19	MW19	MW24	MW24	MW28	MW30	MW45	MW46	MW48	MW49	MW50	MW52	MW53
		Sample ID:	MW161	MW191	MW191RE	MW241	MW241A	MW281	MW301	MW451	MW461	MW481	MW491	MW501	MW521	MW531
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	2/13/96	2/7/96	2/7/96	2/10/96	2/10/96	2/7/96	2/10/96	2/8/96	2/9/96	2/8/96	2/9/96	2/11/96	2/11/96	2/13/96
Group	Parameter	Units														
Pest/PCB	PCB-1242 (AROCHLOR 1242)	UG/L	1 U	1 U	1 R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pest/PCB	PCB-1248 (AROCHLOR 1248)	UG/L	1 U	1 U	1 R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pest/PCB	PCB-1254 (AROCHLOR 1254)	UG/L	1 U	1 U	1 R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pest/PCB	PCB-1260 (AROCHLOR 1260)	UG/L	1 U	1 U	1 R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Pest/PCB	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	GAMMA BHC (LINDANE)	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	HEPTACHLOR	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	ALDRIN	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	HEPTACHLOR EPOXIDE	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	ALPHA ENDOSULFAN	UG/L	0.05 U	0.05 U	0.05 R	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Pest/PCB	DIELDRIN	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	p,p'-DDE	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	ENDRIN	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	BETA ENDOSULFAN	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	p,p'-DDD	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	ENDOSULFAN SULFATE	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	p,p'-DDT	UG/L	0.1 U	0.1 U	0.1 R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pest/PCB	METHOXYCHLOR	UG/L	0.5 U	0.5 U	0.5 R	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
SVOC	PHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	N-NITROSODI-n-PROPYLAMINE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	HEXACHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	NITROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	ISOPHORONE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2-NITROPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4-DIMETHYLPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	bis(2-CHLOROETHOXY) METHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4-DICHLOROPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	1,2,4-TRICHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	NAPHTHALENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-CHLOROANILINE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	HEXACHLOROBUTADIENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-CHLORO-3-METHYLPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2-METHYLNAPHTHALENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	HEXACHLOROCYCLOPENTADIENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4,6-TRICHLOROPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4,5-TRICHLOROPHENOL	UG/L	25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U

D-76

Analytical Data Summary: Groundwater

		Station ID:	MW16	MW19	MW19	MW24	MW24	MW28	MW30	MW45	MW46	MW48	MW49	MW50	MW52	MW53
		Sample ID:	MW161	MW191	MW191RE	MW241	MW241A	MW281	MW301	MW451	MW461	MW481	MW491	MW501	MW521	MW531
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	2/13/96	2/7/96	2/7/96	2/10/96	2/10/96	2/7/96	2/10/96	2/8/96	2/9/96	2/8/96	2/9/96	2/11/96	2/11/96	2/13/96
Group	Parameter	Units														
SVOC	2-CHLORONAPHTHALENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2-NITROANILINE	UG/L	25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SVOC	DIMETHYL PHTHALATE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2-CHLOROPHENOL	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,6-DINITROTOLUENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	ACENAPHTHYLENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	3-NITROANILINE	UG/L	25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SVOC	ACENAPHTHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4-DINITROPHENOL	UG/L	25 UJ	25 UJ		25 UJ	25 UJ	25 UJ	25 U	25 U	25 UJ	25 U	25 U	25 UJ	25 UJ	25 UJ
SVOC	4-NITROPHENOL	UG/L	25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SVOC	DIBENZOFURAN	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,4-DINITROTOLUENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	DIETHYL PHTHALATE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	FLUORENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	1,3-DICHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-CHLOROPHENYL PHENYL ETHER	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-NITROANILINE	UG/L	25 U	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
SVOC	4,6-DINITRO-2-METHYLPHENOL	UG/L	25 UJ	25 U		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 UJ	25 UJ	25 UJ
SVOC	N-NITROSODIPHENYLAMINE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-BROMOPHENYL PHENYL ETHER	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	HEXACHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	PENTACHLOROPHENOL	UG/L	5 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
SVOC	PHENANTHRENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	ANTHRACENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	CARBAZOLE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	1,4-DICHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	DI-n-BUTYL PHTHALATE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	FLUORANTHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	PYRENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	BENZYL BUTYL PHTHALATE	UG/L	10 U	10 U		2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	BENZO(a)ANTHRACENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	3,3'-DICHLOROBENZIDINE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	CHRYSENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	bis(2-ETHYLHEXYL) PHTHALATE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	DI-n-OCTYL PHTHALATE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	BENZO(b)FLUORANTHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	1,2-DICHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	BENZO(k)FLUORANTHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	BENZO(a)PYRENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	INDENO(1,2,3-c,d)PYRENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	DIBENZ(a,h)ANTHRACENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

D-77

.78 80

Analytical Data Summary: Groundwater

		StationID:	MW16	MW19	MW19	MW24	MW24	MW28	MW30	MW45	MW46	MW48	MW49	MW50	MW52	MW53
		Sample ID:	MW161	MW191	MW191RE	MW241	MW241A	MW281	MW301	MW451	MW461	MW481	MW491	MW501	MW521	MW531
		Sample Depth:	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0	0 to 0
		Sample Date:	2/13/96	2/7/96	2/7/96	2/10/96	2/10/96	2/7/96	2/10/96	2/8/96	2/9/96	2/8/96	2/9/96	2/11/96	2/11/96	2/13/96
Group	Parameter	Units														
SVOC	BENZO(g,h,i)PERYLENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2-METHYLPHENOL (o-CRESOL)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	2,2'-OXYBIS(1-CHLORO)PROPANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
SVOC	4-METHYLPHENOL (p-CRESOL)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CHLOROMETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	VINYL CHLORIDE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	BROMOMETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	ACETONE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	18 U	10 U	48 U	56 U	10 U
VOC	1,1-DICHLOROETHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CARBON DISULFIDE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	METHYLENE CHLORIDE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	1,1-DICHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	METHYL ETHYL KETONE (2-BUTANONE)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	TOTAL 1,2-DICHLOROETHENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CHLOROFORM	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	1,1,1-TRICHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CARBON TETRACHLORIDE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	BENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	1,2-DICHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	TRICHLOROETHYLENE (TCE)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J
VOC	1,2-DICHLOROPROPANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	BROMODICHLOROMETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	cis-1,3-DICHLOROPROPENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	TOLUENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	trans-1,3-DICHLOROPROPENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	1,1,2-TRICHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	2-HEXANONE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	TETRACHLOROETHYLENE(PCE)	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	DIBROMOCHLOROMETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	CHLOROBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	ETHYLBENZENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	Total Xylenes	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	STYRENE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	BROMOFORM	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
VOC	1,1,2,2-TETRACHLOROETHANE	UG/L	10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

308 372

D-78

TAB

Appendix E

Appendix E

Summary of Background Data Qualifiers

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
DIOXIN	Sub Soil	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sub Soil	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sub Soil	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Sub Soil	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Sub Soil	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sub Soil	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sub Soil	2,3,7,8-TETRACHLORODIBENZOFURAN	22					22	
DIOXIN	Sub Soil	DIOXIN/FURAN TOTAL EQUIVALENCY FACTOR	22	17				5	
DIOXIN	Sub Soil	OCTACHLORODIBENZO-p-DIOXIN	22	3		14		5	
DIOXIN	Sub Soil	OCTACHLORODIBENZOFURAN	22					22	
METAL	Sub Soil	ARSENIC	22	22					
METAL	Sub Soil	LEAD	22	16		6			
METAL	Sub Soil	SELENIUM	22			1		10	11
METAL	Sub Soil	THALLIUM	22					21	1
METAL	Sub Soil	ALUMINUM	22	22					
METAL	Sub Soil	ANTIMONY	22					9	13
METAL	Sub Soil	BARIUM	22	22					
METAL	Sub Soil	BERYLLIUM	22			14		8	
METAL	Sub Soil	CADMIUM	22			3		19	
METAL	Sub Soil	CALCIUM	22	6		16			
METAL	Sub Soil	CHROMIUM, TOTAL	22	16		6			
METAL	Sub Soil	COBALT	22	4		18			
METAL	Sub Soil	COPPER	22	16		6			
METAL	Sub Soil	IRON	22	22					
METAL	Sub Soil	MAGNESIUM	22	22					
METAL	Sub Soil	MANGANESE	22	15		7			
METAL	Sub Soil	NICKEL	22	21		1			
METAL	Sub Soil	POTASSIUM	22	2		20			
METAL	Sub Soil	SILVER	22			2		20	
METAL	Sub Soil	SODIUM	22					22	
METAL	Sub Soil	VANADIUM	22	22					
METAL	Sub Soil	ZINC	22	3		19			
METAL	Sub Soil	MERCURY	22			1		21	
PEST	Sub Soil	2,4,5,6-TETRACHLORO-META-XYLENE	22	22					
PEST	Sub Soil	ALDRIN	22					22	
PEST	Sub Soil	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Sub Soil	ALPHA ENDOSULFAN	22					22	
PEST	Sub Soil	ALPHA-CHLORDANE	22	1				21	
PEST	Sub Soil	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Sub Soil	BETA ENDOSULFAN	22					22	
PEST	Sub Soil	DECACHLOROBIPHENYL	22	22					
PEST	Sub Soil	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Sub Soil	DIELDRIN	22	1	1	1		19	
PEST	Sub Soil	ENDOSULFAN SULFATE	22					22	
PEST	Sub Soil	ENDRIN	22					22	
PEST	Sub Soil	ENDRIN ALDEHYDE	22					22	
PEST	Sub Soil	ENDRIN KETONE	22					22	
PEST	Sub Soil	GAMMA BHC (LINDANE)	22					22	
PEST	Sub Soil	GAMMA-CHLORDANE	22	1				21	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
PEST	Sub Soil	HEPTACHLOR	22					22	
PEST	Sub Soil	HEPTACHLOR EPOXIDE	22					22	
PEST	Sub Soil	METHOXYCHLOR	22					22	
PEST	Sub Soil	p,p'-DDD	22					22	
PEST	Sub Soil	p,p'-DDE	22			1		21	
PEST	Sub Soil	p,p'-DDT	22			1		21	
PEST	Sub Soil	PCB-1016 (AROCHLOR 1016)	22					22	
PEST	Sub Soil	PCB-1221 (AROCHLOR 1221)	22					22	
PEST	Sub Soil	PCB-1232 (AROCHLOR 1232)	22					22	
PEST	Sub Soil	PCB-1242 (AROCHLOR 1242)	22					22	
PEST	Sub Soil	PCB-1248 (AROCHLOR 1248)	22					22	
PEST	Sub Soil	PCB-1254 (AROCHLOR 1254)	22					22	
PEST	Sub Soil	PCB-1260 (AROCHLOR 1260)	22					22	
PEST	Sub Soil	TOXAPHENE	22					22	
SVOC	Sub Soil	1,2,4-TRICHLOROBENZENE	22				2	20	
SVOC	Sub Soil	1,2-DICHLOROBENZENE	22					22	
SVOC	Sub Soil	1,3-DICHLOROBENZENE	22					22	
SVOC	Sub Soil	1,4-DICHLOROBENZENE	22					22	
SVOC	Sub Soil	2,2'-OXYBIS(1-CHLORO)PROPANE	22				2	14	6
SVOC	Sub Soil	2,4,5-TRICHLOROPHENOL	22				2	20	
SVOC	Sub Soil	2,4,6-TRIBROMOPHENOL	22	22					
SVOC	Sub Soil	2,4,6-TRICHLOROPHENOL	22				2	20	
SVOC	Sub Soil	2,4-DICHLOROPHENOL	22				2	20	
SVOC	Sub Soil	2,4-DIMETHYLPHENOL	22				2	20	
SVOC	Sub Soil	2,4-DINITROPHENOL	22				2	16	4
SVOC	Sub Soil	2,4-DINITROTOLUENE	22				2	20	
SVOC	Sub Soil	2,6-DINITROTOLUENE	22				2	20	
SVOC	Sub Soil	2-CHLORONAPHTHALENE	22				2	20	
SVOC	Sub Soil	2-CHLOROPHENOL	22				2	20	
SVOC	Sub Soil	2-FLUOROBIPHENYL	22	22					
SVOC	Sub Soil	2-FLUOROPHENOL	22	22					
SVOC	Sub Soil	2-METHYLNAPHTHALENE	22				2	20	
SVOC	Sub Soil	2-METHYLPHENOL (o-CRESOL)	22				2	20	
SVOC	Sub Soil	2-NITROANILINE	22				2	20	
SVOC	Sub Soil	2-NITROPHENOL	22				2	20	
SVOC	Sub Soil	3,3'-DICHLOROBENZIDINE	22				2	19	1
SVOC	Sub Soil	3-NITROANILINE	22				2	20	
SVOC	Sub Soil	4,6-DINITRO-2-METHYLPHENOL	22				2	16	4
SVOC	Sub Soil	4-BROMOPHENYL PHENYL ETHER	22				2	20	
SVOC	Sub Soil	4-CHLORO-3-METHYLPHENOL	22				2	20	
SVOC	Sub Soil	4-CHLOROANILINE	22				2	20	
SVOC	Sub Soil	4-CHLOROPHENYL PHENYL ETHER	22				2	20	
SVOC	Sub Soil	4-METHYLPHENOL (p-CRESOL)	22				2	20	
SVOC	Sub Soil	4-NITROANILINE	22				2	20	
SVOC	Sub Soil	4-NITROPHENOL	22				2	16	4
SVOC	Sub Soil	ACENAPHTHENE	22				2	20	
SVOC	Sub Soil	ACENAPHTHYLENE	22				2	20	
SVOC	Sub Soil	ANTHRACENE	22				2	20	
SVOC	Sub Soil	BENZO(a)ANTHRACENE	22				2	19	1
SVOC	Sub Soil	BENZO(a)PYRENE	22				3	12	7
SVOC	Sub Soil	BENZO(b)FLUORANTHENE	22				3	12	7
SVOC	Sub Soil	BENZO(g,h,i)PERYLENE	22				3	12	7
SVOC	Sub Soil	BENZO(k)FLUORANTHENE	22				3	12	7
SVOC	Sub Soil	BENZYL BUTYL PHTHALATE	22				2	19	1
SVOC	Sub Soil	bis(2-CHLOROETHOXY) METHANE	22				2	20	
SVOC	Sub Soil	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	22				2	14	6
SVOC	Sub Soil	bis(2-ETHYLHEXYL) PHTHALATE	22				2	18	2

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
SVOC	Sub Soil	CARBAZOLE	22				2	20	
SVOC	Sub Soil	CHRYSENE	22				2	19	1
SVOC	Sub Soil	DI-n-BUTYL PHTHALATE	22				2	20	
SVOC	Sub Soil	DI-n-OCTYLPHTHALATE	22				2	17	3
SVOC	Sub Soil	DIBENZ(a,h)ANTHRACENE	22				3	12	7
SVOC	Sub Soil	DIBENZOFURAN	22				2	20	
SVOC	Sub Soil	DIETHYL PHTHALATE	22				2	20	
SVOC	Sub Soil	DIMETHYL PHTHALATE	22				2	20	
SVOC	Sub Soil	FLUORANTHENE	22			2	2	18	
SVOC	Sub Soil	FLUORENE	22				2	20	
SVOC	Sub Soil	HEXACHLOROBENZENE	22				2	20	
SVOC	Sub Soil	HEXACHLOROBUTADIENE	22				2	20	
SVOC	Sub Soil	HEXACHLOROCYCLOPENTADIENE	22				2	20	
SVOC	Sub Soil	HEXACHLOROETHANE	22				2	20	
SVOC	Sub Soil	INDENO(1,2,3-c,d)PYRENE	22				3	12	7
SVOC	Sub Soil	ISOPHORONE	22				2	20	
SVOC	Sub Soil	N-NITROSODI-n-PROPYLAMINE	22				2	14	6
SVOC	Sub Soil	N-NITROSODIPHENYLAMINE	22				2	20	
SVOC	Sub Soil	NAPHTHALENE	22				2	20	
SVOC	Sub Soil	NITROBENZENE	22				2	20	
SVOC	Sub Soil	PENTACHLOROPHENOL	22				2	20	
SVOC	Sub Soil	PHENANTHRENE	22				2	20	
SVOC	Sub Soil	PHENOL	22	6			2	14	
SVOC	Sub Soil	PYRENE	22			2	2	17	1
VOC	Sub Soil	1,1,1-TRICHLOROETHANE	22					22	
VOC	Sub Soil	1,1,2,2-TETRACHLOROETHANE	22					22	
VOC	Sub Soil	1,1,2-TRICHLOROETHANE	22					22	
VOC	Sub Soil	1,1-DICHLOROETHANE	22					22	
VOC	Sub Soil	1,1-DICHLOROETHENE	22					22	
VOC	Sub Soil	1,2-DICHLOROETHANE	22					22	
VOC	Sub Soil	1,2-DICHLOROPROPANE	22					22	
VOC	Sub Soil	1-BROMO-4-FLUOROBENZENE (4-	22	22					
VOC	Sub Soil	2-HEXANONE	22					22	
VOC	Sub Soil	ACETONE	22					9	13
VOC	Sub Soil	BENZENE	22					22	
VOC	Sub Soil	BROMODICHLOROMETHANE	22					22	
VOC	Sub Soil	BROMOFORM	22					22	
VOC	Sub Soil	BROMOMETHANE	22					22	
VOC	Sub Soil	CARBON DISULFIDE	22			2		20	
VOC	Sub Soil	CARBON TETRACHLORIDE	22					22	
VOC	Sub Soil	CHLOROBENZENE	22					22	
VOC	Sub Soil	CHLOROETHANE	22					22	
VOC	Sub Soil	CHLOROFORM	22					22	
VOC	Sub Soil	CHLOROMETHANE	22					22	
VOC	Sub Soil	cis-1,3-DICHLOROPROPENE	22					22	
VOC	Sub Soil	DIBROMOCHLOROMETHANE	22					22	
VOC	Sub Soil	ETHYLBENZENE	22					22	
VOC	Sub Soil	METHYL ETHYL KETONE (2-BUTANONE)	22					22	
VOC	Sub Soil	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	22					22	
VOC	Sub Soil	METHYLENE CHLORIDE	22					22	
VOC	Sub Soil	STYRENE	22					22	
VOC	Sub Soil	TETRACHLOROETHYLENE(PCE)	22					22	
VOC	Sub Soil	TOLUENE	22					22	
VOC	Sub Soil	TOLUENE-D8	22	22					
VOC	Sub Soil	TOTAL 1,2-DICHLOROETHENE	22					22	
VOC	Sub Soil	Total Xylenes	22			4		18	
VOC	Sub Soil	trans-1,3-DICHLOROPROPENE	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
VOC	Sub Soil	TRICHLOROETHYLENE (TCE)	22					22	
VOC	Sub Soil	VINYL CHLORIDE	22					22	
HERB	Sub Soil	2,4 DB	22				1	21	
HERB	Sub Soil	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	22				1	21	
HERB	Sub Soil	2,4-D (DICHLOROPHENOXYACETIC ACID)	22				1	21	
HERB	Sub Soil	2,4-DICHLOROPHENYLACETIC ACID	22	22					
HERB	Sub Soil	DALAPON	22				1	21	
HERB	Sub Soil	DICAMBA	22				1	21	
HERB	Sub Soil	DICHLOROPROP	22				1	12	9
HERB	Sub Soil	DINOSEB	22				1	21	
HERB	Sub Soil	MCPA	22				1	21	
HERB	Sub Soil	MCPP	22				1	21	
HERB	Sub Soil	SILVEX (2,4,5-TP)	22				1	21	
METAL	GW	ARSENIC	12					8	4
METAL	GW	LEAD	12	2		1		5	4
METAL	GW	SELENIUM	12			1		1	10
METAL	GW	THALLIUM	12					2	10
METAL	GW	ALUMINUM	12	1		4		1	6
METAL	GW	ANTIMONY	12			1		11	
METAL	GW	BARIUM	12	1		11			
METAL	GW	BERYLLIUM	12			2		10	
METAL	GW	CADMIUM	12					12	
METAL	GW	CALCIUM	12	12					
METAL	GW	CHROMIUM, TOTAL	12	2				10	
METAL	GW	COBALT	12			5		7	
METAL	GW	COPPER	12	1		3		8	
METAL	GW	IRON	12	6		3		1	2
METAL	GW	MAGNESIUM	12	12					
METAL	GW	MANGANESE	12	11				1	
METAL	GW	NICKEL	12			3		9	
METAL	GW	POTASSIUM	12			9		3	
METAL	GW	SILVER	12					2	10
METAL	GW	SODIUM	12	2		2		2	6
METAL	GW	VANADIUM	12			4		8	
METAL	GW	ZINC	12					12	
METAL	GW	MERCURY	12					9	3
PEST	GW	2,4,5,6-TETRACHLORO-META-XYLENE	12	12					
PEST	GW	ALDRIN	12					12	
PEST	GW	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	12					12	
PEST	GW	ALPHA ENDOSULFAN	12					12	
PEST	GW	ALPHA-CHLORDANE	12					12	
PEST	GW	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	12					12	
PEST	GW	BETA ENDOSULFAN	12					12	
PEST	GW	DECACHLOROBIPHENYL	12	12					
PEST	GW	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	12					12	
PEST	GW	DIELDRIN	12					12	
PEST	GW	ENDOSULFAN SULFATE	12					12	
PEST	GW	ENDRIN	12					12	
PEST	GW	ENDRIN ALDEHYDE	12					12	
PEST	GW	ENDRIN KETONE	12					12	
PEST	GW	GAMMA BHC (LINDANE)	12					12	
PEST	GW	GAMMA-CHLORDANE	12					12	
PEST	GW	HEPTACHLOR	12					12	
PEST	GW	HEPTACHLOR EPOXIDE	12					12	
PEST	GW	METHOXYCHLOR	12					12	
PEST	GW	p,p'-DDD	12					12	
PEST	GW	p,p'-DDE	12					12	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
PEST	GW	p,p'-DDT	12					12	
PEST	GW	PCB-1016 (AROCHLOR 1016)	12					12	
PEST	GW	PCB-1221 (AROCHLOR 1221)	12					12	
PEST	GW	PCB-1232 (AROCHLOR 1232)	12					12	
PEST	GW	PCB-1242 (AROCHLOR 1242)	12					12	
PEST	GW	PCB-1248 (AROCHLOR 1248)	12					12	
PEST	GW	PCB-1254 (AROCHLOR 1254)	12					12	
PEST	GW	PCB-1260 (AROCHLOR 1260)	12					12	
PEST	GW	TOXAPHENE	12					12	
SVOC	GW	1,2,4-TRICHLOROBENZENE	12					12	
SVOC	GW	1,2-DICHLOROBENZENE	12					12	
SVOC	GW	1,3-DICHLOROBENZENE	12					12	
SVOC	GW	1,4-DICHLOROBENZENE	12					12	
SVOC	GW	2,2'-OXYBIS(1-CHLORO)PROPANE	12					12	
SVOC	GW	2,4,5-TRICHLOROPHENOL	12					12	
SVOC	GW	2,4,6-TRIBROMOPHENOL	12	12					
SVOC	GW	2,4,6-TRICHLOROPHENOL	12					12	
SVOC	GW	2,4-DICHLOROPHENOL	12					12	
SVOC	GW	2,4-DIMETHYLPHENOL	12					12	
SVOC	GW	2,4-DINITROPHENOL	12					4	8
SVOC	GW	2,4-DINITROTOLUENE	12					12	
SVOC	GW	2,6-DINITROTOLUENE	12					12	
SVOC	GW	2-CHLORONAPHTHALENE	12					12	
SVOC	GW	2-CHLOROPHENOL	12					12	
SVOC	GW	2-FLUOROBIPHENYL	12	12					
SVOC	GW	2-FLUOROPHENOL	12	12					
SVOC	GW	2-METHYLNAPHTHALENE	12					12	
SVOC	GW	2-METHYLPHENOL (o-CRESOL)	12					12	
SVOC	GW	2-NITROANILINE	12					12	
SVOC	GW	2-NITROPHENOL	12					12	
SVOC	GW	3,3'-DICHLOROBENZIDINE	12					12	
SVOC	GW	3-NITROANILINE	12					12	
SVOC	GW	4,6-DINITRO-2-METHYLPHENOL	12					8	4
SVOC	GW	4-BROMOPHENYL PHENYL ETHER	12					12	
SVOC	GW	4-CHLORO-3-METHYLPHENOL	12					12	
SVOC	GW	4-CHLOROANILINE	12					12	
SVOC	GW	4-CHLOROPHENYL PHENYL ETHER	12					12	
SVOC	GW	4-METHYLPHENOL (p-CRESOL)	12					12	
SVOC	GW	4-NITROANILINE	12					12	
SVOC	GW	4-NITROPHENOL	12					12	
SVOC	GW	ACENAPHTHENE	12					12	
SVOC	GW	ACENAPHTHYLENE	12					12	
SVOC	GW	ANTHRACENE	12					12	
SVOC	GW	BENZO(a)ANTHRACENE	12					12	
SVOC	GW	BENZO(a)PYRENE	12					12	
SVOC	GW	BENZO(b)FLUORANTHENE	12					12	
SVOC	GW	BENZO(g,h,i)PERYLENE	12					12	
SVOC	GW	BENZO(k)FLUORANTHENE	12					12	
SVOC	GW	BENZYL BUTYL PHTHALATE	12			1		11	
SVOC	GW	bis(2-CHLOROETHOXY) METHANE	12					12	
SVOC	GW	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	12					12	
SVOC	GW	bis(2-ETHYLHEXYL) PHTHALATE	12					12	
SVOC	GW	CARBAZOLE	12					12	
SVOC	GW	CHRYSENE	12					12	
SVOC	GW	DI-n-BUTYL PHTHALATE	12					12	
SVOC	GW	DI-n-OCTYLPHTHALATE	12					12	
SVOC	GW	DIBENZ(a,h)ANTHRACENE	12					12	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
SVOC	GW	DIBENZOFURAN	12					12	
SVOC	GW	DIETHYL PHTHALATE	12					12	
SVOC	GW	DIMETHYL PHTHALATE	12					12	
SVOC	GW	FLUORANTHENE	12					12	
SVOC	GW	FLUORENE	12					12	
SVOC	GW	HEXACHLOROBENZENE	12					12	
SVOC	GW	HEXACHLOROBUTADIENE	12					12	
SVOC	GW	HEXACHLOROCYCLOPENTADIENE	12					12	
SVOC	GW	HEXACHLOROETHANE	12					12	
SVOC	GW	INDENO(1,2,3-c,d)PYRENE	12					12	
SVOC	GW	ISOPHORONE	12					12	
SVOC	GW	N-NITROSODI-n-PROPYLAMINE	12					12	
SVOC	GW	N-NITROSODIPHENYLAMINE	12					12	
SVOC	GW	NAPHTHALENE	12					12	
SVOC	GW	NITROBENZENE	12					12	
SVOC	GW	PENTACHLOROPHENOL	12					12	
SVOC	GW	PHENANTHRENE	12					12	
SVOC	GW	PHENOL	12					12	
SVOC	GW	PYRENE	12					12	
VOC	GW	1,1,1-TRICHLOROETHANE	12			1		11	
VOC	GW	1,1,2,2-TETRACHLOROETHANE	12					12	
VOC	GW	1,1,2-TRICHLOROETHANE	12					12	
VOC	GW	1,1-DICHLOROETHANE	12					12	
VOC	GW	1,1-DICHLOROETHENE	12			1		11	
VOC	GW	1,2-DICHLOROETHANE	12					12	
VOC	GW	1,2-DICHLOROPROPANE	12					12	
VOC	GW	1-BROMO-4-FLUOROBENZENE (4-	12	12					
VOC	GW	2-HEXANONE	12					10	2
VOC	GW	ACETONE	12					12	
VOC	GW	BENZENE	12					12	
VOC	GW	BROMODICHLOROMETHANE	12					12	
VOC	GW	BROMOFORM	12					12	
VOC	GW	BROMOMETHANE	12					12	
VOC	GW	CARBON DISULFIDE	12					12	
VOC	GW	CARBON TETRACHLORIDE	12					12	
VOC	GW	CHLOROBENZENE	12					12	
VOC	GW	CHLOROETHANE	12					12	
VOC	GW	CHLOROFORM	12					12	
VOC	GW	CHLOROMETHANE	12					12	
VOC	GW	cis-1,3-DICHLOROPROPENE	12					12	
VOC	GW	DIBROMOCHLOROMETHANE	12					12	
VOC	GW	ETHYLBENZENE	12					12	
VOC	GW	METHYL ETHYL KETONE (2-BUTANONE)	12					12	
VOC	GW	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	12					12	
VOC	GW	METHYLENE CHLORIDE	12					12	
VOC	GW	STYRENE	12					12	
VOC	GW	TETRACHLOROETHYLENE(PCE)	12					12	
VOC	GW	TOLUENE	12					12	
VOC	GW	TOTAL 1,2-DICHLOROETHENE	12					12	
VOC	GW	Total Xylenes	12					12	
VOC	GW	trans-1,3-DICHLOROPROPENE	12					12	
VOC	GW	TRICHLOROETHYLENE (TCE)	12			1		11	
VOC	GW	VINYL CHLORIDE	12					12	
HERB	GW	2,4 DB	12					12	
HERB	GW	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	12					12	
HERB	GW	2,4-D (DICHLOROPHENOXYACETIC ACID)	12					12	
HERB	GW	2,4-DICHLOROPHENYLACETIC ACID	12	12					

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
HERB	GW	DALAPON	12					12	
HERB	GW	DICAMBA	12					12	
HERB	GW	DICHLOROPROP	12					12	
HERB	GW	DINOSEB	12					12	
HERB	GW	MCPA	12					12	
HERB	GW	MCPP	12					12	
HERB	GW	SILVEX (2,4,5-TP)	12					12	
DIOXIN	Sediment	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22			3		19	
DIOXIN	Sediment	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sediment	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Sediment	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Sediment	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sediment	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22			1		21	
DIOXIN	Sediment	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Sediment	2,3,7,8-TETRACHLORODIBENZOFURAN	22					22	
DIOXIN	Sediment	DIOXIN/FURAN TOTAL EQUIVALENCY FACTOR	22	11				11	
DIOXIN	Sediment	OCTACHLORODIBENZO-p-DIOXIN	22	2		9		11	
DIOXIN	Sediment	OCTACHLORODIBENZOFURAN	22					22	
METAL	Sediment	ARSENIC	22	5		12		3	2
METAL	Sediment	LEAD	22	3		18			1
METAL	Sediment	SELENIUM	22			4		10	8
METAL	Sediment	THALLIUM	22			2		19	1
METAL	Sediment	ALUMINUM	22	18		4			
METAL	Sediment	ANTIMONY	22			2		17	3
METAL	Sediment	BARIUM	22	8		14			
METAL	Sediment	BERYLLIUM	22			5		17	
METAL	Sediment	CADMIUM	22	3				19	
METAL	Sediment	CALCIUM	22	7		13			2
METAL	Sediment	CHROMIUM, TOTAL	22	12		10			
METAL	Sediment	COBALT	22			14		8	
METAL	Sediment	COPPER	22	11		5		6	
METAL	Sediment	IRON	22	22					
METAL	Sediment	MAGNESIUM	22	9		13			
METAL	Sediment	MANGANESE	22	22					
METAL	Sediment	NICKEL	22	8		5		9	
METAL	Sediment	POTASSIUM	22			9		13	
METAL	Sediment	SILVER	22			1		21	
METAL	Sediment	SODIUM	22			1		19	2
METAL	Sediment	VANADIUM	22			22			
METAL	Sediment	ZINC	22	13		9			
METAL	Sediment	MERCURY	22	1				21	
PEST	Sediment	2,4,5,6-TETRACHLORO-META-XYLENE	22	22					
PEST	Sediment	ALDRIN	22					22	
PEST	Sediment	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Sediment	ALPHA ENDOSULFAN	22					22	
PEST	Sediment	ALPHA-CHLORDANE	22		1	4		17	
PEST	Sediment	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Sediment	BETA ENDOSULFAN	22					22	
PEST	Sediment	DECACHLOROBIPHENYL	22	22					
PEST	Sediment	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
PEST	Sediment	DIELDRIN	22	1				21	
PEST	Sediment	ENDOSULFAN SULFATE	22					22	
PEST	Sediment	ENDRIN	22					22	
PEST	Sediment	ENDRIN ALDEHYDE	22					22	
PEST	Sediment	ENDRIN KETONE	22					22	
PEST	Sediment	GAMMA BHC (LINDANE)	22					22	
PEST	Sediment	GAMMA-CHLORDANE	22	2	1	2		17	
PEST	Sediment	HEPTACHLOR	22					22	
PEST	Sediment	HEPTACHLOR EPOXIDE	22	1				21	
PEST	Sediment	METHOXYCHLOR	22					22	
PEST	Sediment	p,p'-DDD	22			3		19	
PEST	Sediment	p,p'-DDE	22	1		1		20	
PEST	Sediment	p,p'-DDT	22					22	
PEST	Sediment	PCB-1016 (AROCHLOR 1016)	22					22	
PEST	Sediment	PCB-1221 (AROCHLOR 1221)	22					22	
PEST	Sediment	PCB-1232 (AROCHLOR 1232)	22					22	
PEST	Sediment	PCB-1242 (AROCHLOR 1242)	22					22	
PEST	Sediment	PCB-1248 (AROCHLOR 1248)	22					22	
PEST	Sediment	PCB-1254 (AROCHLOR 1254)	22					22	
PEST	Sediment	PCB-1260 (AROCHLOR 1260)	22					22	
PEST	Sediment	TOXAPHENE	22					22	
SVOC	Sediment	1,2,4-TRICHLOROBENZENE	22					22	
SVOC	Sediment	1,2-DICHLOROBENZENE	22					22	
SVOC	Sediment	1,3-DICHLOROBENZENE	22					22	
SVOC	Sediment	1,4-DICHLOROBENZENE	22					22	
SVOC	Sediment	2,2'-OXYBIS(1-CHLORO)PROPANE	22					21	1
SVOC	Sediment	2,4,5-TRICHLOROPHENOL	22					22	
SVOC	Sediment	2,4,6-TRIBROMOPHENOL	22	22					
SVOC	Sediment	2,4,6-TRICHLOROPHENOL	22					22	
SVOC	Sediment	2,4-DICHLOROPHENOL	22					22	
SVOC	Sediment	2,4-DIMETHYLPHENOL	22					22	
SVOC	Sediment	2,4-DINITROPHENOL	22					18	4
SVOC	Sediment	2,4-DINITROTOLUENE	22					22	
SVOC	Sediment	2,6-DINITROTOLUENE	22					22	
SVOC	Sediment	2-CHLORONAPHTHALENE	22					22	
SVOC	Sediment	2-CHLOROPHENOL	22					22	
SVOC	Sediment	2-FLUOROBIPHENYL	22	22					
SVOC	Sediment	2-FLUOROPHENOL	22	22					
SVOC	Sediment	2-METHYLNAPHTHALENE	22					22	
SVOC	Sediment	2-METHYLPHENOL (o-CRESOL)	22					22	
SVOC	Sediment	2-NITROANILINE	22					22	
SVOC	Sediment	2-NITROPHENOL	22					22	
SVOC	Sediment	3,3'-DICHLOROBENZIDINE	22					22	
SVOC	Sediment	3-NITROANILINE	22					22	
SVOC	Sediment	4,6-DINITRO-2-METHYLPHENOL	22					22	
SVOC	Sediment	4-BROMOPHENYL PHENYL ETHER	22					22	
SVOC	Sediment	4-CHLORO-3-METHYLPHENOL	22					22	
SVOC	Sediment	4-CHLOROANILINE	22					22	
SVOC	Sediment	4-CHLOROPHENYL PHENYL ETHER	22					22	
SVOC	Sediment	4-METHYLPHENOL (p-CRESOL)	22					22	
SVOC	Sediment	4-NITROANILINE	22					22	
SVOC	Sediment	4-NITROPHENOL	22					22	
SVOC	Sediment	ACENAPHTHENE	22			2		20	
SVOC	Sediment	ACENAPHTHYLENE	22					22	
SVOC	Sediment	ANTHRACENE	22	1		1		20	
SVOC	Sediment	BENZO(a)ANTHRACENE	22	2		4		16	
SVOC	Sediment	BENZO(a)PYRENE	22	2		5		15	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
SVOC	Sediment	BENZO(b)FLUORANTHENE	22	2		5		15	
SVOC	Sediment	BENZO(g,h,i)PERYLENE	22	1		6		15	
SVOC	Sediment	BENZO(k)FLUORANTHENE	22	2		5		15	
SVOC	Sediment	BENZYL BUTYL PHTHALATE	22					22	
SVOC	Sediment	bis(2-CHLOROETHOXY) METHANE	22					22	
SVOC	Sediment	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	22					17	5
SVOC	Sediment	bis(2-ETHYLHEXYL) PHTHALATE	22			1		21	
SVOC	Sediment	CARBAZOLE	22			2		20	
SVOC	Sediment	CHRYSENE	22	2		6		14	
SVOC	Sediment	DI-n-BUTYL PHTHALATE	22					22	
SVOC	Sediment	DI-n-OCTYLPHTHALATE	22			1		21	
SVOC	Sediment	DIBENZ(a,h)ANTHRACENE	22			2		20	
SVOC	Sediment	DIBENZOFURAN	22			2		20	
SVOC	Sediment	DIETHYL PHTHALATE	22					22	
SVOC	Sediment	DIMETHYL PHTHALATE	22					22	
SVOC	Sediment	FLUORANTHENE	22	2		8		12	
SVOC	Sediment	FLUORENE	22			2		20	
SVOC	Sediment	HEXACHLOROBENZENE	22					22	
SVOC	Sediment	HEXACHLOROBUTADIENE	22					22	
SVOC	Sediment	HEXACHLOROCYCLOPENTADIENE	22					22	
SVOC	Sediment	HEXACHLOROETHANE	22					22	
SVOC	Sediment	INDENO(1,2,3-c,d)PYRENE	22	1		6		15	
SVOC	Sediment	ISOPHORONE	22					22	
SVOC	Sediment	N-NITROSODI-n-PROPYLAMINE	22					16	6
SVOC	Sediment	N-NITROSODIPHENYLAMINE	22					22	
SVOC	Sediment	NAPHTHALENE	22			1		21	
SVOC	Sediment	NITROBENZENE	22					17	5
SVOC	Sediment	PENTACHLOROPHENOL	22					21	1
SVOC	Sediment	PHENANTHRENE	22	2		4		16	
SVOC	Sediment	PHENOL	22			5		17	
SVOC	Sediment	PYRENE	22	2		8		12	
VOC	Sediment	1,1,1-TRICHLOROETHANE	22					22	
VOC	Sediment	1,1,2,2-TETRACHLOROETHANE	22					22	
VOC	Sediment	1,1,2-TRICHLOROETHANE	22					22	
VOC	Sediment	1,1-DICHLOROETHANE	22					22	
VOC	Sediment	1,1-DICHLOROETHENE	22					22	
VOC	Sediment	1,2-DICHLOROETHANE	22					22	
VOC	Sediment	1,2-DICHLOROPROPANE	22					22	
VOC	Sediment	1-BROMO-4-FLUOROBENZENE (4-	22	22					
VOC	Sediment	2-HEXANONE	22					22	
VOC	Sediment	ACETONE	22					17	5
VOC	Sediment	BENZENE	22					22	
VOC	Sediment	BROMODICHLOROMETHANE	22					22	
VOC	Sediment	BROMOFORM	22					22	
VOC	Sediment	BROMOMETHANE	22					22	
VOC	Sediment	CARBON DISULFIDE	22					22	
VOC	Sediment	CARBON TETRACHLORIDE	22					22	
VOC	Sediment	CHLOROBENZENE	22					22	
VOC	Sediment	CHLOROETHANE	22					22	
VOC	Sediment	CHLOROFORM	22					22	
VOC	Sediment	CHLOROMETHANE	22			1		21	
VOC	Sediment	cis-1,3-DICHLOROPROPENE	22					22	
VOC	Sediment	DIBROMOCHLOROMETHANE	22					22	
VOC	Sediment	ETHYLBENZENE	22					22	
VOC	Sediment	METHYL ETHYL KETONE (2-BUTANONE)	22			10		12	
VOC	Sediment	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	22					22	
VOC	Sediment	METHYLENE CHLORIDE	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
VOC	Sediment	STYRENE	22					22	
VOC	Sediment	TETRACHLOROETHYLENE(PCE)	22					22	
VOC	Sediment	TOLUENE	22			3		19	
VOC	Sediment	TOTAL 1,2-DICHLOROETHENE	22					22	
VOC	Sediment	Total Xylenes	22					22	
VOC	Sediment	trans-1,3-DICHLOROPROPENE	22					22	
VOC	Sediment	TRICHLOROETHYLENE (TCE)	22					22	
VOC	Sediment	VINYL CHLORIDE	22					22	
HERB	Sediment	2,4 DB	22					22	
HERB	Sediment	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	22					22	
HERB	Sediment	2,4-D (DICHLOROPHENOXYACETIC ACID)	22					22	
HERB	Sediment	2,4-DICHLOROPHENYLACETIC ACID	22	22					
HERB	Sediment	DALAPON	22					22	
HERB	Sediment	DICAMBA	22					22	
HERB	Sediment	DICHLOROPROP	22						22
HERB	Sediment	DINOSEB	22					22	
HERB	Sediment	MCPA	22					22	
HERB	Sediment	MCPP	22					22	
HERB	Sediment	SILVEX (2,4,5-TP)	22					22	
DIOXIN	Surf Soil	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22			6		16	
DIOXIN	Surf Soil	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Surf Soil	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Surf Soil	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	Surf Soil	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Surf Soil	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	Surf Soil	2,3,7,8-TETRACHLORODIBENZOFURAN	22					22	
DIOXIN	Surf Soil	DIOXIN/FURAN TOTAL EQUIVALENCY FACTOR	22	22					
DIOXIN	Surf Soil	OCTACHLORODIBENZO-p-DIOXIN	22	10		12			
DIOXIN	Surf Soil	OCTACHLORODIBENZOFURAN	22			3		19	
METAL	Surf Soil	ARSENIC	22	22					
METAL	Surf Soil	LEAD	22	16		6			
METAL	Surf Soil	SELENIUM	22			3		7	12
METAL	Surf Soil	THALLIUM	22					22	
METAL	Surf Soil	ALUMINUM	22	22					
METAL	Surf Soil	ANTIMONY	22			1		8	13
METAL	Surf Soil	BARIUM	22	22					
METAL	Surf Soil	BERYLLIUM	22			15		7	
METAL	Surf Soil	CADMIUM	22			4		18	
METAL	Surf Soil	CALCIUM	22	7		15			
METAL	Surf Soil	CHROMIUM, TOTAL	22	16		6			
METAL	Surf Soil	COBALT	22	4		18			
METAL	Surf Soil	COPPER	22	16		6			
METAL	Surf Soil	IRON	22	22					
METAL	Surf Soil	MAGNESIUM	22	22					
METAL	Surf Soil	MANGANESE	22	15		7			
METAL	Surf Soil	NICKEL	22	22					
METAL	Surf Soil	POTASSIUM	22	9		13			
METAL	Surf Soil	SILVER	22			1		21	
METAL	Surf Soil	SODIUM	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
METAL	Surf Soil	VANADIUM	22	22					
METAL	Surf Soil	ZINC	22	3		19			
METAL	Surf Soil	MERCURY	22	3		1		18	
PEST	Surf Soil	2,4,5,6-TETRACHLORO-META-XYLENE	22	22					
PEST	Surf Soil	ALDRIN	22					22	
PEST	Surf Soil	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Surf Soil	ALPHA ENDOSULFAN	22					22	
PEST	Surf Soil	ALPHA-CHLORDANE	22	1		4		17	
PEST	Surf Soil	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Surf Soil	BETA ENDOSULFAN	22					22	
PEST	Surf Soil	DECACHLOROBIPHENYL	22	22					
PEST	Surf Soil	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	Surf Soil	DIELDRIN	22	5	4	4	1	8	
PEST	Surf Soil	ENDOSULFAN SULFATE	22					22	
PEST	Surf Soil	ENDRIN	22					22	
PEST	Surf Soil	ENDRIN ALDEHYDE	22					22	
PEST	Surf Soil	ENDRIN KETONE	22					22	
PEST	Surf Soil	GAMMA BHC (LINDANE)	22					22	
PEST	Surf Soil	GAMMA-CHLORDANE	22	1		4		17	
PEST	Surf Soil	HEPTACHLOR	22					22	
PEST	Surf Soil	HEPTACHLOR EPOXIDE	22			1		21	
PEST	Surf Soil	METHOXYCHLOR	22					22	
PEST	Surf Soil	p,p'-DDD	22			1		21	
PEST	Surf Soil	p,p'-DDE	22	1	1			20	
PEST	Surf Soil	p,p'-DDT	22	2		1		19	
PEST	Surf Soil	PCB-1016 (AROCHLOR 1016)	22					22	
PEST	Surf Soil	PCB-1221 (AROCHLOR 1221)	22					22	
PEST	Surf Soil	PCB-1232 (AROCHLOR 1232)	22					22	
PEST	Surf Soil	PCB-1242 (AROCHLOR 1242)	22					22	
PEST	Surf Soil	PCB-1248 (AROCHLOR 1248)	22					22	
PEST	Surf Soil	PCB-1254 (AROCHLOR 1254)	22					22	
PEST	Surf Soil	PCB-1260 (AROCHLOR 1260)	22			2		20	
PEST	Surf Soil	TOXAPHENE	22					22	
SVOC	Surf Soil	1,2,4-TRICHLOROBENZENE	22					22	
SVOC	Surf Soil	1,2-DICHLOROBENZENE	22					22	
SVOC	Surf Soil	1,3-DICHLOROBENZENE	22					22	
SVOC	Surf Soil	1,4-DICHLOROBENZENE	22					22	
SVOC	Surf Soil	2,2'-OXYBIS(1-CHLORO)PROPANE	22					16	6
SVOC	Surf Soil	2,4,5-TRICHLOROPHENOL	22					22	
SVOC	Surf Soil	2,4,6-TRIBROMOPHENOL	22	22					
SVOC	Surf Soil	2,4,6-TRICHLOROPHENOL	22					22	
SVOC	Surf Soil	2,4-DICHLOROPHENOL	22					22	
SVOC	Surf Soil	2,4-DIMETHYLPHENOL	22					22	
SVOC	Surf Soil	2,4-DINITROPHENOL	22					18	4
SVOC	Surf Soil	2,4-DINITROTOLUENE	22					22	
SVOC	Surf Soil	2,6-DINITROTOLUENE	22					22	
SVOC	Surf Soil	2-CHLORONAPHTHALENE	22					22	
SVOC	Surf Soil	2-CHLOROPHENOL	22					22	
SVOC	Surf Soil	2-FLUOROBIPHENYL	22	22					
SVOC	Surf Soil	2-FLUOROPHENOL	22	22					
SVOC	Surf Soil	2-METHYLNAPHTHALENE	22					22	
SVOC	Surf Soil	2-METHYLPHENOL (o-CRESOL)	22					22	
SVOC	Surf Soil	2-NITROANILINE	22					22	
SVOC	Surf Soil	2-NITROPHENOL	22					22	
SVOC	Surf Soil	3,3'-DICHLOROBENZIDINE	22					22	
SVOC	Surf Soil	3-NITROANILINE	22					22	
SVOC	Surf Soil	4,6-DINITRO-2-METHYLPHENOL	22					18	4

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
SVOC	Surf Soil	4-BROMOPHENYL PHENYL ETHER	22					22	
SVOC	Surf Soil	4-CHLORO-3-METHYLPHENOL	22					22	
SVOC	Surf Soil	4-CHLOROANILINE	22					22	
SVOC	Surf Soil	4-CHLOROPHENYL PHENYL ETHER	22					22	
SVOC	Surf Soil	4-METHYLPHENOL (p-CRESOL)	22					22	
SVOC	Surf Soil	4-NITROANILINE	22					22	
SVOC	Surf Soil	4-NITROPHENOL	22					18	4
SVOC	Surf Soil	ACENAPHTHENE	22					22	
SVOC	Surf Soil	ACENAPHTHYLENE	22			1		21	
SVOC	Surf Soil	ANTHRACENE	22			1		21	
SVOC	Surf Soil	BENZO(a)ANTHRACENE	22	1		8		13	
SVOC	Surf Soil	BENZO(a)PYRENE	22	1		8		11	2
SVOC	Surf Soil	BENZO(b)FLUORANTHENE	22	1		8		11	2
SVOC	Surf Soil	BENZO(g,h,i)PERYLENE	22	1		8		11	2
SVOC	Surf Soil	BENZO(k)FLUORANTHENE	22	1		8		11	2
SVOC	Surf Soil	BENZYL BUTYL PHTHALATE	22					22	
SVOC	Surf Soil	bis(2-CHLOROETHOXY) METHANE	22					22	
SVOC	Surf Soil	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	22					16	6
SVOC	Surf Soil	bis(2-ETHYLHEXYL) PHTHALATE	22					21	1
SVOC	Surf Soil	CARBAZOLE	22			1		21	
SVOC	Surf Soil	CHRYSENE	22	1		9		12	
SVOC	Surf Soil	DI-n-BUTYL PHTHALATE	22					22	
SVOC	Surf Soil	DI-n-OCTYLPHTHALATE	22					20	2
SVOC	Surf Soil	DIBENZ(a,h)ANTHRACENE	22			3		17	2
SVOC	Surf Soil	DIBENZOFURAN	22					22	
SVOC	Surf Soil	DIETHYL PHTHALATE	22					22	
SVOC	Surf Soil	DIMETHYL PHTHALATE	22					22	
SVOC	Surf Soil	FLUORANTHENE	22	1		10		11	
SVOC	Surf Soil	FLUORENE	22					22	
SVOC	Surf Soil	HEXACHLOROBENZENE	22					22	
SVOC	Surf Soil	HEXACHLOROBUTADIENE	22					22	
SVOC	Surf Soil	HEXACHLOROCYCLOPENTADIENE	22					22	
SVOC	Surf Soil	HEXACHLOROETHANE	22					22	
SVOC	Surf Soil	INDENO(1,2,3-c,d)PYRENE	22	1		6		13	2
SVOC	Surf Soil	ISOPHORONE	22					22	
SVOC	Surf Soil	N-NITROSODI-n-PROPYLAMINE	22					16	6
SVOC	Surf Soil	N-NITROSODIPHENYLAMINE	22					22	
SVOC	Surf Soil	NAPHTHALENE	22					22	
SVOC	Surf Soil	NITROBENZENE	22					20	2
SVOC	Surf Soil	PENTACHLOROPHENOL	22					22	
SVOC	Surf Soil	PHENANTHRENE	22	1		8		13	
SVOC	Surf Soil	PHENOL	22	3		2		17	
SVOC	Surf Soil	PYRENE	22	1		10		11	
VOC	Surf Soil	1,1,1-TRICHLOROETHANE	22					22	
VOC	Surf Soil	1,1,2,2-TETRACHLOROETHANE	22					22	
VOC	Surf Soil	1,1,2-TRICHLOROETHANE	22					22	
VOC	Surf Soil	1,1-DICHLOROETHANE	22					22	
VOC	Surf Soil	1,1-DICHLOROETHENE	22					22	
VOC	Surf Soil	1,2-DICHLOROETHANE	22					22	
VOC	Surf Soil	1,2-DICHLOROPROPANE	22					22	
VOC	Surf Soil	1-BROMO-4-FLUOROBENZENE (4-	22	22					
VOC	Surf Soil	2-HEXANONE	22					22	
VOC	Surf Soil	ACETONE	22					9	13
VOC	Surf Soil	BENZENE	22					22	
VOC	Surf Soil	BROMODICHLOROMETHANE	22					22	
VOC	Surf Soil	BROMOFORM	22					22	
VOC	Surf Soil	BROMOMETHANE	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
VOC	Surf Soil	CARBON DISULFIDE	22			2		20	
VOC	Surf Soil	CARBON TETRACHLORIDE	22					22	
VOC	Surf Soil	CHLOROBENZENE	22					22	
VOC	Surf Soil	CHLOROETHANE	22					22	
VOC	Surf Soil	CHLOROFORM	22					22	
VOC	Surf Soil	CHLOROMETHANE	22					22	
VOC	Surf Soil	cis-1,3-DICHLOROPROPENE	22					22	
VOC	Surf Soil	DIBROMOCHLOROMETHANE	22					22	
VOC	Surf Soil	ETHYLBENZENE	22					22	
VOC	Surf Soil	METHYL ETHYL KETONE (2-BUTANONE)	22			1		21	
VOC	Surf Soil	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	22					22	
VOC	Surf Soil	METHYLENE CHLORIDE	22					22	
VOC	Surf Soil	STYRENE	22					22	
VOC	Surf Soil	TETRACHLOROETHYLENE(PCE)	22					22	
VOC	Surf Soil	TOLUENE	22			1		21	
VOC	Surf Soil	TOTAL 1,2-DICHLOROETHENE	22					22	
VOC	Surf Soil	Total Xylenes	22			10		12	
VOC	Surf Soil	trans-1,3-DICHLOROPROPENE	22					22	
VOC	Surf Soil	TRICHLOROETHYLENE (TCE)	22					22	
VOC	Surf Soil	VINYL CHLORIDE	22					22	
HERB	Surf Soil	2,4 DB	22				1	21	
HERB	Surf Soil	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	22				1	21	
HERB	Surf Soil	2,4-D (DICHLOROPHENOXYACETIC ACID)	22				1	21	
HERB	Surf Soil	2,4-DICHLOROPHENYLACETIC ACID	22	22					
HERB	Surf Soil	DALAPON	22				1	21	
HERB	Surf Soil	DICAMBA	22				1	21	
HERB	Surf Soil	DICHLOROPROP	22				1	12	9
HERB	Surf Soil	DINOSEB	22				1	21	
HERB	Surf Soil	MCPA	22				1	21	
HERB	Surf Soil	MCPP	22				1	21	
HERB	Surf Soil	SILVEX (2,4,5-TP)	22				1	21	
DIOXIN	SW	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22	1		4		17	
DIOXIN	SW	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	SW	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	SW	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					22	
DIOXIN	SW	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22			1		21	
DIOXIN	SW	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22			3		19	
DIOXIN	SW	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					22	
DIOXIN	SW	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22			2		20	
DIOXIN	SW	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					22	
DIOXIN	SW	2,3,7,8-TETRACHLORODIBENZOFURAN	22			6		16	
DIOXIN	SW	DIOXIN/FURAN TOTAL EQUIVALENCY FACTOR	22	15				7	
DIOXIN	SW	OCTACHLORODIBENZO-p-DIOXIN	22			15		7	
DIOXIN	SW	OCTACHLORODIBENZOFURAN	22					22	
METAL	SW	ARSENIC	22	3		8		8	3
METAL	SW	Arsenic, Dissolved	22			6		11	5
METAL	SW	LEAD	22	6				14	2
METAL	SW	Lead, Dissolved	22	1				21	
METAL	SW	SELENIUM	22					11	11
METAL	SW	Selenium, Dissolved	22			2		13	7
METAL	SW	THALLIUM	22					20	2
METAL	SW	Thallium, Dissolved	22					17	5

308 388

Appendix E

Background Analytical Data Qualifiers

Background Sampling Program

Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
METAL	SW	ALUMINUM	22	5		13		4	
METAL	SW	Aluminum, Dissolved	22	1		1		20	
METAL	SW	ANTIMONY	22					22	
METAL	SW	Antimony, Dissolved	22			1		21	
METAL	SW	BARIUM	22			22			
METAL	SW	Barium, Dissolved	22			19		3	
METAL	SW	BERYLLIUM	22					22	
METAL	SW	Beryllium, Dissolved	22					22	
METAL	SW	CADMIUM	22					22	
METAL	SW	Cadmium, Dissolved	22					22	
METAL	SW	CALCIUM	22	19		3			
METAL	SW	Calcium, Dissolved	22	19		3			
METAL	SW	Chromium, Dissolved	22			1		17	4
METAL	SW	CHROMIUM, TOTAL	22	2				20	
METAL	SW	COBALT	22					22	
METAL	SW	Cobalt, Dissolved	22					22	
METAL	SW	COPPER	22	2		3		17	
METAL	SW	Copper, Dissolved	22					22	
METAL	SW	IRON	22	22					
METAL	SW	Iron, Dissolved	22	6				16	
METAL	SW	MAGNESIUM	22	5		17			
METAL	SW	Magnesium, Dissolved	22	4		18			
METAL	SW	MANGANESE	22	22					
METAL	SW	Manganese, Dissolved	22	21				1	
METAL	SW	NICKEL	22			5		17	
METAL	SW	Nickel, Dissolved	22	1				21	
METAL	SW	POTASSIUM	22	5		14		3	
METAL	SW	Potassium, Dissolved	22	3		14		5	
METAL	SW	SILVER	22			2		20	
METAL	SW	Silver, Dissolved	22					22	
METAL	SW	SODIUM	22	13		5		4	
METAL	SW	Sodium, Dissolved	22			17			5
METAL	SW	VANADIUM	22			5		17	
METAL	SW	Vanadium, Dissolved	22					22	
METAL	SW	ZINC	22	1		2		8	11
METAL	SW	Zinc, Dissolved	22	1				21	
METAL	SW	MERCURY	22					22	
METAL	SW	Mercury, Dissolved	22					13	9
PEST	SW	2,4,5,6-TETRACHLORO-META-XYLENE	22	22					
PEST	SW	ALDRIN	22					22	
PEST	SW	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	SW	ALPHA ENDOSULFAN	22					22	
PEST	SW	ALPHA-CHLORDANE	22					22	
PEST	SW	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	SW	BETA ENDOSULFAN	22					22	
PEST	SW	DECACHLOROBIPHENYL	22	22					
PEST	SW	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	22					22	
PEST	SW	DIELDRIN	22					22	
PEST	SW	ENDOSULFAN SULFATE	22					22	
PEST	SW	ENDRIN	22					22	
PEST	SW	ENDRIN ALDEHYDE	22					22	
PEST	SW	ENDRIN KETONE	22					22	
PEST	SW	GAMMA BHC (LINDANE)	22					22	
PEST	SW	GAMMA-CHLORDANE	22					22	
PEST	SW	HEPTACHLOR	22					22	
PEST	SW	HEPTACHLOR EPOXIDE	22					22	
PEST	SW	METHOXYCHLOR	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
PEST	SW	p,p'-DDD	22					22	
PEST	SW	p,p'-DDE	22					22	
PEST	SW	p,p'-DDT	22					22	
PEST	SW	PCB-1016 (AROCHLOR 1016)	22					22	
PEST	SW	PCB-1221 (AROCHLOR 1221)	22					22	
PEST	SW	PCB-1232 (AROCHLOR 1232)	22					22	
PEST	SW	PCB-1242 (AROCHLOR 1242)	22					22	
PEST	SW	PCB-1248 (AROCHLOR 1248)	22					22	
PEST	SW	PCB-1254 (AROCHLOR 1254)	22					22	
PEST	SW	PCB-1260 (AROCHLOR 1260)	22					22	
PEST	SW	TOXAPHENE	22					22	
SVOC	SW	1,2,4-TRICHLOROBENZENE	22					22	
SVOC	SW	1,2-DICHLOROBENZENE	22					22	
SVOC	SW	1,3-DICHLOROBENZENE	22					22	
SVOC	SW	1,4-DICHLOROBENZENE	22					22	
SVOC	SW	2,2'-OXYBIS(1-CHLORO)PROPANE	22					22	
SVOC	SW	2,4,5-TRICHLOROPHENOL	22					22	
SVOC	SW	2,4,6-TRIBROMOPHENOL	22	22					
SVOC	SW	2,4,6-TRICHLOROPHENOL	22					22	
SVOC	SW	2,4-DICHLOROPHENOL	22					22	
SVOC	SW	2,4-DIMETHYLPHENOL	22					22	
SVOC	SW	2,4-DINITROPHENOL	22					21	1
SVOC	SW	2,4-DINITROTOLUENE	22					22	
SVOC	SW	2,6-DINITROTOLUENE	22					22	
SVOC	SW	2-CHLORONAPHTHALENE	22					22	
SVOC	SW	2-CHLOROPHENOL	22					22	
SVOC	SW	2-FLUOROBIPHENYL	22	22					
SVOC	SW	2-FLUOROPHENOL	22	22					
SVOC	SW	2-METHYLNAPHTHALENE	22					22	
SVOC	SW	2-METHYLPHENOL (o-CRESOL)	22					22	
SVOC	SW	2-NITROANILINE	22					22	
SVOC	SW	2-NITROPHENOL	22					22	
SVOC	SW	3,3'-DICHLOROBENZIDINE	22					22	
SVOC	SW	3-NITROANILINE	22					22	
SVOC	SW	4,6-DINITRO-2-METHYLPHENOL	22					22	
SVOC	SW	4-BROMOPHENYL PHENYL ETHER	22					22	
SVOC	SW	4-CHLORO-3-METHYLPHENOL	22					22	
SVOC	SW	4-CHLOROANILINE	22					22	
SVOC	SW	4-CHLOROPHENYL PHENYL ETHER	22					22	
SVOC	SW	4-METHYLPHENOL (p-CRESOL)	22					22	
SVOC	SW	4-NITROANILINE	22					22	
SVOC	SW	4-NITROPHENOL	22					21	1
SVOC	SW	ACENAPHTHENE	22					22	
SVOC	SW	ACENAPHTHYLENE	22					22	
SVOC	SW	ANTHRACENE	22					22	
SVOC	SW	BENZO(a)ANTHRACENE	22					22	
SVOC	SW	BENZO(a)PYRENE	22					22	
SVOC	SW	BENZO(b)FLUORANTHENE	22					22	
SVOC	SW	BENZO(g,h,i)PERYLENE	22					22	
SVOC	SW	BENZO(k)FLUORANTHENE	22					22	
SVOC	SW	BENZYL BUTYL PHTHALATE	22					22	
SVOC	SW	bis(2-CHLOROETHOXY) METHANE	22					22	
SVOC	SW	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL	22					22	
SVOC	SW	bis(2-ETHYLHEXYL) PHTHALATE	22					22	
SVOC	SW	CARBAZOLE	22					22	
SVOC	SW	CHRYSENE	22					22	
SVOC	SW	DI-n-BUTYL PHTHALATE	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
SVOC	SW	DI-n-OCTYLPHTHALATE	22					22	
SVOC	SW	DIBENZ(a,h)ANTHRACENE	22					22	
SVOC	SW	DIBENZOFURAN	22					22	
SVOC	SW	DIETHYL PHTHALATE	22					22	
SVOC	SW	DIMETHYL PHTHALATE	22					22	
SVOC	SW	FLUORANTHENE	22					22	
SVOC	SW	FLUORENE	22					22	
SVOC	SW	HEXACHLOROBENZENE	22					22	
SVOC	SW	HEXACHLOROBUTADIENE	22					22	
SVOC	SW	HEXACHLOROCYCLOPENTADIENE	22					22	
SVOC	SW	HEXACHLOROETHANE	22					22	
SVOC	SW	INDENO(1,2,3-c,d)PYRENE	22					22	
SVOC	SW	ISOPHORONE	22					22	
SVOC	SW	N-NITROSODI-n-PROPYLAMINE	22					22	
SVOC	SW	N-NITROSODIPHENYLAMINE	22					22	
SVOC	SW	NAPHTHALENE	22					22	
SVOC	SW	NITROBENZENE	22					22	
SVOC	SW	PENTACHLOROPHENOL	22					22	
SVOC	SW	PHENANTHRENE	22					22	
SVOC	SW	PHENOL	22					22	
SVOC	SW	PYRENE	22					22	
VOC	SW	1,1,1-TRICHLOROETHANE	22					22	
VOC	SW	1,1,2,2-TETRACHLOROETHANE	22					22	
VOC	SW	1,1,2-TRICHLOROETHANE	22					22	
VOC	SW	1,1-DICHLOROETHANE	22					22	
VOC	SW	1,1-DICHLOROETHENE	22					22	
VOC	SW	1,2-DICHLOROETHANE	22					22	
VOC	SW	1,2-DICHLOROPROPANE	22					22	
VOC	SW	1-BROMO-4-FLUOROBENZENE (4-	22	22					
VOC	SW	2-HEXANONE	22					22	
VOC	SW	ACETONE	22					22	
VOC	SW	BENZENE	22					22	
VOC	SW	BROMODICHLOROMETHANE	22					22	
VOC	SW	BROMOFORM	22					22	
VOC	SW	BROMOMETHANE	22					22	
VOC	SW	CARBON DISULFIDE	22					22	
VOC	SW	CARBON TETRACHLORIDE	22					22	
VOC	SW	CHLOROBENZENE	22					22	
VOC	SW	CHLOROETHANE	22					22	
VOC	SW	CHLOROFORM	22					22	
VOC	SW	CHLOROMETHANE	22					22	
VOC	SW	cis-1,3-DICHLOROPROPENE	22					22	
VOC	SW	DIBROMOCHLOROMETHANE	22					22	
VOC	SW	ETHYLBENZENE	22					22	
VOC	SW	METHYL ETHYL KETONE (2-BUTANONE)	22			5		17	
VOC	SW	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	22					22	
VOC	SW	METHYLENE CHLORIDE	22					22	
VOC	SW	STYRENE	22					22	
VOC	SW	TETRACHLOROETHYLENE(PCE)	22					22	
VOC	SW	TOLUENE	22					22	
VOC	SW	TOTAL 1,2-DICHLOROETHENE	22					22	
VOC	SW	Total Xylenes	22			2		20	
VOC	SW	trans-1,3-DICHLOROPROPENE	22					22	
VOC	SW	TRICHLOROETHYLENE (TCE)	22					22	
VOC	SW	VINYL CHLORIDE	22					22	
HERB	SW	2,4 DB	22					22	
HERB	SW	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	22					22	

Appendix E
Background Analytical Data Qualifiers
Background Sampling Program
Defense Depot Memphis Tennessee

Class	Matrix	Chemical	Total	Qualifier					
				=	ER	J	R	U	UJ
HERB	SW	2,4-D (DICHLOROPHENOXYACETIC ACID)	22					22	
HERB	SW	2,4-DICHLOROPHENYLACETIC ACID	22	22					
HERB	SW	DALAPON	22					22	
HERB	SW	DICAMBA	22					22	
HERB	SW	DICHLOROPROP	22					22	
HERB	SW	DINOSEB	22					22	
HERB	SW	MCPA	22					22	
HERB	SW	MCPP	22					22	
HERB	SW	SILVEX (2,4,5-TP)	22					22	

TAB

Appendix F

Appendix F

Background Data Statistical Tables

Appendix F
Contents

Appendix F-1

Background Statistics for Metals

Appendix F-1
Background Statistics for Metals
Background Sampling Program

Matrix	Units	Constituent	Filtered?	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	2 X Mean Detected	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	UCL (Normal)	UCL (Lognormal)	Distribution	Notes
Surf Soil	mg/kg	ALUMINUM	N	22	22	8160.0	18500.0	11905.0	23810.0	2883.48	9.36	0.24	12963.0	13083.6	Normal	
Surf Soil	mg/kg	ANTIMONY	N	22	1	3.5	3.5	3.5	7.0	0.42	0.52	0.18	1.9	1.8	Nonparam.	
Surf Soil	mg/kg	ARSENIC	N	10	10	4.2	13.9	8.2	16.4	2.85	2.05	0.34	9.8	10.4	Lognormal	Offsite locations only. Dropped outlier of 27.7 mg/kg.
Surf Soil	mg/kg	BARIUM	N	11	11	77.1	141.0	117.0	234.0	21.50	4.75	0.20	129.0	132.0	Lognormal	Offsite locations only.
Surf Soil	mg/kg	BERYLLIUM	N	22	15	0.5	0.6	0.5	1.1	0.15	-0.85	0.39	0.5	0.5	Nonparam.	No outliers. Perimeter and offsite values nearly identical.
Surf Soil	mg/kg	CADMIUM	N	22	4	0.6	0.8	0.7	1.4	0.16	-1.07	0.33	0.4	0.4	Nonparam.	
Surf Soil	mg/kg	CALCIUM	N	22	22	424.0	30600.0	2919.9	5839.7	6352.05	7.28	0.94	5250.5	3797.1	Nonparam.	
Surf Soil	mg/kg	CHROMIUM, TOTAL	N	11	11	8.9	17.0	12.5	25.1	2.67	2.51	0.21	14.0	14.2	Normal	Offsite locations only.
Surf Soil	mg/kg	COBALT	N	22	22	5.7	12.3	9.1	18.3	1.65	2.20	0.19	9.7	9.8	Normal	
Surf Soil	mg/kg	COPPER	N	22	22	7.3	23.3	16.7	33.5	4.07	2.78	0.29	18.2	18.9	Normal	
Surf Soil	mg/kg	IRON	N	22	22	10800.0	26100.0	18522.7	37045.5	4432.34	9.80	0.26	20149.0	20554.6	Normal	
Surf Soil	mg/kg	LEAD	N	10	10	11.7	30.5	16.6	33.3	5.98	2.76	0.30	20.1	20.3	Nonparam.	Offsite locations only. Outlier of 73.3 mg/kg removed.
Surf Soil	mg/kg	MAGNESIUM	N	22	22	1110.0	3200.0	2308.2	4616.4	629.72	7.70	0.32	2539.2	2647.4	Normal	
Surf Soil	mg/kg	MANGANESE	N	22	22	330.0	1080.0	651.9	1303.7	174.65	6.44	0.28	715.9	729.4	Normal	
Surf Soil	mg/kg	MERCURY	N	22	4	0.1	0.4	0.2	0.4	0.08	-2.81	0.58	0.1	0.1	Nonparam.	
Surf Soil	mg/kg	NICKEL	N	11	11	10.4	21.4	15.1	30.2	3.88	2.69	0.25	17.2	17.7	Normal	
Surf Soil	mg/kg	POTASSIUM	N	22	22	641.0	1460.0	1012.6	2025.3	249.61	6.89	0.25	1104.2	1118.4	Normal	
Surf Soil	mg/kg	SELENIUM	N	22	3	0.3	0.5	0.4	0.8	0.12	-1.72	0.45	0.2	0.2	Nonparam.	
Surf Soil	mg/kg	SILVER	N	22	1	1.0	1.0	1.0	2.0	0.17	-1.61	0.36	0.3	0.2	Nonparam.	
Surf Soil	mg/kg	SODIUM	N	22						15.78	3.48	0.38	40.7	40.6	N/A	
Surf Soil	mg/kg	THALLIUM	N	22						0.00	-1.62	0.02	0.2	0.2	N/A	
Surf Soil	mg/kg	VANADIUM	N	11	11	19.1	35.2	24.5	49.0	5.18	3.18	0.20	27.3	27.6	Normal	Offsite locations only.
Surf Soil	mg/kg	ZINC	N	22	22	35.6	89.5	62.8	125.7	16.01	4.11	0.27	68.7	70.2	Normal	
Sub Soil	mg/kg	ALUMINUM	N	22	22	6820.0	14900.0	10914.5	21829.1	2545.27	9.27	0.24	11848.5	12034.4	Normal	
Sub Soil	mg/kg	ANTIMONY	N	22						0.06	0.55	0.04	1.8	1.8	N/A	
Sub Soil	mg/kg	ARSENIC	N	22	22	3.1	14.1	8.5	17.0	3.41	2.05	0.48	9.8	10.6	Normal	
Sub Soil	mg/kg	BARIUM	N	22	22	89.9	243.0	150.1	300.2	47.88	4.96	0.32	167.7	171.6	Normal	
Sub Soil	mg/kg	BERYLLIUM	N	22	14	0.5	0.7	0.6	1.2	0.18	-0.85	0.45	0.5	0.6	Nonparam.	
Sub Soil	mg/kg	CADMIUM	N	22	3	0.7	0.7	0.7	1.4	0.14	-1.03	0.29	0.4	0.4	Nonparam.	
Sub Soil	mg/kg	CALCIUM	N	22	22	511.0	2630.0	1216.1	2432.2	518.50	7.02	0.42	1406.3	1463.5	Normal	
Sub Soil	mg/kg	CHROMIUM, TOTAL	N	22	22	8.7	18.0	13.2	26.4	2.46	2.56	0.19	14.1	14.2	Normal	
Sub Soil	mg/kg	COBALT	N	22	22	5.0	20.4	10.2	20.4	3.91	2.26	0.35	11.6	11.8	Lognormal	
Sub Soil	mg/kg	COPPER	N	22	22	7.4	23.1	16.3	32.7	4.62	2.75	0.34	18.0	18.9	Nonparam.	
Sub Soil	mg/kg	IRON	N	22	22	8340.0	24900.0	19241.8	38483.6	5059.90	9.82	0.32	21098.4	22189.6	Nonparam.	
Sub Soil	mg/kg	LEAD	N	22	22	6.9	22.7	12.0	23.9	3.38	2.45	0.27	13.2	13.3	Lognormal	
Sub Soil	mg/kg	MAGNESIUM	N	22	22	1200.0	3370.0	2449.1	4898.2	646.05	7.76	0.32	2686.1	2812.2	Nonparam.	

Appendix F-1

Background Statistics for Metals

Background Sampling Program

Matrix	Units	Constituent	Filtered?	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	1 X Mean Detected	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	UCL (Normal)	UCL (Lognormal)	Distribution	Notes
Sub Soil	mg/kg	MANGANESE	N	22	22	231.0	1580.0	769.9	1539.7	338.74	6.55	0.47	894.2	953.3	Lognormal	
Sub Soil	mg/kg	MERCURY	N	22	1	0.1	0.1	0.1	0.2	0.01	-2.93	0.17	0.1	0.1	Nonparam.	
Sub Soil	mg/kg	NICKEL	N	22	22	9.0	22.4	18.3	36.6	3.48	2.88	0.24	19.6	20.2	Nonparam.	
Sub Soil	mg/kg	POTASSIUM	N	22	22	483.0	1480.0	901.8	1803.6	270.77	6.76	0.32	1001.2	1032.0	Normal	
Sub Soil	mg/kg	SELENIUM	N	22	1	0.3	0.3	0.3	0.6	0.10	-1.78	0.33	0.2	0.2	Nonparam.	
Sub Soil	mg/kg	SILVER	N	22	2	0.4	0.6	0.5	1.0	0.09	-1.52	0.26	0.3	0.3	Nonparam.	
Sub Soil	mg/kg	SODIUM	N	22						33.28	3.86	0.60	68.5	74.8	N/A	
Sub Soil	mg/kg	THALLIUM	N	22						0.01	-1.54	0.04	0.2	0.2	N/A	
Sub Soil	mg/kg	VANADIUM	N	22	22	15.0	31.7	25.6	51.3	4.97	3.22	0.22	27.5	28.0	Normal	
Sub Soil	mg/kg	ZINC	N	22	22	30.9	79.5	57.3	114.6	15.92	4.01	0.31	63.2	65.4	Normal	
SW	ug/l	ALUMINUM	Y	22	2	191.0	280.0	235.5	471.0	66.09	3.19	0.98	67.7	67.7	Lognormal	
SW	ug/l	ANTIMONY	Y	22	1	16.4	16.4	16.4	32.8	1.94	2.02	0.17	8.4	8.2	Nonparam.	
SW	ug/l	ARSENIC	Y	22	6	5.1	7.4	6.2	12.4	2.50	0.37	0.96	3.3	3.9	Nonparam.	
SW	ug/l	BARIUM	Y	22	19	23.0	99.4	43.8	87.6	20.51	3.47	0.72	46.2	59.8	Nonparam.	
SW	ug/l	BERYLLIUM	Y	22						0.00	-2.41	0.00	0.1	0.1	N/A	
SW	ug/l	CADMIUM	Y	22						0.00	0.30	0.00	1.4	1.3	N/A	
SW	ug/l	CALCIUM	Y	22	22	3710.0	34200.0	15061.8	30123.6	10581.99	9.36	0.75	18944.5	22391.9	Nonparam.	
SW	ug/l	CHROMIUM	Y	22	1	16.7	16.7	16.7	33.4	3.99	0.68	1.02	4.8	6.3	Nonparam.	
SW	ug/l	COBALT	Y	22						0.14	-0.12	0.13	0.9	0.9	N/A	
SW	ug/l	COPPER	Y	22						1.44	0.22	0.73	2.2	2.3	N/A	
SW	ug/l	IRON	Y	22	6	118.0	2040.0	600.5	1201.0	437.77	4.07	1.45	353.8	474.5	Lognormal	
SW	ug/l	LEAD	Y	22	1	11.3	11.3	11.3	22.6	2.32	-0.63	0.74	1.8	1.0	Nonparam.	
SW	ug/l	MAGNESIUM	Y	22	22	1220.0	6550.0	3432.3	6864.5	1575.79	8.04	0.48	4010.5	4256.7	Normal	
SW	ug/l	MANGANESE	Y	22	21	31.9	713.0	176.1	352.2	174.38	4.58	1.16	232.3	401.3	Lognormal	
SW	ug/l	MERCURY	Y	22						0.00	-2.41	0.00	0.1	0.1	N/A	
SW	ug/l	NICKEL	Y	22	1	118.0	118.0	118.0	236.0	24.49	1.30	0.79	17.4	7.4	Nonparam.	
SW	ug/l	POTASSIUM	Y	22	17	1050.0	6450.0	3360.6	6721.2	1805.21	7.71	0.75	3463.9	4269.0	Normal	
SW	ug/l	SELENIUM	Y	22	2	1.4	1.6	1.5	3.0	0.25	-0.35	0.25	0.8	0.8	Nonparam.	
SW	ug/l	SILVER	Y	22						0.00	-0.16	0.00	0.9	0.9	N/A	
SW	ug/l	SODIUM	Y	22	17	6720.0	17500.0	10768.8	21537.6	5270.87	8.71	1.03	10487.4	19767.7	Normal	
SW	ug/l	THALLIUM	Y	22						0.00	-0.11	0.00	0.9	0.9	N/A	
SW	ug/l	VANADIUM	Y	22						0.24	-0.41	0.30	0.8	0.8	N/A	
SW	ug/l	ZINC	Y	22	1	205.0	205.0	205.0	410.0	43.21	1.01	1.03	27.4	9.0	Nonparam.	
SW	ug/l	ALUMINUM	N	22	18	266.0	16900.0	2538.4	5076.8	3922.29	6.29	1.75	3525.1	10110.1	Lognormal	
SW	ug/l	ANTIMONY	N	22						0.00	1.99	0.00	7.3	7.3	N/A	
SW	ug/l	ARSENIC	N	22	11	6.6	13.6	9.0	18.0	4.09	1.28	0.97	6.8	9.9	Nonparam.	

F-2

Appendix F-1

Background Statistics for Metals

Background Sampling Program

Matrix	Units	Constituent	Filtered?	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	2 X Mean Detected	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	UCL (Normal)	UCL (Lognormal)	Distribution	Notes
SW	ug/l	BARIUM	N	22	22	26.2	185.0	62.6	125.3	34.10	4.03	0.47	75.1	76.7	Lognormal	
SW	ug/l	BERYLLIUM	N	22						0.07	-2.20	0.37	0.1	0.1	N/A	
SW	ug/l	CADMIUM	N	22						0.00	0.30	0.00	1.4	1.3	N/A	
SW	ug/l	CALCIUM	N	22	22	4410.0	34800.0	15999.1	31998.2	10885.83	9.44	0.72	19993.3	23441.9	Nonparam.	
SW	ug/l	CHROMIUM, TOTAL	N	22	2	18.0	18.1	18.1	36.1	4.99	0.39	0.92	4.6	3.8	Nonparam.	
SW	ug/l	COBALT	N	22						0.73	0.07	0.39	1.4	1.4	N/A	
SW	ug/l	COPPER	N	22	5	10.4	76.4	37.3	74.5	21.52	1.12	1.62	18.9	41.9	Nonparam.	
SW	ug/l	IRON	N	22	22	346.0	20800.0	3051.7	6103.5	4676.99	7.34	1.08	4767.8	5450.5	Nonparam.	
SW	ug/l	LEAD	N	22	6	5.5	16.7	9.3	18.7	4.46	0.48	1.14	4.9	6.4	Nonparam.	
SW	ug/l	MAGNESIUM	N	22	22	1470.0	6710.0	3850.9	7701.8	1561.34	8.17	0.44	4423.8	4720.0	Normal	
SW	ug/l	MANGANESE	N	22	22	46.5	1140.0	328.1	656.2	281.26	5.43	0.91	431.3	574.9	Lognormal	
SW	ug/l	MERCURY	N	22						0.00	-2.41	0.00	0.1	0.1	N/A	
SW	ug/l	NICKEL	N	22	5	6.9	19.9	11.4	22.8	4.26	1.37	0.58	6.4	6.1	Nonparam.	
SW	ug/l	POTASSIUM	N	22	19	733.0	6730.0	3637.0	7274.0	1852.77	7.90	0.69	3950.4	4755.1	Normal	
SW	ug/l	SELENIUM	N	22						0.28	-0.35	0.24	0.8	0.8	N/A	
SW	ug/l	SILVER	N	22	2	1.8	1.8	1.8	3.6	0.28	-0.09	0.22	1.0	1.0	Nonparam.	
SW	ug/l	SODIUM	N	22	18	2890.0	17900.0	10696.7	21393.3	5457.57	8.77	0.99	10934.1	18380.3	Normal	
SW	ug/l	THALLIUM	N	22						0.00	-0.11	0.00	0.9	0.9	N/A	
SW	ug/l	VANADIUM	N	22	5	13.2	39.4	19.5	39.0	9.30	0.63	1.32	8.7	11.7	Nonparam.	
SW	ug/l	ZINC	N	22	3	64.0	221.0	143.7	287.3	53.82	2.19	1.36	46.7	60.3	Lognormal	
Sed	mg/kg	ALUMINUM	N	22	22	490.0	14200.0	5042.5	10084.9	4736.79	7.88	1.28	6780.5	15028.3	Nonparam.	
Sed	mg/kg	ANTIMONY	N	22	2	3.7	3.9	3.8	7.6	1.82	0.92	0.46	3.5	3.4	Nonparam.	
Sed	mg/kg	ARSENIC	N	22	17	1.5	11.1	6.0	12.0	3.61	1.10	1.18	6.1	12.7	Normal	
Sed	mg/kg	BARIUM	N	22	22	3.7	137.0	58.8	117.5	49.69	3.51	1.25	77.0	178.7	Nonparam.	
Sed	mg/kg	BERYLLIUM	N	22	5	0.5	0.8	0.6	1.3	0.24	-1.88	0.95	0.3	0.4	Lognormal	
Sed	mg/kg	CADMIUM	N	22	3	1.3	38.2	14.5	28.9	8.03	-0.45	1.13	5.4	2.5	Nonparam.	Detected in only 3 samples.
Sed	mg/kg	CALCIUM	N	22	20	134.0	56800.0	7429.5	14858.9	13286.44	7.35	1.86	11634.7	46212.0	Lognormal	
Sed	mg/kg	CHROMIUM, TOTAL	N	20	20	4.1	16.1	10.3	20.6	3.87	2.25	0.43	11.8	12.7	Nonparam.	Removed 2 Outliers; 174 and 40.
Sed	mg/kg	COBALT	N	22	14	1.2	10.8	6.8	13.6	3.63	1.06	1.13	6.0	11.2	Nonparam.	
Sed	mg/kg	COPPER	N	20	15	1.7	129.0	27.1	54.2	35.10	1.99	1.54	34.2	79.6	Lognormal	Removed 2 Outliers; 512 and 1250; both are J qualified.
Sed	mg/kg	IRON	N	22	22	3330.0	30700.0	11538.6	23077.3	6989.04	9.17	0.65	14103.0	16039.0	Normal	
Sed	mg/kg	LEAD	N	22	21	1.7	291.0	36.1	72.2	63.75	2.62	1.39	57.9	98.6	Lognormal	
Sed	mg/kg	MAGNESIUM	N	22	22	51.2	2950.0	1215.9	2431.9	899.69	6.50	1.43	1546.1	5159.0	Normal	
Sed	mg/kg	MANGANESE	N	22	22	59.3	2610.0	435.6	871.2	541.51	5.58	1.01	634.3	843.2	Lognormal	
Sed	mg/kg	MERCURY	N	22	1	2.0	2.0	2.0	4.0	0.41	-2.58	0.84	0.3	0.2	Nonparam.	Only one detection.
Sed	mg/kg	NICKEL	N	22	13	5.3	37.4	15.2	30.5	9.19	1.69	1.23	13.1	25.1	Nonparam.	

F-3

Appendix F-1

Background Statistics for Metals

Background Sampling Program

Matrix	Units	Constituent	Filtered?	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	2 X Mean Detected	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	UCL (Normal)	UCL (Lognormal)	Distribution	Notes
Sed	mg/kg	POTASSIUM	N	22	9	269.0	1080.0	779.4	1558.9	375.24	5.46	1.07	532.8	824.5	Nonparam.	
Sed	mg/kg	SELENIUM	N	22	4	0.4	1.5	0.8	1.7	0.36	-1.39	0.69	0.5	0.4	Nonparam.	
Sed	mg/kg	SILVER	N	22	1	0.9	0.9	0.9	1.8	0.24	-1.30	0.48	0.4	0.4	Nonparam.	
Sed	mg/kg	SODIUM	N	22	1	120.0	120.0	120.0	240.0	24.60	3.33	0.62	42.8	45.2	Lognormal	
Sed	mg/kg	THALLIUM	N	22	2	0.5	0.6	0.5	1.1	0.22	-1.22	0.44	0.4	0.4	Nonparam.	
Sed	mg/kg	VANADIUM	N	22	22	4.4	31.5	15.0	30.0	9.53	2.49	0.71	18.5	22.1	Nonparam.	
Sed	mg/kg	ZINC	N	22	22	8.4	7630.0	398.6	797.2	1615.67	3.89	1.44	991.4	390.1	Nonparam.	
GW	ug/l	ALUMINUM	N	12	5	235.0	2670.0	899.2	1798.4	742.99	5.15	1.76	803.0	1700.3	Lognormal	
GW	ug/l	ANTIMONY	N	12	1	17.2	17.2	17.2	34.4	3.50	1.88	0.33	8.9	8.8	Maxdetect	
GW	ug/l	ARSENIC	N	12					0.0	0.14	-0.93	0.46	0.5	0.5	N/A	
GW	ug/l	BARIUM	N	12	12	42.9	307.0	111.9	223.8	72.81	4.56	0.64	149.6	166.5	Lognormal	
GW	ug/l	BERYLLIUM	N	12	2	0.2	0.4	0.3	0.6	0.09	-2.38	1.24	0.2	0.2	Maxdetect	
GW	ug/l	CADMIUM	N	12						0.26	-0.05	0.21	1.1	1.1	N/A	
GW	ug/l	CALCIUM	N	12	12	9950.0	49200.0	26437.5	52875.0	13580.52	10.06	0.51	33478.5	38208.8	Normal	
GW	ug/l	CHROMIUM, TOTAL	N	12	2	20.3	34.0	27.2	54.3	10.38	0.89	1.57	11.2	15.6	Maxdetect	
GW	ug/l	COBALT	N	12	5	2.2	19.6	12.4	24.7	6.62	1.43	1.25	10.2	22.4	Maxdetect	
GW	ug/l	COPPER	N	12	4	2.0	315.0	81.3	162.6	90.31	0.98	1.73	75.1	92.6	Maxdetect	
GW	ug/l	IRON	N	12	9	598.0	7960.0	3364.0	6728.0	2556.91	7.06	1.87	3883.0	31791.5	Normal	
GW	ug/l	LEAD	N	12	3	2.6	7.6	4.7	9.4	2.01	0.42	1.12	3.1	3.6	Maxdetect	
GW	ug/l	MAGNESIUM	N	12	12	5250.0	24000.0	13022.5	26045.0	6809.51	9.34	0.50	16553.0	19164.6	Normal	
GW	ug/l	MANGANESE	N	12	11	17.2	917.0	280.0	560.1	261.13	4.78	1.85	392.2	5404.0	Maxdetect	
GW	ug/l	MERCURY	N	12					0.0	0.02	-3.17	0.62	0.1	0.1	N/A	
GW	ug/l	NICKEL	N	12	3	9.4	25.6	15.7	31.4	6.50	1.68	0.86	10.2	10.4	Maxdetect	
GW	ug/l	POTASSIUM	N	12	9	849.0	4040.0	1747.7	3495.3	1157.29	6.97	0.75	2006.6	2638.3	Lognormal	
GW	ug/l	SELENIUM	N	12	1	2.9	2.9	2.9	5.8	0.57	0.29	0.29	1.7	1.7	Maxdetect	
GW	ug/l	SILVER	N	12						0.00	0.10	0.00	1.1	1.1	N/A	
GW	ug/l	SODIUM	N	12	4	32300.0	74600.0	53325.0	106650.0	23717.44	9.70	0.85	36400.7	49991.7	Maxdetect	
GW	ug/l	THALLIUM	N	12						0.00	-0.84	0.00	0.4	0.4	N/A	
GW	ug/l	VANADIUM	N	12	4	2.6	14.8	7.3	14.5	4.18	0.49	1.46	5.2	8.1	Maxdetect	
GW	ug/l	ZINC	N	12					0.0	9.43	2.15	1.10	16.0	18.3	N/A	

F.4

Appendix F-2

Organic Compound Background Statistics

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Surf Soil	ug/kg	VOA	1,1,1-TRICHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,1,2,2-TETRACHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,1,2-TRICHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,1-DICHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,1-DICHLOROETHENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,2-DICHLOROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	VOA	1,2-DICHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,2-DICHLOROPROPANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	1,3-DICHLOROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	VOA	1,4-DICHLOROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	VOA	2-HEXANONE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	ACETONE	22					6.36	12.73	2.33	1.81	0.27		7.04	7.22	0	N/A
Surf Soil	ug/kg	VOA	BENZENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	BROMODICHLOROMETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	BROMOFORM	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	BROMOMETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	CARBON DISULFIDE	22	2	2	2	2	5.86	11.73	2.60	1.69	0.41	5.41	7.05	6.82	2	Nonpar.
Surf Soil	ug/kg	VOA	CARBON TETRACHLORIDE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	CHLOROBENZENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	CHLOROETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	CHLOROFORM	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	CHLOROMETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	cis-1,3-DICHLOROPROPENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	DIBROMOCHLOROMETHANE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	ETHYLBENZENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	METHYL ETHYL KETONE (2-	22	1	2	2	2	6.02	12.05	2.46	1.73	0.35	5.67	6.96	6.92	2	Nonpar.
Surf Soil	ug/kg	VOA	METHYL ISOBUTYL KETONE (4-	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	METHYLENE CHLORIDE	22					6.66	13.32	2.43	1.85	0.27		7.39	7.55	0	N/A
Surf Soil	ug/kg	VOA	STYRENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	TETRACHLOROETHYLENE(PCE)	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	TOLUENE	22	1	2	2	2	6.02	12.05	2.46	1.73	0.35	5.67	6.96	6.92	2	Nonpar.
Surf Soil	ug/kg	VOA	TOTAL 1,2-DICHLOROETHENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	Total Xylenes	22	10	1	9	2.8	4.95	9.91	3.38	1.36	0.76	3.89	7.60	6.20	9	Nonpar.
Surf Soil	ug/kg	VOA	trans-1,3-DICHLOROPROPENE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A

F-5

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Surf Soil	ug/kg	VOA	TRICHLOROETHYLENE (TCE)	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Surf Soil	ug/kg	VOA	VINYL CHLORIDE	22					6.18	12.36	2.29	1.78	0.26		6.81	7.02	0	N/A
Sub Soil	ug/kg	VOA	1,1,1-TRICHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,1,2,2-TETRACHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,1,2-TRICHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,1-DICHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,1-DICHLOROETHENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,2-DICHLOROBENZENE	22					289.32	578.64	395.96	5.41	0.52		325.20	434.60	0	N/A
Sub Soil	ug/kg	VOA	1,2-DICHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,2-DICHLOROPROPANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	1,3-DICHLOROBENZENE	22					289.32	578.64	395.96	5.41	0.52		325.20	434.60	0	N/A
Sub Soil	ug/kg	VOA	1,4-DICHLOROBENZENE	22					289.32	578.64	395.96	5.41	0.52		325.20	434.60	0	N/A
Sub Soil	ug/kg	VOA	2-HEXANONE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	ACETONE	22					5.82	11.64	0.25	1.76	0.04		5.91	5.91	0	N/A
Sub Soil	ug/kg	VOA	BENZENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	BROMODICHLOROMETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	BROMOFORM	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	BROMOMETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	CARBON DISULFIDE	22	2	1	2	1.5	5.43	10.86	1.30	1.63	0.43	5.12	6.77	5.91	2	Nonpar.
Sub Soil	ug/kg	VOA	CARBON TETRACHLORIDE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	CHLOROBENZENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	CHLOROETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	CHLOROFORM	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	CHLOROMETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	cis-1,3-DICHLOROPROPENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	DIBROMOCHLOROMETHANE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	ETHYLBENZENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	METHYL ETHYL KETONE (2-	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	METHYL ISOBUTYL KETONE (4-	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	METHYLENE CHLORIDE	22					6.20	12.41	0.81	1.82	0.12		6.50	6.50	0	N/A
Sub Soil	ug/kg	VOA	STYRENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	TETRACHLOROETHYLENE(PCE)	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	TOLUENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	TOTAL 1,2-DICHLOROETHENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sub Soil	ug/kg	VOA	Total Xylenes	22	4	1	2	1.5	5.02	10.05	1.73	1.50	0.58	4.49	6.90	5.66	2	Nonpar.
Sub Soil	ug/kg	VOA	trans-1,3-DICHLOROPROPENE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	TRICHLOROETHYLENE (TCE)	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
Sub Soil	ug/kg	VOA	VINYL CHLORIDE	22					5.84	11.68	0.24	1.76	0.04		5.93	5.93	0	N/A
SW	ug/l	VOA	1,1,1-TRICHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,1,2,2-TETRACHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,1,2-TRICHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,1-DICHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,1-DICHLOROETHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,2-DICHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,2-DICHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,2-DICHLOROPROPANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,3-DICHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	1,4-DICHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	2-HEXANONE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	ACETONE	22					5.07	10.14	0.23	1.62	0.04		5.15	5.15	0	N/A
SW	ug/l	VOA	BENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	BROMODICHLOROMETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	BROMOFORM	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	BROMOMETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CARBON DISULFIDE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CARBON TETRACHLORIDE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CHLOROFORM	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	CHLOROMETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	cis-1,3-DICHLOROPROPENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	DIBROMOCHLOROMETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	ETHYLBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	METHYL ETHYL KETONE (2-	22	5	1	2	1.6	4.23	8.45	1.48	1.34	0.54	3.81	5.62	4.77	2	Nonpar.
SW	ug/l	VOA	METHYL ISOBUTYL KETONE (4-	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	METHYLENE CHLORIDE	22					4.20	8.41	1.73	1.22	0.85		7.64	4.84	0	N/A
SW	ug/l	VOA	STYRENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	TETRACHLOROETHYLENE(PCE)	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A

308 403

F
7

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
SW	ug/l	VOA	TOLUENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	TOTAL 1,2-DICHLOROETHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	Total Xylenes	22	2	1	1	1	4.64	9.27	1.18	1.46	0.47	4.32	5.93	5.07	1	Nonpar.
SW	ug/l	VOA	trans-1,3-DICHLOROPROPENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	TRICHLOROETHYLENE (TCE)	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	VOA	VINYL CHLORIDE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
Sed	ug/kg	VOA	1,1,1-TRICHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,1,2,2-TETRACHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,1,2-TRICHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,1-DICHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,1-DICHLOROETHENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,2-DICHLOROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	VOA	1,2-DICHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,2-DICHLOROPROPANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	1,3-DICHLOROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	VOA	1,4-DICHLOROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	VOA	2-HEXANONE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	ACETONE	22					11.18	22.36	8.91	2.24	0.55		13.95	14.45	0	N/A
Sed	ug/kg	VOA	BENZENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	BROMODICHLOROMETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	BROMOFORM	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	BROMOMETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CARBON DISULFIDE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CARBON TETRACHLORIDE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CHLOROBENZENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CHLOROETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CHLOROFORM	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	CHLOROMETHANE	22	1	3	3	3	9.91	19.82	8.80	2.10	0.55	8.19	12.25	13.14	3	Nonpar.
Sed	ug/kg	VOA	cis-1,3-DICHLOROPROPENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	DIBROMOCHLOROMETHANE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	ETHYLBENZENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	METHYL ETHYL KETONE (2-	22	10	1	10	4.8	8.09	16.18	9.20	1.78	0.74	5.95	11.32	11.47	10	Nonpar.
Sed	ug/kg	VOA	METHYL ISOBUTYL KETONE (4-	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	METHYLENE CHLORIDE	22					10.30	20.59	8.62	2.17	0.50		12.30	13.46	0	N/A

F-8

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sed	ug/kg	VOA	STYRENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	TETRACHLOROETHYLENE(PCE)	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	TOLUENE	22	3	2	14	8.667	8.36	16.73	4.05	2.02	0.47	7.55	10.33	9.85	14	Nonpar.
Sed	ug/kg	VOA	TOTAL 1,2-DICHLOROETHENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	Total Xylenes	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	trans-1,3-DICHLOROPROPENE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	TRICHLOROETHYLENE (TCE)	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
Sed	ug/kg	VOA	VINYL CHLORIDE	22					10.05	20.09	8.71	2.13	0.51		12.14	13.24	0	N/A
GW	ug/l	VOA	1,1,1-TRICHLOROETHANE	12	1	1	1	1	4.67	9.33	1.15	1.48	0.42	4.37	6.57	5.27	1	Maxdet
GW	ug/l	VOA	1,1,2,2-TETRACHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,1,2-TRICHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,1-DICHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,1-DICHLOROETHENE	12	1	2	2	2	4.75	9.50	0.87	1.53	0.24	4.63	5.59	5.20	2	Maxdet
GW	ug/l	VOA	1,2-DICHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,2-DICHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,2-DICHLOROPROPANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,3-DICHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	1,4-DICHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	2-HEXANONE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	ACETONE	12					8.83	17.67	8.14	1.93	0.58		13.52	13.06	0	N/A
GW	ug/l	VOA	BENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	BROMODICHLOROMETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	BROMOFORM	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	BROMOMETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CARBON DISULFIDE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CARBON TETRACHLORIDE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CHLOROFORM	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	CHLOROMETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	cis-1,3-DICHLOROPROPENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	DIBROMOCHLOROMETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	ETHYLBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	METHYL ETHYL KETONE (2-	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A

308 405

F-9

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
GW	ug/l	VOA	METHYL ISOBUTYL KETONE (4-	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	METHYLENE CHLORIDE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	STYRENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	TETRACHLOROETHYLENE(PCE)	12					5.00	10.00	0.00	1.61	0.42		5.00	5.00	0	N/A
GW	ug/l	VOA	TOLUENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	TOTAL 1,2-DICHLOROETHENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	Total Xylenes	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	trans-1,3-DICHLOROPROPENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	VOA	TRICHLOROETHYLENE (TCE)	12	1	1	1	1	4.67	9.33	1.15	1.48	0.42	4.37	6.57	5.27	1	Maxdet
GW	ug/l	VOA	VINYL CHLORIDE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
Surf Soil	ug/kg	SVOA	1,2,4-TRICHLOROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,4,5-TRICHLOROPHENOL	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	2,4,6-TRICHLOROPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,4-DICHLOROPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,4-DIMETHYLPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,4-DINITROPHENOL	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	2,4-DINITROTOLUENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2,6-DINITROTOLUENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2-CHLORONAPHTHALENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2-CHLOROPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2-METHYLNAPHTHALENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2-METHYLPHENOL (o-CRESOL)	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	2-NITROANILINE	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	2-NITROPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	3,3'-DICHLOROBENZIDINE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	3-NITROANILINE	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	4,6-DINITRO-2-METHYLPHENOL	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	4-BROMOPHENYL PHENYL ETHER	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	4-CHLORO-3-METHYLPHENOL	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	4-CHLOROANILINE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	4-CHLOROPHENYL PHENYL ETHER	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	4-METHYLPHENOL (p-CRESOL)	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	4-NITROANILINE	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A

F-10

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Surf Soil	ug/kg	SVOA	4-NITROPHENOL	22					815.00	1630.00	1032.92	6.37	0.67		1002.12	1194.00	0	N/A
Surf Soil	ug/kg	SVOA	ACENAPHTHENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	ACENAPHTHYLENE	22	1	190	190	190	323.86	647.73	410.59	5.45	0.67	232.14	397.82	474.52	190	Nonpar.
Surf Soil	ug/kg	SVOA	ANTHRACENE	22	1	96	96	96	319.59	639.18	412.54	5.42	0.69	225.05	397.05	470.96	96	Nonpar.
Surf Soil	ug/kg	SVOA	BENZO(a)ANTHRACENE	22	9	43	710	151.3	312.36	624.73	435.35	5.19	0.99	178.86	505.32	472.10	710	Nonpar.
Surf Soil	ug/kg	SVOA	BENZO(a)PYRENE	22	9	44	960	186.4	326.73	653.45	448.10	5.22	1.01	184.75	582.03	491.14	960	Nonpar.
Surf Soil	ug/kg	SVOA	BENZO(b)FLUORANTHENE	22	9	51	900	207.9	335.50	671.00	438.12	5.34	0.89	208.79	495.06	496.25	900	Nonpar.
Surf Soil	ug/kg	SVOA	BENZO(g,h,i)PERYLENE	22	9	37	820	168.7	319.45	638.91	439.65	5.21	0.99	183.64	518.95	480.77	820	Nonpar.
Surf Soil	ug/kg	SVOA	BENZO(k)FLUORANTHENE	22	9	45	780	191.8	328.91	657.82	432.01	5.32	0.90	204.52	490.61	487.42	780	Nonpar.
Surf Soil	ug/kg	SVOA	BENZYL BUTYL PHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	bis(2-CHLOROETHOXY) METHANE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	bis(2-CHLOROETHYL) ETHER (2-	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	bis(2-ETHYLHEXYL) PHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	CARBAZOLE	22	1	67	67	67	318.27	636.55	413.33	5.40	0.72	221.40	409.52	469.93	67	Nonpar.
Surf Soil	ug/kg	SVOA	CHRYSENE	22	10	40	940	189.7	328.73	657.45	445.08	5.26	0.96	192.81	518.80	492.03	940	Nonpar.
Surf Soil	ug/kg	SVOA	DI-n-BUTYL PHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	DI-n-OCTYLPHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	DIBENZ(a,h)ANTHRACENE	22	3	36	260	117.3	315.32	630.64	416.06	5.34	0.83	208.09	453.15	467.98	260	Nonpar.
Surf Soil	ug/kg	SVOA	DIBENZOFURAN	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	DIETHYL PHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	DIMETHYL PHTHALATE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	FLUORANTHENE	22	11	49	1600	309.5	389.09	778.18	494.96	5.47	0.92	238.32	607.58	570.70	1600	Nonpar.
Surf Soil	ug/kg	SVOA	FLUORENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	HEXACHLOROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	HEXACHLOROBUTADIENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	HEXACHLOROCYCLOPENTADIENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	HEXACHLOROETHANE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	INDENO(1,2,3-c,d)PYRENE	22	7	63	700	179.4	323.68	647.36	428.85	5.32	0.87	203.57	468.43	481.03	700	Nonpar.
Surf Soil	ug/kg	SVOA	ISOPHORONE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	NITROBENZENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	N-NITROSODI-n-PROPYLAMINE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	N-NITROSODIPHENYLAMINE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	NAPHTHALENE	22					323.41	646.82	410.75	5.44	0.67		397.24	474.12	0	N/A
Surf Soil	ug/kg	SVOA	PENTACHLOROPHENOL	22					180.23	360.45	215.47	4.83	0.73		235.87	259.29	0	N/A

F-11

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Surf Soil	ug/kg	SVOA	PHENANTHRENE	22	9	37	610	159.4	315.68	631.36	427.40	5.26	0.92	193.13	488.14	472.50	610	Nonpar.
Surf Soil	ug/kg	SVOA	PHENOL	22	5	52	14000	5238	1329.41	2658.82	3312.39	5.64	1.39	281.41	2013.31	2544.79	14000	Nonpar.
Surf Soil	ug/kg	SVOA	PYRENE	22	11	50	1500	272.2	370.41	740.82	488.90	5.39	0.94	219.49	578.53	549.79	1500	Nonpar.
Sub Soil	ug/kg	SVOA	1,2,4-TRICHLOROBENZENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,4,5-TRICHLOROPHENOL	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	2,4,6-TRICHLOROPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,4-DICHLOROPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,4-DIMETHYLPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,4-DINITROPHENOL	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	2,4-DINITROTOLUENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2,6-DINITROTOLUENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2-CHLORONAPHTHALENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2-CHLOROPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2-METHYLNAPHTHALENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2-METHYLPHENOL (o-CRESOL)	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	2-NITROANILINE	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	2-NITROPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	3,3'-DICHLOROBENZIDINE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	3-NITROANILINE	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	4,6-DINITRO-2-METHYLPHENOL	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	4-BROMOPHENYL PHENYL ETHER	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	4-CHLORO-3-METHYLPHENOL	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	4-CHLOROANILINE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	4-CHLOROPHENYL PHENYL ETHER	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	4-METHYLPHENOL (p-CRESOL)	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	4-NITROANILINE	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	4-NITROPHENOL	22					895.23	1790.45	1088.53	6.47	0.67		1115.07	1294.63	0	N/A
Sub Soil	ug/kg	SVOA	ACENAPHTHENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	ACENAPHTHYLENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	ANTHRACENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	BENZO(a)ANTHRACENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	BENZO(a)PYRENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A
Sub Soil	ug/kg	SVOA	BENZO(b)FLUORANTHENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sub Soil	ug/kg	SVOA	BENZO(g,h,i)PERYLENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A
Sub Soil	ug/kg	SVOA	BENZO(k)FLUORANTHENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A
Sub Soil	ug/kg	SVOA	BENZYL BUTYL PHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	bis(2-CHLOROETHOXY) METHANE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	bis(2-CHLOROETHYL) ETHER (2-	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	bis(2-ETHYLHEXYL) PHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	CARBAZOLE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	CHRYSENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	DIBENZ(a,h)ANTHRACENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A
Sub Soil	ug/kg	SVOA	DIBENZOFURAN	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	DIETHYL PHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	DIMETHYL PHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	DI-n-BUTYL PHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	DI-n-OCTYLPHTHALATE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	FLUORANTHENE	22	2	44	45	44.5	345.64	691.27	449.98	5.42	0.85	226.26	508.25	510.74	45	Nonpar.
Sub Soil	ug/kg	SVOA	FLUORENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	HEXACHLOROBENZENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	HEXACHLOROBUTADIENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	HEXACHLOROCYCLOPENTADIENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	HEXACHLOROETHANE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	INDENO(1,2,3-c,d)PYRENE	22					396.14	792.27	461.06	5.63	0.73		523.67	565.31	0	N/A
Sub Soil	ug/kg	SVOA	ISOPHORONE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	NAPHTHALENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	N-NITROSODI-n-PROPYLAMINE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	N-NITROSODIPHENYLAMINE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	NITROBENZENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	PENTACHLOROPHENOL	22					179.32	358.64	217.25	4.87	0.67		223.48	259.03	0	N/A
Sub Soil	ug/kg	SVOA	PHENANTHRENE	22					359.77	719.55	442.34	5.56	0.67		447.69	522.07	0	N/A
Sub Soil	ug/kg	SVOA	PHENOL	22	6	580	19000	4295	1383.86	2767.73	4015.50	6.00	1.20	402.26	1775.50	2857.23	19000	Nonpar.
Sub Soil	ug/kg	SVOA	PYRENE	22	2	39	42	40.5	345.27	690.55	450.24	5.41	0.87	224.32	516.35	510.47	42	Nonpar.
SW	ug/l	SVOA	1,2,4-TRICHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2,4,5-TRICHLOROPHENOL	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	2,4,6-TRICHLOROPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A

308 409

F-13

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
SW	ug/l	SVOA	2,4-DICHLOROPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2,4-DIMETHYLPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2,4-DINITROPHENOL	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	2,4-DINITROTOLUENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2,6-DINITROTOLUENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2-CHLORONAPHTHALENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2-CHLOROPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2-METHYLNAPHTHALENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2-METHYLPHENOL (o-CRESOL)	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	2-NITROANILINE	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	2-NITROPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	3,3'-DICHLOROBENZIDINE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	3-NITROANILINE	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	4,6-DINITRO-2-METHYLPHENOL	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	4-BROMOPHENYL PHENYL ETHER	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	4-CHLORO-3-METHYLPHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	4-CHLOROANILINE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	4-CHLOROPHENYL PHENYL ETHER	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	4-METHYLPHENOL (p-CRESOL)	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	4-NITROANILINE	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	4-NITROPHENOL	22					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
SW	ug/l	SVOA	ACENAPHTHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	ACENAPHTHYLENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	ANTHRACENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZO(a)ANTHRACENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZO(a)PYRENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZO(b)FLUORANTHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZO(g,h,i)PERYLENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZO(k)FLUORANTHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	BENZYL BUTYL PHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	bis(2-CHLOROETHOXY) METHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	bis(2-CHLOROETHYL) ETHER (2-	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	bis(2-ETHYLHEXYL) PHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	CARBAZOLE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A

F-17

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
SW	ug/l	SVOA	CHRYSENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DI-n-BUTYL PHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DI-n-OCTYLPHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DIBENZ(a,h)ANTHRACENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DIBENZOFURAN	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DIETHYL PHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	DIMETHYL PHTHALATE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	FLUORANTHENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	FLUORENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	HEXACHLOROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	HEXACHLOROBUTADIENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	HEXACHLOROCYCLOPENTADIENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	HEXACHLOROETHANE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	INDENO(1,2,3-c,d)PYRENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	ISOPHORONE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	NITROBENZENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	N-NITROSODI-n-PROPYLAMINE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	N-NITROSODIPHENYLAMINE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	NAPHTHALENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	PENTACHLOROPHENOL	22					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A
SW	ug/l	SVOA	PHENANTHRENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	PHENOL	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
SW	ug/l	SVOA	PYRENE	22					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
Sed	ug/kg	SVOA	1,2,4-TRICHLOROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,4,5-TRICHLOROPHENOL	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	2,4,6-TRICHLOROPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,4-DICHLOROPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,4-DIMETHYLPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,4-DINITROPHENOL	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	2,4-DINITROTOLUENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2,6-DINITROTOLUENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2-CHLORONAPHTHALENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2-CHLOROPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A

F-15

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sed	ug/kg	SVOA	2-METHYLNAPHTHALENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2-METHYLPHENOL (o-CRESOL)	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	2-NITROANILINE	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	2-NITROPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	3,3'-DICHLOROBENZIDINE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	3-NITROANILINE	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	4,6-DINITRO-2-METHYLPHENOL	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	4-BROMOPHENYL PHENYL ETHER	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	4-CHLORO-3-METHYLPHENOL	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	4-CHLOROANILINE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	4-CHLOROPHENYL PHENYL ETHER	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	4-METHYLPHENOL (p-CRESOL)	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	4-NITROANILINE	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	4-NITROPHENOL	22					2053.64	4107.27	2194.86	7.09	1.04		4000.53	2858.97	0	N/A
Sed	ug/kg	SVOA	ACENAPHTHENE	22	2	59	770	414.5	838.82	1677.64	901.99	6.14	1.13	465.17	1805.95	1169.77	770	Nonpar.
Sed	ug/kg	SVOA	ACENAPHTHYLENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	ANTHRACENE	22	2	310	1600	955	887.95	1775.91	907.07	6.25	1.06	518.56	1792.90	1220.78	1600	Nonpar.
Sed	ug/kg	SVOA	BENZO(a)ANTHRACENE	22	6	64	2900	819.8	936.77	1873.55	996.31	6.18	1.25	481.67	2595.30	1302.34	2900	Nonpar.
Sed	ug/kg	SVOA	BENZO(a)PYRENE	22	7	64	2500	631.9	902.86	1805.73	969.52	6.11	1.28	452.54	2557.36	1258.60	2500	Nonpar.
Sed	ug/kg	SVOA	BENZO(b)FLUORANTHENE	22	7	59	2600	668.7	914.59	1829.18	969.78	6.17	1.23	478.90	2216.05	1270.42	2216	Lognorma
Sed	ug/kg	SVOA	BENZO(g,h,i)PERYLENE	22	7	48	1800	452.4	845.77	1691.55	930.62	6.05	1.26	425.94	2320.91	1187.23	1800	Nonpar.
Sed	ug/kg	SVOA	BENZO(k)FLUORANTHENE	22	7	75	2300	623.7	900.27	1800.55	949.19	6.16	1.21	475.61	2126.29	1248.55	2300	Nonpar.
Sed	ug/kg	SVOA	BENZYL BUTYL PHTHALATE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	bis(2-CHLOROETHOXY) METHANE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	bis(2-CHLOROETHYL) ETHER (2-	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	bis(2-ETHYLHEXYL) PHTHALATE	22	1	480	480	480	758.48	1516.95	869.62	6.03	1.15	414.68	1652.69	1077.56	480	Nonpar.
Sed	ug/kg	SVOA	CARBAZOLE	22	2	83	1100	591.5	854.91	1709.82	902.54	6.17	1.11	480.16	1807.52	1186.07	1100	Nonpar.
Sed	ug/kg	SVOA	CHRYSENE	22	8	88	3200	735	923.64	1847.27	1041.41	6.12	1.25	456.29	2191.99	1305.75	3200	Nonpar.
Sed	ug/kg	SVOA	DI-n-BUTYL PHTHALATE	22					829.82	1659.64	904.54	6.09	1.21		1978.15	1161.71	0	N/A
Sed	ug/kg	SVOA	DI-n-OCTYLPHTHALATE	22	1	47	47	47	830.55	1661.09	903.83	6.12	1.15	455.19	1819.80	1162.18	47	Nonpar.
Sed	ug/kg	SVOA	DIBENZ(a,h)ANTHRACENE	22	2	130	700	415	838.86	1677.73	899.58	6.17	1.07	480.09	1681.41	1168.94	700	Nonpar.
Sed	ug/kg	SVOA	DIBENZOFURAN	22	2	42	380	211	820.32	1640.64	907.91	6.09	1.16	443.57	1804.01	1153.45	380	Nonpar.
Sed	ug/kg	SVOA	DIETHYL PHTHALATE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	DIMETHYL PHTHALATE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A

308 412

F-16

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sed	ug/kg	SVOA	FLUORANTHENE	22	10	60	7100	1294	1072.05	2144.09	1631.31	6.16	1.25	474.86	2283.61	1670.60	7100	Nonpar.
Sed	ug/kg	SVOA	FLUORENE	22	2	130	870	500	846.59	1693.18	899.06	6.18	1.08	484.86	1711.60	1176.47	870	Nonpar.
Sed	ug/kg	SVOA	HEXACHLOROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	HEXACHLOROBUTADIENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	HEXACHLOROCYCLOPENTADIENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	HEXACHLOROETHANE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	INDENO(1,2,3-c,d)PYRENE	22	7	42	1700	428.3	838.09	1676.18	927.41	6.02	1.30	413.29	2419.23	1178.38	1700	Nonpar.
Sed	ug/kg	SVOA	ISOPHORONE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	NITROBENZENE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	N-NITROSODI-n-PROPYLAMINE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	N-NITROSODIPHENYLAMINE	22					837.50	1675.00	898.08	6.19	1.05		1636.90	1167.02	0	N/A
Sed	ug/kg	SVOA	NAPHTHALENE	22	1	130	130	130	816.14	1632.27	909.52	6.12	1.08	453.51	1621.92	1149.85	130	Nonpar.
Sed	ug/kg	SVOA	PENTACHLOROPHENOL	22					420.23	840.45	453.75	5.49	1.05		823.37	586.72	0	N/A
Sed	ug/kg	SVOA	PHENANTHRENE	22	6	68	6900	1651	1163.41	2326.82	1570.27	6.28	1.32	532.30	3247.60	1739.57	6900	Nonpar.
Sed	ug/kg	SVOA	PHENOL	22	5	51	200	85.8	812.00	1624.00	918.59	5.96	1.33	387.11	2454.10	1149.05	200	Nonpar.
Sed	ug/kg	SVOA	PYRENE	22	10	43	6800	1360	1102.18	2204.36	1567.77	6.21	1.29	499.49	2881.87	1677.43	2881.9	Lognorma
GW	ug/l	SVOA	1,2,4-TRICHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,2'-OXYBIS(1-CHLORO)PROPANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,4,5-TRICHLOROPHENOL	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	2,4,6-TRICHLOROPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,4-DICHLOROPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,4-DIMETHYLPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,4-DINITROPHENOL	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	2,4-DINITROTOLUENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2,6-DINITROTOLUENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2-CHLORONAPHTHALENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2-CHLOROPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2-METHYLNAPHTHALENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2-METHYLPHENOL (o-CRESOL)	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	2-NITROANILINE	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	2-NITROPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	3,3'-DICHLOROBENZIDINE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	3-NITROANILINE	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	4,6-DINITRO-2-METHYLPHENOL	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A

F-17

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
GW	ug/l	SVOA	4-BROMOPHENYL PHENYL ETHER	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	4-CHLORO-3-METHYLPHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	4-CHLOROANILINE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	4-CHLOROPHENYL PHENYL ETHER	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	4-METHYLPHENOL (p-CRESOL)	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	4-NITROANILINE	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	4-NITROPHENOL	12					12.50	25.00	0.00	2.53	0.00		12.50	12.50	0	N/A
GW	ug/l	SVOA	ACENAPHTHENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	ACENAPHTHYLENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	ANTHRACENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZO(a)ANTHRACENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZO(a)PYRENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZO(b)FLUORANTHENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZO(g,h,i)PERYLENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZO(k)FLUORANTHENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	BENZYL BUTYL PHTHALATE	12	1	2	2	2	4.75	9.50	0.87	1.53	0.24	4.63	5.59	5.20	2	Maxdet
GW	ug/l	SVOA	bis(2-CHLOROETHOXY) METHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	bis(2-CHLOROETHYL) ETHER (2-	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	bis(2-ETHYLHEXYL) PHTHALATE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	CARBAZOLE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	CHRYSENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DI-n-BUTYL PHTHALATE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DI-n-OCTYLPHTHALATE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DIBENZ(a,h)ANTHRACENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DIBENZOFURAN	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DIETHYL PHTHALATE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	DIMETHYL PHTHALATE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	FLUORANTHENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	FLUORENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	HEXACHLOROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	HEXACHLOROBUTADIENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	HEXACHLOROCYCLOPENTADIENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	HEXACHLOROETHANE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	INDENO(1,2,3-c,d)PYRENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A

308 414

F-18

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
GW	ug/l	SVOA	ISOPHORONE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	NITROBENZENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	N-NITROSODI-n-PROPYLAMINE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	N-NITROSODIPHENYLAMINE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	NAPHTHALENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	PENTACHLOROPHENOL	12					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A
GW	ug/l	SVOA	PHENANTHRENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	PHENOL	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
GW	ug/l	SVOA	PYRENE	12					5.00	10.00	0.00	1.61	0.00		5.00	5.00	0	N/A
Surf Soil	ug/kg	HERB	2,4 DB	22					114.81	229.62	108.67	4.51	0.65		154.47	155.72	0	N/A
Surf Soil	ug/kg	HERB	2,4,5-T (TRICHLOROPHENOXYACETIC	22					18.07	36.14	6.06	2.81	0.46		22.72	20.35	0	N/A
Surf Soil	ug/kg	HERB	2,4-D (DICHLOROPHENOXYACETIC	22					93.69	187.38	26.52	4.48	0.38		112.09	103.67	0	N/A
Surf Soil	ug/kg	HERB	DALAPON	22					180.71	361.43	60.61	5.12	0.46		227.13	203.53	0	N/A
Surf Soil	ug/kg	HERB	DICAMBA	22					18.07	36.14	6.06	2.81	0.46		22.72	20.35	0	N/A
Surf Soil	ug/kg	HERB	DICHLOROPROP	22					88.38	176.76	30.73	4.40	0.46		110.92	99.95	0	N/A
Surf Soil	ug/kg	HERB	DINOSEB	22					18.07	36.14	6.06	2.81	0.46		22.72	20.35	0	N/A
Surf Soil	ug/kg	HERB	MCPA	22					10059.52	20119.05	5041.02	9.11	0.47		12505.11	11957.09	0	N/A
Surf Soil	ug/kg	HERB	MCPP	22					9361.90	18723.81	4193.06	9.04	0.51		12081.08	10940.28	0	N/A
Surf Soil	ug/kg	HERB	SILVEX (2,4,5-TP)	22					18.07	36.14	6.06	2.81	0.46		22.72	20.35	0	N/A
Sub Soil	ug/kg	HERB	2,4 DB	22					56.86	113.71	28.75	3.93	0.46		69.92	67.68	0	N/A
Sub Soil	ug/kg	HERB	2,4,5-T (TRICHLOROPHENOXYACETIC	22					11.38	22.76	5.89	2.32	0.48		14.08	13.60	0	N/A
Sub Soil	ug/kg	HERB	2,4-D (DICHLOROPHENOXYACETIC	22					56.86	113.71	28.75	3.93	0.46		69.92	67.68	0	N/A
Sub Soil	ug/kg	HERB	DALAPON	22					113.81	227.62	58.93	4.62	0.48		140.74	135.99	0	N/A
Sub Soil	ug/kg	HERB	DICAMBA	22					11.38	22.76	5.89	2.32	0.48		14.08	13.60	0	N/A
Sub Soil	ug/kg	HERB	DICHLOROPROP	22					56.86	113.71	28.75	3.93	0.46		69.92	67.68	0	N/A
Sub Soil	ug/kg	HERB	DINOSEB	22					11.38	22.76	5.89	2.32	0.48		14.08	13.60	0	N/A
Sub Soil	ug/kg	HERB	MCPA	22					6276.19	12552.38	3518.90	8.62	0.51		7948.46	7600.80	0	N/A
Sub Soil	ug/kg	HERB	MCPP	22					5685.71	11371.43	2875.25	8.54	0.46		6989.05	6768.03	0	N/A
Sub Soil	ug/kg	HERB	SILVEX (2,4,5-TP)	22					11.38	22.76	5.89	2.32	0.48		14.08	13.60	0	N/A
SW	ug/l	HERB	2,4 DB	22					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
SW	ug/l	HERB	2,4,5-T (TRICHLOROPHENOXYACETIC	22					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
SW	ug/l	HERB	2,4-D (DICHLOROPHENOXYACETIC	22					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
SW	ug/l	HERB	DALAPON	22					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A
SW	ug/l	HERB	DICAMBA	22					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A

F-19

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
SW	ug/l	HERB	DICHLOROPROP	22					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
SW	ug/l	HERB	DINOSEB	22					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
SW	ug/l	HERB	MCPA	22					125.00	250.00	0.00	4.83	0.00		124.94	125.00	0	N/A
SW	ug/l	HERB	MCPP	22					125.00	250.00	0.00	4.83	0.00		124.94	125.00	0	N/A
Sed	ug/kg	HERB	2,4 DB	22					237.09	474.18	335.03	4.80	1.13		467.79	360.02	0	N/A
Sed	ug/kg	HERB	2,4,5-T (TRICHLOROPHENOXYACETIC	22					47.20	94.41	66.95	3.19	1.12		92.44	71.77	0	N/A
Sed	ug/kg	HERB	2,4-D (DICHLOROPHENOXYACETIC	22					237.09	474.18	335.03	4.80	1.13		467.79	360.02	0	N/A
Sed	ug/kg	HERB	DALAPON	22					472.05	944.09	669.45	5.49	1.12		924.16	717.68	0	N/A
Sed	ug/kg	HERB	DICAMBA	22					47.20	94.41	66.95	3.19	1.12		92.44	71.77	0	N/A
Sed	ug/kg	HERB	DICHLOROPROP	22					237.09	474.18	335.03	4.80	1.13		467.79	360.02	0	N/A
Sed	ug/kg	HERB	DINOSEB	22					47.20	94.41	66.95	3.19	1.12		92.44	71.77	0	N/A
Sed	ug/kg	HERB	MCPA	22					26145.45	52290.91	32854.39	9.63	1.04		50102.85	38200.34	0	N/A
Sed	ug/kg	HERB	MCPP	22					26254.55	52509.09	34831.59	9.48	1.19		56023.77	39034.90	0	N/A
Sed	ug/kg	HERB	SILVEX (2,4,5-TP)	22					47.20	94.41	66.95	3.19	1.12		92.44	71.77	0	N/A
GW	ug/l	HERB	2,4 DB	12					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
GW	ug/l	HERB	2,4,5-T (TRICHLOROPHENOXYACETIC	12					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
GW	ug/l	HERB	2,4-D (DICHLOROPHENOXYACETIC	12					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
GW	ug/l	HERB	DALAPON	12					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A
GW	ug/l	HERB	DICAMBA	12					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
GW	ug/l	HERB	DICHLOROPROP	12					1.25	2.50	0.00	0.22	0.00		1.25	1.25	0	N/A
GW	ug/l	HERB	DINOSEB	12					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
GW	ug/l	HERB	MCPA	12					125.00	250.00	0.00	4.83	0.00		124.94	125.00	0	N/A
GW	ug/l	HERB	MCPP	12					156.25	312.50	108.25	4.94	0.37		196.70	212.38	0	N/A
GW	ug/l	HERB	SILVEX (2,4,5-TP)	12					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
Surf Soil	ug/kg	PEST	ALDRIN	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	ALPHA BHC (ALPHA	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	ALPHA ENDOSULFAN	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	ALPHA-CHLORDANE	22	5	3.5	29	9.44	3.45	6.90	6.11	0.58	1.00	1.78	5.12	5.69	29	Nonpar.
Surf Soil	ug/kg	PEST	BETA BHC (BETA	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	BETA ENDOSULFAN	22					3.94	7.88	3.94	1.06	0.72		5.40	5.39	0	N/A
Surf Soil	ug/kg	PEST	DELTA BHC (DELTA	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	DIELDRIN	22	14	3.3	530	114	73.15	146.30	132.49	2.63	2.02	13.83	947.79	121.76	530	Nonpar.
Surf Soil	ug/kg	PEST	ENDOSULFAN SULFATE	22					3.94	7.88	3.94	1.06	0.72		5.40	5.39	0	N/A
Surf Soil	ug/kg	PEST	ENDRIN	22					3.94	7.88	3.94	1.06	0.72		5.40	5.39	0	N/A

308 416

f-20

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Surf Soil	ug/kg	PEST	ENDRIN ALDEHYDE	22					3.94	7.88	3.94	1.06	0.72		5.40	5.39	0	N/A
Surf Soil	ug/kg	PEST	ENDRIN KETONE	22					3.94	7.88	3.94	1.06	0.72		5.40	5.39	0	N/A
Surf Soil	ug/kg	PEST	GAMMA BHC (LINDANE)	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	GAMMA-CHLORDANE	22	5	2.3	26	11.02	3.81	7.62	6.20	0.61	1.07	1.84	6.44	6.08	26	Nonpar.
Surf Soil	ug/kg	PEST	HEPTACHLOR	22					2.01	4.03	2.01	0.40	0.72		2.76	2.75	0	N/A
Surf Soil	ug/kg	PEST	HEPTACHLOR EPOXIDE	22	1	7.7	7.7	7.7	2.26	4.51	2.35	0.45	0.79	1.57	3.20	3.12	7.7	Nonpar.
Surf Soil	ug/kg	PEST	METHOXYCHLOR	22					20.14	40.27	20.10	2.70	0.72		27.55	27.51	0	N/A
Surf Soil	ug/kg	PEST	p,p'-DDD	22	1	6.7	6.7	6.7	4.04	8.08	3.99	1.08	0.74	2.95	5.62	5.50	6.7	Nonpar.
Surf Soil	ug/kg	PEST	p,p'-DDE	22	2	110	160	135	15.64	31.28	39.58	1.35	1.33	3.85	24.25	30.16	160	Nonpar.
Surf Soil	ug/kg	PEST	p,p'-DDT	22	3	9.4	74	43.47	8.88	17.77	17.63	1.28	1.13	3.59	14.00	15.35	74	Nonpar.
Surf Soil	ug/kg	PEST	PCB-1016 (AROCHLOR 1016)	22					39.39	78.77	39.43	3.37	0.72		54.01	53.85	0	N/A
Surf Soil	ug/kg	PEST	PCB-1221 (AROCHLOR 1221)	22					79.82	159.64	80.25	4.07	0.72		109.08	109.26	0	N/A
Surf Soil	ug/kg	PEST	PCB-1232 (AROCHLOR 1232)	22					39.39	78.77	39.43	3.37	0.72		54.01	53.85	0	N/A
Surf Soil	ug/kg	PEST	PCB-1242 (AROCHLOR 1242)	22					39.39	78.77	39.43	3.37	0.72		54.01	53.85	0	N/A
Surf Soil	ug/kg	PEST	PCB-1248 (AROCHLOR 1248)	22					39.39	78.77	39.43	3.37	0.72		54.01	53.85	0	N/A
Surf Soil	ug/kg	PEST	PCB-1254 (AROCHLOR 1254)	22					39.39	78.77	39.43	3.17	0.72		54.01	53.85	0	N/A
Surf Soil	ug/kg	PEST	PCB-1260 (AROCHLOR 1260)	22	2	100	110	105	53.68	107.36	75.96	3.49	0.90	32.66	78.28	81.55	110	Nonpar.
Surf Soil	ug/kg	PEST	TOXAPHENE	22					201.36	402.73	201.04	5.00	0.72		275.46	275.13	0	N/A
Sub Soil	ug/kg	PEST	ALDRIN	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	ALPHA BHC (ALPHA	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	ALPHA ENDOSULFAN	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	ALPHA-CHLORDANE	22	1	2.6	2.6	2.6	1.11	2.23	0.40	0.07	0.25	1.07	1.22	1.26	2.6	Nonpar.
Sub Soil	ug/kg	PEST	BETA BHC (BETA	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	BETA ENDOSULFAN	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	DELTA BHC (DELTA	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	DIELDRIN	22	3	3.5	370	127	18.92	37.84	78.42	0.98	1.14	2.65	10.38	47.69	370	Nonpar.
Sub Soil	ug/kg	PEST	ENDOSULFAN SULFATE	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	ENDRIN	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	ENDRIN ALDEHYDE	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	ENDRIN KETONE	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	GAMMA BHC (LINDANE)	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	GAMMA-CHLORDANE	22	1	2.2	2.2	2.2	1.10	2.19	0.34	0.06	0.23	1.06	1.19	1.22	2.2	Nonpar.
Sub Soil	ug/kg	PEST	HEPTACHLOR	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A
Sub Soil	ug/kg	PEST	HEPTACHLOR EPOXIDE	22					1.04	2.08	0.23	0.03	0.16		1.10	1.12	0	N/A

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
Sub Soil	ug/kg	PEST	METHOXYCHLOR	22					10.41	20.82	2.29	2.33	0.16		11.04	11.25	0	N/A
Sub Soil	ug/kg	PEST	p,p'-DDD	22					2.03	4.06	0.45	0.69	0.16		2.15	2.19	0	N/A
Sub Soil	ug/kg	PEST	p,p'-DDE	22	1	1.5	1.5	1.5	2.01	4.03	0.46	0.68	0.17	1.98	2.15	2.18	1.5	Nonpar.
Sub Soil	ug/kg	PEST	p,p'-DDT	22	1	7.2	7.2	7.2	2.18	4.35	1.12	0.72	0.28	2.05	2.39	2.59	7.2	Nonpar.
Sub Soil	ug/kg	PEST	PCB-1016 (AROCHLOR 1016)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	PCB-1221 (AROCHLOR 1221)	22					41.27	82.55	8.77	3.71	0.16		43.71	44.49	0	N/A
Sub Soil	ug/kg	PEST	PCB-1232 (AROCHLOR 1232)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	PCB-1242 (AROCHLOR 1242)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	PCB-1248 (AROCHLOR 1248)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	PCB-1254 (AROCHLOR 1254)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	PCB-1260 (AROCHLOR 1260)	22					20.30	40.59	4.46	3.00	0.16		21.53	21.93	0	N/A
Sub Soil	ug/kg	PEST	TOXAPHENE	22					104.09	208.18	22.87	4.63	0.16		110.40	112.48	0	N/A
SW	ug/l	PEST	ALDRIN	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	ALPHA BHC (ALPHA	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	ALPHA ENDOSULFAN	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	ALPHA-CHLORDANE	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	BETA BHC (BETA	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	BETA ENDOSULFAN	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	DELTA BHC (DELTA	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	DIELDRIN	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	ENDOSULFAN SULFATE	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	ENDRIN	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	ENDRIN ALDEHYDE	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	ENDRIN KETONE	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	GAMMA BHC (LINDANE)	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	GAMMA-CHLORDANE	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	HEPTACHLOR	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	HEPTACHLOR EPOXIDE	22					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
SW	ug/l	PEST	METHOXYCHLOR	22					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
SW	ug/l	PEST	p,p'-DDD	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	p,p'-DDE	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	p,p'-DDT	22					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
SW	ug/l	PEST	PCB-1016 (AROCHLOR 1016)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	PCB-1221 (AROCHLOR 1221)	22					1.00	2.00	0.00	0.00	0.00		1.00	1.00	0	N/A

F-22

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
SW	ug/l	PEST	PCB-1232 (AROCHLOR 1232)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	PCB-1242 (AROCHLOR 1242)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	PCB-1248 (AROCHLOR 1248)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	PCB-1254 (AROCHLOR 1254)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	PCB-1260 (AROCHLOR 1260)	22					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
SW	ug/l	PEST	TOXAPHENE	22					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A
Sed	ug/kg	PEST	ALDRIN	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	ALPHA BHC (ALPHA	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	ALPHA ENDOSULFAN	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	ALPHA-CHLORDANE	22	5	3.6	2400	484	111.82	223.64	511.08	1.12	1.65	3.07	45.52	299.34	2400	Nonpar.
Sed	ug/kg	PEST	BETA BHC (BETA	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	BETA ENDOSULFAN	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	DELTA BHC (DELTA	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	DIELDRIN	22	1	11	11	11	7.90	15.80	9.66	1.64	0.89	5.15	12.24	11.44	11	Nonpar.
Sed	ug/kg	PEST	ENDOSULFAN SULFATE	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	ENDRIN	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	ENDRIN ALDEHYDE	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	ENDRIN KETONE	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	GAMMA BHC (LINDANE)	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	GAMMA-CHLORDANE	22	5	6.1	2000	417	96.99	193.98	425.51	1.37	1.78	3.93	94.31	253.01	2000	Nonpar.
Sed	ug/kg	PEST	HEPTACHLOR	22					3.65	7.30	4.89	0.86	0.86		5.39	5.44	0	N/A
Sed	ug/kg	PEST	HEPTACHLOR EPOXIDE	22	1	230	230	230	13.01	26.02	48.50	0.96	1.21	2.62	11.79	30.81	230	Nonpar.
Sed	ug/kg	PEST	METHOXYCHLOR	22					38.55	77.09	50.20	3.20	0.90		58.65	56.97	0	N/A
Sed	ug/kg	PEST	p,p'-DDD	22	3	2.8	6.1	4.967	7.50	15.01	9.69	1.57	0.88	4.82	11.36	11.06	6.1	Nonpar.
Sed	ug/kg	PEST	p,p'-DDE	22	2	5.8	7.2	6.5	7.64	15.28	9.65	1.60	0.88	4.97	11.62	11.18	7.2	Nonpar.
Sed	ug/kg	PEST	p,p'-DDT	22					7.49	14.98	9.71	1.56	0.89		11.41	11.05	0	N/A
Sed	ug/kg	PEST	PCB-1016 (AROCHLOR 1016)	22					71.05	142.09	94.79	3.83	0.86		105.15	105.83	0	N/A
Sed	ug/kg	PEST	PCB-1221 (AROCHLOR 1221)	22					144.02	288.05	193.36	4.54	0.86		212.33	214.97	0	N/A
Sed	ug/kg	PEST	PCB-1232 (AROCHLOR 1232)	22					71.05	142.09	94.79	3.83	0.86		105.15	105.83	0	N/A
Sed	ug/kg	PEST	PCB-1242 (AROCHLOR 1242)	22					71.05	142.09	94.79	3.83	0.86		105.15	105.83	0	N/A
Sed	ug/kg	PEST	PCB-1248 (AROCHLOR 1248)	22					71.05	142.09	94.79	3.83	0.86		105.15	105.83	0	N/A
Sed	ug/kg	PEST	PCB-1254 (AROCHLOR 1254)	22					87.41	174.82	104.83	3.96	0.99		149.03	125.87	0	N/A
Sed	ug/kg	PEST	PCB-1260 (AROCHLOR 1260)	22					87.41	174.82	104.83	3.96	0.99		149.03	125.87	0	N/A
Sed	ug/kg	PEST	TOXAPHENE	22					364.77	729.55	489.03	5.47	0.86		539.12	544.21	0	N/A

Appendix F-2

Organic Compound Background Statistics

Matrix	Units	Analytical Group	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	UCL (Normal)	RME	Distribution
GW	ug/l	PEST	ALDRIN	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	ALPHA BHC (ALPHA	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	ALPHA ENDOSULFAN	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	ALPHA-CHLORDANE	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	BETA BHC (BETA	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	BETA ENDOSULFAN	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	DELTA BHC (DELTA	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	DIELDRIN	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	ENDOSULFAN SULFATE	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	ENDRIN	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	ENDRIN ALDEHYDE	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	ENDRIN KETONE	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	GAMMA BHC (LINDANE)	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	GAMMA-CHLORDANE	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	HEPTACHLOR	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	HEPTACHLOR EPOXIDE	12					0.03	0.05	0.00	-3.69	0.00		0.03	0.03	0	N/A
GW	ug/l	PEST	METHOXYCHLOR	12					0.25	0.50	0.00	-1.39	0.00		0.25	0.25	0	N/A
GW	ug/l	PEST	p,p'-DDD	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	p,p'-DDE	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	p,p'-DDT	12					0.05	0.10	0.00	-3.00	0.00		0.05	0.05	0	N/A
GW	ug/l	PEST	PCB-1016 (AROCHLOR 1016)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	PCB-1221 (AROCHLOR 1221)	12					1.00	2.00	0.00	0.00	0.00		1.00	1.00	0	N/A
GW	ug/l	PEST	PCB-1232 (AROCHLOR 1232)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	PCB-1242 (AROCHLOR 1242)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	PCB-1248 (AROCHLOR 1248)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	PCB-1254 (AROCHLOR 1254)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	PCB-1260 (AROCHLOR 1260)	12					0.50	1.00	0.00	-0.69	0.00		0.50	0.50	0	N/A
GW	ug/l	PEST	TOXAPHENE	12					2.50	5.00	0.00	0.92	0.00		2.50	2.50	0	N/A

F-24

Appendix F-3

Dioxin/Furan Background Statistics

Appendix F-3
Dioxin/Furan Background Statistics
Background Sampling Program

Matrix	Units	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	RME	Distribution
Surf Soil	ug/kg	TOTAL EQUIVALENCY FACTOR	22	22	0.001	0.023	0.006	0.0055	0.0111	0.0051	-5.57	9.23E-01	0.004	0.010	0.0098	LN
Surf Soil	ug/kg	2,3,7,8-TETRACHLORODIBENZOFURAN	22					0.4773	0.9546	0.1065	-1.01	1.47E+00		--	0.0000	N/A
Surf Soil	ug/kg	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					0.5000	1.0000	0.0000	-0.69	1.03E-08		--	0.0000	N/A
Surf Soil	ug/kg	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.30E-09		--	0.0000	N/A
Surf Soil	ug/kg	OCTACHLORODIBENZOFURAN	22	3	0.045	0.393	0.163	2.1494	4.2988	0.8587	0.43	1.26E+00	1.533	--	0.3930	NP
Surf Soil	ug/kg	OCTACHLORODIBENZO-p-DIOXIN	22	22	0.747	23.325	5.519	5.5188	11.0376	5.0808	1.34	9.22E-01	3.809	9.725	9.7245	LN
Surf Soil	ug/kg	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					1.1933	2.3865	0.2661	-0.07	1.37E+00		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.30E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					1.1933	2.3865	0.2661	-0.07	1.37E+00		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					1.1906	2.3812	0.2721	-0.06	1.32E+00		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					0.9911	1.9823	0.5151	-0.75	2.00E+00		--	0.0000	N/A
Surf Soil	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22	6	0.071	0.390	0.138	0.7054	1.4109	0.5946	-1.16	1.62E+00	0.313	--	0.3900	NP
Sub Soil	ug/kg	TOTAL EQUIVALENCY FACTOR	22	17	0.000	0.009	0.003	0.0030	0.0060	0.0025	-6.14	9.12E-01	0.002	0.006	0.0060	LN
Sub Soil	ug/kg	2,3,7,8-TETRACHLORODIBENZOFURAN	22					0.5000	1.0000	0.0000	-0.69	1.36E-08		--	0.0000	N/A
Sub Soil	ug/kg	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					0.5000	1.0000	0.0000	-0.69	1.03E-08		--	0.0000	N/A
Sub Soil	ug/kg	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	OCTACHLORODIBENZOFURAN	22					2.5000	5.0000	0.0000	0.92	2.86E-08		--	0.0000	N/A
Sub Soil	ug/kg	OCTACHLORODIBENZO-p-DIOXIN	22	17	0.209	9.435	2.991	2.6594	5.3189	2.3269	0.49	1.25E+00	1.633	--	9.4350	NP
Sub Soil	ug/kg	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sub Soil	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22					0.9750	1.9500	0.5294	-0.82	2.03E+00		--	0.0000	N/A
SW	ng/l	TOTAL EQUIVALENCY FACTOR	22	15	0.000	0.031	0.004	0.0041	0.0082	0.0084	-6.77	1.50E+00	0.001	0.018	0.0183	LN
SW	ng/l	2,3,7,8-TETRACHLORODIBENZOFURAN	22	6	0.007	0.031	0.016	3.5048	7.0096	2.3433	-0.15	2.78E+00	0.857	--	0.0310	NP
SW	ng/l	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					3.5755	7.1509	2.3374	-0.07	2.75E+00		--	0.0000	N/A

f-25

Appendix F-3
Dioxin/Furan Background Statistics
Background Sampling Program

Matrix	Units	Constituent	# Analyses	# Detects	Minimum Detected	Maximum Detected	Mean Detected	Mean Value	2 X Mean Value	Standard Deviation	Ln(Mean Value)	Ln(Standard Deviation)	Geometric Mean	UCL (Lognormal)	RME	Distribution
SW	ng/l	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22	2	0.024	0.050	0.037	11.3130	22.6261	3.7488	1.96	1.77E+00	7.134	--	0.0500	NP
SW	ng/l	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22	3	0.027	0.057	0.040	10.8010	21.6019	4.3765	1.74	2.03E+00	5.681	--	0.0570	NP
SW	ng/l	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22	1	0.046	0.046	0.046	11.9070	23.8139	2.7177	2.26	1.22E+00	9.572	--	0.0460	NP
SW	ng/l	OCTACHLORODIBENZOFURAN	22					25.0000	50.0000	0.0000	3.22	5.00E-08		--	0.0000	N/A
SW	ng/l	OCTACHLORODIBENZO-p-DIOXIN	22	15	0.206	1.225	0.577	5.4446	10.8892	10.0360	0.04	1.72E+00	1.040	--	1.2250	NP
SW	ng/l	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					9.6641	19.3283	5.3521	0.93	3.07E+00		--	0.0000	N/A
SW	ng/l	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					10.8003	21.6005	4.3783	1.69	2.16E+00		--	0.0000	N/A
SW	ng/l	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					10.1231	20.2463	5.0210	1.23	2.78E+00		--	0.0000	N/A
SW	ng/l	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					9.2153	18.4306	5.6469	0.69	3.20E+00		--	0.0000	N/A
SW	ng/l	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					8.1302	16.2604	6.1098	-0.03	3.61E+00		--	0.0000	N/A
SW	ng/l	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					9.3802	18.7603	5.5810	0.79	3.15E+00		--	0.0000	N/A
SW	ng/l	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					10.2315	20.4630	4.9254	1.31	2.67E+00		--	0.0000	N/A
SW	ng/l	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					11.3148	22.6296	3.7432	2.01	1.65E+00		--	0.0000	N/A
SW	ng/l	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					3.7663	7.5327	5.8661	-2.12	3.18E+00		--	0.0000	N/A
SW	ng/l	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22	4	0.043	0.184	0.103	9.7452	19.4903	5.3033	1.43	2.12E+00	4.185	--	0.1840	NP
Sed	ug/kg	TOTAL EQUIVALENCY FACTOR	22	11	0.000	0.009	0.003	0.0027	0.0054	0.0031	-6.46	1.09E+00	0.002	--	0.0087	NP
Sed	ug/kg	2,3,7,8-TETRACHLORODIBENZOFURAN	22					0.4093	0.8185	0.1970	-1.89	2.60E+00		--	0.0000	N/A
Sed	ug/kg	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	22					0.4502	0.9004	0.1534	-1.26	1.74E+00		--	0.0000	N/A
Sed	ug/kg	2,3,4,7,8-PENTACHLORODIBENZOFURAN	22	1	0.002	0.002	0.002	1.1933	2.3865	0.2661	-0.07	1.37E+00	0.933	--	0.0020	NP
Sed	ug/kg	1,2,3,7,8-PENTACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.30E-09		--	0.0000	N/A
Sed	ug/kg	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	22					1.1932	2.3865	0.2663	-0.10	1.52E+00		--	0.0000	N/A
Sed	ug/kg	OCTACHLORODIBENZOFURAN	22					2.5000	5.0000	0.0000	0.92	2.94E-08		--	0.0000	N/A
Sed	ug/kg	OCTACHLORODIBENZO-p-DIOXIN	22	11	0.431	8.556	2.620	2.5694	5.1388	2.1628	0.64	8.31E-01	1.898	--	8.5560	NP
Sed	ug/kg	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	22					1.1310	2.2620	0.3758	-0.49	2.25E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	22					1.2500	2.5000	0.0000	0.22	4.46E-09		--	0.0000	N/A
Sed	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	22					1.1310	2.2620	0.3758	-0.52	2.35E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	22					1.0715	2.1431	0.4479	-0.84	2.68E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	22					1.0122	2.0245	0.5023	-1.07	2.74E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	22					1.0123	2.0247	0.5021	-1.08	2.78E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	22					1.1933	2.3865	0.2662	-0.08	1.43E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22					1.1933	2.3865	0.2662	-0.08	1.43E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	22					0.9680	1.9360	0.5323	-1.07	2.50E+00		--	0.0000	N/A
Sed	ug/kg	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	22	3	0.064	0.583	0.238	0.9295	1.8589	0.5313	-0.71	1.68E+00	0.490	--	0.5830	NP

Notes: LN = Lognormal

NP = Nonparametric

308 423

F-26

Appendix F-4

Evaluation of Surface Soil Populations

Appendix F-4
Evaulation of Surface Soil Populations
Background Sampling Program
Defense Depot Memphis Tennessee

	Summary Statistics				Wilcoxon Rank Sum Statistics								
Parameter	Offsite Number of Detections	Perimeter Number of Detections	Offsite Mean of Detections	Perimeter Mean of Detections	Offsite Observed Sum of Ranks	Perimeter Observed Sum of Ranks	Offsite Expected Sum of Ranks	Perimeter Expected Sum of Ranks	Offsite Mean of Ranks	Perimeter Mean of Ranks	Z Score	Prob > |Z|	Within Critical Region of Rejection?
AL	11	11	11123	12687	101	152	126.5	126.5	9.2	13.8	1.6421	0.1006	No
AS	11	11	9.96	11.9	101	152	126.5	126.5	9.2	13.8	1.6416	0.1007	No
BA	11	11	117	135	99.5	153.5	126.5	126.5	9	14	1.7416	0.0816	No
BE	4	11	0.53	0.56	108	145	126.5	126.5	9.8	13.2	1.184	0.2364	No
CA	11	11	1617	4222	105	148	126.5	126.5	9.5	13.5	1.3797	0.1677	No
CO	11	11	8.65	9.63	107.5	145.5	126.5	126.5	9.8	13.2	1.2152	0.2243	No
CR	**11**	**11**	**12.5**	**14.9**	**95**	**158**	**126.5**	**126.5**	**8.6**	**14.4**	**2.0379**	**0.0416**	**Yes**
CU	11	11	15.9	17.6	113.5	139.5	126.5	126.5	10.3	12.7	0.8213	0.4115	No
FE	11	11	16945	20100	103	150	126.5	126.5	9.4	13.6	1.5103	0.131	No
K	**11**	**11**	**910**	**1115**	**92**	**161**	**126.5**	**126.5**	**8.4**	**14.6**	**2.2332**	**0.0255**	**Yes**
MG	11	11	2065	2551	102	151	126.5	126.5	9.3	13.7	1.5764	0.1149	No
MN	11	11	632	671	108	145	126.5	126.5	9.8	13.2	1.182	0.2372	No
NI	11	11	15.1	17.9	97.5	155.5	126.5	126.5	8.9	14.1	1.872	0.0612	No
PB	11	11	21.8	20.8	104	149	126.5	126.5	9.5	13.5	1.4446	0.1486	No
V	11	11	24.2	27.9	98	155	126.5	126.5	8.9	14.1	1.8391	0.0659	No
ZN	11	11	57.7	68	103	150	126.5	126.5	9.4	13.6	1.5103	0.131	No

Appendix F-5

Evaluation of Subsurface Soil Populations

Appendix F-5
Evaulation of Subsurface Soil Populations
Background Sampling Program
Defense Depot Memphis Tennessee

	Summary Statistics				Wilcoxon Rank Sum Statistics								
Parameter	Offsite Number of Detections	Perimeter Number of Detections	Offsite Mean of Detections	Perimeter Mean of Detections	Offsite Observed Sum of Ranks	Perimeter Observed Sum of Ranks	Offsite Expected Sum of Ranks	Perimeter Expected Sum of Ranks	Offsite Mean of Ranks	Perimeter Mean of Ranks	Z Score	Prob > |Z|	Within Critical Region of Rejection?
AL	11	11	10136	11693	106	147	126.5	126.5	9.6	13.4	1.3137	0.189	No
AS	11	11	8.24	8.79	120.5	132.5	126.5	126.5	11	12	0.3613	0.7179	No
BA	11	11	152	148	132	121	126.5	126.5	12	11	-0.3283	0.7427	No
BE	5	9	0.58	0.59	124.5	128.5	126.5	126.5	11.3	11.7	0.0988	0.9213	No
CA	11	11	1197	1236	122	131	126.5	126.5	11.1	11.9	0.2627	0.7928	No
CO	11	11	9.77	10.6	112	141	126.5	126.5	10.2	12.8	0.9206	0.3573	No
CR	11	11	12.6	13.8	104.5	148.5	126.5	126.5	9.5	13.5	1.4122	0.1579	No
CU	11	11	15.3	17.3	119	134	126.5	126.5	10.8	12.2	0.4602	0.6454	No
FE	11	11	18129	20355	115.5	137.5	126.5	126.5	10.5	12.5	0.6897	0.4904	No
K	11	11	807	996	97	156	126.5	126.5	8.8	14.2	1.9043	0.0569	No
MG	11	11	2249	2649	113.5	139.5	126.5	126.5	10.3	12.7	0.821	0.4116	No
MN	11	11	879	661	147	106	126.5	126.5	13.4	9.6	-1.3137	0.189	No
NI	11	11	17.5	19.1	111	142	126.5	126.5	10.1	12.9	0.9864	0.324	No
PB	11	11	11.8	12.2	130	123	126.5	126.5	11.8	11.2	-0.197	0.8438	No
V	11	11	24	27.3	106	147	126.5	126.5	9.6	13.4	1.3133	0.1891	No
ZN	11	11	56.9	57.7	128	125	126.5	126.5	11.6	11.4	-0.0657	0.9476	No

K:\USERS\GUEST\Table38.xls

F-28

Appendix F-6

Evaluation of Surface Soil Populations–Selected Pesticides

Appendix F-6
Evaluation of Surface Soil Populations–Selected Pesticides
Background Sampling Program
Defense Depot Memphis Tennessee

	Summary Statistics				Wilcoxon Rank Sum Statistics								
Parameter	Offsite Number of Detections	Perimeter Number of Detections	Offsite Mean of Detections	Perimeter Mean of Detections	Offsite Observed Sum of Ranks	Perimeter Observed Sum of Ranks	Offsite Expected Sum of Ranks	Perimeter Expected Sum of Ranks	Offsite Mean of Ranks	Perimeter Mean of Ranks	Z Score	Prob > |Z|	Within Critical Region of Rejection?
CHLORDANEA	2	3	17.4	4.17	109.5	143.5	126.5	126.5	10	13	1.1218	0.2619	No
CHLORDANEG	2	3	17	7.07	108.5	144.5	126.5	126.5	9.9	13.1	1.1898	0.2341	No
DIELDRIN	3	11	47.4	132	83.5	169.5	126.5	126.5	7.6	15.4	2.8003	0.0051	Yes
HEPT-EPOX	1	0	7.7	NA	106	147	126.5	126.5	9.6	13.4	1.3606	0.1736	No

Notes:

NA = not applicable
CHLORDANEA = Chlordane, alpha
CHLORDANEG = Chlordane, gamma
DIELDRIN = Dieldrin
HEPT-EPOX = Heptachlor-Epoxide

F-29

TAB

Appendix G

Appendix G

Comment Responses

EPA Comments on the Draft Background Sampling Program Technical Memorandum

1. Units

Comment: Several of the tables were presented without units. Units should be included in all tables.

Response: Units were included for most of the tables as footnotes. The revised report will include units in the table or the table headers.

2. Proximity of Sampling locations to Railroad Tracks

Comment: Background samples locations BS02, BW14, BS15, and BS16 appear to be close to railroad tracks in Figure 2-1. This issue requires some discussion in the text to assure that the locations have not been impacted by rail traffic and associated contamination.

Response: All four samples listed in the comment are at least 50 meters from the closest railroad tracks. Due to the condensed scale used in Figure 2-1, it may appear that these samples are within the railroad track areas. Text will be modified to included a discussion of the location of these samples and their proximity to the railroad tracks.

3. Non-parametric approach to sample size determination

Comment: The text (pp. 2-9, 10) discusses the non-parametric tolerance interval used to determine a level of confidence associated with sampling coverage. The formula on p. 2-10 requires more explanation vis-à-vis its applicability here. This section should be expanded to include all relevant equations and explanations.

A related question is the determination of a 90% confidence for each medium. How was this determined? The choice of sampling confidence levels is close to being a risk management decision is needed.

Response: In place of a random non-specific sampling approach, a statistical approach to sampling was implemented, with a pre-specified confidence level in selecting a representative data set for the background. This approach has been approved during the work plan. The confidence limits for each media were identified and discussed in Section 5.3.2 of the approved Remedial Investigation Workplan (Generic Remedial Investigation/Feasibility Study Workplan, Defense Distribution Depot Memphis, 1995).

4. Table 3-1, use of the term RME

Comment: The 95% upper confidence limit (UCL) on the mean is used as a health-protective surrogate for the true mean of a set of environmental samples. Because it is inappropriate to call the Exposure Point Concentration an RME. The acronym RME stands for "Reasonable Maximum Exposure." It pertains to exposure assumptions such as daily water intake, incidental soil ingestion, etc. The use of the 95% UCL on the mean represents a health-protective estimate of the mean concentration in the face of unavoidable uncertainty in sampling the site characterization. Because the 95% UCL is an estimate of the mean, it should not be considered as a reasonable maximum. In short, the acronym RME should not be used to determine the concentration term.

Response: The term RME will be replaced with UCL95% concentration. Although these (UCL95%) values are provided for reference, they are not used as background values.

5. Table 3-2, PRG criteria used

Comment: The reviewer spot-checked this table and was not able to duplicate calculations for several of the criteria. For example, the criterion (labeled a PRG) for arsenic in surface soil is 0.000876 mg/kg. This value is three orders of magnitude lower than other PRG/screening values with which the reviewer was familiar. Details of these calculations should be provided here, perhaps as an appendix, rather than as a reference to another document.

Some of the criteria are labeled 'ARARs." This term is not sufficiently specific. For example, dioxin/furan TEQ in surface soil are shown to have an ARAR of 4 ppt. This reviewer is unaware of statutory requirements regarding dioxin in surface soil from either the federal government or Tennessee. More explanation is needed.

Response: The arsenic PRG is based on groundwater protection (GWP) value calculated for soil, using carcinogenicity health based drinking water standard which is lower than an MCL and a Kd value from the literature. A direct exposure based PRG value included in the work plan for arsenic is 0.231 mg/kg. Lower of these two values was included in the background report. The revised report will include additional information on PRG values either in an appendix or within the text, as appropriate.

The available dioxin PRG value from EPA Region IV could perhaps be considered a "to-be considered, (TBC)" ARAR. However, this may not be critical issue and reference in the table will be changed in the revised report to read as PRG.

6. Tables 3-5 and 3-6, use of the t-test

Comment: This common statistical test was used to determine whether off-site and perimeter soil samples could be considered as coming from the same population. The use of t-test assumes that both groups of samples are normally distributed. This assumption is in conflict with the assumptions underlying the use of non-parametric methods earlier in the document. Non-parametric methods can be used for any distribution and make no assumptions regarding distribution. Therefore, the appropriate choice for statistical test would have been the non-parametric Mann-Whitney U test or a variant.

Response: The statistical evaluation of the off-site and perimeter soil samples will be performed with the Mann-Whitney U-test, as suggested by the reviewer.

7. Page 3-21, Units

Comment: Metals concentrations in the sediment are given in ug/L (micrograms/L). This is incorrect. The reviewer believes that the intended units are ug/kg. Assuming these values are in ug/kg, both lead and zinc are considerably above Region 4 sediment screening levels. Therefore, Cane Creek should not be used as a background sampling location - it has probably been impacted by non-DoD human activities.

Response: The correct units for the reported concentrations are mg/kg. We agree with the comment that the reported lead concentration in the Cane Creek (147 mg/kg) are higher than sediment screening value of 30.2 mg/kg from EPA Region IV. So also for zinc the maximum detected concentrations in the background locations are above Region IV screening value of 124 mg/kg. The revised background values will eliminate the outlier samples identified through the boxplots, which could eliminate these samples from inclusion in the background value calculation.

8. Table 3-12, background levels dioxin/furan

Comment: The reviewer points out that the national surface soil background for dioxin/furan TEQ is about 8 ppt. The mean level here of 6 ppt is equal to the national background level. The third paragraph on page 3-37 ends with the statement about elevated dioxin levels. This statement should be removed.

Response: Agree with the comment. The referenced statement will be modified in the revised report. The statement in the text refers to the elevated concentrations in samples BW16 through BW19, which is relatively high compared to the other samples within the population. No comparisons to national averages were made.

9. Figure 3-11 and accompanying text

Comment: This figure is misleading because it suggests two soil groups. The text does not bear this out (p. 3-43). The text should be left as is, and the figure should be removed from the document.

Response: The dioxin statistical analysis in reference was performed to correlate surface soil and subsurface soil. The conclusion of the analysis was that there is no apparent reason to split the sample groups. The entire analysis will be eliminated from the report, as the text by itself is not self-explanatory. Therefore, both the figure and the text associated with it in the paragraph will be removed from the revised report.

Tennessee Department of Environment and Conservation
Comments on the Draft Background Sampling Program Technical Memorandum

General Comments

TDEC/DSF is concerned about the submission date of this document (April 1997) compared to its publication date (September 1996). In addition, considering the nature and length of this document, TDEC/DSF views it as a report, not a Technical Memorandum.

TDEC/DSF reserves the right to further review any or all of the statistics presented in the report.

Response: The revised report will be titled "Background Sampling Program Report."

Specific Comments

1. **Section 1.0, page 1-1, second paragraph**

Please strike the word "the" before "Section 1.1."

Response: Suggested change will be made in the revised report.

2. **Section 1.2, page 1-3, last sentence**

Has the referenced report been submitted to TDEC/DSF?

Response: This report has not been submitted for regulatory review. The reference to it will be removed.

3. **Section 2.1, page 2-8, Figure 2-3**

It is noted on page 2-12 that monitoring well MW-23 was dropped as a background well. Should it be removed from this figure?

Response: Agree with the comment. MW-23 will be removed from this figure in the revised report.

4. **Section 2.2, page 2-9, first paragraph**

Should the word "forming" in the next to last line of this paragraph actually be "farming?"

Response: Yes. Typographical error will be corrected in the revised report.

5. **Section 2.2.3, page 2-13, Figure 2-4**

The following item in the legend has no symbol (which should presumably be an arrow): "GROUNDWATER GRADIENT DIRECTION IN THE FLUVIAL AQUIFER."

Response: Figure will be corrected as suggested in the revised report.

6. **Section 3.0, page 3-1**

The paragraph in this section does not mention groundwater data, although groundwater data is included in the later sections, tables, etc.

Response: Agree with the comment. Information on groundwater will be added to the introduction in the revised report.

7. **Section 3.1.1, page 3-2, Table 3-1**

The word "anti-logarith" in the definition of "Geometric-Mean" should be "anti-logarithm."

Response: typographical error will be corrected in the revised report.

8. **Section 3.1.2, pages 3-1 & 3-2**

Some of the paragraphs that discuss various matrices refer to table 3-3 and other do not (e.g. groundwater). Please review the text and references for consistency.

Response: Comment noted. References will be added to the text as suggested in the revised report.

9. **Section 3.1.2, page 3-7, Table 3-3**

"CRDL" is defined in the footnotes but not used in the table. Is a column missing from the table?

Response: The Definition of the CRDL is provided for the acronym used in the definition of 'U' qualifier. The revised report will clarify the CRDL acronym use.

10. **Section 3.2.1, page 3-14, Soil section**

Chromium and arsenic are referred to as "man-made" metals. Should the word "anthropogenic" be used in this context?

Response: Agree with the comment. Correction will be made in the revised report.

11. **Section 3.2.1, page 3-15, Figure 3-1**

Unlike on other similar figures, the red circles representing Total Metals are printed in the foreground and therefore obscure the underlying bar graph that represent the Distribution of Selected Metals. In addition, although the legend indicates that bars are plotted on individual scales, scales for bars on figures 3-4, 3-5, and 3-6 are present. Please consider clarifying the legend.

Response: Comment noted. An attempt will be made to further clarify the figure legend in the revised report. [Note: during preparation of the final report, it was noted that individual scales were necessary for this figure due to the differences in ranges of detection between the metals. The relative scale was not changed]

12. **Section 3.2.1, page 3-22 through 3-24, Figures 3-4 through 3-6**

Are the units for the red circles symbol the same as for the bars? (See Figure 3-7 for an example of units labeling for both bars and circle symbols).

Response: Yes. Units are the same for circles and the bars. The revised report will have units included for the bars also.

13. **Section 3.2.1, page 3-24, Figure 3-6**

It is noted on page 2-12 that monitoring MW-23 was dropped as a background well. Should it be removed from this figure?

Response: Yes. MW-23 will be dropped from the referenced figure in the revised report.

14. Section 3.2.4, page 3-3, Table 3-11

No units are provided for the data in this table.

Response: Units will be included in the revised report.

15. Appendix B

Is there a reason why copies of the log book for the groundwater background sampling are omitted here

Response: Filed sampling logs for monitoring well sampling will be included in the revised report.

16. Appendix D

Why is the analytical Data Summary for Groundwater omitted.

Response: The revised report will include groundwater data summaries.

17. Appendix E

Please consider a cover page for this table that explains among other things, the following:

a) does a total column represent total samples or total detects?

b) does the sum in the Qualifier row equal the number of detects? (the sum in some rows equal the "total" and less that the total in other rows)

c) should qualifier definitions be annotated?

d) is there any need for a summary per sample location

Response:

a) The total represents the number of times a chemical was analyzed.

b) The sum of all qualifiers should be equal to total. Qualifiers '=' and 'J' represent detected number.

c) Qualifier definitions will be provided as footnotes in the revised report.

d) The included summary is by medium, e.g. soil (surface and subsurface, surface water, etc.).

18. Appendix F.

There are several examples in the tables where means are provided for contaminants with no detections reported. Please clarify.

Response: The table included in this appendix represents a data summary of the information used for different statistics. Typically, ½ the detection limit of the chemical not detected is used in calculation of statistics such as UCL 95%. However, if a chemical was never detected, no background value was calculated.

Tennessee Department of Environment and Conservation:
Nashville Central Office
Comments on the Draft Background Sampling Program Technical Memorandum

1. **Comment:** The report utilized the methodology of combining site boundary data with off-site data prior to the statistical analysis on each chemical. Separate statistics should also have been run for these two data sets for comparison prior to validation of methodology. The possibility of outliers in the site boundary data set jacking up the computed mean detection values is high.

Response: A statistical evaluation of the site boundary and off-site data populations will be performed using the Mann-Whitney U test if the populations are non-parametric or a one-way analysis of variance (ANOVA) if the populations are normally or log-normally distributed. If there is not a significant difference between the populations, both will be combined to represent the entire background dataset. If there is a statistically significant difference between the population means, then the onsite dataset will be excluded. The reason for combining the two populations when they are equivalent is to maintain a 90 percent coverage and a 90 percent confidence of the sample population, as proposed in Section 5.3.2 of the Generic Remedial Investigation/Feasibility Study Work Plan (August, 1995). Outliers will be evaluated and removed from either the off-site only or the combined datasets, as appropriate based on the statistical evaluation.

2. **Comment:** Metals data from off-site and chemical compounds commonly deposited via vehicular traffic could represent naturally occurring and anthropogenic background respectively. Plugging in these values into the suggestion given in Comment No. 1 above could serve to verify if generic background assumptions used during Data Quality Evaluation are well suited to the DDMT site.

Response: Comment noted. Considering DDMT is in a highly urban environment, the selected background locations are intended to mimic the site conditions in locations selected offsite and throughout the city. Atmospheric deposition due to vehicular traffic is expected to be similar throughout the area including the background locations in the offsite areas. However, the fence-line is unique, where facility maintenance activities may have localized impact at these locations. The rationale for the selected sampling locations was previously presented in the work plan. The statistical evaluation discussed in response to Question #1 will identify any differences in the perimeter (fence-line) and other off-site samples. If there is an impact on the perimeter of DDMT due to vehicular traffic around DDMT, the perimeter data will be excluded.

3. **Comment:** The DDMT comprises a large expanse of land which may undergo activities under new ownership that could disturb the soil (such as demolition and construction). The response level should consider additional pathways and fugitive dust.

Response: This comment pertains to the baseline risk assessments to be performed at the site. The background values for the surface soils as well as subsurface soils presented in the *Background Sampling Program Report* will be used in the baseline risk assessment to evaluate these exposure scenarios. For areas with known construction, it is appropriate to compare the surface soil values with subsurface background values due to the excavation activities.

4. **Comment:** Under page 3-3, will the current values in the criteria column be the remedial action levels agreed upon between MFO and DDMT?

Response: These proposed values are conservative comparison (screening) criteria protective of human health and the environment under default conservative exposure scenarios. Remedial goals will be developed for the site at a later time for areas that may present risk above acceptable levels.

5. **Comment:** TDSF has compiled non-parametric background metals statistics from ninety (90) Memphis area sites. Outliers were not filtered out during the survey. The data are available for your information upon request.

Response: Comment noted. We may request for a copy of this data for evaluation.

Defense Distribution Depot Memphis
Response to Review Comments on the Background Program Technical Memorandum

1) **Please change the name of this document to the Background Sampling Data Report.**

   In accordance to the TDEC general comment, the final report will be titled, "Background Sampling Program Report."

2) **Executive Summary (ES-1), 1st paragraph, sixth bullet: Is the development of clean-up criteria appropriate to mention as an objective of this report (see also page 1-3)?**

   The development of cleanup criteria and preliminary remediation goals is not a specific objective of this report. However, it is anticipated that the results of the background data analysis presented in this report will be used in future documents. In terms of supporting the overall objectives of the environmental program, it is appropriate to include development of this cleanup criteria as a programmatic objective in the Executive Summary.

3) **ES-2, 2nd paragraph, fifth sentence: This sentence is confusing. What does it mean?**

   The sentence will be rewritten as follows:

   > "That is, if twenty two samples were repeatedly taken from the background population (e.g. background surface soil), in 90 percent of the samples the sample 90th percentile would be below the true 90th percentile of the population."

4) **ES-1, 3rd paragraph, third sentence: Does this sentence state that since the perimeter sample values are not double (100% higher) the values of the offsite samples, the perimeter samples are assumed to be unaffected by DDMT waste management practices? If I am interpreting this sentence correctly, what is the justification for stating that the perimeter samples are unaffected by waste management operations? Is there some sort of EPA rule that established twice background as critical?**

   The DDMT background sampling program was designed to characterize background in areas surrounding DDMT that were not impacted by waste management operations at the Depot. The decision to include the 11 DDMT perimeter samples in the sample design was documented in the *Generic Remedial Investigation/Feasibility Study Workplan (US Army Corps of Engineers Huntsville Division, 1995)* [page 5-8] and is based on the need to include samples representative of environmental conditions surrounding DDMT that were not affected by waste management operations. The on-site samples were selected along the perimeter of DDMT where there was no known impact from DDMT operations other than grounds maintenance and other potential anthropogenic affects associated with traffic, previous land uses, and other local industrial sources. The percent relative difference statistic was presented to indicate that concentrations of background constituents in the perimeter samples are not grossly above those of the non-perimeter background samples. A large difference would indicate direct impact from DDMT waste management operations. A minor difference is expected that is not necessarily due to DDMT operations, but to the previously mentioned anthropgenic conditions.

To clarify this point in the Executive Summary, the last two sentences of this paragraph will be rewritten as follows:

> "The difference in the concentration of background constituents between the perimeter and offsite sample groups is low (less than 100 percent relative difference), indicating that the difference is representative of variations in anthropogenic conditions between the two sample groups rather than gross impact from waste management at DDMT. Therefore, perimeter and offsite data were combined into one background data set."

5) **ES-1 4th paragraph, second sentence: Does Region IV have RBCs?**

No. The sentence will be rewritten to correctly identify Region III as the source for the RBCs.

6) **Section 1.1, page 1-3, 2nd paragraph: Who agreed that all investigations would be done under CERCLA?**

The first portion of this paragraph will be rewritten as follows:

"As a result of DDMT status as an NPL site, DDMT entered a Federal Facilities Agreement on March 6th, 1995. The signatories of that agreement; DLA, EPA, and TDEC, agreed that the investigation of all..."

7) **Section 1.1, page 1-3, 3rd paragraph: When was the BRAC announcement made?**

The first sentence of the paragraph will be prefaced with, "In July 1995, DDMT..."

8) **Figure 2-3, page 2-8: This figure indicated 13 monitoring wells. Please delete the unsampled well from this figure. Some offsite wells are not sampled, even if they were not associated with the Dunn Field TCE plume. An example of this is well 47. Why?**

MW-23 was included as an error and will be removed. Some wells that were not impacted by the Dunn Field plume but were nonetheless associated with groundwater contamination were not included as background wells (see the discussion in Section 2.2, page 2-12). Specifically, organic contamination detected in wells MW-23, MW-47, and MW-51 indicated anthropogenic impacts that, even though not necessarily from DDMT, suggested that these wells were not representative of ambient conditions throughout the Fluvial Aquifer.

9) **Section 2.2, page 2-9, 1st paragraph, last sentence: please change forming to farming.**

The change will be made as suggested.

10) **Section 2.2, page 2-9, 2nd paragraph: Are either the "quartile (4th sentence) or quantile (6th sentence) misspelled?**

Quartile is the proper term and will be used in both sentences.

11) **Section 2.2.3, page 2-11, 1st paragraph, fifth sentence: Please state that samples were taken from some of these wells.**

The change will be made as suggested.

12) **Section 2.2.3, page 2-12, top of page: Please remove the two chemical concentrations (IJ) from this sentence. Make the concentrations a second sentence for clarity. Please state that the data was qualified.**

The parenthetical "1J"s will be removed from the sentence and the following sentence will be added:

> "Trace detections of both compounds were estimated at 1 μg/L, which is below the detection limit."

13) **Section 2.2.3, pages 2-11, 1-12, Last paragraph on 2-11: Only wells 16, 19, 24, 28, and 30 are mentioned as background wells. Yet in the next paragraph wells 45, 46, 48, 50, 52, are mentioned as background wells. Other than the age of these wells, is there any reason why all twelve of these wells are not grouped together?**

There isn't a compelling reason to discuss the existing and new background wells separately. The paragraphs will be reassembled so that both sets of wells are discussed together.

14) **Section 3.1.3, page 3-6, 2nd paragraph: The beginning of this sentence is confusing. Please explain how a greater number can be found exceeding threshold criteria in sediment yet still in fewer that the samples of surface soils.**

To clarify, the beginning of this sentence will be rewritten as follows:

> "Fewer sediment samples had SVOC detections relative to the number of soil samples with SVOCs. However, a greater range of SVOC compounds were detected in sediment at concentrations exceeding criteria:..."

15) **Section 3.2, page 3.8, 2nd paragraph: This is a very good point. You may want to state, in general, whether or not there were any gross differences between perimeter samples and offsite samples in this paragraph.**

In addition to further discussion in Section 3, this point is strengthened in the Executive Summary (see response to DDMT comment #4) and is also discussed in Section 5.0. Additional discussion here is probably not necessary.

16) **Section 3.2.1, page 3-14, Soil, 1st paragraph, first sentence: Chromium and arsenic are elements. I am not aware of these elements being man-made. It may be more appropriate to call them typical industrial or anthropogenic metals.**

The term man-made will be replaced with anthropogenic.

17) **Section 3.2.1, page 3-14, 3rd paragraph, second sentence: Table 3-1 is referenced in error.**

The referenced statistical summary has been moved to Appendix F and the subject table was removed.

18) **Table 3-5, page 3-18: What is the significance of the "t" value for vanadium being highlighted?**

Per comments by EPA Region IV, the t-test has been removed and replace with the Wilcoxon Rank Sum test as discussed in Appendix F of the final document.

19) **Section 3.2.2, page 3-27, 3rd paragraph: 1,1-dichloroethane and TCE were not detected in Well 45 according to the Groundwater Characterization Technical Memorandum. 1,1-Dichloroethane was detected in well 45.**

1,1,1-Trichloroethane and 1,1-dichloroethane were detected in Well 45, as presented on pages 54 and 62 of Appendix H and Table 3-6. 1,1,1-Trichloroethane was not discussed in the body of the Groundwater Characterization Technical Memorandum because it was not a primary VOC constituent in groundwater. TCE was not detected and will be removed from the paragraph.

20) **Section 3.2.3, page 3-27, 2nd paragraph, last sentence: The including of phenol in this paragraph is confusing when compared to the second, sixth, and seventh sentences. While the last sentence is correct (6600 ug/kg offsite vs. 4898 ug/kg onsite), the issue of phenol's as a whole in this paragraph is confusing. Maybe the confusion is between the sixth and seventh sentences.**

To improve clarity by separating the surface and subsurface soil discussion, this paragraph will be rewritten as follows:

> "SVOC concentrations were significantly higher in surface soil samples BS04 (located outside the northeast corner of the DDMT property fence) and BS15 (located along the western perimeter of the Main Installation). Phenol concentrations were also elevated at BS01 (Dunn Field), BS08 (DDMT southwest perimeter), and BS09 (residential area 1.5 miles east of DDMT). Other SVOC concentrations in surface soil samples were estimated at below the CRDL. SVOC values for perimeter and offsite surface soil samples are summarized in Table 3-10. With the exception of phenol, mean surface soil SVOC values are higher in the perimeter samples than offsite.
>
> The range and concentrations of detected SVOCs decrease from surface to subsurface soils. Concentrations of fluoranthene and pyrene in the subsurface soil samples are about a factor of seven lower than their corresponding surface soil samples. Phenol concentrations do not substantially decrease in the subsurface soil samples most likely because of leaching of water soluble phenol and adsorption of other insoluble SVOC compounds in the surface soil (CRC, 1971). Five out of six phenol detections in subsurface soil are from perimeter soil samples and are all higher than the single offsite phenol detection also at BS09."

21) **Section 3.2.5, page 3-37, 3rd paragraph, first sentence: Are the units reported in this sentence applicable to Table 3-13? If they are, then those units should be indicated either in the table or in the table notes on page 3-40.**

The units in the table are consistent with those discussed in this paragraph. The units in the table will be appropriately identified.

22) **Section 5.0, page 5-1, 1st paragraph, second sentence: This sentence states what the objective of this entire effort was. It also says that such a background statistical database was established (developed). After hearing what TDEC and EPA had concerns with in terms of pesticides and PAH concentration at our fenceline versus offsite, I question the validity of this sentence's statement.**

As discussed on page 5-8 of the EPA- and TDEC-approved *Generic Remedial Investigation/Feasibility Study Workplan (CEHNC, 1995)*, areas within the DDMT property that were not affected by DDMT operations were selected for background characterization based on information regarding former and current land usage, existing soil analytical data, and avoidance of areas of known or potential contamination. Potential sample locations were chosen by delineating areas throughout the installation that were not appropriate for sampling, including areas of know or suspected contamination and areas covered by buildings or roads. Because DDMT is heavily populated, relatively few areas were available for sampling. The 11 onsite locations were chosen to represent the most reasonable geographical distribution possible over the site, considering the site limitations.

Since there are no know waste operations in the background sampling areas, differences in the parameter concentrations between the perimeter and offsite sample locations are likely due to differences in anthropogenic background conditions. This difference is considered to be acceptable in the background sampling program, particularly since the background data are being applied to sample locations on the DDMT Main Installation. To strengthen this point, the last portion of this paragraph will be rewritten as follows:

> "...determine whether site-specific waste management operations or releases of hazardous materials at DDMT have contributed contaminants exceeding background levels."

23) Section 5.0, page 5-1, table: The title of this table refers to Remedial Action Criteria. If the exceedances mentioned are exceedances of screening criteria, do not refer to this table as Remedial Action Criteria, but instead refer to it as Risk Screening Criteria.

The table is in reference to the screening criteria. The term "Remedial Action Criteria" will be replaced with "Screening Criteria."

308 446

CH2M HILL
Engineers
Planners
Economists
Scientists

April 15, 1998

113627.RR.ZZ

Mr. Terry Templeton
State of Tennessee Department of Environment and Conservation
Memphis Environmental Field Office
Suite E-645, Perimeter Park
2510 Mt. Moriah
Memphis, TN 38115-1520

Dear Terry:

Subject: Response to December 8th, 1997, Response to Comment Resolution on the Draft Background Program Technical Memorandum

This letter provides a response to comments received from TDEC on December 8th, 1997, regarding the Draft Background Program Technical Memorandum. These comments were on the comment response document prepared by CH2M HILL and received by the TDEC office on November 3, 1997. The responses are provided as follows:

Response to TDEC/DSF General Comments:

The response states that the revised report will be titled "Background Sampling Program Report." However, the cover letters accompanying the comment responses refer to the document as the "Background Characterization Technical Memorandum." Please clarify.

Response: The report will be titled "Background Sampling Program Report."

Response to TDEC/DSF Specific Comments:

TDEC Comment: Regarding Appendix E, is there any need for a summary per sample location?

Response: The included summary is by medium, e.g. soil (surface and subsurface, surface water, etc.).

TDEC Comment: The response to this comment does not seem to actually address the comment.

CH2M HILL Oak Ridge Office 599 Oakridge Turnpike, Oak Ridge, TN 37830-7187 615.483.9032 Fax 615.481.3541

Response: The table provides a summary of the qualifiers (e.g. number detections, number of estimated values) for each parameter in each media sampled. The purpose of the table is to provide a summary of the parameter detections and qualifiers in a manner similar to the way the data is presented in the report. Summarizing the qualifiers by sample does not organize the data in a manner that supports the data interpretations discussed in the document.

The comments will be incorporated and the final Background Sampling Program Report will be issued on May 13th, 1998.

Sincerely,

CH2M HILL

Greg Underberg
Program Manager

ORO/TDEC_fin_resp.doc
c: Dorothy Richards/CEHNC
Glenn Kaden/DDSP-FE

308 448

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE