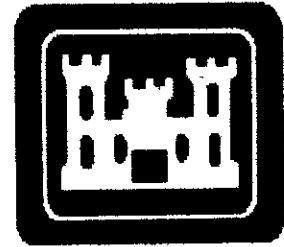




THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 618



Transportation and Disposal Plan

Dunn Field Contaminated Waste

Memphis, Tennessee

Prepared for

U. S. Army Corps of Engineers
Huntsville, Alabama

Prepared by

UXB International, Inc.
Ashburn, Virginia

Date

March 9, 2001

Executive Summary

UXB International, Inc. and the U.S. Army Corps of Engineers are totally committed to investigating, remediating, and the total removal of chemical warfare materials from Dunn Field, Memphis, Tennessee. This goal demands a safe, effective, cost efficient program with full compliance of federal, state, and local regulatory directives.

The following Disposal and Transportation Plan, is submitted to ensure the processes employed at Dunn Field meet public expectation and comply with federal, state, and local regulations.

These procedures attest that the handling of project generated waste meet or exceed the high standards rightfully expected of our ultimate customer – the residents of Memphis, as well as the U.S. Army Corps of Engineers, the Defense Logistic Agency, the Tennessee Department of Environment and Conservation, and the U.S. Environmental Protection Agency.

It also defines the processes used to perform soil, water, and debris sampling, classification of each category of waste, manifesting the shipment, transporting, and appropriately disposing of non-hazardous and hazardous waste resulting from this worthwhile project.

It is imperative to note that the procedures written in this addendum plan are in strict compliance with the approved work plan for Dunn Field. It does provide additional information that was not known or that could have anticipated at the time the work plan was originally written and approved.

BRAC Cleanup Team approval, of this plan, permits continued removal, and treatment/disposal of hazardous waste generated by this project.

Sincerely,

Frank Johnson
Project Manager,
UXB International, Inc.

Approval Page

This page reserved for BCT Approval letter or signatures.

(List of approving authority names pending)

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List of Acronyms

ADEM	Alabama Department of Environmental Management
AEL	airborne exposure limit
BCT	BRAC Cleanup Team
BDL	below detectable limits
BNA	base-neutral/acid extractables compounds
BRAC	Base Realignment and Closure
CEHNC	U.S. Army Corps of Engineers, Huntsville Center.
CERCLA	Comprehensive Environmental Resource, Compensation, Liability Act
CFR	Code of Federal Regulations
cu. yds.	cubic yards
CWM	chemical warfare materiel
DA	Department of Army
DAAMS	Depot Area Air Monitoring System
DLA	Defense Logistics Agency
DOT	U.S. Department of Transportation
ECBC	Edgewood Chemical Biological Center
ETC	Environmental Testing & Consulting, Inc
GC/MS	Gas Chromatography/Mass Spectroscopy
HD	distilled mustard
HTRW	hazardous, toxic and radiological waste
ICP	inductively coupled argon plasma
IDW	investigative derived waste
lb.	pound
MEAP	Mobile Environmental Analytical Platform
N/A	not applicable
ND	non detect
NDEQ	Nebraska Department of Environmental Quality
NOW	non-hazardous oilfield waste
OSHA	Occupational Safety and Health Administration
PA	pamphlet
PCB	poly vinyl chloride
PCC	primary combustion chamber
ppb	parts per billion
ppm	parts per million
PRG	preliminary remediation goals
QC	quality control
RCRA	Resource Conservation and Recovery Act
RL	reporting limit
SOP	standing operating procedure
SRC	secondary reaction chamber
SRC	secondary reaction chamber
T & M	time and materials contract
TAL	target analytes list
TCL	target compound list
TCLP	toxic characterization leaching procedure
TDG	thodiglycol
TEU	Technical Escort Unit
TOU	thermal oxidation unit
TSCA	Toxic Substances Control Act

UXB International, Inc.

USEPA	U.S. Environmental Protection Agency
UXB	UXB International, Inc.
VCS	vapor containment structure
VOA	volatile organic compound analysis
VOC	volatile organic compound
WM	Waste Management, Inc.

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1.0 Introduction

- 1.1 This plan describes the processes to profile and characterize soil/debris, define action levels for Hazardous, Toxic, or Radiological Waste (HTRW) compliance, and select soil/debris treatment and disposal options. The processes in this directive meet or exceed the guidelines outlined by the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) on waste disposal policies and treatment of chemical warfare material (CWM) outlined in Toxic Chemical Agent Safety Standards, DA-PAM 385-61.
- 1.2 Approval of this plan requires the joint-concurrence of the U.S. Army Corps of Engineers, Huntsville Center (CEHNC), Base Realignment and Closure (BRAC) Cleanup Team (BCT), and UXB International, Inc. (UXB).
- 1.3 This plan does not supercede, amend, or otherwise change the approved Dunn Field Work Plan or Site Safety Submission. Should a conflict occur, the approved work plan and/or site safety submission shall have overriding precedence.
- 1.4 UXB uses EPA preliminary remediation goals (PRGs) defined by Environmental Protection Agency (EPA) Region 9 guidelines, to evaluate the excavated soil's and investigative derived waste water's environmental suitability for retention at Dunn Field. The BCT amended a number of constituents in a meeting held between August 4th and 6th, 1997. The PRG standards and amended screening values are contained in Annex A to this document. Region 9 PRGs are also available on the internet at URL: <http://www.epa.gov/region09/waste/sfund/prg/>

2.0 Dunn Field Contaminant Categories and Treatment/Disposition

- 2.1 Waste Categories. Soil/Debris recovered/excavated/generated at Dunn Field are classified by ten (10) categories. These categories are represented below.
 - 2.1.1 Soil within EPA Regulatory Guidelines. This soil is within EPA regulatory guidelines, as defined in Section 7 (Regulatory Compliance Standards) of this document and does not contain mustard or mustard degradation by-products.
 - 2.1.1.1 Disposition. This soil will be retained on Dunn Field as fill dirt.
 - 2.1.2 Soil Containing Foreign Debris. This soil contains foreign debris, such as broken glass, wood, construction debris, and metal fragments. The debris, present in this soil, has not been exposed to chemical warfare agents. CEHNC and UXB will make an effort to segregate foreign debris from soil.
 - 2.1.2.1 Disposition. This soil will be removed from the site and placed in a Subtitle D Landfill owned by Waste Management in Tunica, MS (non-hazardous landfill). Soil cleared of debris by manual removal will remain on-site and the segregated debris will be discarded as solid waste and placed in a Subtitle D Landfill.

- 2.1.3 **HTRW Contaminated Soil.** Soil that contains concentrations of HTRW constituents above regulatory compliance levels, as defined in Section 7 of this document, but does not contain mustard or mustard degradation by-products.
- 2.1.3.1 **Disposition.** This soil will be removed from the site and placed in a Subtitle C Landfill operated by Waste Management in Emelle, AL.
- 2.1.4 **Mustard Degradation By-Product Contaminated Soil.** This soil contains no mustard but does contain detectable levels of mustard degradation by-products. Mustard degradation by-products include 1,4-thioxane, 1,4 dithiane, and/or thiodiglycol (TDG).
- 2.1.4.1 **Treatment and Disposition.** This soil will be incinerated by Onyx Environmental Services in Port Arthur, TX. The Onyx facility is permitted to accept and treat soil containing these chemical constituents. Treated residue ash will be placed in a RCRA Subtitle C Landfill operated by Waste Management in Sulphur, LA.
- 2.1.5 **Mustard Contaminated Soil.** This soil contains mustard in any amount, both the legal detectable limits and below detectable limits (BDL). Refer to Section 3-5 and 3-6.
- 2.1.5.1 **Treatment and Disposition.** This soil will be incinerated by Clean Harbors Environmental Services at Kimball, Nebraska, de-listed, and the residue ash will be disposed of in a dedicated monofill landfill at the incineration facility.
- 2.1.6 **XXX Material.** XXX Material (a.k.a. 3X) are items that have been surface decontaminated. The recovered 29 German chemical warfare bomb casings and metallic debris recovered from pits known to have at one time contained mustard agent (Sites 24-A and 24-B) qualify as XXX material.
- 2.1.6.1 **Treatment and Disposition.** This material will be incinerated by Clean Harbors Environmental Services at Kimball, Nebraska, de-listed, and the residue ash/slag will be disposed of in a dedicated monofill landfill at the incineration facility.
- 2.1.7 **Non-contaminated Investigative Derived Waste (N-IDW) Water.** The waste stream consists of water collected as a result of decontamination of personnel and equipment, rain runoff recovered from excavation pits, and wash water derived from washing vehicles that have been inside the VCS. This water contains concentrations of HTRW constituents within regulatory compliance levels, as defined in Section 7 of this document, and does not contain mustard or mustard degradation by-products.

- 2.1.7.1 Treatment and Disposition. Chemical analysis of the water will be performed to determine if the water is within EPA regulatory limits and totally free of CWM and mustard degradation by-products. Once sample analysis concludes the water is free of these concerns, a letter requesting authorization to discharge the water into the Memphis Sewer System will be sent to the City of Memphis Public Works (Mr. Akil Al-Chokahachi – [901-353-2392]). The letter will include the source of the water, quantity, and all sampling results. If authorized, the water will be discharged into the Memphis Public Sewer system at a location and flow rate designated in the authorization. If water is not authorized for discharge in the Memphis Sewer System, it will be handled in accordance with paragraph 2.1.8 of this document.
- 2.1.8 HTRW Contaminated Water. HTRW contaminated water is known to contain concentrations of HTRW constituents above regulatory compliance levels, as defined in Section 7 of this document, but does not contain mustard or mustard degradation by-products.
- 2.1.8.1 Treatment and Disposition. Water containing unacceptable levels of HTRW will be treated and disposed of in a Subtitle C landfill operated by Waste Management, Inc. in Emelle, AL.
- 2.1.9 Mustard Degradation By-Product Contaminated Water. This water contains detectable levels of mustard degradation by-products.
- 2.1.9.1 Treatment and Disposition. Onyx Environmental Services, located in Port Arthur, TX, will incinerate this water. The small quantity of post-treated residue (solids) will be placed in a RCRA Subtitle C Landfill operated by Waste Management in Sulphur, LA.
- 2.1.10 Mustard Contaminated Water. Mustard contaminated water contains any detectable level of mustard agent.
- 2.1.10.1 Treatment and Disposition. This water will be incinerated by Clean Harbors Environmental Services at Kimball, Nebraska, de-listed, and the small quantity of residue (solids) will be disposed of in a dedicated monofill landfill at the incineration facility.

2.2 Disposition Path Table For Waste Streams. Refer to Table 2-1 for disposal of contaminated waste in table format.

Table 2-1 Disposition Path for Waste Streams

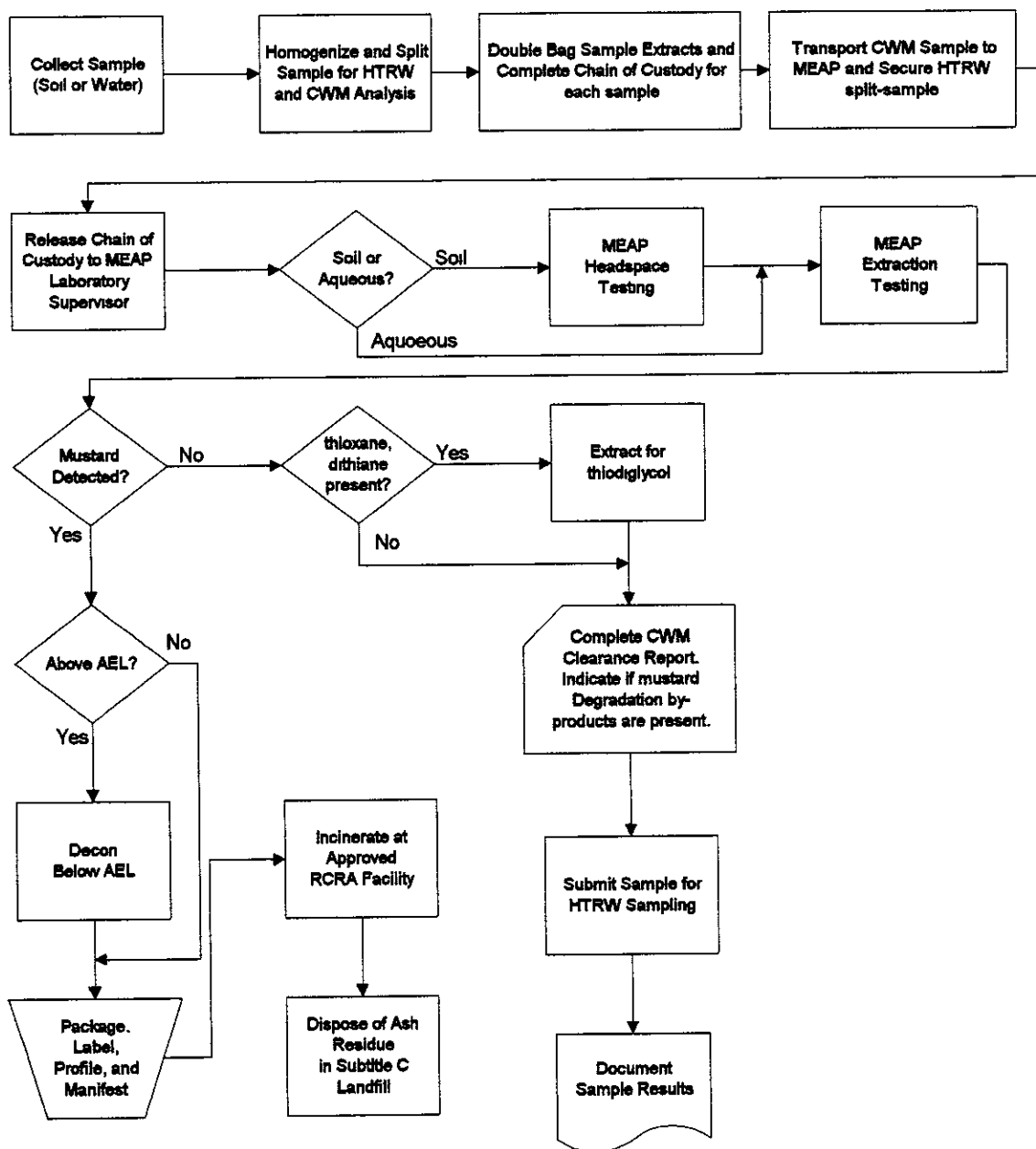
Disposition Path for Waste Streams			
Category	Treatment	Disposal	Comment
1. Soil Within Regulatory EPA Guidelines	N/A	N/A	Remain On-Site and shall be used as backfill material
2. Soil Containing Foreign Debris	N/A	Subtitle D Landfill Waste Management Landfill, Tunica, MS Permit No. SWO720010459	
3. HTRW Contaminated Soil	N/A	Subtitle C Landfill Waste Management Landfill Emelle, AL RCRA Part B Permit No, ALD000622464	
4. Mustard Degradation by-product Contaminated Soil	Incineration Onyx Environmental Services Port Arthur, TX Part B RCRA Permit No. HW-50212-001 (Incinerator/Landfills)	Subtitle C Landfill Waste Management Landfill Sulphur, LA EPA RCRA Permit No LAD000777201-OP-1	
5. Mustard Contaminated Soil	Incineration Clean Harbors Kimball, NE Permit No. NEO203238 EPA ID NED981723513	Monofill Landfill At Clean Harbors Site, Kimball, NE Permit No. NEO203238	
6. XXX Material	Incineration Clean Harbors Kimball, NE Permit No. NEO203238 EPA ID NED981723513	Monofill Landfill At Clean Harbors Site, Kimball, NE Permit No. NEO203238	Per DA Pam 385-61
7. Investigative Derived Waste Water	Discharge into Memphis Sewer System. Treatment by sanitary sewer treatment.	N/A	Authorization MUST be granted by Memphis Public Works
8. HTRW Contaminated Water	N/A	Subtitle C Landfill Waste Management Landfill Emelle, AL RCRA Part B Permit No, ALD000622464	
9. Mustard Degradation By-Product Contaminated Water	Incineration Onyx Environmental Services Port Arthur, TX	Subtitle C Landfill Waste Management Landfill Sulphur, LA EPA RCRA Permit No LAD000777201-OP-1	
10. Mustard Contaminated Water	Incineration Clean Harbors Kimball, NE Permit No. NEO203238 EPA ID NED981723513	Monofill Landfill At Clean Harbors Site, Kimball, NE Permit No. NEO203238	A waste disposal license was issued for the ash monofill by the Nebraska Dept of Environmental Quality (NDEQ)

3.0 Soil and Aqueous Sampling for CWM.

- 3.1 Purpose. The intent of CWM sampling is to properly profile the waste characteristics of the excavated soil and aqueous solutions to ensure appropriate disposition of soil/debris/water. The monitoring will provide information documenting the cleanup effort by indicating low-level CWM contamination areas. The results will also ensure that soils and aqueous samples may be safely shipped to off-site laboratories for further HTRW analyses. All soil samples will be analyzed for the presence of distilled mustard (HD). If the soil analysis detects the presence of HD, no further CWM testing will be performed, as this soil will be classified as mustard contaminated soil. Soils that do not contain mustard will be further tested for 1,4-dithiane, and 1,4-thioxane (1,4-oxathiane). If the compounds 1,4-dithiane or 1,4-thioxane are detected in the soil extract then the sample needs to be tested for TDG. The analysis will be conducted on-site by ECBC's Mobile Environmental Analytical Platform (MEAP). The MEAP is a self-contained laboratory capable of providing all laboratory functions necessary to analyze soil and water samples for these chemicals. In the event that MEAP instrumentation is not functioning, ECBC team will package and ship the samples to the ECBC Laboratory in Edgewood, Maryland, for analysis.
- 3.2 Soil Samples. UXB determines soil-sampling locations and collects the soil samples according to the procedures set in the work plan. UXB double bags the samples, issues a unique identification number, transports the samples to the ECBC site representative, and ensures the chain-of-custody procedures are implemented and followed. The double-bagged soil samples must be cleared by the MINICAMS or Depot Area Air Monitoring System (DAAMS) Soil Headspace Procedure defined in the Site Safety Submission, ECBC Air Monitoring Plan, (Section 3.3.4). Once cleared, the sample will be transported to the on-site MEAP or (if necessary) shipped by Federal Express to the ECBC laboratory in Edgewood, Maryland, for soil extraction testing.
- 3.3 Aqueous Samples. UXB determines the aqueous sample locations. Aqueous samples are collected from water generated through decontamination procedures, rain water that may migrate into the excavation pit, and from washing vehicles used inside the vapor containment structure (VCS). The samples are tested with M8 paper to preclude transporting neat agent material to the laboratory. The aqueous samples are extracted similarly to the procedure for soils and analyzed by injection into a Hewlett-Packard Gas Chromatograph/Mass Spectrometer. If the initial analysis detects the presence of HD, no further CWM testing will be performed. If HD is not present, the soil extract is tested for 1,4-dithiane, or 1,4-thioxane. The presence of either of these compounds will require a subsequent extraction of the sample for TDG. If the initial analysis does not detect the presence of 1,4-dithiane or 1,4-thioxane, then the TDG extraction is not conducted.

3.4 Refer to Chart 3-1 for flow-process of CWM/HTRW Sampling

CWM/HTRW Sampling Process



3.5 Soil and Aqueous Sample Analytes of Concern and Detection Limits. Refer to Table 3-1 for Soil and Aqueous Sample Analytes of Concern and Legal Detection Limits.

Table 3-1 Analytes of Concern and Detection Limits

Analyte	Method of Analysis	Detection Limit Soil Matrix (ppb)	Detection Limit Aqueous Matrix (ppb)
HD	1	200	200
1,4-Dithiane	1	200	200
1,4-Thioxane	1	200	200
Thiodiglycol	2	250	250

1: "Application of Gas Chromatography/Mass Spectroscopy (GC/MS) for the Detection of Military Agents Mustard and Mustard Breakdown products 1,4-Dithiane and 1,4-Thioxane in Water and Soil"

2: "Application of Gas Chromatography/Mass Spectroscopy (GC/MS) for the Detection of Military Agent Breakdown Product Thiodiglycol in Soil and Water"

3.6 Below Detection Limits (BDL) For Mustard. MEAP instruments are capable of identifying the presence of mustard below detectable limits (defined in Table 3-1) but are not capable of quantifying the mustard concentrations in soil below 100 parts per billion (ppb). Mustard in aqueous samples may be detected to 0.0 ppb. EPA standards define mustard concentration below 200 ppb as non-hazardous; however, the Dunn Field Chemical Warfare Materiel Investigation/Removal Action Contract specifications require incineration of soil or water containing any amount of mustard.

3.7 Non-Detect Limits For Mustard (ND). The non-detect limit for mustard in soil is 100 ppb and 0.0 ppb for aqueous solutions (water).

4.0 Soil and Aqueous Sampling for HTRW

4.1 Toxic Characteristic Leaching Procedure (TCLP) Sampling. A sample is collected for analysis using a TCLP extraction method and then analyzed for regulated chemicals – including volatiles, semi-volatiles, pesticides, herbicides, metals, reactive cyanide, reactive sulfide, corrosivity, ignitability, and total arsenic. A sample is taken from each 20 cubic yards of soil excavated at Dunn Field. A water sample is also collected for each 500 gallons of Investigative Derived Waste (IDW) water generated. These samples are analyzed for Target Compounds List (TCL) volatiles, TCL semi-volatiles & pyridine, TCL pesticides, TCL PCBs, herbicides (2 compounds), Target Analytes List (TAL) metals, cyanide, sulfide, corrosivity (pH), and flashpoint. Samples will be sent to an independent laboratory. Severn-Trent or ETC is currently testing samples collected for these sample sources.

4.2 Solids Sampling. In addition, a solid (soil) sample is collected for each 500 cubic yards of soil excavated at Dunn Field for analysis of TCL volatiles, TCL semi-volatiles, TCL pesticides, TCL PCB, TAL metals, and cyanide.

4.3 Testing Protocols. Table 4-1 identifies the constituent of concern for each test category and the laboratory testing method.

Table 4-1 Testing Protocols

Testing Protocols	
IDW Water	
<i>Constituent</i>	<i>Analytical Method</i>
Cyanide	9012A
Flash Point	1010
Sulfide	371.1
pH - aqueous	9040
Mercury	7470A
Metals ICP-total	6010B
Metals ICP Trace-total	6010B
Herbicides	8151A
TCL PCBs	8082
TCL Pesticides	8081A
TCL BNA & Pyridine	8270C
TCL VOA	8260B
Solids	
<i>Constituent</i>	<i>Analytical Method</i>
TCL VOA	8260B
TCL BNA	8270C
TCL Pesticides	8081A
TCL PCBs	8082
TAL Metals ICP Trace	6010B
Mercury	7471A
Cyanide	9012A
TCLP	
<i>Constituent</i>	<i>Analytical Method</i>
TCLP Volatile	8260B
TCLP Semivolatiles	8270C
TCLP Pesticides	8081A
TCLP Herbicides	8151A
TCLP ICP Metals	6010B
TCLP Mercury	7470A
Arsenic	6010A

4.4 TCLP/Solids Soil Analysis Laboratories. At the onset of the Dunn Field Project, Severn-Trent Laboratories performed all HTRW water and soil analysis. In mid-February, the task of analyzing TCLP soil samples was assigned to Environmental Testing & Consulting, Inc. (ETC). Severn-Trent and ETC perform the following sampling functions.

4.4.1 Severn-Trent Laboratories:

- Soil Solids analysis (for each 500 cubic feet of soil excavated)
- TCLP Water analysis (for each 500 gallons of investigative derived waste [IDW] water)

4.4.2 Environmental Testing & Consulting, Inc. (ETC)

- TCLP Soil analysis (for each 20 cubic yards of soil excavated)

4.5 TCLP Sampling Extraction Method. Laboratory standard extraction method 1311 is utilized for the TCLP extraction of samples and for extraction, followed by subsequent analysis of TCLP volatiles, TCLP semi-volatiles, TCLP pesticides, TCLP herbicides, and TCLP metals.

4.6 Sampling TCL, TAL, Methods, RL, and Compounds. Refer to Annex B, for the Target Compounds List (TCL), Target Analytes List (TAL), and specific lists of compounds, methods, and reporting limits associated with sample protocols for this Project.

4.7 Analytical Review. The TCLP and solid sample results are provided to the UXB chemist; Defense Logistics Agency (DLA) Dunn Field Caretaker; and CEHNC environmental engineers for review. Final soil disposition is determined by this joint review.

5.0 Soil Characterization

5.1 General. All soil excavated at Dunn Field sites must be characterized for chemical content, and the results compared with a set of criteria to determine its ultimate disposition. There are several types of chemical analyses required, and during the analyses, the soil must be held on site. Only soil that meets all of the criteria for cleanliness will be allowed to remain on-site. All other soils will be disposed of off-site by one of the approved methods outlined in the document.

5.2 CWM/Mustard Degradation Characterization. The first criteria, is that the soil contain no detectable mustard or mustard degradation by-products. Soil removed from the pit is sampled and tested for mustard and mustard degradation by-products before it is removed from the vapor containment structure (VCS). Any soil containing mustard above the airborne exposure limit (AEL) must be decontaminated, within the VCS, until the AEL is below one. Soil will not depart the VCS until this level of protection is confirmed. CWM clearance testing is performed by ECBC at a mobile lab located on the site. Mustard contaminated soil and/or XXX material will be handled in accordance with Section 11 of the work plan, Waste Management Plan, and all federal, state and local laws and regulations.

5.3 HTRW Characterization. If the soil meets the criteria of no mustard or mustard degradation by-products, the soil is sampled and the sample is sent off-site for HTRW characterization. The samples are extracted using EPA TCLPs. The extract is analyzed for metals, volatiles, semivolatiles, herbicides, pesticides, PCBs and pH. The results are compared to the criteria agreed upon by all parties prior to the beginning of the project. U.S. Environmental Protection Agency (Region IX) 1999 Preliminary Remediation Goals (PRGs) serve as HTRW clearance for this project. Specific constituent levels, within the EPA list, were modified by the BCT to reflect background levels of certain metals that exist naturally in the soil at the site, and dioxin. The BCT amended PRG levels are incorporated in the HTRW sample analysis review to determine the suitability of soil/water retention at Dunn Field.

5.4 Regulatory Compliance. The PRGs and BCT's exceptions to the PRGs are included as Annex A to this document. The PRG values are categorized according to the proposed use of the land (residential or industrial) and the type of exposure (inhalation of dusts, dermal contact, or an "integrated" value that corresponds to a one in a million chance that a cancer or other disease may result from exposure). The BCT agreement mandates the use of the "Industrial-integrated" value. Please note that not all chemicals in the PRG list are tested for routinely.

5.5 Data Quality Control. The UXB Chemist evaluates data packages (laboratory raw data) to ensure that data quality is maintained and the data reported represents the actual soil analytical results.

6.0 Hazardous Waste Checklist.

6.1 Dunn Field Hazardous Waste Checklist. Refer to Annex C for a detailed list of hazardous waste generator steps taken by UXB and CEHNC and the generator.

7.0 Regulatory Compliance Standards

7.1 Regulatory Compliance Standards Guidelines. Regulatory compliance standards employed for soil evaluation are contained in Annex A. Industrial (integrated) screening values serve as the standard.

8.0 Profiling

8.1 Profiling Responsibility. The Quality Control (QC) Manager shall be responsible for reviewing the pre-qualifications information to determine how to characterize waste streams for profiling. The evaluation shall be based on a review and comparison of the following determinations.

8.1.1 CERCLA Determination. The QC Manager shall determine if the waste is originated from a CERCLA site. CERCLA regulations do apply to all waste generated at the Dunn Field.

8.1.2 Waste Generation Determination. The QC Manager shall have generator knowledge and certification on how waste was generated.

8.1.3 Required Supporting Documentation. The following supporting documentation is provided to the QC Manager. This information includes, but is not limited to:

1. Manufacturer's information
2. Material Safety Data Sheets (MSDSs)
3. Physical characteristics
4. Analytical data gained from testing and/representative sample(s)
5. Physical Description
 - Phases/Layers
 - Color
6. Physical State
 - Density
7. pH (if liquid)
8. Free Liquid (Visual Determination)
9. Compatibility Test
10. Water Reactivity

11. Ignitability

- 8.1.4 41CFR 261.4(b). The QC Manager shall determine if the solid waste is excluded from regulation under 41CFR 261.4(b)
- 8.1.5 40CFR Part 261, subpart D. The QC Manager shall determine if solid waste is listed under 40CFR part 261, subpart D, or if it is a mixture that contains a waste listed in subpart D.
- 8.1.6 CFR Exclusion Determination. The QC Manager shall determine if the waste or mixture has been excluded from the list in subpart D or 40CFR 261.3 in accordance with 40CFR 260.20 or 260.22.
- 8.1.7 Characteristic Determination. The QC Manager shall determine if the waste exhibits any of the characteristics specified in 40CFR part 261, subpart C.
- 8.1.8 USEPA Waste Codes. The QC Manager shall determine any USEPA waste codes that may apply.
- 8.1.9 Shipping Name. The QC Manager shall determine proper shipping name through the hazardous materials table – DOT49CFR.
- 8.1.10 Shipping Manifest. The QC Manager shall determine proper shipping manifest to use in accordance with DOT, state and USEPA guidelines, i.e., Reference DOT 49 Code of Federal Regulations (CFR) and USEPA 40CFR.
- 8.1.11 Land Disposal Restriction Determination. If applicable, The QC Manager shall provide Land Disposal Restriction (LDR) forms.

9.0 Manifest. All manifests will be in strict compliance with DOT 49CFR and USEPA 40CFR. Refer to Annex D for samples of manifest for each hazard category.

10.0 Transportation

- 10.1 Hazardous Wastes Transport Contractor. Action Resource, Inc will transport contaminated water, soil, and debris from Dunn Field to an approved treatment facility and/or landfill. Annex E contains Action Resource's Permit List and Waste Transport Permits for Alabama, Tennessee, and Texas. Mississippi and Nebraska do not require an actual copy. They accept Action Resource's EPA number ALR 000007237.
- 10.2 Waste Material Loading Standing Operating Procedures. Action Resource, Inc. will accomplish loading of waste material for transport. Wearing of proper personal protective equipment (PPE), Occupational Safety and Health Administration (OSHA) required training, OSHA required medical exams for personnel directly involved with hazardous waste, and monitoring requirements will be strictly enforced by the UXB Site Safety Officer and the CEHNC Safety Specialist. Standing Operating Procedures (SOPs) for loading waste material for off-site transport will be reviewed by CEHNC prior to loading operations. The SOP will detail PPE, monitoring, dust control measures, emergency notification, safety measures, and proper securing of load for transport. All workers must present in-date OSHA required credentials for working with hazardous waste. The UXB Site Safety Officer and the CEHNC Safety Specialist will inspect these documents prior to commencement of waste loading operations. Additional

information regarding Action Resource, Inc. may be obtained from:

Ms. Carolyn Payne
Action Resource, Inc.
355 County Road 513
Hanceville, AL 35077
1-800-228-8845

- 10.3 Inspection. All required transportation forms will be accurately completed and inspected by the QC Manager.
- 10.4 Release of Manifest. Mr. Mike Lee or Mr. Jack Kallal, Defense Logistics Agency, will review, require corrections (if necessary), and sign the waste manifest as the generator.

11.0 Treatment Methods

11.1 Combustion System for XXX Material and Mustard Contaminated Soil.

- 11.1.1 Thermal Oxidation Unit. The combustion system and ancillary equipment are called the Thermal Oxidation Unit (TOU). The TOU is a rectangular fluidized bed incinerator consisting of three separate zones called the primary combustion chamber (PCC), the secondary reaction chamber (SRC), and the prequench chamber. The TOU is lined with refractory and has inside dimensions of 7.5 feet wide by 15 feet long by 59 feet high. The cross-section area of the TOU is 112.5 square feet.
- 11.1.2 Primary Combustion Chamber. The PCC is the fluidized bed portion of the TOU. The auxiliary fuel, fluidizing air, and the four main waste feeds are introduced into the system and are thermally oxidized in the PCC. Within the PCC, granular refractory material is fluidized with air from the fluidizing air system and distributed uniformly across the bed through the air distribution manifold in the bottom of the vessel. The waste is injected into the fluidized bed (approximately 48-60" deep) through nozzles spaced around the bed zone. The fluidizing velocity is maintained between 2-9 feet per second. Given the range of bed depth and fluidizing velocity, the residence time within the PCC is between 0.4 seconds and 2.5 seconds. The SRC allows additional reaction time for complete combustion of the off gases from the PCC. The SRC extends 33 feet above the fluidized bed zone. To ensure adequate residence time in the SRC, the NDEQ has set the permit limit for maximum fluidizing velocity at 13 feet per second. The SRC velocity typically ranges between 8-13 feet per second. Given the height and range of SRC velocity, the residence time in the SRC is between 2.5-4.1 seconds. Therefore, the total residence time within the combustion chamber is between 3.1-6.6 seconds.
- 11.1.3 Prequench Chamber. The prequench chamber consists of the top 16 feet of the TOU. The prequench chamber cools and conditions the combustion gases exiting the TOU prior to entering the off-gas treatment system. Water is atomized into the combustion gases to cool the gases to a temperature ranging from 950° F to 1300° F.
- 11.1.4 Destruction Efficiency. The TOU has demonstrated a destruction and removal efficiency of 99.999% for several hard-to-destroy principle organic hazardous constituents in the Trial Burn performed in 1994 and

subsequent annual performance tests.

- 11.2 Incineration of Mustard Contaminated Soil and XXX Material. All incineration temperatures shall be continuously monitored to meet the following specification:

- 11.2.1 Primary Combustion Chamber. The primary combustion chamber (bed) temperature 24 inches above the bubble caps shall be:

- 11.2.1.1 Thermal Treatment Temperature – Primary Chamber.
Material will be exposed to at least 1424 degrees Fahrenheit but no greater than 1630 degrees Fahrenheit, instantaneous.

- 11.2.2 Secondary Reaction Chamber. The secondary reaction chamber (SRC) temperature, at approximately 42 feet above the bubble caps, shall be:

- 11.2.2.1 Thermal Treatment Temperature – Secondary Chamber.
Material will be exposed to at least 1426 degrees Fahrenheit, instantaneous basis.

- 11.3 Incineration, Mustard Degradation By-Products. These materials will be subjected to temperatures listed in paragraphs 11.2.1 through 11.2.3

- 11.3.1 Kiln Temperature The kiln temperature shall not be less than 1300 degree Fahrenheit (measured at exit).

- 11.3.2 Secondary Combustion Chamber Temperature. Material will be exposed to not less than 2030 degree Fahrenheit with a rolling average and not less than 2012 degree Fahrenheit instantaneous.

- 11.3.3 Secondary Combustion Chamber Material Exposure Duration.

- 11.3.3.1 Solids. Solids retention in the Kiln is approximately 60 minutes.

- 11.3.3.2 Gas. Gas entering the secondary combustion chamber are exposed to high temperatures for approx. 2 seconds, total destruction of organics is >99.9999%.

- 11.3.4 Post-Treatment Land Disposal Restrictions. Since this material is not a RCRA regulated material, there are no Land Disposal Restriction Standards. See 40CFR 261 part 268.

12.0 Treatment Facilities Information

- 12.1 Onyx Environmental Services, LLC.

- 12.1.1 General Information. This facility is located on about 3,100 acres of agricultural land, just over three miles west of Port Arthur city limits on Texas State Highway 73. Onyx operates a rotary kiln incinerator that is capable of destroying RCRA and TSCA bulk solids, sludges, bulk liquids, combustible containers, and steel drums that meet specifications. The facility received CERCLA status in December 1993

- 12.1.2 Permit Data. Onyx permits include RCRA Part B Permit Number HW-50212-001. TSCA authorization was received on June 1, 1992. Their EPA ID number is TXD 000838896.

- 12.1.3 Point of contact. For additional information regarding Onyx Environmental, LLC, contact:

Ms. Margie Ratcliff
P.O. Box 2563
Port Arthur, TX 77643-2563
(409) 736-4103
email: mratcliff@onyxes.com

12.2 Clean Harbors Environmental Services, Inc.

- 12.2.1 General Information. The Clean Harbors Kimball facility is an RCRA Part B permitted commercial facility for incineration, treatment, storage, and disposal of hazardous waste. The facility is located on approximately 640 acres near Interstate 80, 5 miles south of the town of Kimball, NE, in the southeast corner of the state. The site includes a 45,000-ton-per-year fluidized-bed incinerator for thermal destruction of hazardous waste, a monofill for disposal of de-listed ash, and an analytical laboratory for waste analysis.

- 12.2.2 Permit Data. Clean Harbors operates under permit number NEO203238. Their EPA ID is NED981723513.

- 12.2.3 Point of Contact. Additional information regarding this facility is available from:

Clean Harbors of Kimball
Ms. Danielle Reader
HC54 Box 2B
Kimball, NE 68145
(308) 235-8207
reader@cleanharbors.com

12.3 Waste Management, Inc – Sulphur, LA Landfill

- 12.3.1 General Information. The Waste Management Sulphur, LA, Facility provides secure landfill, metals fixation (stabilization, microencapsulation, macroencapsulation), solidification, acid neutralization, cyanide/sulfide destruction, and waste storage for shipment to incinerator and recycling. Additionally, the facility can accept Non-Hazardous Oilfield Waste (NOW) and recently began operation of a unit for bioremediation of organically contaminated soils and other wastes. The facility is permitted for disposal of RCRA Part II (Part B) material.

- 12.3.2 Permit Data. EPA RCRA Permit No. LAD000777201-OP-1 was issued to Waste Management Sulphur, LA Landfill effective May 30, 1996.

- 12.3.3 Point of Contact. Addition information regarding this facility is available from:

Mr. Carl Carlsson
Chemical Waste Management, Inc. (CWM)
7170 John Branon Road
Sulphur, LA 70665
(337) 583-3654 or
email: ccarlsson@wm.com

12.4 Waste Management, Inc. – Tunica, Mississippi Landfill.

- 12.4.1 General Information. The Tunica County New Landfill is a Class 1, Subtitle D facility with leachate extraction and a composite liner system consisting of 2 feet of re-compacted clay exhibiting a minimum permeability rating of 10 to the minus 7 (exponential) cm/second overlaid with HDPE flexible membrane liner with a thickness of 60 mil. The liner system in place exceeds Federal EPA requirements for landfill construction. Therefore, the only limitation is hazardous materials. The landfill will accept friable and non-friable asbestos, petroleum contaminated soils, industrial waste water sludges, and non-hazardous industrial process wastes as well as Municipal Solid Waste.

- 12.4.2 Permit Data. The United States Environmental Protection Agency issued the Solid Waste Permit (no. SW-0720010459), through an initial assessment, and found the landfill acceptable for receipt of non-hazardous CERCLA off-site waste at the Subtitle D lined section of Tunica Country Landfill.

- 12.4.3 Point of Contact. Addition information regarding this facility is available from:

Facilities Manager
The Tunica Landfill
6035 Bowdre Road
Robinsonville, MS 38664
(662) 363-2282

12.5 Waste Management, Inc. – Emelle, AL Landfill.

- 12.5.1 General Information. The Waste Management (WM) facility is located on the east and west sides of Highway 17, to the south of its intersection with Highway 116 in a sparsely populated area of Emelle, Alabama. Only a portion of the property on the east side of Highway 17 is active. The 2,700 acre facility is surrounded by a sparsely developed range-land. The facility maintains permits related to air discharges, surface water and stormwater discharges, and holds a RCRA Part B operating permit with the Alabama Department of Environment Management (ADEM). The facility also maintains a permit with the US EPA to operate in accordance with the Toxic Substances Control Act (TSCA).

- 12.5.2 Permit Data. The EPA Identification Number for the WM-Emelle facility is AKD000622464. The five-year permit was issued in September 1997

12.5.3 Point of Contact. Additional information regarding this facility is available from:

Dr. Rodger Henson, Division Manager
Waste Management – Emelle Division
P.O. Box 55
Highway 17N. at Mile Marker 163
Emelle, Alabama 25470
(205) 652-9721

12.6 Facility Audit Manuals. Facility audit manuals are available from:

Mr. Frank Johnson
UXB International, Inc
Dunn Field Project Manager
21641 Beaumeade Circle, Suite 301
Ashburn, Virginia 20147-6002
(703) 625-3792
email: fejohnson@uxb.com

13.0 Table of Authorities

13.1 Waste Management Task and Responsible Persons. Table 13-1 identifies specific waste management task and responsible persons for each task.

Table 13-1 Table of Authorities

Table of Authorities			
<i>Task</i>	<i>Responsible Person</i>	<i>Agency</i>	<i>Contact Information</i>
Collect and Submit Samples for CWM Clearance	Mr. Jim Dunkle UXB QC Manager	UXB International, Inc.	(901) 754-4999
Collect and Submit Samples for HTRW Clearance	Mr. Jim Dunkle UXB QC Manager	UXB International, Inc.	(901) 754-4999
Perform CWM Sample Analysis	ECBC Field Supervisor – <i>Supervisors Rotate bi-monthly</i>	Edgewood Chemical and Biological Center	(901) 745-4278 /4279
Perform HTRW Sample Analysis	Mr. Dave Dunlap	Severn-Trent	(412) 820-2088
	Mr. Nathan Pera	ETC	(901) 327-2750
Evaluate CWM Sample Results	ECBC Field Supervisor – <i>Supervisors Rotate bi-monthly</i>	Edgewood Chemical and Biological Center	(901) 745-4278 /4279
Evaluate HTRW Sample Results	Mr. Mike Lee	DLA – Environmental Specialist/Safety Manager	(901) 544-0612
	Mr. Harley Heaton	UXB Chemist	(703) 724-9646
	Mr. Bob Torstrick	CEHNC Project Manager	(256) 895-1512
Prepare Hazardous Waste Profile	Mr. Gerry Girardeau	Innovative Waste, Inc.	(843) 725-2000
Prepare Hazardous Waste Manifest	Mr. Gerry Girardeau	Innovative Waste, Inc.	(843) 725-2000
Approve Treatment/Landfill for Hazardous Waste	Mr. Gerry Girardeau	Innovative Waste, Inc.	(843) 725-2000
Review for Accuracy and Sign Manifest	Mr. Mike Lee or Mr. Jack Kallal	Defense Logistics Agency	(901) 544-0612 (901) 544-0614

14.0 Cost Analysis

14.1 Waste Management Treatment and Disposal Costs. Table 14-1 identifies waste treatment/disposal costs associated with hazardous wastes at Dunn Field.

Table 14-1 Treatment/Disposal Cost Analysis

Treatment/Disposal Cost Analysis				
Treatment Method	Applicable Hazard Category(s) See Notes	Loading/ Shipping Cost	Landfill Cost	Treatment Cost
Landfill Subtitle D	2	Included	\$105/cu. yd.	N/A
Landfill Subtitle C	3, 8	\$1,046 per load (~20 cu. yds.)	\$215/ cu. yd. \$21 AL Tax per cu. yd.	N/A
Incineration of Mustard Degradation By-Products	4, 9	Included	Included – Ash residue placed in Subtitle C Landfill	\$0.50 per lb.
Incineration of Mustard Contaminated Soil-Water/XXX Bomb Casings	5, 6, 10	Included	Included – Ash/bomb casing residue placed in monofill	\$1.06 per lb.
Discharge into Memphis Sewer System	7	Time and Materials (minimal costs)	N/A	T & M through existing contract
Note. Category 1 – Soil Within EPA Regulatory Guidelines (retained on-site – no disposal costs) Category 2 – Soil Containing Foreign Debris Category 3 – HTRW Contaminated Soil Category 4 – Mustard Degradation By-Product Contaminated Soil Category 5 – Mustard Contaminated Soil Category 6 – XXX Material Category 7 – Investigative Derived Waste Water Category 8 – HTRW Contaminated Water Category 9 – Mustard Degradation By-Product Contaminated Water Category 10 – Mustard Contaminated Water				

15.0 Definition of Terms

15.1 CWM Terms and Definitions. Annex F Contains definitions of CWM unique terms

ANNEX A

Regulatory Compliance Standards

Soil and aqueous sample results are compared to the standards listed in this annex. Page 16, of this annex, contains exceptions to these standards adopted by the BRAC Cleanup Team (BCT) in August 1997.

Dunn Field
Regulatory Compliance

Region 9

Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
30560-19-1	Acephate	2.8E+02	ca*
75-07-0	Acetaldehyde	2.3E+01	ca**
34256-82-1	Acetochlor	1.8E+04	nc
67-64-1	Acetone	6.2E+03	nc
75-86-5	Acetone cyanohydrin	7.0E+02	nc
75-05-8	Acetonitrile	1.7E+03	nc
98-86-2	Acetophenone	1.6E+00	nc
50594-66-6	Acifluorfen	2.2E+01	ca
107-02-8	Acrolein	3.4E-01	nc
79-06-1	Acrylamide	5.4E-01	ca
79-10-7	Acrylic acid	1.0E+05	max
107-13-1	Acrylonitrile	5.1E-01	ca*
15972-60-8	Alachlor	3.1E+01	ca
1596-84-5	Alar	1.0E+05	max
116-06-3	Aldicarb	8.8E+02	nc
1646-88-4	Aldicarb sulfone	8.8E+02	nc
309-00-2	Aldrin	1.5E-01	ca
5585-64-8	Ally	1.0E+05	max
107-18-6	Allyl alcohol	4.4E+03	nc
107-05-1	Allyl chloride	4.3E+04	nc
7429-90-5	Aluminum	1.0E+05	max
20859-73-8	Aluminum phosphide	8.2E+02	nc
67485-29-4	Amdro	2.6E+02	nc
834-12-8	Ametryn	7.9E+03	nc
591-27-5	m-Aminophenol	6.2E+04	nc
504-24-5	4-Aminopyridine	1.8E+01	nc
33089-61-1	Amitraz	2.2E+03	nc
7664-41-7	Ammonia		
7773-06-0	Ammonium sulfamate	1.0E+05	max
62-53-3	Aniline	4.3E+02	ca*
7440-36-0	Antimony and compounds	8.2E+02	nc
1314-60-9	Antimony pentoxide	1.0E+03	nc
28300-74-5	Antimony potassium tartrate	1.8E+03	nc
1332-81-6	Antimony tetroxide	8.2E+02	nc
1309-64-4	Antimony trioxide	8.2E+02	nc
74115-24-5	Apollo	1.1E+04	nc
140-57-8	Aramite	9.9E+01	ca
7440-38-2	Arsenic (noncancer endpoint)	4.4E+02	nc
7440-38-2	Arsenic (cancer endpoint)	2.7E+00	ca
7784-42-1	Arsine (see arsenic for cancer endpoint)		
76578-12-6	Assure	7.9E+03	nc
3337-71-1	Asulam	4.4E+04	nc
1912-24-9	Atrazine	1.1E+01	ca
71751-41-2	Avermectin B1	3.5E+02	nc
103-33-3	Azobenzene	2.2E+01	ca
7440-39-3	Barium and compounds	1.0E+05	max
114-26-1	Baygon	3.5E+03	nc

Dunn Field
Regulatory Compliance

Region 9

Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
CAS No.	Contaminant	Industrial Soil (mg/kg)	
43121-43-3	Bayleton	2.6E+04	nc
68359-37-5	Baythroid	2.2E+04	nc
1861-40-1	Benefin	1.0E+05	max
17804-35-2	Benomyl	4.4E+04	nc
25057-89-0	Bentazon	2.6E+04	nc
100-52-7	Benzaldehyde	8.8E+04	nc
71-43-2	Benzene	1.5E+00	ca*
92-87-5	Benzidine	1.1E-02	ca
65-85-0	Benzoic acid	1.0E+05	max
98-07-7	Benzotrichloride	1.9E-01	ca
100-51-6	Benzyl alcohol	1.0E+05	max
100-44-7	Benzyl chloride	2.3E+00	ca
7440-41-7	Beryllium and compounds	2.2E+03	ca**
141-66-2	Bidrin	8.8E+01	nc
82657-04-3	Biphenethrin (Talstar)	1.3E+04	nc
92-52-4	1,1-Biphenyl	3.5E+02	sat
111-44-4	Bis(2-chloroethyl)ether	6.2E-01	ca
108-60-1	Bis(2-chloroisopropyl)ether	8.1E+00	ca
542-88-1	Bis(chloromethyl)ether	4.4E-04	ca
108-60-1	Bis(2-chloro-1-methylethyl)ether	8.1E+00	ca
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	1.8E+02	ca
80-05-7	Bisphenol A	4.4E+04	nc
7440-42-8	Boron	7.9E+04	nc
7/2/37	Boron trifluoride		
108-86-1	Bromobenzene	9.2E+01	nc
75-27-4	Bromodichloromethane	2.4E+00	ca
75-25-2	Bromoform (tribromomethane)	3.1E+02	ca*
74-83-9	Bromomethane (Methyl bromide)	1.3E+01	nc
101-55-3	4-Bromophenyl phenyl ether		
2104-96-3	Bromophos	4.4E+03	nc
1689-84-5	Bromoxynil	1.8E+04	nc
1689-99-2	Bromoxynil octanoate	1.8E+04	nc
106-99-0	1,3-Butadiene	7.6E-03	ca
71-36-3	1-Butanol	8.8E+04	nc
2008-41-5	Butylate	4.4E+04	nc
104-51-8	n-Butylbenzene	2.4E+02	sat
135-98-8	sec-Butylbenzene	2.2E+02	sat
98-06-6	tert-Butylbenzene	3.9E+02	sat
85-68-7	Butyl benzyl phthalate	1.0E+05	max
85-70-1	Butylphthalyl butylglycolate	1.0E+05	max
75-60-5	Cacodylic acid	2.6E+03	nc
7440-43-9	Cadmium and compounds	8.1E+02	nc
	"CAL-Modified PRG" (PEA, 1994)		
105-60-2	Caprolactam	1.0E+05	max
6/1/25	Captafol	2.9E+02	ca**

Dunn Field
Regulatory Compliance

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Region 9

Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
133-06-2	Captan	7.0E+02	ca
63-25-2	Carbaryl	8.8E+04	nc
86-74-8	Carbazole	1.2E+02	ca
1563-66-2	Carbofuran	4.4E+03	nc
75-15-0	Carbon disulfide	7.2E+02	sat
56-23-5	Carbon tetrachloride	5.3E-01	ca*
55285-14-8	Carbosulfan	8.8E+03	nc
5234-68-4	Carboxin	8.8E+04	nc
133-90-4	Chloramben	1.3E+04	nc
118-75-2	Chloranil	6.1E+00	ca
12789-03-6	Chlordane	1.1E+01	ca*
90982-32-4	Chlorimuron-ethyl	1.8E+04	nc
7782-50-5	Chlorine		
10049-04-4	Chlorine dioxide		
107-20-0	Chloroacetaldehyde		
79-11-8	Chloroacetic acid	1.8E+03	nc
532-27-4	2-Chloroacetophenone	1.1E-01	nc
106-47-8	4-Chloroaniline	3.5E+03	nc
108-90-7	Chlorobenzene	5.4E+02	nc
510-15-6	Chlorobenzilate	9.1E+00	ca
74-11-3	p-Chlorobenzoic acid	1.0E+05	max
98-56-6	4-Chlorobenzotrifluoride	1.8E+04	nc
126-99-8	2-Chloro-1,3-butadiene	1.2E+01	nc
109-69-3	1-Chlorobutane	4.8E+02	sat
75-68-3	1-Chloro-1,1-difluoroethane (HCFC-142b)	3.4E+02	sat
75-45-6	Chlorodifluoromethane	3.4E+02	sat
75-00-3	Chloroethane	6.5E+00	ca
110-75-8	2-Chloroethyl vinyl ether		
67-66-3	Chloroform	5.2E-01	ca**
74-87-3	Chloromethane	2.7E+00	ca
95-69-2	4-Chloro-2-methylaniline	4.3E+00	ca
3165-93-3	4-Chloro-2-methylaniline hydrochloride	5.4E+00	ca
91-58-7	beta-Chloronaphthalene	2.7E+04	nc
88-73-3	o-Chloronitrobenzene	2.3E+01	ca
100-00-5	p-Chloronitrobenzene	3.2E+01	ca
95-57-8	2-Chlorophenol	2.4E+02	nc
75-29-6	2-Chloropropane	5.9E+02	nc
1897-45-6	Chlorothalonil	2.2E+02	ca*
95-49-8	o-Chlorotoluene	5.7E+02	nc
101-21-3	Chlorpropham	1.0E+05	max
2921-88-2	Chlorpyrifos	2.6E+03	nc
5598-13-0	Chlorpyrifos-methyl	8.8E+03	nc
64902-72-3	Chlorsulfuron	4.4E+04	nc
60238-56-4	Chlorthiophos	7.0E+02	nc
	Total Chromium (1:6 ratio Cr VI:Cr III)	4.5E+02	ca

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Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
CAS No.	Contaminant	Industrial Soil (mg/kg)	
16065-83-1	Chromium III	1.0E+05	max
18540-29-9	Chromium VI	6.4E+01	ca
	"CAL-Modified PRG" (PEA, 1994)		
7440-48-4	Cobalt	1.0E+05	max
8007-45-2	Coke Oven Emissions		
7440-50-8	Copper and compounds	7.6E+04	nc
123-73-9	Crotonaldehyde	1.1E-02	ca
98-82-8	Cumene (isopropylbenzene)	5.2E+02	nc
21725-46-2	Cyanazine	2.9E+00	ca
74-90-8	Cyanide and compounds	3.5E+01	nc
460-19-5	Cyanogen	4.3E+02	nc
506-68-3	Cyanogen bromide	9.7E+02	nc
506-77-4	Cyanogen chloride	5.4E+02	nc
110-82-7	Cyclohexane	1.4E+02	sat
108-94-1	Cyclohexanone	1.0E+05	max
108-91-8	Cyclohexylamine	1.0E+05	max
68085-85-8	Cyhalothrin/Karate	4.4E+03	nc
52315-07-8	Cypermethrin	8.8E+03	nc
66215-27-8	Cyromazine	6.6E+03	nc
1861-32-1	Dacthal	8.8E+03	nc
75-99-0	Dalapon	2.6E+04	nc
39515-41-8	Danitol	2.2E+04	nc
72-54-8	DDD	1.7E+01	ca
72-55-9	DDE	1.2E+01	ca
50-29-3	DDT	1.2E+01	ca*
1163-19-5	Decabromodiphenyl ether	8.8E+03	nc
8065-48-3	Demeton	3.5E+01	nc
2303-16-4	Diallate	4.0E+01	ca
333-41-5	Diazinon	7.9E+02	nc
132-64-9	Dibenzofuran	5.1E+03	nc
106-37-6	1,4-Dibromobenzene	8.8E+03	nc
124-48-1	Dibromochloromethane	2.7E+00	ca
96-12-8	1,2-Dibromo-3-chloropropane	4.0E+00	ca**
	"CAL-Modified PRG" (PEA, 1994)		
106-93-4	1,2-Dibromoethane	4.8E-02	ca*
84-74-2	Dibutyl phthalate	8.8E+04	nc
1918-00-9	Dicamba	2.6E+04	nc
95-50-1	1,2-Dichlorobenzene	3.7E+02	sat
541-73-1	1,3-Dichlorobenzene	5.2E+01	nc
106-46-7	1,4-Dichlorobenzene	8.1E+00	ca
91-94-1	3,3-Dichlorobenzidine	5.5E+00	ca
90-98-2	4,4'-Dichlorobenzophenone	2.6E+04	nc
764-41-0	1,4-Dichloro-2-butene	1.8E-02	ca
75-71-8	Dichlorodifluoromethane	3.1E+02	nc
75-34-3	1,1-Dichloroethane	2.1E+03	nc
	"CAL-Modified PRG"	7.1E+00	ca

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Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
	CAS No.	Contaminant	Industrial Soil (mg/kg)
107-06-2		1,2-Dichloroethane (EDC)	7.6E-01
75-35-4		1,1-Dichloroethylene	1.2E-01
156-59-2		1,2-Dichloroethylene (cis)	1.5E+02
156-60-5		1,2-Dichloroethylene (trans)	2.1E+02
120-83-2		2,4-Dichlorophenol	2.6E+03
94-82-6		4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	7.0E+03
94-75-7		2,4-Dichlorophenoxyacetic Acid (2,4-D)	1.2E+04
78-87-5		1,2-Dichloropropane	7.7E-01
542-75-6		1,3-Dichloropropene	1.6E+00
616-23-9		2,3-Dichloropropanol	2.6E+03
62-73-7		Dichlorvos	8.5E+00
115-32-2		Dicofol	5.6E+00
77-73-6		Dicyclopentadiene	1.8E+00
60-57-1		Dieldrin	1.5E-01
112-34-5		Diethylene glycol, monobutyl ether	5.0E+03
111-90-0		Diethylene glycol, monoethyl ether	1.0E+05
617-84-5		Diethylformamide	9.7E+03
103-23-1		Di(2-ethylhexyl)adipate	2.1E+03
84-66-2		Diethyl phthalate	1.0E+05
56-53-1		Diethylstilbestrol	5.2E-04
43222-48-6		Difenzoquat (Avenge)	7.0E+04
35367-38-5		Diffubenzuron	1.8E+04
75-37-6		1,1-Difluoroethane	
28553-12-0		Diisononyl phthalate	1.8E+04
1445-75-6		Diisopropyl methylphosphonate	7.0E+04
55290-64-7		Dimethipin	1.8E+04
60-51-5		Dimethoate	1.8E+02
119-90-4		3,3'-Dimethoxybenzidine	1.8E+02
124-40-3		Dimethylamine	2.5E-01
121-69-7		N,N-Dimethylaniline	1.8E+03
95-68-1		2,4-Dimethylaniline	3.3E+00
21436-96-4		2,4-Dimethylaniline hydrochloride	4.3E+00
119-93-7		3,3'-Dimethylbenzidine	2.7E-01
57-14-7		1,1-Dimethylhydrazine	9.5E-01
540-73-8		1,2-Dimethylhydrazine	6.7E-02
68-12-2		N,N-Dimethylformamide	8.8E+04
122-09-8		Dimethylphenethylamine	8.8E+02
105-67-9		2,4-Dimethylphenol	1.8E+04
576-26-1		2,6-Dimethylphenol	5.3E+02
95-65-8		3,4-Dimethylphenol	8.8E+02
131-11-3		Dimethyl phthalate	1.0E+05
120-61-6		Dimethyl terephthalate	8.8E+04
131-89-5		4,6-Dinitro-o-cyclohexyl phenol	1.8E+03

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Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
CAS No.	Contaminant	Industrial Soil (mg/kg)	
528-29-0	1,2-Dinitrobenzene	3.5E+02	nc
99-65-0	1,3-Dinitrobenzene	8.8E+01	nc
100-25-4	1,4-Dinitrobenzene	3.5E+02	nc
51-28-5	2,4-Dinitrophenol	1.8E+03	nc
25321-14-6	Dinitrotoluene mixture	3.6E+00	ca
121-14-2	2,4-Dinitrotoluene (see Dinitrotoluene mixture)	1.8E+03	nc
606-20-2	2,6-Dinitrotoluene (see Dinitrotoluene mixture)	8.8E+02	nc
88-85-7	Dinoseb	8.8E+02	nc
117-84-0	di-n-Octyl phthalate	1.0E+04	sat
123-91-1	1,4-Dioxane	2.2E+02	ca
1746-01-6	Dioxin (2,3,7,8-TCDD)	2.7E-05	ca
957-51-7	Diphenamid	2.6E+04	nc
122-39-4	Diphenylamine	2.2E+04	nc
74-31-7	N,N-Diphenyl-1,4 benzenediamine (DPPD)	2.6E+02	nc
122-66-7	1,2-Diphenylhydrazine	3.1E+00	ca
127-63-9	Diphenyl sulfone	7.9E+03	nc
85-00-7	Diquat	1.9E+03	nc
1937-37-7	Direct black 38	2.9E-01	ca
2602-46-2	Direct blue 6	3.0E-01	ca
16071-86-6	Direct brown 95	2.7E-01	ca
298-04-4	Disulfoton	3.5E+01	nc
505-29-3	1,4-Dithiane	8.8E+03	nc
330-54-1	Diuron	1.8E+03	nc
10/3/39	Dodine	3.5E+03	nc
7429-91-6	Dysprosium	1.0E+05	max
115-29-7	Endosulfan	5.3E+03	nc
145-73-3	Endothall	1.8E+04	nc
72-20-8	Endrin	2.6E+02	nc
106-89-8	Epichlorohydrin	2.6E+01	nc
106-88-7	1,2-Epoxybutane	5.0E+03	nc
759-94-4	EPTC (S-Ethyl dipropylthiocarbamate)	2.2E+04	nc
16672-87-0	Ethephon (2-chloroethyl phosphonic acid)	4.4E+03	nc
563-12-2	Ethion	4.4E+02	nc
110-80-5	2-Ethoxyethanol	1.0E+05	max
111-15-9	2-Ethoxyethanol acetate	1.0E+05	max
141-78-6	Ethyl acetate	3.7E+04	sat
140-88-5	Ethyl acrylate	4.5E-01	ca
100-41-4	Ethylbenzene	2.3E+02	sat
75-00-3	Ethyl chloride	6.5E+00	ca
109-78-4	Ethylene cyanohydrin	1.0E+05	max
107-15-3	Ethylene diamine	1.8E+04	nc
107-21-1	Ethylene glycol	1.0E+05	max

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Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
CAS No.	Contaminant	Industrial Soil (mg/kg)	
111-76-2	Ethylene glycol, monobutyl ether	1.0E+05	max
75-21-8	Ethylene oxide	3.6E-01	ca
96-45-7	Ethylene thiourea (ETU)	2.2E+01	ca**
60-29-7	Ethyl ether	1.8E+03	sat
97-63-2	Ethyl methacrylate	1.4E+02	sat
2104-64-5	Ethyl p-nitrophenyl phenylphosphorothioate	8.8E+00	nc
84-72-0	Ethylphthalyl ethyl glycolate	1.0E+05	max
101200-48-0	Express	7.0E+03	nc
22224-92-6	Fenamiphos	2.2E+02	nc
2164-17-2	Fluometuron	1.1E+04	nc
16984-48-8	Flouride	5.3E+04	nc
59756-60-4	Fluoridone	7.0E+04	nc
56425-91-3	Flurprimidol	1.8E+04	nc
66332-96-5	Flutolanil	5.3E+04	nc
69409-94-5	Fluvalinate	8.8E+03	nc
133-07-3	Folpet	7.0E+02	ca
72178-02-0	Fomesafen	1.3E+01	ca
944-22-9	Fonofos	1.8E+03	nc
50-00-0	Formaldehyde	1.0E+05	nc
64-18-6	Formic Acid	1.0E+05	max
39148-24-8	Fosetyl-al	1.0E+05	max
76-13-1	Freon 113	5.6E+03	sat
110-00-9	Furan	8.5E+00	nc
67-45-8	Furazolidone	6.5E-01	nc
98-01-1	Furfural	2.6E+03	nc
531-82-8	Furium	4.9E-02	ca
60568-05-0	Furmecyclox	8.2E+01	ca
77182-82-2	Glufosinate-ammonium	3.5E+02	nc
765-34-4	Glycidaldehyde	3.5E+02	nc
1071-83-6	Glyphosate	8.8E+04	nc
69806-40-2	Haloxypop-methyl	4.4E+01	nc
79277-27-3	Harmony	1.1E+04	nc
76-44-8	Heptachlor	5.5E-01	ca
1024-57-3	Heptachlor epoxide	2.7E-01	ca*
87-82-1	Hexabromobenzene	1.8E+03	nc
118-74-1	Hexachlorobenzene	1.5E+00	ca
87-68-3	Hexachlorobutadiene	3.2E+01	ca**
319-84-6	HCH (alpha)	5.9E-01	ca
319-85-7	HCH (beta)	2.1E+00	ca
58-89-9	HCH (gamma) Lindane	2.9E+00	ca
608-73-1	HCH-technical	2.1E+00	ca
77-47-4	Hexachlorocyclopentadiene	5.9E+03	nc
19408-74-3	Hexachlorodibenzo-p-dioxin mixture (HxCDD)	4.0E-04	ca
67-72-1	Hexachloroethane	1.8E+02	ca**
70-30-4	Hexachlorophene	2.6E+02	nc

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Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
121-82-4	Hexahydro-1,3,5-trinitro-1,3,5-triazine	2.2E+01	ca
822-06-0	1,6-Hexamethylene diisocyanate	2.5E+00	nc
110-54-3	n-Hexane	1.1E+02	sat
51235-04-2	Hexazinone	2.9E+04	nc
2691-41-0	HMX	4.4E+04	nc
302-01-2	Hydrazine, hydrazine sulfate	8.2E-01	ca
60-34-4	Hydrazine, monomethyl	8.2E-01	ca
57-14-7	Hydrazine, dimethyl	8.2E-01	ca
7647-01-0	Hydrogen chloride		
6/4/83	Hydrogen sulfide		
123-31-9	p-Hydroquinone	3.5E+04	nc
35554-44-0	Imazalil	1.1E+04	nc
81335-37-7	Imazaquin	1.0E+05	max
36734-19-7	Iprodione	3.5E+04	nc
7439-89-6	Iron	1.0E+05	max
78-83-1	Isobutanol	4.0E+04	sat
78-59-1	Isophorone	2.6E+03	ca*
33820-53-0	Isopropalin	1.3E+04	nc
1832-54-8	Isopropyl methyl phosphonic acid	8.8E+04	nc
82558-50-7	Isoxaben	4.4E+04	nc
143-50-0	Kepone	1.4E-01	ca
77501-63-4	Lactofen	1.8E+03	nc
7439-92-1	Lead	7.5E+02	nc
78-00-2	Lead (tetraethyl)	8.8E-02	nc
330-55-2	Linuron	1.8E+03	nc
7439-93-2	Lithium	4.1E+04	nc
83055-99-6	Londax	1.0E+05	max
121-75-5	Malathion	1.8E+04	nc
108-31-6	Maleic anhydride	8.8E+04	nc
123-33-1	Maleic hydrazide	2.4E+03	sat
109-77-3	Malononitrile	1.8E+01	nc
1/7/18	Mancozeb	2.6E+04	nc
12427-38-2	Maneb	4.1E+01	ca
7439-96-5	Manganese and compounds	3.2E+04	nc
950-10-7	Mephosfolan	7.9E+01	nc
24307-26-4	Mepiquat	2.6E+04	nc
149-30-4	2-Mercaptobenzothiazole	8.5E+01	ca
7487-94-7	Mercury and compounds	6.1E+02	nc
7439-97-6	Mercury (elemental)		
22967-92-6	Mercury (methyl)	8.8E+01	nc
150-50-5	Merphos	2.6E+01	nc
78-48-8	Merphos oxide	2.6E+01	nc
57837-19-1	Metalaxyl	5.3E+04	nc
126-98-7	Methacrylonitrile	8.8E+00	nc
10265-92-6	Methamidophos	4.4E+01	nc

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Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
67-56-1	Methanol	1.0E+05	max
950-37-8	Methidathion	8.8E+02	nc
16752-77-5	Methomyl	1.5E+02	nc
72-43-5	Methoxychlor	4.4E+03	nc
109-86-4	2-Methoxyethanol	8.8E+02	nc
110-49-6	2-Methoxyethanol acetate	1.8E+03	nc
99-59-2	2-Methoxy-5-nitroaniline	5.4E+01	ca
79-20-9	Methyl acetate	9.6E+04	nc
96-33-3	Methyl acrylate	2.3E+02	nc
95-53-4	2-Methylaniline (o-toluidine)	1.0E+01	ca
636-21-5	2-Methylaniline hydrochloride	1.4E+01	ca
79-22-1	Methyl chlorocarbonate	1.0E+05	max
94-74-6	2-Methyl-4-chlorophenoxyacetic acid	4.4E+02	nc
94-81-5	4-(2-Methyl-4-chlorophenoxy) butyric acid	8.8E+03	nc
93-65-2	2-(2-Methyl-4-chlorophenoxy) propionic acid	8.8E+02	nc
16484-77-8	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	8.8E+02	nc
108-87-2	Methylcyclohexane	8.8E+03	nc
101-77-9	4,4'-Methylenebisbenzeneamine	9.9E+00	ca
101-14-4	4,4'-Methylene bis(2-chloroaniline)	1.9E+01	ca*
101-61-1	4,4'-Methylene bis(N,N'-dimethyl)aniline	5.4E+01	ca
74-95-3	Methylene bromide	2.4E+02	nc
75-09-2	Methylene chloride	2.1E+01	ca
101-68-8	4,4'-Methylene diphenyl diisocyanate	1.5E+02	nc
78-93-3	Methyl ethyl ketone	2.8E+04	nc
60-34-4	Methyl hydrazine	2.2E+00	ca
108-10-1	Methyl isobutyl ketone	2.9E+03	nc
74-93-1	Methyl Mercaptan	5.0E+02	nc
80-62-6	Methyl methacrylate	2.7E+03	sat
99-55-8	2-Methyl-5-nitroaniline	7.5E+01	ca
298-00-0	Methyl parathion	2.2E+02	nc
95-48-7	2-Methylphenol	4.4E+04	nc
108-39-4	3-Methylphenol	4.4E+04	nc
106-44-5	4-Methylphenol	4.4E+03	nc
993-13-5	Methyl phosphonic acid	1.8E+04	nc
25013-15-4	Methyl styrene (mixture)	5.6E+02	nc
98-83-9	Methyl styrene (alpha)	6.8E+02	sat
1634-04-4	Methyl tertbutyl ether (MTBE)		
	"CAL-Modified PRG"	3.7E+01	ca
51218-45-2	Metolacior (Dual)	1.0E+05	max
21087-64-9	Metribuzin	2.2E+04	nc
2385-85-5	Mirex	1.4E+00	ca

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Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
2212-67-1	Molinate	1.8E+03	nc
7439-98-7	Molybdenum	1.0E+04	nc
10599-90-3	Monochloramine	8.8E+04	nc
300-76-5	Naled	1.8E+03	nc
15299-99-7	Napropamide	8.8E+04	nc
7440-02-0	Nickel (soluble salts)	4.1E+04	nc
	"CAL-Modified PRG" (PEA, 1994)		
	Nickel refinery dust		
12035-72-2	Nickel subsulfide	1.1E+04	ca
1929-82-4	Nitrapyrin	1.3E+03	nc
14797-55-8	Nitrate		
10102-43-9	Nitric Oxide	1.0E+05	max
14797-65-0	Nitrite		
88-74-4	2-Nitroaniline	5.0E+01	nc
98-95-3	Nitrobenzene	1.1E+02	nc
67-20-9	Nitrofurantoin	6.2E+04	nc
59-87-0	Nitrofurazone	1.6E+00	ca
55-63-0	Nitroglycerin	1.8E+02	ca
556-88-7	Nitroguanidine	8.8E+04	nc
100-02-7	4-Nitrophenol	7.0E+03	nc
79-46-9	2-Nitropropane		
924-16-3	N-Nitrosodi-n-butylamine	6.1E-02	ca
1116-54-7	N-Nitrosodiethanolamine	8.8E-01	ca
55-18-5	N-Nitrosodiethylamine	1.6E-02	ca
62-75-9	N-Nitrosodimethylamine	4.8E-02	ca
86-30-6	N-Nitrosodiphenylamine	5.0E+02	ca
621-64-7	N-Nitroso di-n-propylamine	3.5E-01	ca
10595-95-6	N-Nitroso-N-methylethylamine	1.1E-01	ca
930-55-2	N-Nitrosopyrrolidine	1.2E+00	ca
99-08-1	m-Nitrotoluene	1.0E+03	sat
88-72-2	o-Nitrotoluene	1.0E+03	sat
99-99-0	p-Nitrotoluene	1.0E+03	sat
27314-13-2	Norflurazon	3.5E+04	nc
85509-19-9	NuStar	6.2E+02	nc
32536-52-0	Octabromodiphenyl ether	2.6E+03	nc
152-16-9	Octamethylpyrophosphoramidate	1.8E+03	nc
19044-88-3	Oryzalin	4.4E+04	nc
19666-30-9	Oxadiazon	4.4E+03	nc
23135-22-0	Oxamyl	2.2E+04	nc
42874-03-3	Oxyfluorfen	2.6E+03	nc
76738-62-0	Paclobutrazol	1.1E+04	nc
4685-14-7	Paraquat	4.0E+03	nc
56-38-2	Parathion	5.3E+03	nc
1114-71-2	Pebulate	4.4E+04	nc
40487-42-1	Pendimethalin	3.5E+04	nc
87-84-3	Pentabromo-6-chloro cyclohexane	1.1E+02	ca

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Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
CAS No.	Contaminant	Industrial Soil (mg/kg)	
32534-81-9	Pentabromodiphenyl ether	1.8E+03	nc
608-93-5	Pentachlorobenzene	7.0E+02	nc
82-68-8	Pentachloronitrobenzene	9.5E+00	ca
87-86-5	Pentachlorophenol	1.1E+01	ca
7601-90-3	Perchlorate	1.0E+03	nc
52645-53-1	Permethrin	4.4E+04	nc
13684-63-4	Phenmedipham	1.0E+05	max
108-95-2	Phenol	1.0E+05	max
92-84-2	Phenothiazine	1.8E+03	nc
108-45-2	m-Phenylenediamine	5.3E+03	nc
106-50-3	p-Phenylenediamine	1.0E+05	max
62-38-4	Phenylmercuric acetate	7.0E+01	nc
90-43-7	2-Phenylphenol	1.3E+03	ca
298-02-2	Phorate	1.8E+02	nc
732-11-6	Phosmet	1.8E+04	nc
7803-51-2	Phosphine	2.6E+02	nc
7664-38-2	Phosphoric acid		
7723-14-0	Phosphorus (white)	4.1E+01	nc
100-21-0	p-Phthalic acid	1.0E+05	max
85-44-9	Phthalic anhydride	1.0E+05	max
2/1/18	Picloram	6.2E+04	nc
23505-41-1	Pirimiphos-methyl	8.8E+03	nc
	Polybrominated biphenyls	2.8E-01	ca*
1336-36-3	Polychlorinated biphenyls (PCBs)	1.0E+00	ca
12674-11-2	Aroclor 1016	2.9E+01	ca**
11104-28-2	Aroclor 1221	1.0E+00	ca
11141-16-5	Aroclor 1232	1.0E+00	ca
53469-21-9	Aroclor 1242	1.0E+00	ca
12672-29-6	Aroclor 1248	1.0E+00	ca
11097-69-1	Aroclor 1254	1.0E+00	ca*
11096-82-5	Aroclor 1260	1.0E+00	ca
	Polynuclear aromatic hydrocarbons (PAHs)		
83-32-9	Acenaphthene	3.8E+04	nc
120-12-7	Anthracene	1.0E+05	max
56-55-3	Benz[a]anthracene	2.9E+00	ca
205-99-2	Benzo[b]fluoranthene	2.9E+00	ca
207-08-9	Benzo[k]fluoranthene	2.9E+01	ca
	"CAL-Modified PRG" (PEA, 1994)		
50-32-8	Benzo[a]pyrene	2.9E-01	ca
	"CAL-Modified PRG" (PEA, 1994)		
218-01-9	Chrysene	2.9E+02	ca
	"CAL-Modified PRG" (PEA, 1994)		
53-70-3	Dibenz[ah]anthracene	2.9E-01	ca

Region 9

Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
	CAS No.	Contaminant	Industrial Soil (mg/kg)
206-44-0		Fluoranthene	3.0E+04
86-73-7		Fluorene	3.3E+04
193-39-5		Indeno[1,2,3-cd]pyrene	2.9E+00
91-20-3		Naphthalene	1.9E+02
129-00-0		Pyrene	5.4E+04
67747-09-5		Prochloraz	1.6E+01
26399-36-0		Profluralin	5.3E+03
1610-18-0		Prometon	1.3E+04
7287-19-6		Prometryn	3.5E+03
23950-58-5		Pronamide	6.6E+04
1918-16-7		Propachlor	1.1E+04
709-98-8		Propanil	4.4E+03
2312-35-8		Propargite	1.8E+04
107-19-7		Propargyl alcohol	1.8E+03
139-40-2		Propazine	1.8E+04
122-42-9		Propham	1.8E+04
60207-90-1		Propiconazole	1.1E+04
98-82-8		Isopropylbenzene (Cumene)	5.2E+02
103-65-1		n-Propylbenzene	2.4E+02
57-55-6		Propylene glycol	1.0E+05
111-35-3		Propylene glycol, monoethyl ether	1.0E+05
107-98-2		Propylene glycol, monomethyl ether	1.0E+05
75-56-9		Propylene oxide	9.1E+00
81335-77-5		Pursuit	1.0E+05
51630-58-1		Pydrin	2.2E+04
110-86-1		Pyridine	8.8E+02
13593-03-8		Quinalphos	4.4E+02
91-22-5		Quinoline	2.1E-01
121-82-4		RDX (Cyclonite)	2.2E+01
10453-86-8		Resmethrin	2.6E+04
299-84-3		Ronnel	4.4E+04
83-79-4		Rotenone	3.5E+03
78587-05-0		Savey	2.2E+04
7783-00-8		Selenious Acid	4.4E+03
7782-49-2		Selenium	1.0E+04
630-10-4		Selenourea	4.4E+03
74051-80-2		Sethoxydim	7.9E+04
7440-22-4		Silver and compounds	1.0E+04
122-34-9		Simazine	2.1E+01
26628-22-8		Sodium azide	
148-18-5		Sodium diethyldithiocarbamate	9.1E+00
62-74-8		Sodium fluoroacetate	1.8E+01
13718-26-8		Sodium metavanadate	8.8E+02
7440-24-6		Strontium, stable	1.0E+05
57-24-9		Strychnine	2.6E+02
100-42-5		Styrene	1.7E+03

Region 9

Contaminant CAS No.	PRELIMINARY REMEDIATION GOALS (PRGs)		
	Contaminant	Industrial Soil (mg/kg)	
80-07-9	1,1'-Sulfonylbis (4-chlorobenzene)	2.0E+03	nc
88671-89-0	Systhane	2.2E+04	nc
1746-01-6	2,3,7,8-TCDD (dioxin)	2.7E-05	ca
34014-18-1	Tebuthiuron	6.2E+04	nc
3383-96-8	Temephos	1.8E+04	nc
5902-51-2	Terbacil	1.1E+04	nc
13071-79-9	Terbufos	2.2E+01	nc
886-50-0	Terbutryn	8.8E+02	nc
95-94-3	1,2,4,5-Tetrachlorobenzene	2.6E+02	nc
630-20-6	1,1,1,2-Tetrachloroethane	7.0E+00	ca
79-34-5	1,1,2,2-Tetrachloroethane	9.0E-01	ca
127-18-4	Tetrachloroethylene (PCE)	1.9E+01	ca*
	"CAL-Modified PRG" (PEA, 1994)		
58-90-2	2,3,4,6-Tetrachlorophenol	2.6E+04	nc
5216-25-1	p,a,a,a-Tetrachlorotoluene	1.2E-01	ca
961-11-5	Tetrachlorovinphos	1.0E+02	ca
3689-24-5	Tetraethyldithiopyrophosphate	4.4E+02	nc
109-99-9	Tetrahydrofuran	3.2E+02	ca
7446-18-6	Thallium and compounds	1.3E+02	nc
28249-77-6	Thiobencarb	8.8E+03	nc
N/A	Thiocyanate	1.0E+05	max
39196-18-4	Thiofanox	2.6E+02	nc
23564-05-8	Thiophanate-methyl	7.0E+04	nc
137-26-8	Thiram	4.4E+03	nc
	Tin (inorganic, see tributyltin oxide for organic tin)	1.0E+05	max
108-88-3	Toluene	5.2E+02	sat
95-80-7	Toluene-2,4-diamine	7.7E-01	ca
95-70-5	Toluene-2,5-diamine	1.0E+05	max
823-40-5	Toluene-2,6-diamine	1.0E+05	max
106-49-0	p-Toluidine	1.3E+01	ca
8001-35-2	Toxaphene	2.2E+00	ca
66841-25-6	Tralomethrin	6.6E+03	nc
2303-17-5	Triallate	1.1E+04	nc
82097-50-5	Triasulfuron	8.8E+03	nc
615-54-3	1,2,4-Tribromobenzene	4.4E+03	nc
56-35-9	Tributyltin oxide (TBTO)	2.6E+02	nc
634-93-5	2,4,6-Trichloroaniline	7.3E+01	ca
33663-50-2	2,4,6-Trichloroaniline hydrochloride	8.5E+01	ca
120-82-1	1,2,4-Trichlorobenzene	3.0E+03	sat
71-55-6	1,1,1-Trichloroethane	1.4E+03	sat
79-00-5	1,1,2-Trichloroethane	1.9E+00	ca*
79-01-6	Trichloroethylene (TCE)	6.1E+00	ca*
75-69-4	Trichlorofluoromethane	2.0E+03	sat
95-95-4	2,4,5-Trichlorophenol	8.8E+04	nc

Region 9

Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)		
	CAS No.	Contaminant	Industrial Soil (mg/kg)
88-06-2		2,4,6-Trichlorophenol	2.2E+02
93-76-5		2,4,5-Trichlorophenoxyacetic Acid	8.8E+03
93-72-1		2-(2,4,5-Trichlorophenoxy) propionic acid	7.0E+03
598-77-6		1,1,2-Trichloropropane	5.1E+01
96-18-4		1,2,3-Trichloropropane	3.1E-03
96-19-5		1,2,3-Trichloropropene	3.9E+01
76-13-1		1,1,2-Trichloro-1,2,2-trifluoroethane	5.6E+03
58138-08-2		Tridiphenyl	2.6E+03
121-44-8		Triethylamine	8.8E+01
1582-09-8		Trifluralin	3.2E+02
552-30-7		Trimellitic Anhydride (TMAN)	1.2E+02
95-63-6		1,2,4-Trimethylbenzene	1.7E+02
108-67-8		1,3,5-Trimethylbenzene	7.0E+01
512-56-1		Trimethyl phosphate	6.7E+01
99-35-4		1,3,5-Trinitrobenzene	2.6E+04
479-45-8		Trinitrophenylmethylnitramine	8.8E+03
118-96-7		2,4,6-Trinitrotoluene	8.2E+01
791-28-6		Triphenylphosphine oxide	8.8E+04
115-96-8		Tris(2-chloroethyl) phosphate	1.8E+02
7440-61-0		Uranium (chemical toxicity only)	4.1E+02
7440-62-2		Vanadium and compounds	1.4E+04
1929-77-7		Vernam	8.8E+02
50471-44-8		Vinclozolin	2.2E+04
108-05-4		Vinyl acetate	1.4E+03
593-60-2		Vinyl bromide (bromoethene)	4.2E-01
75-01-4		Vinyl chloride(child/adult)	
75-01-4		Vinyl chloride(adult)	8.3E-01
81-81-2		Warfarin	2.6E+02
1330-20-7		Xylenes	2.1E+02
7440-66-6		Zinc	1.0E+05
1314-84-7		Zinc phosphide	6.1E+02
12122-67-7		Zineb	4.4E+04

Key

i = IRIS

h = HEAST

n = NCEA

x = WITHDRAWN

o = OTHER EPA

DOCUMENTS

r = ROUTE EXTRAPOLATION

ca = CANCER PRG

nc = NONCANCER

PRG

Region 9

Contaminant	PRELIMINARY REMEDIATION GOALS (PRGs)	
CAS No.	Contaminant	Industrial Soil (mg/kg)

sat = SOIL

SATURATION

max = CEILING LIMIT

*indicates that the noncancer PRG $\leq$ 100X the cancer PRG

**indicates that the noncancer PRG $<$ 10X the cancer PRG

BOLD=New or revised Toxicity values

Exceptions to Surface Soil Criteria

Accepted by the BCT

December 10, 1997

Surface Soil Criteria Acceptable by the BCT		
Parameter	Screening Value	Basis
Arsenic	20 mg/kg	Background Range
Aluminum	24,000 mg/kg	Twice Background Range
Manganese	1,300 mg/kg	Twice Background Mean
Iron	37,000 mg/kg	Twice Background Mean
Dioxin	10 ng/kg	Background UCL95
Antimony	7 mg/kg	Twice Background Mean
Lead	400 mg/kg	CERCLA

Reference BRAC Cleanup Team Minutes, August 4 through 6, 1997 Concurred: December 10, 1997

ANNEX B

Target Compound List (TCL), Target Analytes List (TAL), Laboratory Methods, and Reporting Limits

ANNEX B identifies testing criteria for water samples, total samples [solids], and Toxic Characteristic Leaching Procedure (TCLP) sampling.

Sample Medium		Testing Method	
Water Solid			
Units: ug/L			
Test Description: WATER, 8260B, TCL VOA			
Synonym	Name		RL
00011	Acetone	Target Constituents	20
00196	Benzene		5
00323	Bromodichloromethane		5
00340	Bromoform		5
00343	Bromomethane		10
00372	2-Butanone		20
00459	Carbon disulfide		5
00463	Carbon tetrachloride		5
00521	Chlorobenzene		5
00535	Dibromochloromethane		5
00550	Chloroethane		10
00569	Chloroform		5
00574	Chloromethane		10
00933	1,1-Dichloroethane		5
00936	1,2-Dichloroethane		5
00943	1,1-Dichloroethene		5
00952	1,2-Dichloroethene (total)		5
00986	1,2-Dichloropropane		5
00998	cis-1,3-Dichloropropene		5
01000	trans-1,3-Dichloropropene		5
01332	Ethylbenzene		5
01515	2-Hexanone		20
01811	Methylene chloride		5
01845	4-Methyl-2-pentanone		20
02355	Styrene		5
02439	1,1,2,2-Tetrachloroethane		5
02445	Tetrachloroethene		5
02489	Toluene		5
02518	1,1,1-Trichloroethane		5
02522	1,1,2-Trichloroethane		5
02525	Trichloroethene		5
02613	Vinyl chloride		10
02627	Xylenes (total)		5

Reporting Levels

UXB International, Inc

Matrix: I WATER

Synonym	Description	RL	Units:	D Wt	Qu.
00667	WATER, 9012A, Cyanide, Total	10.0	ug/L	N	N
02673	WATER, 1010, Flash Point		deg F	N	N
02366	WATER, 376.1, Sulfide	1.0	mg/L	N	N
03044	WATER, 9040, pH - Aqueous		su	N	N

UXB International, Inc.

Units: ug/L
Test Description: WATER, 7470A, Mercury

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
Mercury, SW846	7470A, METALS, TOTAL (Method exclusive) - Wat	0.2

UXB International, Inc

Units: ug/L
 Test Description: WATER, 6010B, TAL Metals ICP-total

Synonym	Name	RL
	Aluminum, SW846 6010B, METALS, TOTAL - Waters	200
	Barium, SW846 6010B, METALS, TOTAL - Waters	200
	Beryllium, SW846 6010B, METALS, TOTAL - Waters	5.0
	Calcium, SW846 6010B, METALS, TOTAL - Waters	5000
	Cobalt, SW846 6010B, METALS, TOTAL - Waters	50
	Copper, SW846 6010B, METALS, TOTAL - Waters	25
	Iron, SW846 6010B, METALS, TOTAL - Waters	100
	Potassium, SW846 6010B, METALS, TOTAL - Waters	5000
	Magnesium, SW846 6010B, METALS, TOTAL - Waters	5000
	Manganese, SW846 6010B, METALS, TOTAL - Waters	15
	Sodium, SW846 6010B, METALS, TOTAL - Waters	5000
	Nickel, SW846 6010B, METALS, TOTAL - Waters	40
	Vanadium, SW846 6010B, METALS, TOTAL - Waters	50
	Zinc, SW846 6010B, METALS, TOTAL - Waters	20

UXB International, Inc

Units: ug/L
 Test Description: WATER, 6010B, TAL Metals ICP Trace-total

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
Antimony, SW846 6010B, METALS, TOTAL - Waters		60
Arsenic, SW846 6010B, METALS, TOTAL - Waters		10
Cadmium, SW846 6010B, METALS, TOTAL - Waters		5
Lead, SW846 6010B, METALS, TOTAL - Waters		3.0
Selenium, SW846 6010B, METALS, TOTAL - Waters		5.0
Silver, SW846 6010B, METALS, TOTAL - Waters		10
Thallium, SW846 6010B, METALS, TOTAL - Waters		10
Chromium, SW846 6010B, METALS, TOTAL - Waters		10

UXB International, Inc

Units: ug/L
Test Description: WATER, 8151A, Herbicides

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
00690	2,4-D	4.0
02291	2,4,5-TP (Silvex)	1.0

UXB International, Inc.

Units: ug/L
Test Description: WATER, 8082, TCL PCBs

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
		1.0
02082	Aroclor 1016	1.0
02085	Aroclor 1221	1.0
02088	Aroclor 1232	1.0
02091	Aroclor 1242	1.0
02094	Aroclor 1248	1.0
02097	Aroclor 1254	1.0
02100	Aroclor 1260	1.0

UXB International, Inc.

Units: ug/L
Test Description: WATER, 8081A, TCL Pesticides

Synonym	Name	RL
00226	alpha-BHC	0.05
00228	beta-BHC	0.05
00230	delta-BHC	0.05
00232	gamma-BHC (Lindane)	0.05
01470	Heptachlor	0.05
00060	Aldrin	0.05
01479	Heptachlor epoxide	0.05
01236	Endosulfan I	0.05
01052	Dieldrin	0.05
00777	4,4'-DDE	0.05
01270	Endrin	0.05
01279	Endrin ketone	0.05
01277	Endrin aldehyde	0.05
01239	Endosulfan II	0.05
00770	4,4'-DDD	0.05
01241	Endosulfan sulfate	0.05
00780	4,4'-DDT	0.1
01741	Methoxychlor	0.05
00497	alpha-Chlordane	0.05
00499	gamma-Chlordane	2.0
02499	Toxaphene	

Units: ug/L
Test Description: WATER, 8270C, TCL BNA & Pyridine

Synonym	Name	RL
01829	2-Methylnaphthalene	10
01851	2-Methylphenol	10
01857	4-Methylphenol	10
01932	Naphthalene	50
01960	2-Nitroaniline	50
01964	3-Nitroaniline	50
01968	4-Nitroaniline	10
01972	Nitrobenzene	10
01998	2-Nitrophenol	50
02001	4-Nitrophenol	10
02024	N-Nitrosodi-n-propylamine	10
02028	N-Nitrosodiphenylamine	10
03597	2,2'-oxybis(1-Chloropropane)	50
02118	Pentachlorophenol	10
02154	Phenanthrene	10
02155	Phenol	10
02252	Pyrene	10
02515	1,2,4-Trichlorobenzene	10
02555	2,4,5-Trichlorophenol	10
02559	2,4,6-Trichlorophenol	10

UXB International, Inc.

Units: ug/L
 Test Description: WATER, 8270C, TCL BNA & Pyridine

Synonym	Name	RL
02256	Pyridine	20
00001	Acenaphthene	10
00005	Acenaphthylene	10
00122	Anthracene	10
00202	Benzo(a)anthracene	10
00211	Benzo(a)pyrene	10
00205	Benzo(b)fluoranthene	10
00208	Benzo(k)fluoranthene	10
00210	Benzo(ghi)perylene	10
00289	bis(2-Chloroethoxy)methane	10
00293	bis(2-Chloroethyl) ether	10
00302	bis(2-Ethylhexyl) phthalate	10
00348	4-Bromophenyl phenyl ether	10
00403	Butyl benzyl phthalate	10
02751	Carbazole	10
00518	4-Chloroaniline	10
00578	4-Chloro-3-methylphenol	10
00589	2-Chloronaphthalene	10
00600	2-Chlorophenol	10
00602	4-Chlorophenyl phenyl ether	10
00633	Chrysene	10
00860	Dibenz(a,h)anthracene	10
00863	Dibenzofuran	10
00904	1,2-Dichlorobenzene	10
00907	1,3-Dichlorobenzene	10
00910	1,4-Dichlorobenzene	50
00918	3,3'-Dichlorobenzidine	10
00971	2,4-Dichlorophenol	10
01082	Diethyl phthalate	10
01145	2,4-Dimethylphenol	10
01149	Dimethyl phthalate	10
00891	Di-n-butyl phthalate	10
01162	Di-n-octyl phthalate	50
01187	2,4-Dinitrophenol	50
01167	4,6-Dinitro-2-methylphenol	10
01191	2,4-Dinitrotoluene	10
01193	2,6-Dinitrotoluene	10
01414	Fluoranthene	10
01417	Fluorene	10
01482	Hexachlorobenzene	10
01489	Hexachlorobutadiene	50
01492	Hexachlorocyclopentadiene	10
01497	Hexachloroethane	10

Units: ug/L
 Test Description: WATER, 8260B, TCL VOA

Synonym	Name	RL
		20
00011	Acetone	5
00196	Benzene	5
00323	Bromodichloromethane	5
00340	Bromoform	10
00343	Bromomethane	20
00372	2-Butanone	5
00459	Carbon disulfide	5
00463	Carbon tetrachloride	5
00521	Chlorobenzene	5
00535	Dibromochloromethane	10
00550	Chloroethane	5
00569	Chloroform	10
00574	Chloromethane	5
00933	1,1-Dichloroethane	5
00936	1,2-Dichloroethane	5
00943	1,1-Dichloroethene	5
00952	1,2-Dichloroethene (total)	5
00986	1,2-Dichloropropane	5
00998	cis-1,3-Dichloropropene	5
01000	trans-1,3-Dichloropropene	5
01332	Ethylbenzene	20
01515	2-Hexanone	5
01811	Methylene chloride	20
01845	4-Methyl-2-pentanone	5
02355	Styrene	5
02439	1,1,2,2-Tetrachloroethane	5
02445	Tetrachloroethene	5
02489	Toluene	5
02518	1,1,1-Trichloroethane	5
02522	1,1,2-Trichloroethane	5
02525	Trichloroethene	10
02613	Vinyl chloride	5
02627	Xylenes (total)	

Units: ug/kg
 Test Description: SOLID, 8260B, TCL VOA

Synonym	Name	RL
		20
00011	Acetone	5
00196	Benzene	5
00323	Bromodichloromethane	5
00340	Bromoform	10
00343	Bromomethane	20
00372	2-Butanone	5
00459	Carbon disulfide	5
00463	Carbon tetrachloride	5
00521	Chlorobenzene	5
00535	Dibromochloromethane	10
00550	Chloroethane	5
00569	Chloroform	10
00574	Chloromethane	5
00933	1,1-Dichloroethane	5
00936	1,2-Dichloroethane	5
00943	1,1-Dichloroethene	5
00952	1,2-Dichloroethene (total)	5
00986	1,2-Dichloropropane	5
00998	cis-1,3-Dichloropropene	5
01000	trans-1,3-Dichloropropene	5
01332	Ethylbenzene	20
01515	2-Hexanone	5
01811	Methylene chloride	20
01845	4-Methyl-2-pentanone	5
02355	Styrene	5
02439	1,1,2,2-Tetrachloroethane	5
02445	Tetrachloroethene	5
02489	Toluene	5
02518	1,1,1-Trichloroethane	5
02522	1,1,2-Trichloroethane	5
02525	Trichloroethene	10
02613	Vinyl chloride	5
02627	Xylenes (total)	

Units: ug/kg
 Test Description: SOLID, 8270C, TCL BNA

Synonym	Name	RL
00001	Acenaphthene	330
00005	Acenaphthylene	330
00122	Anthracene	330
00202	Benzo(a)anthracene	330
00211	Benzo(a)pyrene	330
00205	Benzo(b)fluoranthene	330
00208	Benzo(k)fluoranthene	330
00210	Benzo(ghi)perylene	330
00289	bis(2-Chloroethoxy)methane	330
00293	bis(2-Chloroethyl) ether	330
00302	bis(2-Ethylhexyl) phthalate	330
00348	4-Bromophenyl phenyl ether	330
00403	Butyl benzyl phthalate	330
02751	Carbazole	330
00518	4-Chloroaniline	330
00578	4-Chloro-3-methylphenol	330
00589	2-Chloronaphthalene	330
00600	2-Chlorophenol	330
00602	4-Chlorophenyl phenyl ether	330
00633	Chrysene	330
00860	Dibenz(a,h)anthracene	330
00863	Dibenzofuran	330
00904	1,2-Dichlorobenzene	330
00907	1,3-Dichlorobenzene	330
00910	1,4-Dichlorobenzene	1600
00918	3,3'-Dichlorobenzidine	330
00971	2,4-Dichlorophenol	330
01082	Diethyl phthalate	330
01145	2,4-Dimethylphenol	330
01149	Dimethyl phthalate	330
00891	Di-n-butyl phthalate	330
01162	Di-n-octyl phthalate	1600
01187	2,4-Dinitrophenol	1600
01167	4,6-Dinitro-2-methylphenol	330
01191	2,4-Dinitrotoluene	330
01193	2,6-Dinitrotoluene	330
01414	Fluoranthene	330
01417	Fluorene	330
01482	Hexachlorobenzene	330
01489	Hexachlorobutadiene	330

Units: ug/kg
Test Description: SOLID, 8270C, TCL BNA

Synonym	Name	RL
		330
01851	2-Methylphenol	330
01857	4-Methylphenol	330
01932	Naphthalene	1600
01960	2-Nitroaniline	1600
01964	3-Nitroaniline	1600
01968	4-Nitroaniline	330
01972	Nitrobenzene	330
01998	2-Nitrophenol	1600
02001	4-Nitrophenol	330
02024	N-Nitrosodi-n-propylamine	330
02028	N-Nitrosodiphenylamine	330
03597	2,2'-oxybis(1-Chloropropane)	1600
02118	Pentachlorophenol	330
02154	Phenanthrene	330
02155	Phenol	330
02252	Pyrene	330
02515	1,2,4-Trichlorobenzene	330
02555	2,4,5-Trichlorophenol	330
02559	2,4,6-Trichlorophenol	330

Units: ug/kg
 Test Description: SOLID, 8081A, TCL Pesticides

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
00060	Aldrin	1.7
00226	alpha-BHC	1.7
00228	beta-BHC	1.7
00230	delta-BHC	1.7
00232	gamma-BHC (Lindane)	1.7
00497	alpha-Chlordane	1.7
00499	gamma-Chlordane	1.7
00770	4,4'-DDD	1.7
00777	4,4'-DDE	1.7
00780	4,4'-DDT	1.7
01052	Dieldrin	1.7
01236	Endosulfan I	1.7
01239	Endosulfan II	1.7
01279	Endrin ketone	1.7
01241	Endosulfan sulfate	1.7
01270	Endrin	1.7
01277	Endrin aldehyde	1.7
01470	Heptachlor	1.7
01479	Heptachlor epoxide	67
02499	Toxaphene	17
01741	Methoxychlor	

UXB International, Inc

Units: ug/kg
Test Description: SOLID, 8082, TCL PCBs

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
02082	Aroclor 1016	33
02085	Aroclor 1221	33
02088	Aroclor 1232	33
02091	Aroclor 1242	33
02094	Aroclor 1248	33
02097	Aroclor 1254	33
02100	Aroclor 1260	33

UXB International, Inc.

Units: mg/kg
Test Description: SOLID, 6010B, TAL Metals ICP Trace

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
Antimony,	SW846 6010B, METALS, TOTAL - Soils	6.0
Arsenic,	SW846 6010B, METALS, TOTAL - Soils	1.0
Cadmium,	SW846 6010B, METALS, TOTAL - Soils	0.5
Lead,	SW846 6010B, METALS, TOTAL - Soils	0.3
Selenium,	SW846 6010B, METALS, TOTAL - Soils	0.5
Silver,	SW846 6010B, METALS, TOTAL - Soils	1.0
Thallium,	SW846 6010B, METALS, TOTAL - Soils	1.0
Chromium,	SW846 6010B, METALS, TOTAL - Soils	1.0

Units: mg/kg
Test Description: SOLID, 6010B, TAL Metals ICP

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
	Aluminum, SW846 6010B, METALS, TOTAL - Soils	20
	Barium, SW846 6010B, METALS, TOTAL - Soils	20
	Beryllium, SW846 6010B, METALS, TOTAL - Soils	0.50
	Calcium, SW846 6010B, METALS, TOTAL - Soils	500
	Cobalt, SW846 6010B, METALS, TOTAL - Soils	5.0
	Copper, SW846 6010B, METALS, TOTAL - Soils	2.5
	Iron, SW846 6010B, METALS, TOTAL - Soils	10
	Magnesium, SW846 6010B, METALS, TOTAL - Soils	500
	Manganese, SW846 6010B, METALS, TOTAL - Soils	1.5
	Nickel, SW846 6010B, METALS, TOTAL - Soils	4.0
	Potassium, SW846 6010B, METALS, TOTAL - Soils	500
	Sodium, SW846 6010B, METALS, TOTAL - Soils	500
	Vanadium, SW846 6010B, METALS, TOTAL - Soils	5.0
	Zinc, SW846 6010B, METALS, TOTAL - Soils	2.0

Units: mg/kg
Test Description: SOLID, 7471A, Mercury

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
	Mercury, SW846 7471A, METALS, TOTAL (Method Exclusive) - Sol	0.10

UXB International, Inc

Matrix: A SOLID

<u>Synonym</u>	<u>Description</u>	<u>RL</u>	<u>Units:</u>	<u>D Wt</u>	<u>Que</u>
00667	SOLID, 9012A, Cyanide, Total	0.5	mg/kg	Y	N

UXB International, Inc

Units: mg/L
Test Description: SOLID, 8260B, TCLP Volatile

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
00196	Benzene	.05
00372	2-Butanone	.05
00463	Carbon tetrachloride	.05
00521	Chlorobenzene	.05
00569	Chloroform	.05
00936	1,2-Dichloroethane	.05
00943	1,1-Dichloroethene	.05
02445	Tetrachloroethene	.05
02525	Trichloroethene	.05
02613	Vinyl chloride	

UXB International, Inc

Units: mg/L
Test Description: SOLID, 8270C, TCLP Semivolatiles

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
00910	1,4-Dichlorobenzene	0.050
01191	2,4-Dinitrotoluene	0.050
01482	Hexachlorobenzene	0.050
01489	Hexachlorobutadiene	0.050
01497	Hexachloroethane	0.050
01972	Nitrobenzene	0.250
02118	Pentachlorophenol	0.100
02256	Pyridine	0.050
02555	2,4,5-Trichlorophenol	0.050
02559	2,4,6-Trichlorophenol	0.050
02758	Cresols (total)	

UXB International, Inc.

Units: mg/L
Test Description: SOLID, 8081A, TCLP Pesticides

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
		0.005
00476	Chlordane (technical)	0.0005
01270	Endrin	0.0005
01470	Heptachlor	0.0005
01479	Heptachlor epoxide	.0005
00233	Lindane	0.001
01741	Methoxychlor	0.02
02499	Toxaphene	

Units: mg/L
Test Description: SOLID, 8151A, TCLP Herbicides

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
00690	2,4-D	.005
02291	2,4,5-TP (Silvex)	.005

Units: mg/L
Test Description: SOLID, 6010B, TCLP ICP Metals

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
	Arsenic, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.50
	Barium, SW846 6010B, TCLP(1311) -> METALS, TOTAL	10.0
	Cadmium, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.10
	Lead, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.50
	Selenium, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.25
	Silver, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.50
	Chromium, SW846 6010B, TCLP(1311) -> METALS, TOTAL	.50

<u>Synonym</u>	<u>Description</u>	<u>RL</u>	<u>Units:</u>	<u>D</u>	<u>Wt</u>	<u>Que</u>
00666	SOLID, 7.3.3, Reactive Cyanide	200	mg/kg	N	N	N
02365	SOLID, 7.3.4, Reactive Sulfide	200	mg/kg	N	N	N
01534	SOLID, SECTION 7.1.2, Ignitability	--	No Units	N	N	N
03044	SOLID, 9045C, pH - Non-Aqueous		No Units	N	N	N
03311	SOLID, 160.3 MOD, Solids, Percent	1	%	?	Y	Y

UXB International, Inc

Units: mg/L
Test Description: SOLID, 7470A, TCLP Mercury

<u>Synonym</u>	<u>Name</u>	<u>RL</u>
	Mercury, SW846 7470A, TCLP(1311) -> METALS, TOTAL (Method ex	0.0002

Selectd Metals

<u>Metal</u>	<u>Method</u>	<u>RL</u>	<u>Units</u>
Matrix: SOLID Arsenic	SW846 6010B, METALS, TOTAL - Soils	1.0	mg/kg

ANNEX C

Hazardous Waste Generator Steps

ANNEX C provides specific steps required to prepare and submit waste manifests for shipment. Applicable federal regulations are included

Dunn Field

Hazardous Waste Generator Steps

Steps	Reference
1. Determine regulatory status of each waste at each initial point of generation.	
a. Identify hazardous waste codes.....	40 CFR 262.11,261
b. Identify all applicable LDR treatment standards.....	40 CFR 268.7(a)
c. Identify volatile organic concentration (if claiming an exemption).....	40 CFR 265.1084
2. Manage Waste Under:	
a. "Satellite" accumulation rules.....	40 CFR 262.3(c)
• At or near initial point of generation, < 55 gallons in containers	
b. "90 Day" rules (large quantity generators).....	40 CFR 262.34(a)
• In containers, tanks, drip pads or containment buildings, managed under TSD rules	40 CFR 265 Subparts I,J, W, or DD
• Control volatile organic air emissions	40 CFR 265 Subpart CC
• Have emergency preparedness and written contingency plan	40 CFR 265 Subparts C and D
• Have written training plan	40 CFR 265.16
c. "180 day" rules (small quantity generators).....	40 CFR 262.34(d) & (e)
• In containers or tanks, managed under TSD rules.....	40 CFR 265 Subpart I & J
• Have emergency preparedness and post emergency information near telephone.....	40 CFR 262.34(d)(4) & (5)
• Assure personnel are trained in job duties.....	40 CFR 262.34(d)(5)
c. Under permit if >90 or 180 days	40 CFR 262.34(b) or (f)
• Comply with all applicable TSD rules	40 CFR 264 & 270
3. Prepare waste for shipment off-site	
a. Classify, name, package, mark, label and placard per DOT hazardous materials regulations	40 CFR 172, 173 & 178
b. Mark containers per EPA regulations.....	40 CFR 262.32
• "Hazardous Waste" statement	

- Generator's name and address
- Federal Manifest Document Number

4. Prepare manifest/shipping papers legibly

- a. Complete items 1-20 per Federal EPA rules.....40 CFR 262 Appendix
- b. Follow DOT rules for Item 11 (Shipping description).....49 CFR 172 Subpart C
- c. Complete items A-K (shaded area) per destination state and generator state rules
Applicable state rules
- d. Provide emergency response information and 24-hour phone numbers per
DOT rules.....49 CFR 172 Subpart G

5. Prepare LDR Documentation

- a. Notify if needs further treatment.....40 CFR 268.7(a)(1)
- c. Certify if meets all standards and may be disposed.....40 CFR 268.7(a)(2)

6. Provide placards as appropriate.....49 CFR 172 Subpart F

7. Execute manifest40 CFR 262 Subpart B

- a. Sign by hand, obtain handwritten signature of transporter, keep copies of manifest
- b. Mail copy(ies) to states as required per state rules
- c. Track manifest to assure proper delivery, investigate if not returned
within 35 days.....40 CFR 262.42

8. Report & Keep records

- a. Report waste generating activity biannually, annually, or as otherwise required by
state.....40 CFR 262.41
- b. Report un-returned manifest copies (exception reports) within 45 days of
Shipment.....40 CFR 262.42
- c. Keep all waste management records & LDR records.....40 CFR 262.40,268.7(a)(5)

9. Train

- a. "Personnel" how to perform job-specific waste management duties to preclude RCRA
violations, review training annually.....40 CFR 265.16
- b. "HazMat Employees" overall DOT HM regulations and applicable job-specific DOT
regulations, retrain every two years49 CFR 172 Subpart H
- c. "Emergency response" employees how to use protective equipment, E.R.
procedures29 CFR 1910.120(q)

Document everything and keep records forever!

ANNEX D

Sample Manifest

ANNEX D contains labeling guidelines and sample manifests for waste generated at Dunn Field

INNOVATIVE WASTE MANAGEMENT, INC.

P.O. Box 50397 Summerville SC 29485-0397

1-800-858-1663

FAX (843) 725-2018



IMPORTANT

1. CHECK NAME AND ADDRESS
2. CHECK EPA NUMBER
3. CHECK MANIFEST NUMBER
4. REVIEW WASTE STREAMS
5. MAKE SURE APPROVAL NUMBER IS ON MANIFEST AND DRUMS
6. MAKE SURE DRUM COUNTS, GALLONS OR POUNDS ARE COMPLETED BEFORE DRUMS ARE TRANSPORTED
7. MAKE SURE TRANSPORTER HAS COMPLETED ALL TRANSPORTER INFORMATION
8. LAND DISPOSAL RESTRICTION FORMS (LDR) ARE REQUIRED ON ALL HAZARDOUS WASTE TO ASSURE PROPER DISPOSAL HANDLING, THIS MUST BE FILLED OUT COMPLETELY, SIGNED AND ACCOMPANY THE MANIFEST TO THE FACILITY
9. KEEP COPIES OF ALL PAPERWORK (MANIFESTS, LDR'S, ETC) FOR YOUR RECORDS
10. IF ANY INFORMATION IS INCORRECT, CONTACT US IMMEDIATELY. THIS WILL HELP TO AVOID DELAYS AT THE FACILITIES. CALL 800-858-1663.



INNOVATIVE WASTE MANAGEMENT, INC.

P.O. Box 50397, Summerville, SC 29485-0397

1-800-858-1663

(843) 725-2018

FAX (843) 725-2018

FOR HAZARDOUS MATERIAL TRANSPORTATION

The U.S. Department of Transportation has a General Marking Requirement (49 CFR 172.30) that requires any person offering a hazardous material for transportation in a container smaller than 110 gallons to mark the container with the proper shipping name and number.

1. Labels must be durable and displayed clearly on the drum side.
2. Labels must contain the following information:
 - A. Proper shipping name
 - B. Generators name and address
 - C. Waste manifest number
 - D. Accumulation start date
3. Labels and manifest must match, with approval numbers on both. Approval number should be marked on top of drum with grease pencil.
4. Markings should be legible and printed on or affixed to the surface of the drum.
5. Markings and labels should be unobscured from other markings that could reduce its effectiveness.
6. The four-inch diamond label is required when appropriate.

Please call us if you are unsure or consult column 4 of the Hazardous Material Table (49 CFR 172.101) to determine whether your material needs a hazardous label or not.

When drums are stored exposed to the weather or stored for long periods of time, labels can fade or peel from them. If this should occur, they must be replaced before shipment.

The process of inspection and labeling can be time consuming, but we wish to re-emphasize that the safety and the integrity of all parties are involved. Therefore, strict adherence to these requirements is necessary. Prior compliance with these requirements should make demurrage charge unnecessary and will prevent rejection of your load.

We are always willing to help you with these drum acceptance requirements. If you have any questions or problems, please do not hesitate to call us at 800-858-1663.

INNOVATIVE WASTE MANAGEMENT, INC.

P.O. Box 50397 Summerville, SC 29485-0397

FAX (843) 725-2018

1-800-858-1663



DRUM ACCEPTANCE REQUIREMENTS

When transporting and handling hazardous or non-hazardous waste materials, safety and compliance with applicable regulations are Innovative Waste Management, Inc. greatest consideration. The proper packaging, labeling, and associated documentation is the heart of a safe and legal material handling system. Please follow the guidelines when shipping material.

1. All drums must have gaskets and securely tightened.
2. All containers must meet the marking and labeling requirements of the US Department of Transportation and the US EPA.
3. Only materials, which have been contracted for and scheduled, will be loaded, unless pre-approved by Innovative Waste Management, Inc.
4. Drums may be rejected if they have the following:
 - A. Swollen or bulging steel
 - B. Lever-lock cinch rings
 - C. Excessive waste on outside of drums (use good judgment, drums obviously can't be spotless)
 - D. Excessive rust
 - E. Serious dents or active leaks
 - F. Polyliners (may require a small surcharge)

It's important that we work together to minimize the risk involved with transporting your waste. If you have any questions regarding these requirements, we encourage you to contact us for assistance at 800-858-1663.

Thank you for your business.

DRUM MARKINGS FOR HAZARDOUS WASTE WHICH IS ALSO A U.S. DOT HAZARDOUS MATERIAL AND IS TO BE TRANSPORTED OFF SITE.

APPROVAL CODE TO BE MARKED ON THE TOP AND SIDE OF EACH DRUM.

U.S. DOT REQUIREMENTS AS DESCRIBED IN 49 CFR PART 172

DOT LABEL

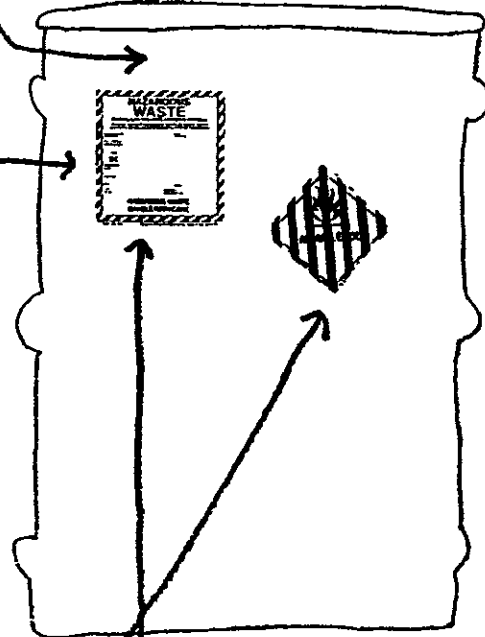
MARKING SHOWING U.S. EPA REQUIREMENTS AS SHOWN IN 50 CFR PART 262.32

"HAZARDOUS WASTE" -FEDERAL LAW PROHIBITS IMPROPER DISPOSAL. IF FOUND CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY. GENERATORS NAME & ADDRESS:

MANIFEST DOCUMENT NUMBER: _____

DATE WHEN ACCUMULATION OF WASTE BEGAN PER CFR 262.34 _____

PROPER DOT SHIPPING NAME: _____



HAZARDOUS WASTE	
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.	
ACCUMULATION DATE	EPA WASTE NO.
DOT SHIPPER SHIPPING NAME	
AND U.S. OR N.A. NO.	
GENERATOR NAME	
ADDRESS	
CITY	STATE
EPA ID NO.	MANIFEST DOCUMENT NO.
HAZARDOUS WASTE HANDLE WITH CARE	

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on 12 inch typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570	Manifest Document No. 00000	2. Page 1 of 1
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA		2163 Airways Blvd. Memphis, TN 38114		
4. Generator's Phone (901) 544-0612				
5. Transporter 1 Company Name Action Resources		6. US EPA ID Number ALR000007237	A. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number	B. Transporter 1 Phone 800-228-8845	
9. Treatment Facility Name and Site Address Trash Hunters of Tunica INS DBA Tunica Landfill 6035 Bowdre Road Robinsonville, MS 38664		10. US EPA ID Number SW-0720010459	C. State Transporter's ID	
			D. Transporter 2 Phone	
			E. State Facility's ID	
			F. Facility's Phone 877-989-2783	
11. WASTE DESCRIPTION		Containers No. Type	12. Total Quantity	14. Unit Wt./Vol
a. Soil & Debris Non Hazardous/Non Regulated				Y
b.				
c.				
d.				
12. Additional Description for Materials Listed Above		C. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and additional information 24 Hour Emergency Contact: Mike Lee 901-754-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792				
16. RECEIPT/ACKNOWLEDGEMENT: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Printed/Typed Name		Signature	Date Month Day Year	
17. Transporter 1 Acknowledgment of Receipt of Materials		Signature	Date Month Day Year	
Printed/Typed Name		Signature	Date Month Day Year	
18. Transporter 2 Acknowledgment of Receipt of Materials		Signature	Date Month Day Year	
Printed/Typed Name		Signature	Date Month Day Year	
19. Discrepancy Indication Space				
20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19				
Printed/Typed Name		Signature	Date Month Day Year	



TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION
P.O. Box 13087
Austin, Texas 78711-3087



Please print or type. (Form designed for use on size (12-page) typewriter.)

Form approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA		2163 Airways Blvd. Memphis, TN 38114		A. State Manifest Document Number 02416107		B. State Generator's ID 99947	
4. Generator's Phone (901) 554-0612		6. US EPA ID Number ALR000007237		C. State Transporter's ID		D. Transporter's Phone 800-228-8845	
5. Transporter 1 Company Name Action Resources		8. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone	
7. Transporter 2 Company Name		10. US EPA ID Number TXD000838896		G. State Facility's ID 50212		H. Facility's Phone 409-736-2821	
8. Designated Facility Name and Site Address Chemical Waste Management Inc. Hwy 73, 3 1/2 Mile W. of Taylors Bayou Port Arthur, TX 77640		12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol	
11. US DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group)		15. Environmentally Hazardous Substances, Liquid, n.o.s., 9, UN3082, PG III, (1,4- Thioxane and 1,4-Dithiane at <6 ppm) ERC 71		16. Handling Codes for Wastes Listed Above M043		17. Waste No. OUTS3011	
18. Additional Descriptions for Materials Listed Above 11a. 519005		19. Special Handling Instructions and Additional Information Chemtrec Emergency Response Number 800-424-9300 Mike Lee 901-754-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792		20. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		21. Printed/Typed Name Signature Month Day Year	
22. Transporter 1 Acknowledgment of Receipt of Materials Printed/Typed Name Signature Month Day Year		23. Transporter 2 Acknowledgment of Receipt of Materials Printed/Typed Name Signature Month Day Year		24. Discrepancy Indication Space		25. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19 Printed/Typed Name Signature Month Day Year	

THRC-6311 (Rev. 07/1997)

White - original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy

TEXAS NATURAL RESOURCES
CONSERVATION COMMISSION
P.O. Box 13067
Austin, Texas 78711-3067



Form approved OMB No. 2050-0025

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570	Manifest Document No. 000000	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA		2163 Airways Blvd. Memphis, TN 38114		A. State Manifest Document Number 02416106		
4. Generator's Phone (901) 554-0612				B. State Generator's ID 99947		
5. Transporter 1 Company Name Action Resources		6. US EPA ID Number ALR0000Q7237		C. State Transporter's ID		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 800-228-8845		
9. Designated Facility Name and Site Address Chemical Waste Management, Inc. Hwy 73, 3 1/2 Mile W. of Taylors Bayou Port Arthur, TX 77640		10. US EPA ID Number TXD000838896		E. State Facility's ID 50212		
				F. Facility's Phone 409-736-2821		
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group)	12. Containers No.	13. Type	14. Total Quantity	15. Unit Wt/Vol	16. Waste No.
X	a. Environmentally Hazardous Substances, Solid, i.o.s., 9, UN3077, PG III, (1,4-Thioxane and 1,4-Dithiane at <6 ppm) ERG 71		CM		Y	OUTS3011
	b.					
	c.					
	d.					
J. Additional Descriptions for Materials Listed Above 11a. 519005				K. Handling Codes for Wastes Listed Above M043		
15. Special Handling Instructions and Additional Information Chemtrec Emergency Response Number 800-424-9300 Mike Lee 901-754-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this assignment are fully and accurately described above by proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name		Signature		Month Day Year		
17. Transporter 1 Acknowledgment of Receipt of Materials		Signature		Date		
Printed/Typed Name		Signature		Month Day Year		
18. Transporter 2 Acknowledgment of Receipt of Materials		Signature		Date		
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name		Signature		Date		
Printed/Typed Name		Signature		Month Day Year		

TRICC-0311 (Rev. 07/01/97)
Sample Manifest

White - original Pink - TSD Facility Yellow - Transporter Green - Generator's first copy

Annex D

UXB International, Inc.



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Please print or type. (Form designed for use on either 12-pitch typewriter.)

Form Approved OMB No. 2050-0008, Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570		Manifest Document No.		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA 2163 Airways Blvd Memphis, TN 38114				A. State Manifest Document Number CWMA 910769		B. State Generator's ID			
4. Generator's Phone (901) 544-0612				C. State Transporter's ID		D. Transporter's Phone 800-228-8845			
5. Transporter 1 Company Name Action Resources				6. US EPA ID Number ALR000007237		E. State Transporter's ID			
7. Transporter 2 Company Name				8. US EPA ID Number		F. Transporter's Phone			
9. Designated Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC Emelle Facility Alabama Highway 17 at Mile Marker 163 Emelle, Alabama 35658				10. US EPA ID Number		G. State Facility's ID			
				H. Facility's Phone 205/652-9721					
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers		13. Total Quantity		14. Unit Wt/Vol	
a. RQ, Hazardous Waste, Liquid, n.o.s. (Lead, Arsenic) 9, NA3082, PG III, ERG171				No. Type				I. Waste No.	
b. Disposal Approval # CWM Profile #								D004	
c. Disposal Approval # CWM Profile #									
d. Disposal Approval # CWM Profile #									
e. Disposal Approval # CWM Profile #									
11a. D008				11c. Handling Codes for Wastes Listed Above					
State of Generation				a. M132		c.		d.	
15. Special Handling Instructions and Additional Information				24 Hour Emergency Contact: Mike Lee 901-754-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792					
Purchase Order #				Work Order #					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.									
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name				Signature		Month		Day Year	
17. Transporter 1 Acknowledgment of Receipt of Materials				Signature		Month		Day Year	
18. Transporter 2 Acknowledgment of Receipt of Materials				Signature		Month		Day Year	
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.									
Printed/Typed Name				Signature		Month		Day Year	

EPA Form 670-22 (Rev. 9-86) Previous editions are obsolete.

U.S. GOVERNMENT PRINTING OFFICE: 1986-0-250-000

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UXB International, Inc



CHEMICAL WASTE MANAGEMENT, INC. LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM (UTS)

Generator Name: Memphis Depot Caretaker DLACWM Profile Number: 000000State Manifest No.: OW MA 91 076 B

This form is submitted to Chemical Waste Management, Inc. in accordance with 40 CFR Part 268 and LAC 33:V Chapter 22, which restrict the land disposal of certain hazardous wastes.

- 1. IDENTIFICATION OF THE WASTE**
 1. Is this waste a non-hazardous waste or wastewater? (See 40 CFR 261.2 and LAC 33:V.2203) Check One: ☒ Non-Wastewater ☐ Wastewater
 2. If this waste is subject to any California restrictions, enter the letter below (A, B, 1 or 2) next to each restriction that is applicable:
 HOCs _____ PCBs _____ Acids _____ Metals _____ Cyanides _____
 3. Identify all USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261 and LAC 33:V Chapter 46. For each waste code, classify the corresponding category, or check NONE if no waste code has been assigned. Special provisions (California Information) pertaining to hazardous waste are listed below:
 If F001, multi-source inorganic acids, these constituents must be listed and analyzed by the generator. If D001, D002, D003 (explosive, water-reactive, or other reactive category), or D012-D043 (corrosive) any of the characteristic and most pH 4.0 standards, the underlying hazardous constituents present in the waste must be listed and analyzed.

R E F	4. USEPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE		6. HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM BELOW
		DESCRIPTION	NONE	
1	D004	Arsenic		
2	D008	Lead		
3				
4				
5				
6				
7				
8				
9				
10				

Treatment codes: D001, D002, D003 (explosive, water-reactive, or other reactive category), D012-D043, identify hazardous constituents, use "F001" identify inorganic acids.
 Constituent list: provide (CWA 304) and check here: ☐ See CWA 304 in the waste manifest and check here: ☐
 To list and analyze hazardous waste constituents (CWA 304) and check here: ☐ See CWA 304 in the waste manifest and check here: ☐

II. HOW MUST THE WASTE BE MANAGED?

1. In accordance with the California A, B, 1, 2, 3, 4, C, D or E below, the waste must be managed to comply with the land disposal restrictions (40 CFR 268.7 and LAC 33:V Chapter 22, Subchapter 2). Please indicate that you are not using A, B, 1, 2, 3, 4, C, D or E by checking the appropriate certification below.

A. RESTRICTED WASTE REQUIRES TREATMENT

This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32 or RCRA Section 3004(g) and LAC 33:V.2213 and LAC 33:V Chapter 22, Subchapter 2.

☐ Further restrictions: This waste is not subject to the above treatment standards of 40 CFR Part 268.45.

B.1. RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

I, the undersigned, certify that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for managing this information, I believe that the treatment process has been applied and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, LAC 33:V Chapter 22, Subchapter 2, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (g) and LAC 33:V.2213 without (precluding) violation of the prohibitions. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

B.2. RESTRICTED WASTE FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

I, the undersigned, certify that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for managing this information, I believe that the treatment process has been applied and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, LAC 33:V Chapter 22, Subchapter 2, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (g) and LAC 33:V.2213 without (precluding) violation of the prohibitions. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

B.3. GOOD PRACTICES ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS

I, the undersigned, certify that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for managing this information, I believe that the treatment process has been applied and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, LAC 33:V Chapter 22, Subchapter 2, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (g) and LAC 33:V.2213 without (precluding) violation of the prohibitions. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

B.4. WASTE-WATER CERTIFICATION

I, the undersigned, certify that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for managing this information, I believe that the treatment process has been applied and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, LAC 33:V Chapter 22, Subchapter 2, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (g) and LAC 33:V.2213 without (precluding) violation of the prohibitions. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

This waste is subject to a federal agency variance, a state agency variance, or a case-by-case exemption. Enter the effective date of prohibition in column 6 above.

D. RESTRICTED WASTE CAN BE LAND-DISPOSED WITHOUT FURTHER TREATMENT

I, the undersigned, certify that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for managing this information, I believe that the treatment process has been applied and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D, LAC 33:V Chapter 22, Subchapter 2, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (g) and LAC 33:V.2213 without (precluding) violation of the prohibitions. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that the information submitted herein is true and accurate and is based on the best of my knowledge and information.

Signature: _____ Title: _____ Date: _____
 4. A signature must be provided by the generator, the transporter, or the receiver. The signature must be dated and must be accompanied by a signature of the generator, transporter, or receiver.

BEST AVAILABLE COPY

the waste identified on the first page of this form is described by any of the following USRA hazardous waste codes: 01, 0403, 0404, 0405, 0406, 0407, and all solvent constituents will not be monitored by the treater, and/or this hazardous waste is subject to any prohibitions identified on California List restrictions (40 CFR 261.22 and/or RCRA Section 3004(d)). For each constituent, MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code 0403 describes this waste, then the corresponding list of constituents must be attached. If 0401, 0402, 0403, 0404 or 0405-0407 require treatment to 249.62 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS			
Pass through post spent solvent constituents and their associated USRA hazardous waste code(s).	Treatment Standard		Treatment Standard
	Westcode	Remediation Code	
Pass through post spent solvent constituents and their associated USRA hazardous waste code(s).			

11 spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Westwater sites are mg/L, nonwater are mg/kg.

CALIFORNIA LIST TREATMENT STANDARDS—40 CFR 261.22, 40 CFR 261.62 and RCRA Section 3004(d)		
A waste must first be designated as a USRA hazardous waste before the waste can be subject to the California List restrictions.		
Restricted waste description	Prohibition	Treatment Standard
Liquid or nonliquid wastes containing halogenated organic compounds listed in 40 CFR 261, Appendix III	Liquid wastes: Greater than or equal to 1,000 mg/L Nonliquid wastes: Greater than or equal to 1,000 mg/kg	40 CFR 261.62(a)(2) - DRCIN or F005
Liquid wastes containing Poly Chlorinated Biphenyls (PCBs)	Greater than or equal to 50 ppm	40 CFR 261.62(a)(1) - DRCIN or F005 Also see 40 CFR 261.60 and .70
Liquid wastes containing Metals	One or more of the following metals (or elements) at concentrations greater than or equal to the following: Nickel and/or compounds as Ni: 15mg/L Thallium and/or compounds as Tl: 15mg/L	RCRA Section 3004(d)

* - see the definition "liquid" under Method 9005, the Fast Filter Liquids Test from EPA manual 846-046

REMARKS/REMARKS

- 041:
- Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High VOC subcategory, that are managed in non-CM/non-CM equivalent/non-Class I SWM system.
 - Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High VOC subcategory, that are managed in CM/CM-equivalent or Class I SWM system.
 - High VOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a)(1) - greater than or equal to 100 total organic carbon.
- 042:
- Corrosive characteristic wastes that are managed in non-CM/non-CM-equivalent/non-Class I SWM system.
 - Corrosive characteristic wastes that are managed in CM, CM-equivalent, or Class I SWM system.

1200 Chemical Waste Management, Inc. - 05/96 - Form CM-2005-A



HAZARDOUS WASTE MANIFEST

(As Required By The Alabama Department of Environmental Management)

Form 520-22 (Rev 9-80) (Please design for use on file (12-pin) generator.)

Form Approved, OMB No. 2050-0028, Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TS4210020570	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA Memphis, TN 38114		4. Generator's Phone (901) 544-0612		5. A. State Manifest Document Number CWMA 910257 B. State Generator's ID	
6. Transporter 1 Company Name Action Resources		7. Transporter 1 US EPA ID Number ALR000007237		8. C. State Transporter's ID D. Transporter's Phone 800-228-8845 E. State Transporter's ID	
9. Transporter 2 Company Name		10. Transporter 2 US EPA ID Number		F. Transporter's Phone G. State Facility's ID	
11. Disposal Facility Name and Site Address CHEMICAL WASTE MANAGEMENT, INC. Emelle Facility Alabama Highway 17 at M in Marker 163 Emelle, Alabama 36659		12. US EPA ID Number AL00000622464		H. Facility's Phone 205/652-9721	
13. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		14. Quantity	15. Type	16. Total Quantity	17. Waste No.
a. RQ, Hazardous Waste, Solid, n.o.s. (Lead, Arsenic) 9, RA3077, PG III, ERG171 Shipped Approval # _____ CWM Profile # _____			CM		Y D004
b. _____ Shipped Approval # _____ CWM Profile # _____					
c. _____ Shipped Approval # _____ CWM Profile # _____					
d. _____ Shipped Approval # _____ CWM Profile # _____					
18. Additional Descriptions for Materials Listed Above 11a. D008		19. Handling Codes for Wastes Listed Above a. M132 c. b. d.			
20. Special Handling Instructions and Additional Information 24 Hour Emergency Contact: Mike Lee 901-754-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792 Purchase Order # _____ Work Order # _____ EMERGENCY CONTACT: _____					
21. GENERATOR'S CERTIFICATION. I hereby declare that the contents of this assignment are fully and accurately described above by the proper shipping name, unless classified, packaged, marked and labeled in accordance with applicable federal and state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threats to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to encourage new waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name _____ Signature _____ Month Day Year _____					
22. Transporter 1 Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month Day Year _____					
23. Transporter 2 Acknowledgment of Receipt of Materials Printed/Typed Name _____ Signature _____ Month Day Year _____					
24. Discrepancy Indication Space					
25. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 13. Printed/Typed Name _____ Signature _____ Month Day Year _____					

EPA Form 520-22 (Rev 9-80) Revisions in brackets.

STATE OF ALABAMA Department of Environmental Management



the waste identified on the first page of this form is described by any of the following USRA hazardous waste codes: 41, 4002, 4003, 4004, 4005, and all solvent constituents will not be monitored by the creater, and/or this hazardous waste subject to any prohibitions identified on California list restrictions (40 CFR 265.32 and/or RCRA Section 3004(d)). Each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code 4005 describes this waste, then the corresponding list of constituents must be attached. If 4001, 4002, 4003 or 4012-4004 require treatment to 100.0% standards, then the underlying standards constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS			
4001 through 4005 spent solvent constituents and their associated USRA hazardous waste code(s).	Treatment Standard		Treatment Standard
	Wastewater	Sludge/Solids	
4001 through 4005 spent solvent constituents and their associated USRA hazardous waste code(s).			

11 spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater site are mg/l. Sludge/Solids are %/70.

CALIFORNIA LIST TREATMENT STANDARDS--40 CFR 265.32, 40 CFR 265.42 and RCRA Section 3004(d)		
A waste must first be designated as a 40 EPA Hazardous waste before the waste can be subject to the California List restrictions.		
Restricted waste description	Prohibition	Treatment standard
Liquid or sludge waste containing halogenated organic compounds listed in 40 CFR 265, Appendix III	Liquid waste: Greater than or equal to 1,000 mg/l Sludge waste: Greater than or equal to 1,000 mg/kg	40 CFR 265.42(a)(2) - INCIN or POUSS
Liquid waste containing Poly chlorinated biphenyls (PCBs)	Greater than or equal to 50 ppm	40 CFR 265.42(a)(1) - INCIN or POUSS Also see 40 CFR 761.60 and 761.61
Liquid waste containing Metals	One or more of the following metals (or elements) at concentrations greater than or equal to the following: Arsenic and/or compounds as As: 10mg/l Thallium and/or compounds as Th: 100mg/l	RCRA Section 3004(d)
NOTE: Sludge waste containing As, Cd, Cr, Hg, Pb, or Se must be evaluated if not characteristically hazardous for that metal		

- - For the definition "liquid" refer to Method 9005, the Fast Filter Liquid Test from EPA manual 821-0-04

SUBSEQUENT REFERENCES

- 4001:
- Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High VOC subcategory, that are managed in non-CM/non-CM equivalent/non-Class I SWM systems.
 - Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High VOC subcategory, that are managed in CM/CM-equivalent or Class I SWM systems.
 - High VOC Ignitable characteristic liquid subcategory based on 40 CFR 261.21(a)(1) - greater than or equal to 10% total organic carbon.
- 4002:
- Corrosive characteristic wastes that are managed in non-CM/non-CM-equivalent/non-Class I SWM systems.
 - Corrosive characteristic wastes that are managed in CM, CM-equivalent, or Class I SWM systems.

1990 Chemical Waste Management, Inc. - 01/90 - Form CM-2005-A

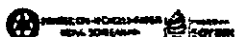
Please print or type. (Form designed for use on 12-pitch typewriter.)

Form Approved OMB No. 1545-0047

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570	Manifest Document No. 00000	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address Memphis Depot Caretaker DLA 2163 Airways Blvd. Memphis, TN 38114				A. State Manifest Document Number		
4. Generator's Phone ()				B. State Generator's ID		
5. Transporter 1 Company Name Action Resources		6. US EPA ID Number ALR000007237		C. State Transporter's ID		
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 800-228-8845		
9. Designated Facility Name and Site Address Clean Harbors Kimball Incineration 2247 South Hwy 71, Kimball, NE 69145		10. US EPA ID Number NED981723513		E. State Transporter's ID		
				F. Transporter's Phone		
				G. State Facility's ID		
				H. Facility's Phone 800-282-0058		
11. US DOT Description (including Proper Shipping Name, Hazard Class and ID Number)		12. Containers No. Type	13. Total Quantity	14. Unit M/Vol	15. Waste No.	
a. X RQ, Waste Toxic Liquids, Organic, n.o.s. (1,4-Thioxane, bis (2 Chloroethyl) Sulfide) 6.1, UN2810, PG II, BRG153		DM		G		
b.						
c.						
d.						
J. Additional Descriptions for Materials Listed Above 11a. CHE19-0136			K. Handling Codes for Wastes Listed Above CCRX M043/T07			
15. Special Handling Instructions and Additional Information 24 Hour Emergency Contact: Mike Lee 901-745-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this assignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name			Signature		Month Day Year	
17. Transporter 1 Acknowledgment of Receipt of Materials			Signature		Month Day Year	
Printed/Typed Name			Signature		Month Day Year	
18. Transporter 2 Acknowledgment of Receipt of Materials			Signature		Month Day Year	
Printed/Typed Name			Signature		Month Day Year	
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.						
Printed/Typed Name			Signature		Month Day Year	

Step 17 LABEL FACTORY: 800-451-4515 www.labelfactory.com

EPA Form 6700-22 (Rev. 9-83) Previous editions are obsolete.



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COPY

CLEAN HAZARDOUS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM (LDR-1)

MANIFEST NO. 2179

THE HAZARDOUS WASTE IDENTIFIED ON THE HAZARDOUS WASTE MANIFEST IDENTIFIED ABOVE AND BEARING THE EPA HAZARDOUS WASTE CODES LISTED BELOW ARE RESTRICTED WASTE WHICH ARE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT UNDER THE LAND DISPOSAL RESTRICTIONS, 40 CFR PART 268 AND RCRA SECTION 3004(D). IN ACCORDANCE WITH 40 CFR 268.7(a)(2), THE EPA WASTE CODE, WASTE SUBCATEGORY, AND TREATABILITY GROUPS, AS APPLICABLE, ARE INCLUDED BELOW.

INSTRUCTIONS - COMPLETE ALL SECTIONS. REFER TO PAGE 3 OF THIS FORM FOR KEY TERMS/DEFINITIONS.

Column 1 - Line Item: Enter the manifest line item number (e.g., 11a) that corresponds to the waste code(s).
Column 2 - Waste Codes/Subcategory: Check off all applicable waste codes. For D001 through D013, also check applicable subcategory for D001 through D005, check applicable constituents.

Column 3 - Wastewater/Non-wastewater: Check off "W" for wastewater and "Non-W" for non-wastewater.

Column 4 - LDR Handling Code: Circle the appropriate handling code, as follows:

- 1 - The waste is a characteristic hazardous waste D001 High TOC Ignitable Liquids Subcategory (i.e., greater than or equal to 10% TOC). Pursuant to 40 CFR 268.40, the waste must be treated using organic recovery (R002) or combustion (C001) technology. UIC's are NOT required to be identified.
- 2 - The waste is a characteristic hazardous waste D001 (other than High TOC Ignitable Liquids), D002, D003 Explosive, Reactant or other reactive subcategory, D004-D011, D012-17 non-wastewater, or D018-43 which is intended for treatment/disposal in a non-CRA system, non-CRA-equivalent system, or non-Class I SSWA system located in the United States. All UIC's which are reasonably expected to be present must be identified, except for D001 waste that is intended to be treated using organic recovery (R002) or combustion (C001) technology. Identify UIC's by completing sections I and IV of CMT Form LDR-1 Addendum and attach completed Addendum to this form.
- 3 - The waste is a characteristic (i.e., D-code) or listed (i.e., F-, K-, U-, or P-code) hazardous waste which is intended for export and treatment/disposal at a facility located outside the United States. LDR treatment standards do not apply to hazardous waste treated/disposed in a foreign country, and per USEPA guidance, the identification of UIC's (if applicable) is not required for hazardous waste that is intended to be exported. Note however that if the exported waste is subsequently returned for treatment/disposal in the United States, all applicable LDR regulations would apply and a revised LDR notification would be required.
- 4 - The waste meets the definition of hazardous waste pursuant to 40 CFR 261.2(a) and is intended for treatment/disposal in compliance with the alternative lab pack treatment technologies of 40 CFR 268.45. In accordance with the requirements of 40 CFR 268.7(a)(2), the constituents subject to treatment (CST's) must be identified as part of this notification. Identify CST's by completing Sections III and IV of CMT Form LDR-1 Addendum and attach completed Addendum to this form. These constituents are being treated to comply with 40 CFR 268.45.
- 5 - The waste is a characteristic waste D003 Reactive Solids, Reactive Cyanide, or Unexploded Ordnance subcategory, a characteristic waste D012-17 wastewater, or a listed (i.e., F-, K-, U-, or P-code) hazardous waste. UIC's are NOT required to be identified.
- 6 - The waste is a lab pack that is intended for incineration using the alternative lab pack treatment standards under 40 CFR 268.43(c). UIC's are NOT required to be identified; however, the generator must complete and attach the lab pack certification statement on CMT Form LDR-1B. Note that in accordance with 40 CFR Part 268 Appendix IV, lab packs which contain waste codes D009, F019, K001, K004, K005, K006, K007, K100, K101, P010, P011, P012, P016, P070, U104, and U105 are not eligible for alternative lab pack treatment standard.

*** NOTE: IF THE WASTE IS A SOLID CONCENTRATE WITH A LISTED OR CHARACTERISTIC WASTE AND THE GENERATOR WANTS TO USE THE ALTERNATE TREATMENT STANDARD FOR SOLIDS, CONTACT COASTAL COMPLIANCE FOR THE APPROPRIATE LDR EXEMPTION FORM.

SECTION 1. CHARACTERISTIC WASTE D001 THROUGH D043

Column 1: LINE ITEM SEE MANIFEST	Column 2: WASTE CODE / SUBCATEGORY	Column 3: WASTEWATER/ NON-WASTEWATER	Column 4: HANDLING CODE
	☐ D001 Ignitables, except High TOC subcategory	☐ W ☐ Non-W	1 2 3 4 5
	☐ D001 High TOC Ignitable Liquids Subcategory (greater than or equal to 10% TOC)	☐ Non-W only	1A 3 4
	☐ D002 Corrosives	☐ W ☐ Non-W	1 2 3 4 5
	☐ D003		
	☐ Reactive Solids, per 261.23(a)(3)	☐ W ☐ Non-W	1 3 4 5 6
	☐ Reactive Cyanide, per 261.23(a)(5)	☐ W ☐ Non-W	1 3 4 5 6
	☐ Explosive, per 261.23(a)(6), (7) & (8)	☐ W ☐ Non-W	1 2 3 4 5
	☐ Other Reactive, per 261.23(a)(2), (3) & (4)	☐ Non-W only	1 2 3 4 5
	☐ Other Reactive, per 261.23(a)(2)	☐ W ☐ Non-W	1 2 3 4 5
	☐ Unexploded Ordnance, Emergency Response	☐ W ☐ Non-W	1 3 4 5 6
	☐ D004 Arsenic	☐ W ☐ Non-W	1 2 3 4 5
	☐ D005 Barium	☐ W ☐ Non-W	1 2 3 4 5
	☐ D006		
	☐ Cadmium	☐ W ☐ Non-W	1 2 3 4 5
	☐ Cadmium Containing Batteries	☐ Non-W only	2 3 4
	☐ D007 Chromium	☐ W ☐ Non-W	1 2 3 4 5
	☐ D008		
	☐ Lead	☐ W ☐ Non-W	1 2 3 4 5
	☐ Lead Acid Batteries	☐ Non-W only	2 3 4

CMT Form LDR-1, Page 1 of 3 (Effective 02/78/00)

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COPYCLEAN HARBORS ENVIRONMENTAL SERVICE, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

Manifest No. _____

SECTION I. CHARACTERISTIC WASTES P001-P005 (CONTINUED)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / NAME	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
	() P007	() NW () Non-NW	1 2 3 4
	() Low Mercury, less than 240 ug/kg Mercury	() Non-NW only	2 3 4
	() High Mercury Organic Subcategory	() Non-NW only	2 3 4
	() High Mercury Inorganic Subcategory	() NW () Non-NW	1 2 3 4 6
	() P010 Selenium	() NW () Non-NW	1 2 3 4 6
	() P011 Silver	() NW () Non-NW	2 3 4 5 6
	() P012 Endrin	() NW () Non-NW	2 3 4 5 6
	() P013 Lindane	() NW () Non-NW	2 3 4 5 6
	() P014 Methomylchlor	() NW () Non-NW	2 3 4 5 6
	() P015 Toxaphene	() NW () Non-NW	2 3 4 5 6
	() P016 2,4-D	() NW () Non-NW	2 3 4 5 6
	() P017 2,4,5-TP (Silvex)	() NW () Non-NW	2 3 4 5 6
	() P018 Benzene	() NW () Non-NW	1 2 3 4 6
	() P019 Carbon tetrachloride	() NW () Non-NW	1 2 3 4 6
	() P020 Chloroform	() NW () Non-NW	1 2 3 4 6
	() P021 Chlorobenzene	() NW () Non-NW	1 2 3 4 6
	() P022 Chloroform	() NW () Non-NW	1 2 3 4 6
	() P023 o-Cresol	() NW () Non-NW	1 2 3 4 6
	() P024 m-Cresol	() NW () Non-NW	1 2 3 4 6
	() P025 p-Cresol	() NW () Non-NW	1 2 3 4 6
	() P026 Cresol	() NW () Non-NW	1 2 3 4 6
	() P027 1,4-Dichlorobenzene	() NW () Non-NW	1 2 3 4 6
	() P028 1,2-Dichloroethane	() NW () Non-NW	1 2 3 4 6
	() P029 1,1-Dichloroethylene	() NW () Non-NW	1 2 3 4 6
	() P030 1,4-Dinitrobenzene	() NW () Non-NW	1 2 3 4 6
	() P031 Heptachlor (and its epoxides)	() NW () Non-NW	1 2 3 4 6
	() P032 Hexachlorobenzene	() NW () Non-NW	1 2 3 4 6
	() P033 Hexachlorocyclopentadiene	() NW () Non-NW	1 2 3 4 6
	() P034 Hexachlorobutadiene	() NW () Non-NW	1 2 3 4 6
	() P035 Methyl ethyl ketone	() NW () Non-NW	1 2 3 4 6
	() P036 Nitrobenzene	() NW () Non-NW	1 2 3 4 6
	() P037 Pentachlorophenol	() NW () Non-NW	1 2 3 4 6
	() P038 Pyridine	() NW () Non-NW	1 2 3 4 6
	() P039 Trichloroethylene	() NW () Non-NW	1 2 3 4 6
	() P040 Trichloroethylene	() NW () Non-NW	1 2 3 4 6
	() P041 2,4,6-Trichlorophenol	() NW () Non-NW	1 2 3 4 6
	() P042 2,4,6-Trichlorophenol	() NW () Non-NW	1 2 3 4 6
	() P043 Vinyl Chloride	() NW () Non-NW	1 2 3 4 6

SECTION II. SPECIFIC SOLVENT WASTES P001 THROUGH P005

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / CONSTITUENTS	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
	() P001 () P002 () P003 () P004 () P005 () NW () Non-NW		3 4 5 6
	() 1. ALL P001-P005	() 12. Cyclohexanone	() 28. Pyridine
	() 2. Acetone	() 13. o-Dichlorobenzene	() 29. Tetrachloroethylene
	() 3. Benzene	() 14. 2-Ethoxyethanol (P005 only)	() 27. Toluene
	() 4. n-Butyl alcohol	() 15. Ethyl acetate	() 28. 1,1,1-Trichloroethane
	() 5. Carbon disulfide	() 16. Ethyl benzene	() 29. 1,1,2-Trichloroethane
	() 6. Carbon tetrachloride	() 17. Ethyl ether	() 30. Trichloroethylene
	() 7. Chlorobenzene	() 18. Isobutyl alcohol	() 31. 1,1,2-Trichloro-1,2,2-tetrafluoroethane
	() 8. o-Cresol	() 19. Methanol	() 32. Trichloroethoxyfluoroethane
	() 9. m-Cresol (difficult to distinguish from p-cresol)	() 20. Methylene chloride	() 33. Xylene - mixed isomers (sum of o-, m-, and p-xylene)
	() 10. p-Cresol (difficult to distinguish from m-cresol)	() 21. Methyl ethyl ketone	
	() 11. Cresol - Mixed isomers (sum of o-, m- and p-cresol)	() 22. Methyl isobutyl ketone	
		() 23. Nitrobenzene	
		() 24. 2-Methylpropano (P005 only)	

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CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

Manifest No. _____

SECTION III. CALIFORNIA LIST WASTES

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
			1 2 3 4 5 6
Hazardous waste containing one or more of the following California List constituents:			
	☐ ALL CALIFORNIA LIST CONSTITUENTS		
	☐ Liquids with nickel greater than or equal to 134 mg/l		
	☐ Liquids with thallium greater than or equal to 130 mg/l		
	☐ Liquids with PCB's > or = 50 ppm		
	☐ Waste containing HOC's > or = 1,000 mg/kg		

SECTION IV. OTHER LISTED WASTES (F001-F012, F017-F018, F019, K-, U-, AND P-CODES)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
			1 2 3 4 5 6
_____	_____	☐ W ☐ NON-W	3 4 5 6
_____	_____	☐ W ☐ NON-W	3 4 5 6
_____	_____	☐ W ☐ NON-W	3 4 5 6
_____	_____	☐ W ☐ NON-W	3 4 5 6
_____	_____	☐ W ☐ NON-W	3 4 5 6

- ☐ CHECK HERE IF ADDITIONAL LISTED WASTE CODES ARE PRESENT. COMPLETE AND ATTACH LDR-1 CONTINUATION SHEET.
☐ CHECK HERE IF WASTE CODE F020 (MULTIPHASE LEACHATE) IS PRESENT. IDENTIFY F020 CONSTITUENTS BY COMPLETING SECTIONS II AND IV OF CRI FORM LDR-1 ADDENDUM AND ATTACH COMPLETED ADDENDUM TO THIS FORM.

SECTION V. CONTACT NAME AND DATE

Print Name: _____ Date: _____

KEY TERMS/DEFINITIONS

CLASS I ZERO SYSTEM means a Class I deep well facility regulated under the Safe Drinking Water Act (SDWA).

CWA SYSTEM means a centralized wastewater treatment facility discharging under a Clean Water Act (CWA) permit. For example, a CWA facility would treat organic or inorganic aqueous wastes and discharge the treated effluent to the local sewer system. Examples of CWA treatment systems owned and operated by Clean Harbors include the wastewater treatment operations at Baltimore (including the CES system), Bristol, Chicago, Cincinnati and Cleveland.

CWA-EQUIVALENT SYSTEM means a "zero discharge system" that engages in "CWA-equivalent" treatment before land disposal. Zero-discharge facilities treat hazardous wastes using "CWA-equivalent" treatment methods, but do not discharge the treatment effluent to a sewer or water body (e.g., spray irrigation land farm). "CWA-equivalent" treatment methods means biological treatment for organics, alkaline chlorination, or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

HIGH TOC IGNITABLE LIQUIDS SUBCATEGORY means an ignitable liquid hazardous waste (waste code D001) which contains greater than or equal to 103 total organic carbon (TOC). Pursuant to 40 CFR 268.10, such wastes must be treated using organic recovery (RORS) or combustion (CRST) technology. Examples of RORS technologies include the CES unit at Clean Harbors of Baltimore. Examples of CRST technologies include hazardous waste fuel blending and subsequent reuse at a cement kiln, or destruction at a RCMA incinerator.

WASTEWATERS are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS). (See 40 CFR 268.31(f))

CRI FORM LDR-1, Page 2 of 2 (effective 02/28/00)

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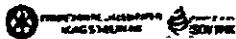
Please print or type. (Form designed for use on 11x17 (12-pitch) typewriter.)

Form Approved OMB No. 0750-0047

Please print or type. (Form designed for use on site (12-page operator))		Manifest Document No.		2 Page 1 of 1		Information in the shaded areas is not required by Federal law	
UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. TN4210020570					
3. Generator's Name and Mailing Address Memphis Depot Carriers DLA Memphis, TN, 38114		2. Generator's US EPA ID No. 000000		A. State Manifest Document Number			
4. Generator's Phone (901) 544-0612		5. Transporter 1 Company Name Action Resources		B. State Generator's ID			
6. Transporter 1 US EPA ID No. ALR000007237		7. Transporter 2 Company Name		C. State Transporter's ID			
8. Transporter 2 US EPA ID No.		9. Transporter 2 US EPA ID No. ALR000007237		D. Transporter's Phone 800-228-8845			
10. Designated Facility Name and Site Address Chambers-Kimball Incineration PI 2247 South Hwy 71, Kimball, NE, 68145		11. US DOT Description (including Proper Shipping Name, Hazard Class and ID Number) PG 1 a. > RQ, Waste Toxic Solids, Organic, n.e.s., (1,4-Dioxane, its (2-Chloroethyl) Ether) 6.1, UN2811, PG II, ERG154		12. Containers No. Type		13. Total Quantity	
		14. US EPA ID No. KED061723513		15. State Facility's ID		16. Facility's Phone 800-282-0058	
				17. Waste No.			
J. Additional Descriptions for Materials Listed Above 11a: CHE100136		K. Handling Codes for Wastes Listed Above CCRX MD43/T87					
15. Special Handling Instructions and Additional Information 24 Hour Emergency Contact: Mike Lee 901-745-4999 or DLA 800-851-8061 or Frank Johnson 703-625-3792							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be completely practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name				Signature		Month Day Year	
17. Transporter 1 Acknowledgment of Receipt of Materials				Signature		Month Day Year	
Printed/Typed Name				Signature		Month Day Year	
18. Transporter 2 Acknowledgment of Receipt of Materials				Signature		Month Day Year	
Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.							
Printed/Typed Name				Signature		Month Day Year	

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EPA Form 570-22 (Rev. 5-88) ; Previous editions are obsolete.



CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

MANIFEST NO. 2179

THE HAZARDOUS WASTE IDENTIFIED ON THE HAZARDOUS WASTE MANIFEST IDENTIFIED ABOVE AND BEARING THE EPA HAZARDOUS WASTE CODES LISTED BELOW ARE RESTRICTED WASTES WHICH ARE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT UNDER THE LAND DISPOSAL RESTRICTIONS, 40 CFR PART 268 AND RCRA SECTION 3004(D). IN ACCORDANCE WITH 40 CFR 268.7(a)(2), THE EPA WASTE CODE, WASTE SUBCATEGORY, AND TREATABILITY GROUPS, AS APPLICABLE, ARE INCLUDED BELOW.

INSTRUCTIONS -- COMPLETE ALL SECTIONS. REFER TO PAGE 3 OF THIS FORM FOR KEY TERMS/DEFINITIONS.

- Column 1 - Line Item: Enter the manifest line item number (e.g., 11A) that corresponds to the waste code(s).
- Column 2 - Waste Codes/Subcategory: Check off all applicable waste codes. For D001 through D043, also check applicable subcategory, for F001 through F005, check applicable constituents.
- Column 3 - Wastewater/Non-wastewater: Check off "NW" for wastewater and "Non-NW" for non-wastewaters.
- Column 4 - LDR Handling Code: Circle the appropriate handling code, as follows:
- 1 - The waste is a characteristic hazardous waste D001, D002, D003, D004-D011, or D018-63 which is intended for treatment/disposal in a CMA system, CMA-equivalent system, or Class 1 SMDA system. Underlying Hazardous Constituents (UHC's) are NOT required to be identified.
 - 2 - The waste is a characteristic hazardous waste D001 (other than High TOC Ignitable Liquids), D002, D003 Explosive, Reactant or Other Reactive Subcategory, D004-D011, D012-17 Non-Wastewater, or D018-63 which is intended for treatment/disposal in a non-CMA system, non-CMA-equivalent system, or non-Class 1 SMDA system located in the United States. All UHC's which are reasonably expected to be present must be identified, except for D001 waste that is intended to be treated using organic recovery (ROGS) or combustion (CMBST) technologies. Identify UHC's by completing Sections I and IV of CHI Form LDR-1 Addendum and attach completed Addendum to this form.
 - 3 - The waste is a characteristic (i.e., D-code) or listed (i.e., F-, X-, U-, or P-code) hazardous waste which is intended for export and treatment/disposal at a facility located outside the United States. LDR treatment standards do not apply to hazardous waste treated/disposed in a foreign country, and per USEPA guidance, the identification of UHC's (if applicable) is not required for hazardous waste that is intended to be exported. Note however that if the exported waste is subsequently returned for treatment/disposal in the United States, all applicable LDR regulations would apply and a revised LDR notification would be required.
 - 4 - The waste meets the definition of hazardous debris pursuant to 40 CFR 268.2(b) and is intended for treatment/disposal in compliance with the alternative debris treatment technologies of 40 CFR 268.45. In accordance with the requirements of 40 CFR 268.7(a)(2), the constituents subject to treatment (CSTT's) must be identified as part of this notification. Identify CSTT's by completing Sections III and IV of CHI Form LDR-1 Addendum and attach completed Addendum to this form. These constituents are being treated to comply with 40 CFR 268.45.
 - 5 - The waste is a characteristic waste D003 Reactive Sulfide, Reactive Cyanide, or Unexploded Ordnance subcategory, a characteristic waste D012-17 Wastewater, or a listed (i.e., F-, X-, U-, or P-code) hazardous waste. UHC's are NOT required to be identified.
 - 6 - The waste is a lab pack that is intended for incineration using the alternative lab pack treatment standard under 40 CFR 268.42(c). UHC's are NOT required to be identified; however, the generator must complete and attach the lab pack certification statement on CHI Form LDR-1B. Note that in accordance with 40 CFR Part 268 Appendix IV, lab packs which contain waste codes D003, F019, K003, K004, K005, K006, K012, K013, K100, K105, P010, P011, P012, P016, P018, U134, and U151 are not eligible for alternative lab pack treatment standard.

*** NOTE: IF THE WASTE IS A SOIL CONTAMINATED WITH A LISTED OR CHARACTERISTIC WASTE AND THE GENERATOR WANTS TO USE THE ALTERNATE TREATMENT STANDARD FOR SOILS, CONTACT CONTRACTS COMPLIANCE FOR THE APPROPRIATE LDR NOTIFICATION FORM.

SECTION I. CHARACTERISTIC WASTE D001 THROUGH D043

Column 1: LINE ITEM SEE MANIFEST	Column 2: WASTE CODE / SUBCATEGORY	Column 3: WASTEWATER/ NON-WASTEWATER	Column 4: HANDLING CODE
	☐ D001 Ignitables, except High TOC subcategory	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ D001 High TOC Ignitable Liquids Subcategory (greater than or equal to 10% TOC)	☐ Non-NW only	1A 3 6
	☐ D002 Corrosives	☐ NW ☐ Non-NW	1 2 3 4 5
	☐ D003		
	☐ Reactive Sulfide, per 261.23(a)(5)	☐ NW ☐ Non-NW	1 2 3 4 5 6
	☐ Reactive Cyanide, per 261.23(a)(5)	☐ NW ☐ Non-NW	1 2 3 4 5 6
	☐ Explosive, per 261.23(a)(1), (7) & (8)	☐ NW ☐ Non-NW	1 2 3 4 5
	☐ Water Reactive, per 261.23(a)(2), (3) & (4)	☐ Non-NW only	1 2 3 4 6
	☐ Other Reactive, per 261.23(a)(2)	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ Unexploded Ordnance, Emergency Response	☐ NW ☐ Non-NW	1 3 4 5 6
	☐ D004 Arsenic	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ D005 Barium	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ D006		
	☐ Cadmium	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ Cadmium Containing Batteries	☐ Non-NW only	2 3 6
	☐ D007 Chromium	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ D008		
	☐ Lead	☐ NW ☐ Non-NW	1 2 3 4 6
	☐ Lead Acid Batteries	☐ Non-NW only	2 3 6

CLEAN HARBOR ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

Manifest No. _____

SECTION I. CHARACTERISTIC WASTE D001-43 (CONTINUED)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / NAME	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HAZARDOUS CODE
	() D009		
	() Low Mercury, less than 260 ug/kg Mercury	() NW () Non-NW	1 2 3 4
	() High Mercury Organic Subcategory	() Non-NW only	2 3 4
	() High Mercury Inorganic Subcategory	() Non-NW only	2 3 4
	() D010 Selenium	() NW () Non-NW	1 2 3 4 5
	() D011 Silver	() NW () Non-NW	1 2 3 4 5
	() D012 Endria	() NW () Non-NW	2 3 4 5 6
	() D013 Lindane	() NW () Non-NW	2 3 4 5 6
	() D014 Methoxychlor	() NW () Non-NW	2 3 4 5 6
	() D015 Dieldrin	() NW () Non-NW	2 3 4 5 6
	() D016 2,4-D	() NW () Non-NW	2 3 4 5 6
	() D017 2,4,5-T (Silver)	() NW () Non-NW	2 3 4 5 6
	() D018 Benzene	() NW () Non-NW	1 2 3 4 5
	() D019 Carbon tetrachloride	() NW () Non-NW	1 2 3 4 5
	() D020 Chloroform	() NW () Non-NW	1 2 3 4 5
	() D021 Chlorobenzene	() NW () Non-NW	1 2 3 4 5
	() D022 Chloroform	() NW () Non-NW	1 2 3 4 5
	() D023 o-Cresol	() NW () Non-NW	1 2 3 4 5
	() D024 m-Cresol	() NW () Non-NW	1 2 3 4 5
	() D025 p-Cresol	() NW () Non-NW	1 2 3 4 5
	() D026 Cresol	() NW () Non-NW	1 2 3 4 5
	() D027 1,4-Dichlorobenzene	() NW () Non-NW	1 2 3 4 5
	() D028 1,2-Dichloroethane	() NW () Non-NW	1 2 3 4 5
	() D029 1,1-Dichloroethylene	() NW () Non-NW	1 2 3 4 5
	() D030 1,4-Dinitrotoluene	() NW () Non-NW	1 2 3 4 5
	() D031 Heptachlor (and its epoxides)	() NW () Non-NW	1 2 3 4 5
	() D032 Hexachlorobenzene	() NW () Non-NW	1 2 3 4 5
	() D033 Hexachlorocyclopentadiene	() NW () Non-NW	1 2 3 4 5
	() D034 Hexachlorocyclohexane	() NW () Non-NW	1 2 3 4 5
	() D035 Methyl ethyl ketone	() NW () Non-NW	1 2 3 4 5
	() D036 Nitrobenzene	() NW () Non-NW	1 2 3 4 5
	() D037 Pentachlorophenol	() NW () Non-NW	1 2 3 4 5
	() D038 Pyridine	() NW () Non-NW	1 2 3 4 5
	() D039 Tetrachloroethylene	() NW () Non-NW	1 2 3 4 5
	() D040 Trichloroethylene	() NW () Non-NW	1 2 3 4 5
	() D041 2,4,5-Trichlorophenol	() NW () Non-NW	1 2 3 4 5
	() D042 2,4,6-Trichlorophenol	() NW () Non-NW	1 2 3 4 5
	() D043 Vinyl Chloride	() NW () Non-NW	1 2 3 4 5

SECTION II. SELECT SOLVENT WASTE F001 THROUGH F005

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / CONSTITUENTS	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HAZARDOUS CODE
	() F001 () F002 () F003 () F004 () F005 () NW () Non-NW		1 2 3 4
	() 1. ALL F001-F005		
	() 2. Acetone	() 13. Cyclohexanone	() 26. Pyridine
	() 3. Benzene	() 14. o-Dichlorobenzene	() 27. Tetrachloroethylene
	() 4. n-Butyl alcohol	() 15. 2-Methoxyethanol (F005 only)	() 28. Toluene
	() 5. Carbon disulfide	() 16. Ethyl acetate	() 29. 1,1,1-Trichloroethane
	() 6. Carbon tetrachloride	() 17. Ethyl benzene	() 30. 1,1,2-Trichloroethane
	() 7. Chlorobenzene	() 18. Ethyl ether	() 31. Trichloroethylene
	() 8. o-Cresol	() 19. Isobutyl alcohol	() 32. 1,1,2-Trichloro-1,2,2-trifluoroethane
	() 9. m-Cresol (difficult to distinguish from p-cresol)	() 20. Methyl cellosolve	() 33. Trichloroethanol
	() 10. p-Cresol (difficult to distinguish from m-cresol)	() 21. Methyl ethyl ketone	() 34. 1,1,2-Trichloro-1,2,2-trifluoroethane
	() 11. Cresol - mixed isomers (sum of o-, m- and p-cresol)	() 22. Methyl isobutyl ketone	() 35. Xylene - mixed isomers (sum of o-, m- and p-xylene)
		() 23. Nitrobenzene	
		() 24. 2-Nitropropane (F005 only)	

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

Manifest No. _____

SECTION III. CALIFORNIA LIST WASTES

COLUMN 1:
LINE ITEM
SEE MANIFEST

COLUMN 2:
WASTE CODE / SUBCATEGORY

COLUMN 3:
WASTEWATER/
NON-WASTEWATER

COLUMN 4:
HANDLING CODE

Hazardous waste containing one or more of the following ☐ HW ☐ NON-HW 1 2 3 4 5 6
California list constituents:

- ☐ ALL CALIFORNIA LIST CONSTITUENTS
- ☐ Liquids with nickel greater than or equal to 114 mg/l
- ☐ Liquids with thallium greater than or equal to 130 mg/l
- ☐ Liquids with PCB's > or = 50 ppm
- ☐ Waste containing HCB's > or = 1,000 mg/kg

SECTION IV. OTHER LISTED WASTES (P001-P017, P019-P032, P037-P041, P042, K-, U-, AND F-CODES)

COLUMN 1:
LINE ITEM
SEE MANIFEST

COLUMN 2:
WASTE CODE / SUBCATEGORY

COLUMN 3:
WASTEWATER/
NON-WASTEWATER

COLUMN 4:
HANDLING CODE

_____	_____	☐ HW ☐ NON-HW	1 2 3 4 5 6
_____	_____	☐ HW ☐ NON-HW	1 2 3 4 5 6
_____	_____	☐ HW ☐ NON-HW	1 2 3 4 5 6
_____	_____	☐ HW ☐ NON-HW	1 2 3 4 5 6
_____	_____	☐ HW ☐ NON-HW	1 2 3 4 5 6

- ☐ CHECK HERE IF ADDITIONAL LISTED WASTE CODES ARE PRESENT. COMPLETE AND ATTACH LDR-1 CONTINUATION SHEET.
☐ CHECK HERE IF WASTE CODE P019 (MULTIPHASE LEACHATE) IS PRESENT. IDENTIFY P019 CONSTITUENTS BY COMPLETING SECTIONS II AND IV OF CHI FORM LDR-1 ADDENDUM AND ATTACH COMPLETED ADDENDUM TO THIS FORM.

SECTION V. CONTACT NAME AND DATE

Print Name: _____

Date: _____

KEY TERMS/DEFINITIONS

CLASS I SDWA SYSTEM means a Class I deep well facility regulated under the Safe Drinking Water Act (SDWA).

CWA SYSTEM means a centralized wastewater treatment facility discharging under a Clean Water Act (CWA) permit. For example, a CWA facility would treat organic or inorganic aqueous wastes and discharge the treated effluent to the local sewer system. Examples of CWA treatment systems owned and operated by Clean Harbors include the wastewater treatment operations at Baltimore (including the CES system), Bristol, Chicago, Cincinnati and Cleveland.

CWA-EQUIVALENT SYSTEM means a "zero discharge system" that engages in "CWA-equivalent" treatment before land disposal. Zero-discharge facilities treat hazardous wastes using "CWA-equivalent" treatment methods, but do not discharge the treatment effluent to a sewer or water body (e.g., spray irrigation land farm). "CWA-equivalent" treatment methods means biological treatment for organics, alkaline chlorination, or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

HIGH TOC IGNITABLE LIQUIDS SUBCATEGORY means an ignitable liquid hazardous waste (waste code P001) which contains greater than or equal to 10% total organic carbon (TOC). Pursuant to 40 CFR 265.10, such wastes must be treated using organic recovery (RORR) or combustion (CBST) technology. Examples of RORR technologies include the CES unit at Clean Harbors of Baltimore. Examples of CBST technologies include hazardous waste fuel blending and subsequent reuse at a cement kiln, or destruction at a RCRA incinerator.

WASTEWATERS are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS). [See 40 CFR 265.21(f)]

CHI FORM LDR-1, Page 2 of 2 (effective 02/28/00)

BEST AVAILABLE
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NON-REGULATED WASTE

OPTIONAL GENERATOR INFORMATION

SHIPPER MEMPHIS DEPOT CARETAKER DLA
ADDRESS 1263 AIRWAYS BLVD
CITY MEMPHIS STATE TN ZIP 38114
CONTENTS ENVIRONMENTALLY HAZARDOUS SUBSTANCE
SOLID N.O.S., 9, UN 3077, TL
(1,4-DITHIOXANE & 1,4-DITHIAZOLE)

NON-REGULATED

THIS WASTE IS NOT
REGULATED BY THE
U.S. ENVIRONMENTAL
PROTECTION AGENCY.

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86-HML-C

BEST AVAILABLE
COPY**HAZARDOUS
WASTE****FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY.**ACCUMULATION
START DATE _____E.P.A.
WASTE NO. _____D.O.T. PROPER
SHIPPING NAME _____**RQ, Waste Toxic Solids, Organic, n.o.s., (1, 4-
Thioxane, bis (2-Chloroethyl) Sulfide) 6.1**

AND _____

U.N. OR
N.A. NO. _____**UN2811, PG II, ERG154 11a.CH190136**GENERATOR
NAME _____**Memphis Depot Caretaker DLA**

ADDRESS _____

2163 Airways Blvd.

CITY _____

Memphis

STATE _____

TN, 38114E.P.A.
I.D. NO. _____**TN4210020570**MANIFEST
DOCUMENT NO. _____**2041****HAZARDOUS WASTE
HANDLE WITH CARE**

ANNEX E

Waste Transporter Permit List

ANNEX E contains transport permit numbers by state, a copy of the State of Alabama Transport Permit, and the State of Tennessee Used Oil Transportation Authorization Letter for the selected waste transporter.

ACTION RESOURCES, INC.
355 County Road 513
Hanceville, Alabama 35077
Permit List

Alabama General Contractor License # 22339
Mississippi General Contractor License # 11345
Alabama Public Service Commission Certificate # F1131
ICC MC #316888
KYU # 154963
Texas Solid Waste # 86256
TN. Used Oil # UPO-00-000-019
U.S. DOT # 680185
U.S. DOT Hazardous Material Certificate # 060600 001 0031
Hazardous Waste Transporter Permits:

Alabama EPA #	ALR 000 00 7237
Arkansas	H-1119
Colorado	HMP-83820
Delaware	DE-HW-150
Florida	ALR 000 00 7237
Georgia	13653
Illinois	UPW-0680185-OH
Indiana	ALR 000 00 7237
Kansas	ALR 000 00 7237
Kentucky	ALR 000 00 7237
Louisiana	T-129-9806
Maryland	HWH 623
Michigan	UPW-0680185-OH
Mississippi	ALR 000 00 7237
Missouri	H-2277
Minnesota	UPW-0680185-OH
Nebraska	ALR 000 00 7237
Nevada	UPW-0680185-OH
New Hampshire	TNH-0389
North Carolina	ALR 000 00 7237
North Dakota	WH-679
Ohio	UPW-0680185-OH
Oklahoma	ALR 000 00 7237
Pennsylvania	PA-AH-0650
South Carolina	ALR 000 00 7237
Tennessee	ALR 000 00 7237
Texas	005409195C
Virginia	ALR 000 00 7237
West Virginia	UPW-0680185-OH
Wisconsin	16293

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**HAZARDOUS WASTE
TRANSPORT PERMIT**

PERMITTEE: ACTION RESOURCES, INC

ADDRESS: 40 COUNTY ROAD ROAD 513
HANCEVILLE, AL 35077

PERMIT NUMBER: ALR 000 007 237

HAZARDOUS WASTES APPROVED: All hazardous wastes identified by Rules 335-14-2-.02 through 335-14-2-.04, inclusive, of the Alabama Department of Environmental Management Administrative Code.

TRANSPORTATION MODE: HIGHWAY

In accordance with and subject to the provisions of the Hazardous Waste Management Act of 1978, as amended, Code of Alabama 1975, §§ 22-30-1 to 22-30-24 ("HWMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§ 22-224-1 to 22-224-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to transport the above-described hazardous wastes by the above-described transportation mode.

ISSUANCE DATE: MARCH 24, 2000

EFFECTIVE DATE: APRIL 18, 2000

EXPIRATION DATE: APRIL 17, 2003

A handwritten signature in black ink, likely of a state official, is written over a horizontal line. Below the line, the text "Alabama Department of Environmental Management" is printed.
Alabama Department of Environmental Management

**BEST AVAILABLE
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**STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
Fifth Floor, L & C Tower
401 Church Street
Nashville, Tennessee 37243 - 1535**

February 23, 2000

Mr. Stan Wood
355 County Road 513
Hanceville, AL 35077

Dear Mr. Wood:

We have processed your Used Oil Notification forms and the Used Oil Management Program has registered the activities you claimed for your site.

This activity and site have been registered in our system and identified by the LD. Number UOP 00-000-0-019. This number shall not be used for any facility except Action Resources, Inc, 40 County Road 517, Hanceville, AL.

Should you add sites to your program or modify your used oil activities as currently registered for this site, please notify.

Used Oil Management Program
Department of Environment and Conservation
L&C Tower, 5th Floor Annex
Nashville, TN 37243-1535

Sincerely,

A handwritten signature in cursive script, appearing to read "Dave Edwards".

Dave Edwards
Environmental Specialist
Used Oil Program

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COPY****PART I — FINANCIAL RESPONSIBILITY**

- A. The permittee (transporter) shall maintain financial assurance sufficient to comply with the requirements of ADEM Admin. Code R.335-14-4.04. The permittee shall obtain written approval from the Alabama Department of Environmental Management (hereinafter "the Department") prior to cancellation, alteration or substitution of any such assurance.

PART II — TRANSPORTATION MANAGEMENT REQUIREMENTS

- A. The permittee, his agents and employees shall be familiar with the manifest and reporting requirements of ADEM Admin. Code R.335-14-4.02.
- B. The permittee, his agents and employees shall be familiar with the permittee's spill contingency plan and the requirements of ADEM Admin. Code R.335-14-4.03. In addition to the reports required by such Rule, a written report of any spill during loading or unloading shall be filed with the Land Division of the Department not later than 15 days after such spill.
- C. The permittee shall allow, at all reasonable times, representatives of the Department, upon presentation of credentials, to enter the permittee's premises, including, but not limited to, vehicles, loading and unloading facilities or any place where records required by the ADEM Admin. Code are kept, for the purpose of inspection to determine compliance with the ADEM Admin. Code and this permit. At all reasonable times, representatives of the Department shall be allowed access to and the right to copy all records required by the ADEM Admin. Code and the conditions of this permit. All inspection reports and other data collected shall be available for public inspection unless the permittee makes a showing in compliance with Code of Alabama 1975, §22-30-18 that such information is entitled to confidentiality.

PART III — EFFECT OF PERMIT

- A. Issuance of this permit does not convey any property rights of any sort or any exclusive privilege.
- B. The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, State of Alabama or local laws or regulations or preclude the institution of any legal action for violation of such laws or regulations.

PART IV — REVOCATION, SUSPENSION AND MODIFICATION OF PERMITS

- A. The Department may, at any time, revoke or terminate this permit as provided in ADEM Admin. Code R.335-14-8.11.
- B. The Department may, at any time, suspend this permit for any of the causes for termination listed in ADEM Admin. Code R. 335-14-8.11(2).

ANNEX F

Chemical Warfare Materiel (CWM) Terms and Definitions

ANNEX F contains CWM terms and definitions pertinent to this document.

CWM Terms and Definitions.

Airborne Exposure Limit (AEL). The AEL is the maximum allowable concentration in the air for occupational and general population exposures of any Chemical Warfare Materiel. Airborne exposure limits (AELs) for agents are contained in Toxic Chemical Agent Safety Standards, DA PAM 385-61 and the Department of the Army (DA) Pamphlets 40-8 and 40-173. Unless otherwise noted, AEL refers to the 8-hour Time Weighted Average (TWA) for unmasked agent workers

Chemical Agent. A chemical compound that is intended for use (to include experimental compounds) in military operations to kill, seriously injure, or incapacitate persons through its physiological effects. Excluded are RDTE solutions, riot control agents, chemical defoliants and herbicides, smoke, flame, and incendiaries, and industrial chemicals.

Depot Area Air Monitoring System (DAAMS). DAAMS is a portable air-sampling unit, which is designed to draw a controlled volume of air through a glass tube with collection material (for example Tenax GC). As the air is passed through the solid sorbent tube, agent is collected on a sorbent bed. After sampling for the predetermined period of time and flow rate, the tube is removed from the vacuum line and analyzed.

Open Path Fourier Transform Infrared Spectrometer Air Monitoring (Op-FTIR). Open path air monitoring of gaseous compounds is a direct extension of laboratory spectroscopy systems that identify and quantify gases on their spectrum absorption characteristics. Typically open-path systems send a beam of light through the open air, to a reflector and then back to a receiver. If gases that absorb light are present in the beam, they can be identified and quantified.

Mobile Environmental Analytical Platform (MEAP). The MEAP is a self-contained mobile platform that can be moved from site to site. It contains all the equipment necessary to analyze and confirm samples taken with DAAMS tubes and extracts of soil and surface water samples.

Mustard. The chemical bis(2-chloroethyl) sulfide chemical abstracts service registry No. 505-60-2, in pure form and in the various impure forms that may be found in munitions as well as field, industrial, or laboratory operations. These include Levinstein mustard (H), and closely related preparations. This standard is not meant to be applied to nitrogen mustards.

Real Time Analysis Platform (RTAP). The RTAP provides an automatic, continuous, environmental monitoring system that collects compounds on a solid sorbent trap, thermally desorbs them into a capillary gas chromatograph column. The GC detects eluting compounds with simultaneous phosphorous and sulfur, dual heading Flame Photometric Detector (FPD) or an Electron Capture Detector

(ECD). The RTAP is a self-contained mobile platform that can be moved from site to site. It is a mobile, low level monitor designed to respond in less than 10 minutes with alarm capability

Time Weighted Average. TWA is the maximum allowable concentration in the air for occupational exposures of any Chemical Warfare Material in any eight-hour work shift of a forty-hour workweek. CWM concentrations above the TWA level require the employees in this environment to don protective clothing or leave the work.

XXX or 3X. XXX indicates that the item has been surface decontaminated by approved procedures, bagged or contained, and that appropriate tests or monitoring have verified that vapor concentrations above the AEL or TWA limits for the specific agent(s) do not exist. Does not apply to a decontaminated liquid, soil, or a gas. Some items may be released from Government control if all federal, state, and local provisions have been met.

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE