

Environmental Restoration Program

**OPERABLE UNIT 9 SITE SCOPING REPORT:  
VOLUME 12 – SITE SUMMARY REPORT**

**MOUND PLANT  
MIAMISBURG, OHIO**

**December 1994**

**Final**

**U.S. Department of Energy  
Ohio Field Office**



**EG&G Mound Applied Technologies**

**ENVIRONMENTAL RESTORATION PROGRAM**

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Signature Page

This report is Volume 12 of a multiple-volume Site Scoping Report. Together, the reports provide background information pertinent to the remedial investigation/feasibility study (RI/FS) of the Mound Plant. Under the terms of the Federal Facility Agreement between the Department of Energy and US EPA, DOE submits this report to US EPA and Ohio EPA for approval.

US EPA and Ohio EPA approve this report only for the purposes of scoping the RI/FS, and approval does not imply concurrence with the interpretations presented herein. DOE will collect additional information during the RI/FS, and that data may supersede information contained in this report.

APPROVED:

Diane Spencer  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region V



A handwritten signature in cursive script, appearing to read "Diane M. Spencer", is written over a solid horizontal line.

Brian Nickel  
Site Coordinator  
Ohio EPA



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## ACRONYMS

AEA	Atomic Energy Act of 1954
AL	U. S. Department of Energy Albuquerque Operations Office
AOC	area of concern
ARAR	applicable or relevant and appropriate requirement
AUST	active underground storage tank
CAA	Clean Air Act
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act of 1986 (also known as SARA Title III)
ER	Environmental Restoration (Program)
FFA	Federal Facility Agreement
FS	feasibility study
HRS	Hazard Ranking System, CERCLA
HSWA	Hazardous and Solid Waste Amendments of 1984
HWMU	hazardous waste management unit
LFI	limited field investigation
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFA	no further action
NPDES	National Pollutants Discharge Elimination System
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
PA	preliminary assessment
PBR	permit by rule
POTW	publicly owned treatment works
PR	preliminary review
PRS	potential release site
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RI	remedial investigation
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SI	site inspection
SMCL	secondary maximum contaminant level
SWMU	solid waste management unit
UIC	underground injection control
UST	underground storage tank
VOC	volatile organic compound
VSI	visual site inspection
WHP	Well Head Protection (program)

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## 1. INTRODUCTION

The U.S. Department of Energy (DOE) Mound Plant, Miamisburg, Ohio (Figure 1.1), was placed on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund) National Priorities List (NPL) on November 21, 1989 (54 Federal Register 48184). The placement of the Mound Plant on the NPL occurred as a consequence of historic disposal practices and releases of contaminants to the environment. The Mound Plant received an overall Hazard Ranking System (HRS) score of 34.61, which exceeded the threshold (28.51) for NPL listing (40 CFR 300, Appendix A). Pursuant to its NPL status, the DOE signed a CERCLA Section 120 Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) that became effective October 11, 1990 (Administrative Docket #VW-'90-C-075). The Ohio EPA (OEPA) became a signatory to the agreement in July 1993. The terms of the FFA require that the DOE develop and implement remedial investigations (RIs) and feasibility studies (FSs) and conduct interim remedial actions in order to ensure that environmental impacts associated with past and present activities at the site are thoroughly investigated and appropriate action is taken to protect the public health, welfare, and the environment.

The DOE Albuquerque Operations Office (AL) established the Environmental Restoration (ER) Program in 1984 to collect and assess environmental data in order to develop a conceptual site model, to assess both the nature and extent of contamination, and to identify potential exposure pathways and potential human and environmental receptors. In order to provide the EPA with sufficient information and data gathered during these previous investigations, a multivolume scoping report, providing background information, has been prepared. The Site Scoping Report provides descriptions and summaries of the current conditions and characteristics of Mound Plant and consists of the following volumes:

1. Groundwater Data: February 1987 - July 1990 with Addendum
2. Geologic Log and Well Information Report
2. Addendum - Stratigraphic and Lithologic Logs
3. Radiological Site Survey
4. Engineering Map Series
5. Topographic Map Series
6. Photo History
7. Waste Management
8. Environmental Monitoring Data
8. Addendum - Vegetation and Foodstuff
9. Annotated Bibliography
10. Permits and Enforcement Actions
11. Spills and Response Actions
12. Site Summary Report

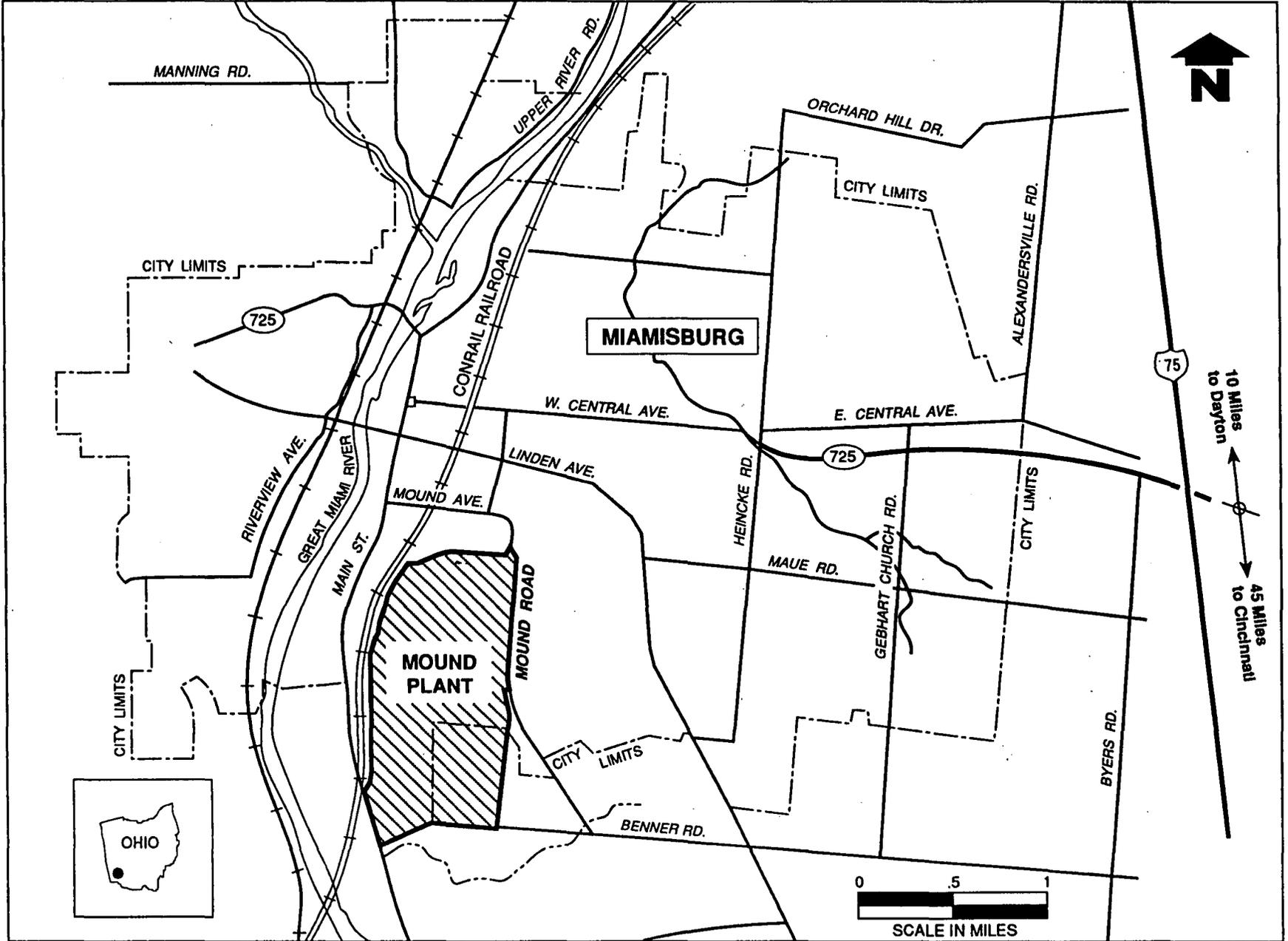


Figure 1.1. Location of Mound Plant, Miamisburg, Ohio.

Mound location map/7-26-93

## 1.1. SCOPE OF REPORT

This report is intended as a summary document to complete the Site scoping process for Mound Plant as described in Section 1 of Attachment 1 to the FFA. It includes 1) summaries of the previous 11 volumes of the scoping report; 2) a comprehensive summary of the potential release sites identified through the scoping process, including summaries of whether releases are known and the environmental data available for each site; 3) identification of the regulated units and the regulatory authorities responsible for operation, contaminant release, and spill response and closure; 4) recommendations of potential release sites that require no further action; and 5) a review of the Site conceptual model. Plate 1 provides a map of the Site and the potential release sites. References to other documents that contain background information, Site characteristics, or data that may assist in assessing the known or suspected nature and extent of contamination, and potential exposure pathways and potential human and environmental receptors are provided as appropriate.

The term potential release site (PRS) is an informal term not defined by regulation or the FFA. The term is defined, for the purposes of this report, as a potential area of concern in which knowledge of historic or current use indicates that the site may be considered a solid waste management unit (SWMU) or has been identified as an area with potential releases of concern. This definition is consistent with informal terminology used in the FFA and the Resource Conservation and Recovery Act (RCRA) Facility Assessment Guidance (EPA 1986).

The identification of a PRS in this report does not necessarily mean that the site poses a threat to human health or the environment. The tabulation of data for all PRSs simply provides an explicit means of identifying and evaluating all potential releases of concern, the need for further action and the identification of the authority responsible for action. Recommendations for no further action for those PRSs that pose no threat to human health or the environment are included in this report. In accordance with the FFA, the decision for no further action will be documented in subsequent RI/FS work plans or other documents, as appropriate.

Section 2 of this report describes a comprehensive tabulation of potential release sites (Appendix A). This tabulation is compiled from the list of scoping documents and reports of other response actions. Summaries of the PRS identification processes are included. To facilitate cross-reference and identification, each PRS is numbered and the numbers are used on Plate 1 for site location.

Section 3 of this report discusses the interaction of appropriate responses of the Mound Plant FFA and other regulatory entities. As the Mound Plant is an operational facility, many PRSs are currently active and operational. Many are regulated under the RCRA, the Clean Water Act (CWA) or the Clean Air Act

(CAA). Mound Plant, however, conducts its routine operations under the Atomic Energy Act of 1954 (AEA). One of the goals of this report is to ensure that all PRSs are properly evaluated for their inclusion or omission from the ER Program.

## 1.2. OVERVIEW OF MOUND PLANT SCOPING PROCESS

Prior to signing the FFA, the DOE collected and interpreted data to develop a Site conceptual model to assess both the nature and extent of contamination and to identify potential exposure pathways and potential human and environmental receptors. The multivolume scoping report, compiled under the guidance of the FFA Statement of Work, provides descriptions and summaries of current conditions and characteristics of the Mound Plant Site. The volumes are arranged to provide a systematic data set as follows:

- Volume 1 Groundwater Data: February 1987 - July 1990 (Final February 1992). Provides a tabulation of laboratory reports of groundwater sample analyses from ER Program monitoring wells, plant supply wells and groundwater seeps collected from February 1987 to July 1990, before the FFA became effective.
- Volume 2 Geologic Log and Well Information Report (Final May 1992). Provides a location map, and construction and borehole lithology details for monitoring and production wells on and adjacent to Mound Plant that have been used to collect environmental samples. Selected residential and municipal wells are also included where appropriate.
- Volume 2 Addendum Stratigraphic and Lithologic Logs (Final June 1992). Provides stratigraphic and lithologic information including borehole logs and borehole location maps compiled from plant engineering, planning, and foundation studies and contaminant infiltration and movement investigations.
- Volume 3 Radiological Site Survey (Final June 1993). Provides a summary and tabulation of available radiological data collected at Mound Plant with emphasis on the extensive radiological characterization investigation conducted by Mound Plant during the Site Survey Project (Stought et al. 1988).
- Volume 4 Engineering Map Series (Final February 1992). Provides a series of engineering maps of the Site, including plant utilities, potable water and condensate cooling lines, process piping and tanks, municipal utilities adjacent to the plant, surrounding land uses and easements, adjacent property owners, and copies of the boundary survey conducted in 1982. All maps were reproduced at a scale of 1 inch = 200 ft and use the Ohio State Plane coordinate system.
- Volume 5 Topographic Map Series (Final February 1992). Provides a series of topographic maps of the Mound Plant and adjacent areas, including a topographic map with 2-ft contours, a map of surface water features, a digitized topographic map of the northern part of the site before the plant was constructed in 1946, and a contour map with 10-ft contours that estimates the amounts of cut and fill performed from 1946 to 1986, principally along the plant drainage ditch. All maps were reproduced at a scale of 1 inch = 200 ft and use the Ohio State Plane coordinate system.

- Volume 6 Photo History Report (Final February 1992). Provides a series of interpretive maps compiled from historical aerial photos of Mound Plant that span the years 1959 to 1981. Maps of the upper and lower valley areas were compiled for 1959, 1964, 1968, 1973, 1975, 1979, and 1981, as these areas were known to have been used for waste disposal and experienced significant changes in morphology and terrain elevation.
- Volume 7 Waste Management Report (Final February 1993). Provides a description of the history of ownership and operation of the plant with emphasis on the generation, treatment, storage, and disposal of hazardous wastes through the perspective of the major programs and projects at the plant. Also provides a summary list of the hazardous substances generated through process information. This tabulation was used to compile the list of analytical parameters for the Operable Unit 9 RI/FS (DOE 1993a).
- Volume 8 Environmental Monitoring Data: 1976-1989 (Final February 1992). Provides summaries and tabulations of environmental sampling conducted by Mound Plant as part of the ongoing environmental surveillance program, the Potable Water Standards Project (Dames and Moore 1976a,b) and the Plutonium Soil Inventory Program (MRC 1977). Analytical data included tritium, plutonium-238, uranium-233, uranium-234, and uranium-238 in surface water and silt samples collected from the Great Miami River from 1974 to 1989, tritium in groundwater from the Buried Valley aquifer from 1975 to 1990, and plutonium-238 in regional soils measured in 1977.
- Volume 8 Addendum Vegetation and Foodstuff (Draft March 1994). Provides summary of analytical data on tritium and plutonium-238 concentrations in vegetation (grass) and foodstuff (fish, vegetables and milk) for the years 1972 to 1991. Data was collected and reported as part of the Mound Plant environmental monitoring and surveillance program required by DOE.
- Volume 9 Annotated Bibliography (Final February 1993). Provides an annotated list of reports prepared for the Site prior to the signing of the FFA. The bibliography includes reports prepared by government agencies, subcontractors, scientific journal articles, and maps and drawings that may be relevant to the preparation of the RI/FS. Reports published or compiled since the effective date of the FFA are beyond the scope of Volume 9.
- Volume 10 Permits and Enforcement Actions (Final May 1992). Provides a summary of past and present permits and registrations requested and received by Mound Plant, as well as a summary of enforcement actions. As a government-owned, contractor-operated facility, Mound Plant must operate not only in compliance with Executive Orders and Orders of the DOE, but also with federal and state statutes and regulations, and corporate policies. This report includes only those activities relating to compliance with federal, state, and county environmental regulations and statutes. Conditions of discharges and other permit limitations were beyond the scope of the report. Copies of permits of interest were copied in the appendix of the report.
- Volume 11 Spills and Response Actions (Final March 1992). Provides summaries of past product and hazardous substance spills, including amounts and locations and the response actions conducted. Data were compiled from records and incident reports of the Mound Plant safety office. Limited data were also available from the health physics office. Only incidents that resulted in a spill or an environmental release are included in this report. Laboratory and tabletop accidents, releases that were entirely contained within buildings, and personal injuries and radiation or hazardous substance exposures that did not apparently result in an environmental release were beyond the scope of this report. Summaries of response actions conducted by the EPA and OEPA are also included.

### 1.3. OVERVIEW OF OTHER DOCUMENTS RELEVANT TO SCOPING PROCESS

During the scoping process for the RI under the FFA, a number of documents were generated that provide additional details concerning Site conditions and characteristics. These documents include the Operable Unit 9 work plan and other reconnaissance sampling reports as summarized below.

- Operable Unit 9, Site-Wide Work Plan (DOE 1992a). Provides strategies for site-wide investigations to be conducted to define possible off-plant migration of contaminants, background conditions, and the total area of the Site. The plan summarizes a considerable body of data to facilitate the sampling rationale. Overviews and summary data are provided on 1) surface water and groundwater hydrology, hydrogeology, and the geologic setting of the Site; 2) land use, natural resources, and ecology; 3) meteorology and climatology; 4) initial evaluations of the Site conceptual model, including exposure pathways and potential impacts to the public and the environment; 5) a legal description of the Mound Plant; and 6) a preinvestigation evaluation of remedial action technologies. The Site inspection of the 35 potential release sites in the former Operable Unit 7 is documented in the Operable Unit 9 work plan. These sites were deemed to require no further action at that time.
- Letter Report: Preliminary Results of Reconnaissance Magnetic Survey Areas 2, 6, 7, and C (DOE 1990). Provides the results of a reconnaissance magnetic survey conducted in Areas 2, 6, 7, and C, where disposal of ferrous waste was probable. Positive magnetic anomalies are identified and mapped.
- Preliminary Floodplains/Wetlands Assessment Report for 10 CFR 1022 (DOE 1992b). Provides a preliminary evaluation of the effects of the RI activities on the sensitive habitats at the Mound Plant. Serves as a progress report of the activities already in place to delineate the floodplains and wetlands on and adjacent to the Site, including details of the methods and results of a preliminary investigation of the potential wetlands. A map and summaries of the occurrences of the soil types and ecological habitats at the Site is included. The maps are reproduced at a scale of 1 inch = 200 ft and use the Ohio State Plane coordinate system.
- Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c). Provides a list of the known underground storage tanks (USTs) and the environmental regulatory program most applicable to each. The report identifies 106 tank systems divided into three categories on the basis of usage: 1) active tanks containing radionuclide-bearing wastewater; 2) other active tanks containing petroleum products, sanitary wastewater, explosives wastewater, or metal plating wastewater; and 3) inactive tanks and former tank sites. Tanks and USTs are defined for the purposes of the report to be any tank-like unit having some portion of its structure below grade. A map of all the tank locations is included. The map is reproduced at a scale of 1 inch = 200 ft and uses the Ohio State Plane coordinate system.
- Active Underground Storage Tank Plan (EG&G 1994). Provides the basis for the Mound Plant Active Underground Storage Tank (AUST) Program and builds on the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c). As part of a field survey, 19 additional tanks were identified in 1994. These new tanks are included in this report. The AUST Program identified and subdivided AUSTs into four categories, based on usage and regulatory jurisdiction:

In service	Currently in use or available for use in routine facility operations;
Removed	Physically excavated and removed. Site assessment and remediation is either underway or will be undertaken as part of ER or Decontamination and Decommissioning (D&D) programs;
Closed in place	AUST rendered unusable (filled with concrete or gravel); and
Inactive	Present onsite, but not currently in use and no plans for use. These AUSTs are included or are recommended for inclusion in either the ER or D&D programs.

- Operable Unit 6 Reconnaissance Sampling Report (DOE 1992d). Provides the results of a limited sampling of those areas identified as part of the D&D Program. The effort focused on obtaining analyses of non-radioactive substances in areas of known radioactive contamination. The areas sampled included 1, 4 and 4a, 11, 14, 16, 17, 19, and D.
- Reconnaissance Sampling Report - Soil Gas Survey and Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (DOE 1993b). Provides results of the soil gas surveys conducted in four primary areas: the Main Hill, Area 7, Building 51 and Area J; two additional areas determined during the field investigations in the Main Hill parking lot; and an area on the southwest part of the Main Hill. Over 200 samples were collected and analyzed; of these, five were groundwater samples that entered the probes. Magnetometer/gradiometer and electromagnetic (EM-31) surveys were conducted in Area J and in the Miami-Erie Canal to locate near surface objects that could impact future intrusive investigations. The results of the investigations are integrated into this report.
- Operable Unit 3, Miscellaneous Sites Limited Field Investigation Report (DOE 1993c). Provides the results of a limited field investigation (LFI) initiated to identify the presence and types of any contaminants at 32 separate investigation sites. At the time of the initiation of the Operable Unit 3 limited field investigation, 57 of the then 109 potential release sites (see section 2) had neither documented histories of contaminant releases nor observations of releases from visual site inspections. Thirty-five of the 57 potential release sites required no further action and were assigned to Operable Unit 7. The remaining 22 of the 57 sites required analytical data for further evaluation and were subsequently subdivided into 32 separate investigation sites, mainly due to the diversity of the sewer lines investigated. Of the 32 investigated sites, 10 were recommended for additional characterization beyond the LFI. The results are integrated into this report.
- Operable Unit 4 - Miami Erie Canal Special Sampling Report (DOE 1993e). Provides results of the sampling conducted in the north and south parts of the Miami-Erie canal and the off-plant reach of the plant drainage ditch as it enters the canal. The objective of the special canal sampling was to provide qualified data to support the determination of whether mixed waste (radioactive and hazardous wastes) contamination is present in the canal. The sample locations generally are identical to some of the locations sampled in a previous canal study conducted in the mid 1970s (Rogers 1975). Based on comparable standards, the report concluded that chemical contamination in the canal soils sampled is limited to trace amounts of polychlorinated biphenyls, polynuclear aromatic hydrocarbons and lead. The radiological analyses indicate plutonium-238, thorium and tritium and trace amounts of uranium, cesium and potassium. The results of the investigations are integrated into this report.
- Letter Report - Results of South Pond (Halford 1990). Provides the results of sampling and analysis of the Miami-Erie canal south pond. The sampling was conducted to determine the level of possible contaminants in the south pond in preparation for dredging of the pond

by the City of Miamisburg. The samples were analyzed for organic and inorganic constituents, as well as plutonium-238. The concentrations of hazardous wastes and plutonium were below regulatory guidelines. The results are integrated into this report.

## 2. IDENTIFICATION OF POTENTIAL RELEASE SITES

At the effective date of the FFA, 109 PRSs had been identified (Table II.1). These sites had been described through a series of response actions conducted by both the DOE and EPA. Through the efforts documented in the Site Scoping Report and the Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c), additional potential sites are now recognized. The comprehensive tabulation of sites is provided in Table A.1 in Appendix A of this report.

The following subsections provide discussions of the response actions and the identification of PRSs. For each PRS listed in Table A.1, data are compiled that include descriptions of waste history and nature of waste handling and references where descriptions can be found; an evaluation of any hazardous conditions and incidents; and whether any environmental data are available. Detailed descriptions of waste treatment, storage and disposal areas are provided in Volume 7 - Waste management (DOE 1993a). The location of each PRS is referenced to the index on Plate 1 according to the number of the PRS on Table A.1. Additional regulatory information and the status of each PRS is provided below in Section 3 and in Table A.2.

The review of the Comprehensive Environmental Assessment and Response Program (CEARP) and RCRA Facility Assessment (RFA) programs, described below, illustrates important distinctions between the CERCLA and RCRA processes of potential release site identification. The CERCLA Preliminary Assessment (PA) and Site Inspection (SI) process focuses on the potential for offsite exposure from releases. The CERCLA PA/SI was developed primarily as a method of evaluating facilities to determine whether or not they should be on the NPL. The CERCLA guidance documents for conducting investigations under CERCLA (EPA 1988b) are written with a simple and singular focus on release sites. The CERCLA guidance does not provide methodology for conducting a complex investigation at a facility with multiple release sites and multiple contaminants. Although allowing for multiple contaminants, the PA/SI formats do not easily allow for multiple sites at a single facility. In contrast, the RFA process focuses on identifying specific releases at RCRA facilities for purposes of corrective action and recognizes the complexities that may exist at hazardous waste facilities. The RFA guidance provides the means for multiple sites at hazardous waste facilities through the recognition of the SWMU. The FFA Statement of Work is written to incorporate the essential elements of an RFA, while maintaining the CERCLA terminology for scoping. Consequently, the list of PRSs compiled in this report explicitly incorporates all potential release sites identified during the previous assessment efforts, in accordance with the FFA, regardless of their origin.

**Table II.1. List of Sites in the Mound Plant Environmental Restoration Program by Operable Unit Cross-Referenced to the RCRA Facilities Assessment and CEARP Phase I**

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
<b>Area B Groundwater, Operable Unit 1:</b>		
Site Sanitary Landfill	LF-1 lined landfill	
Area 18, Landfill Cover		3-Area 18
Contaminated Soil and Pond Area	LF-2 past landfill	1-Area B
<b>Main Hill Seeps Operable Unit 2:</b>		
Seeps	D North slope springs G Hillside hole	
Area 15, Old SW Cave	F SW Building C	3-Area 15
Area 6, WD Building Filter Waste	DD Main Hill-6	3-Area 6
Area F Chromium Trench	MI-7 Chromium trench	3-Area F
Cooling Tower Basins	MI-8 Cooling tower basins CS-16 Cooling tower storage	
Building E Solvent Storage Shed	CS-2 Bldg E solvent storage	
Building G Garage Area	P Bldg G spills	2-Bldg G
Monitoring Well 34-1	MI-13 Monitoring well 34-1	
<b>Miscellaneous Sites, Operable Unit 3 (Closed [DOE 1993c] and site reassigned):</b>		
Farm Trash Area	LF-5 South property dump	
Underground Sewage Lines	SD-10 Underground sewer lines	
Paint Shop Area	N Paint shop spills	2-Paint shop
Powerhouse Area	O Powerhouse spills	2-Powerhouse
Area C, Waste Storage Area	MI-6 Lithium carbonate disposal	1-Area C
Building 61, Former Equipment Area	Q Bldg 61 spills	2-Bldg 61
Oil Burn Structure	MI-3 Oil burn structure	
Fire-Fighting Training Facility Pit	MI-5 Fire fighter training	
Area I, Buildings 1, 27 Leach Pits	SI-4 Bldg 1 leach pit SI-5 Bldg 27 leach pit	1-Area I
Building 27 Sump Area	SU-3 Bldg 27 sump	
Building 27 Concrete Flume	MI-14 Bldg 27 flume	
Building 27 Solvent Storage Area	CS-12 Bldg 27 solvent storage	
Glass Melter Room Sump	SU-1 Glass melter room sump	
WD Building Drum Staging Area	CS-18 WD Bldg drum area	
Area H, Pyrotechnic Waste Disposal	OB-8 Pyrotechnic waste disposal	1-Area H
Pyrotechnic Waste Shed	OB-5 Pyrotechnic waste shed	
Thermal Treatment Unit Area	OB-2 Thermal treatment unit	
Trash Burner Area	OB-1 Trash burner	
Waste Oil Drumfield Area	CS-6 Waste oil drumfield	
Old Firing Range Drum Storage Site	CS-10 Old firing range storage	
Building 34 Aviation Fuel Tank	UT-2 Aviation fuel tank	
Building 51 Waste Solvent Tank	UT-1 Waste solvent tank IN-3 Waste solvent incinerator AP-10 Waste solvent incinerator scrubber	

Table II.1. (page 2 of 4)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
<b>Miami-Erie Canal, Operable Unit 4:</b>		
(All parts comprise 1 site)	B Runoff hollow I North canal J South canal K North pond L South pond	3-Plutonium in M-E Canal
<b>Radioactively Contaminated Soils, Operable Unit 5:</b>		
Area 2, Crushed Empty Thorium Drums	CC Valley-3	3-Area 2
Area 3, Thorium Drum Storage Sewage Disposal Building Area	T Valley-1 SD-1 Grit chamber SD-2 Grit conveyor SD-3 Comminutor SD-4 Equalizer basins SD-5 Aeration basins SD-6 Clarifier SD-7 Sand filters SD-8 Chlorine chambers	3-Area 3
Sludge Drying Beds	SD-9 Sludge drying beds	
Dredge Spoil Drying Beds	MI-15 Dredge spoil beds	
Building 72 Storage Area	CS-13 Outdoor hazardous waste storage CS-14 Empty drum storage	
Area 5, Radioactive Waste Line Break	Z Main Hill-3	3-Area 5
Area 7, Empty Thorium Drums	KK Valley-6	3-Area 7
Area 8, Contaminated Soils from Area 1	EE SM/PP Hill-4	3-Area 8
Area 9, Former Thorium Storage	W SM/PP Hill-2	3-Area 9
Area 10, Concrete from Dayton Units	FF SM/PP Hill-5	3-Area 10
Area 12, Contaminated Soil from Area 1 and SM Building Operations	GG SM/PP Hill-6	3-Area 12
Area 13, Polonium-Contaminated Wood	HH-Valley-4	3-Area 13
Area 20, Radioactive Waste Line Break	BB Main Hill-5 R HH Bldg contamination	
Area 21, Old Bunker	LL SM/PP Hill-10	
Area 22, Orphan Soil	II SM/PP Hill-7	
Area J, Hillside Catch Basin	SI-6 Hillside catch basin LF-4 Dredged material disposal	1-Area J
Spoils Disposal Area	LF-3 Spoils disposal	
<b>D&amp;D Sites, Operable Unit 6:</b>		
Area 1, Bulk Transfer of Thorium Drums	A Thorium drum storage S SM/PP-1	3-Area 1
Area 4, WD Building Influent Tanks	U Main Hill-1	3-Area 4
Area 4A, Overflow Area	V Main Hill-2	3-Area 4a 3-Area G
Area 11, Contamination from SM Building	JJ SM/PP Hill-8	3-Area 11

Table II.1. (page 3 of 4)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Area 14, Radioactive Waste Line Break	Y Valley-2 AA Main Hill-4	3-Area 14
Area 16, Sanitary Sewage Septic Tank and Leach Basin for SM Building	C Septic tank and leach field	3-Area 16
Area 17, Area under the SM Building	X SM/PP Hill-3	3-Area 17
Area 19, Underground Waste Line	MI-2 Waste disposal pipeline E Waste disposal pipeline	3-Area 19
Area D, Acid Leach Field Contaminated Soil Box Area Old Sanitary Treatment Plant Radioactive Waste lines	MI-11 Acid leach field M Contaminated soil box area SD-11 Old treatment plant	1-Area D
<b>Limited Action Sites, Operable Unit 7 (closed and sites reassigned):</b>		
Scintillation Vial Storage Area	CS-1 Scintillation vial storage	
Building 28 Solvent Storage Area	CS-3 Bldg 28 solvent storage	
DS Building Solvent Storage Shed	CS-4 DS Bldg solvent storage	
Building B Solvent Storage Shed	CS-5 Bldg B solvent storage	
Hazardous Waste Storage Area	CS-7 Hazardous waste storage	
Past Hazardous Waste Storage Area	CS-8 Past hazardous waste storage	
Radioactive/Mixed Waste Storage Area	CS-9 Mixed waste storage	
Drilling Mud Storage Area	CS-11 Drilling mud storage	
Building B Temporary Drum Storage	CS-15 Bldg B temporary storage	
Test Firing Residual Storage Area	CS-17 Test fire residual storage	
Retort	OB-3 Retort	
Building 90 Blockhouse	OB-4 Bldg 90 blockhouse	
Biodegradation Unit	OB-6 Biodegradation unit	
Explosive Waste Storage Bunker	OB-7 Explosive waste storage	
Building 1 Sump	SU-2 Bldg 1 sump	
Waste Transport Vehicles	MI-4 Waste transport vehicle	
Glass Melter Feed Drum	MI-9 Glass melter feed drum	
Trash Dumpsters	MI-10 Trash dumpsters	
Vapor Degreaser	MI-12 Vapor degreaser	
SW Building Drum Staging Area	CS-19 SW Bldg staging area	
Glass Melter Furnace	IN-1 Glass melter furnace	
Off-Gas Treatment System (9 sites)		
Deluge tank	AP-1 Deluge tank	
Venturi scrubber	AP-2 Venturi scrubber	
Cyclone demister	AP-3 Cyclone demister	
HEPA filter	AP-4 HEPA filter	
WD filter bank	AP-5 WD filter bank	
Recycle tank	AP-6 Recycle tank	
Leaf solution filter	AP-7 Leaf solution filter.	
Strainer	AP-8 Strainer	
Iodine absorption filter	AP-9 Iodine absorption filter	

Table II.1. (page 4 of 4)

ER Program Sites	RCRA Facility Assessment (SWMU's and Other Areas of Concern)	CEARP Phase I (Category-Site)
Ventilation Hoods Epoxy Resin Disposal Alpha Wastewater Treatment Beta Wastewater Treatment Cyclone Incinerator	AP-11 Ventilation hoods H Epoxy resin disposal WD-2 Alpha wastewater WD-3 Beta wastewater IN-2 Cyclone incinerator	
Inactive Underground Storage Tanks, Operable Unit 8:		
SD Building (3 tanks comprise 3 sites) WD Building Annex (3 tanks comprise 3 sites)	WD-1 Alpha influent tanks	2-WD Bldg
Site-Wide, Operable Unit 9:		
Plant Drainage Ditch Retention Basins  Overflow Pond Asphalt-Lined Pond	MI-1 Plant drainage ditch SI-1 Retention basins SI-2 Overflow pond  SI-3 Asphalt-lined pond	
Not Carried Forward in Original 109 Sites		
		1-Area A, soil fill 1-Area E, oil spill 3-Tritium in BVA 3-Monsanto Unit I 3-Monsanto Unit II 3-Monsanto Unit III 3-Monsanto Unit IV 3-Monsanto warehouse 3-Monsanto - Marion
109 Sites	124 Sites	43 Sites

- A through LL - other areas of concern
- AP - air pollution control units
- BVA - Buried Valley Aquifer
- CEARP - Comprehensive Environmental Assessment and Response Program
- CS - container storage
- D&D - Decontamination and Decommissioning
- ER - Environmental Restoration
- IN - incinerators.
- LF - landfill
- MI - miscellaneous units
- OB - open burn areas
- RCRA - Resource Conservation and Recovery Act
- SD - sanitary wastewater treatment system
- SI - surface impoundments
- SU - sumps
- SWMU - solid waste management unit
- UT - underground storage tank
- WD - WD Building wastewater treatment

## **2.1. DOE COMPREHENSIVE ENVIRONMENTAL ASSESSMENT AND RESPONSE PROGRAM**

In mid-1984, the DOE AL initiated the CEARP to help fulfill the DOE policy that all facilities comply with applicable environmental regulations while conducting their missions. CEARP was intended to fulfill DOE obligations under the EPA CERCLA Program. It used the same basic approach as the EPA guidance to federal facilities (Federal Facility Program Manual for Implementing CERCLA Responsibilities of Federal Agencies, Final Draft) and was authorized by DOE Order 5480.14. CEARP was administered by Los Alamos National Laboratory under contract to DOE AL. As the operating contractor, Monsanto Research Corporation (predecessor to the current operator, EG&G Mound Applied Technologies) was responsible to the DOE Dayton Area Office for plant operations. CEARP was implemented in five phases:

- Phase I - Installation Assessment
- Phase II - Confirmation
- Phase III - Technology Assessment
- Phase IV - Remedial Action
- Phase V - Compliance and Verification

A CEARP Phase I Installation Assessment Report was compiled for Mound Plant in 1986 (DOE 1986) with the intent of determining the extent of compliance with environmental laws, in order to ascertain the magnitude of potential CERCLA sites. Tasks performed under Phase I included record searches and literature surveys, employee interviews, waste management evaluation, tentative identification of contaminated areas, evaluation of compliance with environmental regulations, a preliminary physical survey, a pathway evaluation, and an HRS scoring.

A CEARP Phase II plan (DOE 1987) was implemented with three objectives: 1) obtain the additional information identified in Phase I; 2) complete an environmental evaluation to confirm the presence or absence of potential environmental concerns of Phase I; and 3) conduct measurements and sampling programs as required to understand potential contaminant sources and environmental pathways. Under Phase II of CEARP, DOE conducted three stages of investigations. Plans were submitted to EPA and OEPA for review, and comments were received and incorporated into the revised plans that served to guide the field work. A detailed review of the three stages of Phase II is provided in the Site Scoping Report: Volume 11 - Spills and Response Actions (DOE 1992f).

The CEARP Phase I and Phase II documents were submitted to the EPA in October 1987 to comply with requests for PA/SI reports. These documents were then used to score Mound Plant using the HRS conducted under "Uncontrolled Hazardous Waste Site Ranking System - A Users Manual" (16 FR

31219-31243 July 1982). The overall score was calculated to be 34.61, which exceeded the threshold of 28.5 for listing on the NPL. Details of the scoring are reviewed in the Operable Unit 9, Site-Wide work plan (DOE 1992a). On the basis of the HRS score, Mound Plant was one of 27 federal facilities EPA placed on the NPL on November 21, 1989 (54 Federal Register 48184). No additional potential release sites beyond those identified in the installation assessment report (DOE 1986) were identified during the scoring process.

The CEARP Phase I assessment results included the identification of 43 sites and their grouping into three categories: 1) areas that have potentially received oils or hazardous substances; 2) areas that, because of past activities, had potential for leaks and spills; and 3) previously identified areas of radioactive contamination. The 43 sites are listed in Table II.1 by category and are cross-referenced to the present ER Program sites. Category 1 sites were recommended for further investigation and included Areas B, C, and I, which were sampled during CEARP Phase II. Two Category 1 sites, Areas A and E, were areas of minor concern and had significantly small volumes of waste. Category 2 sites were considered to require no additional investigation but have, nonetheless, been carried forward in the ER Program. Category 3 sites included two sites off the plant property and 20 areas recommended for further radiological investigation by the Mound Plant Site Survey Program. Data collected during the Site Survey Program (Stought et al. 1988) are reported in the Site Scoping Report: Volume 3— Radiological Site Survey (DOE 1993c). The sites off the plant property comprise the Miami-Erie canal and tritium in the Buried Valley aquifer. Six category 3 sites were former Monsanto facilities that pre-dated Mound Plant, were apparently not scored, and were not included in the NPL. Therefore, these sites have not been carried forward in the ER Program. Of the original 43 potential release sites identified in the CEARP Phase I installation assessment report (DOE 1986), 35 were carried forward in the 109 sites identified at the effective date of the FFA. Area A and Area E were not included in the 109 sites (Table II.1), but are included in the list of potential release sites tabulated in Appendix A.

## **2.2. EPA DRAFT RCRA FACILITIES ASSESSMENT (RFA)**

In 1988, the EPA conducted the preliminary review (PR) and visual site inspection (VSI) portions of the RFA. The inspection was a response to the statutes of the Hazardous and Solid Wastes Amendments of 1984 (HSWA) under RCRA. Section 3004(u) of HSWA requires that any permit issued under Section 3005(c) of RCRA to a treatment, storage, or disposal facility after November 8, 1985, address corrective action for releases of hazardous wastes or hazardous constituents from any SWMU at the facility. Because the Mound Plant had applied for a permit to treat and store hazardous substances under RCRA, the RFA was to be the primary legal document that would support the agencies initial corrective action activities at the plant. The inspection included review of files and materials supplied

by the OEPA, data evaluations, and personnel interviews. These were used to evaluate the potential for release of hazardous constituents from SWMUs and other areas of concern (AOC) identified during the inspection.

The PR/VSI were performed in accordance with the RFA Guidance (EPA 1986). This guidance required the documentation of all SWMUs and other AOCs. The term SWMU was defined in the July 15, 1985 Codification Rule (50 Federal Register 28702) to include landfills, surface impoundments, waste piles, land treatment units, incinerators, tanks, container storage units, injection wells, and other physical, chemical, and biological treatment units. The EPA, at the time of the Mound Plant RFA, interpreted the term to apply to areas associated with production processes at facilities that had become contaminated as a result of routine, systematic, and deliberate release of wastes or constituents, noting that a product could become a waste if it is discarded or abandoned. This interim definition is essentially unchanged in the FFA. As explained in the Final Codification Rule, spills of wastes or constituents were considered to be subject to RCRA Section 3004(u) corrective action only if the spill occurred from a discernible SWMU. One-time spills, leakage from product storage, and releases from production areas that were not routine, systematic, and deliberate were not considered to be SWMUs, but were informally termed AOCs in the RFA guidance (EPA 1986). Since the RFA at Mound Plant was conducted, the EPA has proposed requirements under RCRA for corrective actions for SWMUs at facilities seeking a permit under Section 3005(c) of RCRA. The proposed rule established procedures and technical requirements for implementing corrective action under section 3004(u) of RCRA and created a new Subpart S in the RCRA Part 264 regulations to define requirements for conducting remedial investigations, evaluating potential remedies, and selecting and implementing remedies at RCRA facilities (55 Federal Register 30798). Since both EPA and DOE entered into the FFA pursuant to these sections of RCRA, the Proposed Rule is relevant and is appropriately incorporated into the Statement of Work of the FFA. "Site" is currently defined in the FFA to mean any area where hazardous substances, pollutants, or contaminants have come to be located due to Mound Plant activities. The term solid waste management unit is also defined in the FFA. Hence, Table A.1 of potential release sites (Appendix A) appropriately includes the SWMUs and AOCs identified in the draft RFA (EPA 1988a).

A draft PR/VSI report was prepared (EPA 1988a), but was not finalized, probably due to the listing of Mound Plant on the NPL. The draft report identified 86 SWMUs and 38 AOCs, for a total of 124 sites; these are tabulated in Table II.1. All of the 124 sites that could be positively identified in the draft RFA report were included in the ER Program at the time the FFA became effective (see below). During the initial scoping process, however, the 124 sites were recombined to produce 109 PRSs. Table II.1 depicts the cross-reference of these sites in both programs. Some errors in the RFA have been noted. For example, the Area 14 radioactive waste-line break (Table II.1) was found to be referred to twice

under two different categories in the RFA: the "Y-site, Valley-2" and the "AA-site, Main Hill-4." Area 19, the underground waste line, was similarly found to be referred to as "MI-2, Waste disposal pipeline" and "E, Waste disposal pipeline." Area of concern F was noted in the VSI report as "SM/PP Hill-9" and as "SW Building C". From the photograph, it appears that AOC F should be the SW Building site, which correlates with Area 15 in Table II.1. If this assumption is correct, then Table III.2 in the Site Scoping Report: Volume 11—Spills and Response Actions erroneously coupled SM/PP Hill-9 with Area 16. The actual location of "SM/PP Hill-9" is unknown at this writing.

### **2.3. SITE SCOPING REPORT: VOLUME 7—WASTE MANAGEMENT**

The Site Scoping Report: Volume 7—Waste Management, focuses on the identification of current and historic treatment, storage, and disposal activities in relation to the major projects and waste generation activities over the history of the plant. It serves to identify buildings and other areas used historically for these activities that have since been remodeled or otherwise reconfigured. New PRSs added to the list (Appendix A) from Volume 7 include six radioactive waste treatment facilities including compactors and solidification facilities in the SM, WDA, WS, HH, and T Buildings; eight historic storage facilities, including six old warehouses and two open storage areas; two historic incinerators; and one process area in the SW Building (room 1A) associated with, but separate from Area 15.

### **2.4. SITE SCOPING REPORT: VOLUME 3—RADIOLOGICAL SITE SURVEY**

The Site Scoping Report: Volume 3—Radiological Site Survey provided a review of the extensive Site Survey Project data conducted by Mound Plant (Stought et al.; 1988), as well as other available records of radiologically contaminated soils. Table B.1 (Appendix B) reproduces the summary table from Volume 3. Research for the volume identified four areas of radioactively contaminated soils (site 0647, Building 66 lot, the railroad siding and Building 48 hillside). Review of the Site Survey Project data additionally identified 14 isolated hot spots, four on the Main Hill, two in the valley area and eight on the SM/PP Hill, and an area of possible elevated thorium adjacent to Area 7 in the upper valley (Plate 1). A spoils pile of excavated materials containing low-level thorium was described in the SM/PP Hill (known as the excavated materials disposal area). All of these sites have been added to the list of PRSs (Appendix A).

### **2.5. MOUND PLANT UNDERGROUND STORAGE TANK PROGRAM PLAN AND REGULATORY STATUS REVIEW**

The Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c) is a comprehensive effort identifying underground tanks and tank systems at the plant. It includes a

description of 106 tanks, of which only some had been previously identified. The original 109 PRSs included 16 tanks and sumps, but failed to provide a comprehensive accounting of all tanks on the plant. Within the 16 tanks, four WD Building influent tanks were counted as one PRS; the three historic tanks at the old SD Building counted three tanks as three PRSs; and the three historic tanks at the WDA Building alpha wastewater facility counted three tanks as three PRSs.

## **2.6. RECONNAISSANCE SAMPLING REPORT—SOIL GAS SURVEY AND GEOPHYSICAL INVESTIGATIONS**

The Reconnaissance Sampling Report—Soil Gas Survey and Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (DOE 1993b), focuses on soil gas surveys in four areas of the plant. Results of sampling and analysis are reproduced in Appendix B, Tables B.2, B.3, B.4, and B.5. Figures B.1, B.2, and B.3 reproduce the sampling locations. Review of the soil gas data for this report indicates areas of elevated concentrations of volatile organic compounds in the north parking area, Building B, Building I, and Building HH. Accordingly, Building I and Building HH have been added to the list of PRSs on the Main Hill, along with M Building soils where elevated VOCs may be related to process (Appendix A). Isolated hot spots of VOCs are also apparent in the soil gas data. The VOC hot spots are grouped (Table A.1, Appendix A) where they are geographically closely spaced. Six new PRSs are identified through the grouping of hot spots identified by the soil gas survey data. For ease of reference, these are identified as the Northwest Parking Lots, HH Building, M Building, I Building, E Building, and Powerhouse soils. The soil gas data are also reviewed for their potential to indicate organic vapors in existing PRSs. Table A.1 (Appendix A) references specific soil gas sampling locations for PRSs if they appear relevant.

## **2.7. OPERABLE UNIT 3, MISCELLANEOUS SITES LIMITED FIELD INVESTIGATION REPORT**

The Operable Unit 3, Miscellaneous Sites Limited Field Investigation (LFI) Report (DOE 1993c), focuses on environmental sampling to identify the presence and types of any contaminants at 32 separate investigation sites. The 32 investigation sites included the original 22 OU 3 sites, some of which were subdivided. The underground sewage line site (Table II.2) was expanded into eight separate sites because of geographic diversity. Area C was subdivided into three sites due to the historic use of the area for chemical waste storage and possible waste disposal, as described in Site Scoping Report: Volume 7—Waste Management (Table II.2). In addition, the Area C-Lithium Burn Area is now known to have been on the same site as the Historic Fire Fighter Training Pit. These two PRSs are, however, listed separately in Appendix A. The recommendations for further action presented in the LFI report (DOE 1993c) are reproduced in Table II.2. The glass melter room sump (PRS #172) is, however, still operational, and along with all other operational facilities in the WP Building, is not currently recommended for further action (see subsection 3.2).

**Table II.2. Operable Unit 3 Limited Field Investigation Proposed Disposition for Investigation Sites**

OU 3 Investigation Site	Sites Recommended for Further Characterization	Sites Recommended for Removal Action/Remedial Action	Primary Contaminant of Concern	Characterization Under OU
Paint Shop Area	Yes	•	Lead	OU 2
Powerhouse Area Fuel Tanks	Yes	Yes	EPH	OU 2
WD Building Drum Staging Area	No	No		OU 2
WD Building Glass Melter Room Sump	Yes	Yes	Pu-238	OU 6
Building 51 Waste Solvent Tank	Yes	•	VOCs	OU 5
Building 61 Former Heavy Equipment Area	Yes	•	EPH	OU 5
Building 27 Solvent Storage Area	No	No		OU 5
Building 27 Concrete Flume	No	No		OU 5
Building 27 Sump	No	No		OU 5
Area I Building 27 Leach Pit	No	No		OU 5
Area I Building 1 Leach Pit	No	No		OU 5
Building 34 Oil Burn Structure	Yes	•	EPH, dioxin/furans	OU 5
Building 34 Fire-Fighting Training Pits	Yes	Yes	EPH	OU 5
Building 34 Historical Fire-Fighting Training Pit	Yes	•	Dioxin/furans	OU 5
Building 34 Former Aviation Fuel Tank	No	No		OU 5
Area C Former Equipment Storage Area	No	No		OU 5
Area C Drum Staging Area	No	No		OU 5
Area H Pyrotechnic Waste Disposal Area	No	No		OU 5
Area H Trash Burner Area	No	No		OU 5
Area H Thermal Treatment Unit	No	No		OU 5
Area H Pyrotechnic Waste Shed	No	No		OU 5
Waste Oil Drum Field	Yes	•	TPH, VOCs	OU 5
Old Firing Range Drum Storage Site	Yes	•	VOCs	OU 5
Farm Trash Area	No	No		OU 5
Underground Sewer Lines Grid G5	No	No		OU 5
Underground Sewer Lines Grids G6 and G7	No	No		OU 5
Underground Sewer Lines Grid G12	No	No		OU 2
Underground Sewer Lines Grid G14 West	No	No		OU 2
Underground Sewer Lines Grid G14 East	No	No		OU 2
Underground Sewer Lines Grid G15	No	No		OU 5
Underground Sewer Lines Grids G19/14	No	No		OU 2
Underground Sewer Lines Grid G24	No	No		OU 2

\*Disposition of site undetermined

## **2.8. OPERABLE UNIT SITE-WIDE RI WORK PLAN**

The Operable Unit 9, Site-Wide Work Plan (DOE 1992a) provides an overview of the points of effluents from Mound Plant. Sites of surface water effluent were identified in the RFA (EPA 1988a) or the Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c). These PRSs were generally included in the 109 PRSs, or have been added to the comprehensive list in Appendix A. The pipeline to the Great Miami River is added as a PRS because it transports treated water from the WD Building and the active and historic wastewater treatments, all of which were part of the 109 original PRSs.

Points of air emissions include the ventilation ducts and fume hoods. Of the latter, over 500 are known onsite, but were listed as a single PRS in the RFA and remain so in Appendix A. Emissions of radionuclides from 10 stacks are regulated under the Clean Air Act (see subsection 3.1.6). Eleven stacks are added to the list of PRSs (Appendix A) including the B Building stack, which is no longer operational. There are ten stacks on the Main Hill and one on the SM/PP Hill.

The Miami-Erie canal was listed as five areas of concern in the draft RFA (EPA 1988), but the list of 109 PRSs considered that all parts comprise one site. Appendix A separates the Miami-Erie canal into five PRSs, as individual parts of the canal possess environmental data that others do not and individual parts may require no further action, or actions different from other parts.

The Main Hill seeps were listed as two areas of concern in the draft RFA (EPA 1988), but the list of 109 PRSs considered that all parts comprise one site. Appendix A separates the seeps into separate known locations (Appendix A). Eight seeps are known on the Main Hill and on the SM/PP Hill. As with the Miami-Erie canal, individual seeps possess data not present for others, and individual seeps may require actions different from others.

## **2.9. MOUND PLANT ACTIVE UNDERGROUND STORAGE TANK PLAN**

The Mound Plant Active Underground Storage Tank Plan (EG&G 1994) provides the basis for the current Active UST Program at the Mound Plant. The program builds on the Mound Plant UST Program Plan and Regulatory Status Review (DOE 1992c). As a result of a field survey and document review conducted in early 1994, 19 additional USTs, both inactive and in service, were identified and included in a draft report. All of these sites are included in the current revision of this report. The Building 37 Waste Tank (PRS #338) was listed in the AUST Plan as an inactive low-risk, wastewater tank. Re-evaluation of this tank by ER Program personnel indicates that the tank was re-engineered to

receive wastewater from the fumehoods in Building 37, that is subsequently routed to the sanitary treatment facility. The tank is still in service.

The G Building Waste Oil Tank (PRS #332) was recommended in the AUST Plan (EG&G 1994) to be assigned to the Mound D&D Program. Since there is no indication of radioactivity, it is recommended that this tank be assigned to the ER Program under CERCLA.

### **3. ASSIGNMENT OF POTENTIAL RELEASE SITES TO REGULATORY AUTHORITIES**

#### **3.1. REGULATORY FRAMEWORK FOR EVALUATION OF POTENTIAL RELEASE SITES**

The purpose of this document is to define the environmental regulatory program that is applicable to each PRS, if any; to identify the regulated units; and to assign each PRS to the ER Program (FFA) or other regulatory authority, as appropriate. As an operating facility, Mound Plant maintains compliance with applicable regulatory programs. This document provides an initial determination of the ARARs applicable to activities involving the PRSs. Compliance with both federal and state environmental regulatory programs is necessary in the ER Program (FFA), as directed by the provisions of the FFA and to the extent required by CERCLA. The following subsections generally describe each of the regulatory programs evaluated for applicability to the PRSs at Mound Plant and their interactions with CERCLA activities. While other programs might also be applicable in some cases, the review was limited to the AEA, RCRA, CERCLA, CWA, and CAA and the corresponding Ohio programs, as appropriate. In discussing the regulatory programs, this document addresses only the assignment of the PRSs to the appropriate programs, and does not provide the requirements for site or equipment usage or their associated activities.

##### **3.1.1. RCRA Hazardous Wastes**

The Resources Conservation and Recovery Act of 1976 (42 U.S.C. 6901-6992) (RCRA) is the most complex and far-reaching regulatory statute. RCRA Subtitle C, commonly referred to as RCRA, provides requirements for the management of hazardous wastes, as defined in 40 Code of Federal Regulations (CFR) Part 261 Subparts C and D (O.A.C. 3745-51-20 to 33). These requirements include standards for collection and storage of hazardous wastes (40 CFR Parts 260 to 265; O.A.C. 3745-55-90 to 99 and 3745-66-90-992).

In order to become subject to RCRA hazardous waste regulations, a site must first have been determined to contain hazardous wastes. Hazardous wastes may be identified by first establishing that the materials in question are solid wastes. Materials exempt from solid wastes are domestic sewage,

CWA point source discharges (see subsection below), irrigation return flow, in situ mining wastes, and special nuclear material, source material, and product material, defined under the AEA (40 CFR 260, Appendix I). Once a waste has been identified, it must be evaluated by reviewing the lists of hazardous wastes presented in 40 CFR Part 261 Subpart D (O.A.C. 3745-51-31 to 33). If the waste is determined not to be a "listed hazardous waste," it must then be assessed to determine if it exhibits what the EPA has defined as qualities or "characteristics" of a hazardous waste, as set forth in 40 CFR Part 261 Subpart C (O.A.C. 3745-51-20 to 24). Except where a waste is specifically excluded by the EPA, if it is found to be "listed" or "characteristic," it must be managed in accordance with RCRA hazardous waste management regulations. Conversely, if a waste is determined not to be a hazardous waste, it is not subject to the hazardous waste management regulations, nor is the unit containing it (such as a tank) subject to hazardous waste management regulations.

It should also be noted that hazardous waste units must have been managed since 1980 to be subject to RCRA hazardous waste management regulations. Hazardous waste management units (e.g., tanks) closed prior to 1980 are not subject to these regulations. However, there are RCRA requirements that do address old (pre-1980) waste units that may pose a threat to human health and the environment through releases of hazardous wastes or constituents. RCRA's corrective action program, provided by Sections 3008(h) and 3004(u) and (v) of RCRA, as well as 40 CFR 264.101 (O.A.C. 3745-55-011), require corrective measures at SWMUs present at hazardous waste management facilities.

These requirements may be applied to former storage tanks from which hazardous wastes or constituents may have been released. Hazardous constituents are identified in 40 CFR Part 261, Appendix VIII (O.A.C. 3745-51-11 Appendix VIII). The corrective action provisions of RCRA Sections 3008(h) and 3004(u) and (v) are explicitly included within the jurisdiction of the FFA. Most of the PRSs considered in this document are not subject to RCRA hazardous waste requirements, either because they do not contain RCRA defined hazardous waste or because they fall into an excluded category. This reasoning is discussed further in the following paragraphs.

Many of the PRSs were described as containing either sanitary or alpha radionuclide-bearing wastewaters. In general, unless such wastewaters are hazardous wastes or mixed with hazardous wastes, these wastewaters would not be subject to RCRA hazardous waste requirements. There are several exclusions and exemptions for these materials or the units in which they are managed. For example, 40 CFR 261.4(a)(4) provides a solid waste exclusion from regulation under Parts 262 through 266, 268, and 270 for "source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954." Consequently, wastewaters that fit this exclusion are not solid wastes and therefore cannot be hazardous wastes subject to RCRA; however, if hazardous wastes are mixed with such wastewaters, the resulting wastes become subject to RCRA. An exemption in 40 CFR 264.1(g)(6)

[O.A.C. 3745-54-01(G)(5)] provides that wastewater treatment units are not subject to hazardous waste management regulations, including those applicable to hazardous waste tanks. A wastewater treatment unit is defined in 40 CFR 260.10 as:

"...a device which: (1) is part of a wastewater treatment facility which is subject to regulation under either Section 402 or 307(b) of the Clean Water Act; and (2) receives and treats or stores an influent wastewater which is a hazardous waste as defined in Section 261.3 of this chapter, or generates and accumulates a wastewater treatment sludge which is a hazardous waste..., or treats or stores a wastewater treatment sludge which is a hazardous waste...; and (3) meets the definition of tank in Section 260.10 of this chapter."

It should be noted that the definition of "wastewater treatment unit" is a misnomer because it specifically includes tanks that collect and store wastewaters, in addition to those in which treatment takes place. Also defined in 40 CFR 260.10, a tank is "a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials...." Ohio regulations provide similar definitions in O.A.C. 3745-50-10.

Several of the PRSs (e.g., the 30,000-gallon, alpha-wastewater influent tanks at WD Building) can be defined as wastewater treatment systems which discharge pursuant to a National Pollutant Discharge Elimination System (NPDES) permit issued under Section 402 of the CWA (O.A.C. 3745-33). These systems are excluded from RCRA hazardous waste tank regulations.

Some wastewater treatment tanks (e.g., the 3,750-gallon, beta-wastewater influent tanks at WD Building Annex described in Subsection 2.1.7) are not part of a system which discharges pursuant to a National Pollutant Discharge Elimination System (NPDES) permit issued under the CWA. Such wastewater treatment tanks would be subject to RCRA hazardous waste regulation if a RCRA-regulated waste was introduced into the system. A thorough review was previously conducted of all possible waste stream contributors to the alpha- and beta-wastewater treatment systems (EG&G 1990). No RCRA hazardous wastes were found being directed to these systems.

The RCRA hazardous waste requirements apply to hazardous wastes that must be identified as waste materials before being evaluated for hazardous waste determination. Most of the non-wastewater-related tanks (Appendix A) are product tanks, such as the petroleum product Tank 118, and are therefore not subject to RCRA hazardous waste management regulations. If, however, a tank was closed with remaining product, the residual product may be considered a solid waste and, therefore, could be a hazardous waste, thereby making the tank subject to RCRA hazardous waste management regulations. In addition, contaminated media resulting from a leak of a product tank is considered hazardous waste and would be subject to RCRA regulations.

It is important to note that the State of Ohio has developed a hazardous waste regulatory program to implement the provisions of Subtitle C of RCRA. The Ohio program has been reviewed by EPA and was found to be at least as stringent as the corresponding federal program. Pursuant to its authority under Section 3006 of RCRA, EPA has authorized the State of Ohio to implement the hazardous waste regulatory program in lieu of EPA.

As an operating facility, Mound Plant operates a hazardous waste treatment and storage facility under interim status. Several of the PRSs (Appendix A) are currently active and are part of the routine plant operations. As designated in Table A.2, eight of the PRSs are permitted as hazardous waste management units (HWMU) and are included in the RCRA Part B permit application. Many of the PRSs are, however, considered satellite accumulation areas and, in accordance with 40 CFR 262.34, are not formally permitted, but are considered "permitted by rule" (i.e., their operations are regulated under RCRA). These areas (e.g., DS Building solvent storage shed) require closure under RCRA regulations (40 CFR 262.34), but are not required to comply with a closure plan. Although no closure reports are required, as a matter of good operating practice documentation of the closure of these areas should be maintained as part of the operating record. Equipment that routinely utilizes hazardous materials (e.g., vapor degreaser) is considered a generator activity and is also subject to closure regulations under 40 CFR 262.34.

### **3.1.2. RCRA Underground Tanks**

RCRA Subtitle I provides requirements for the management of USTs, as defined in 40 CFR Part 280. These regulations apply to any UST determined to contain a regulated substance. 40 CFR 280.12 (O.A.C. 1301: 7-9-02) defines a UST as:

"...any one or a combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which... is 10 percent or more beneath the surface of the ground...."

40 CFR 280.12 defines a regulated substance as:

"(a) Any substance defined in Section 101(14) of ...(CERCLA)...(but not including any substance regulated as a hazardous waste under Subtitle C), and (b) Petroleum, including crude oil or any fraction thereof...."

According to the above definitions, any underground tanks determined to contain regulated substances at Mound Plant are subject to 40 CFR Part 280 (O.A.C. 1301: 7-9). At Mound Plant, regulated

substances found in USTs include radionuclide-bearing wastewaters and petroleum substances (e.g., diesel fuel, fuel oil, etc.).

Some tanks found at Mound Plant are subject to certain exclusions or exemptions under the 40 CFR Part 280 (O.A.C. 1301: 7-9) regulations. Several tanks are considered to be excluded wastewater treatment tank systems, such as the 30,000-gallon alpha-influent tanks at the WD Building (subsection 2.1.3). As stated in 40 CFR 280.10(b)(2) [O.A.C. 1301: 7-9-04(A)(2)], "any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act" is excluded from regulation. Other tanks, such as the 3,750-gallon beta-wastewater influent tanks at the WD Building Annex (subsection 2.1.6), are subject to a limited deferral under 40 CFR 280.10(c), which states that any "UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954..." are subject to only the requirements of release response and corrective action. The State of Ohio, under a cooperative agreement with EPA, is authorized to clean up petroleum releases from UST systems or to require owners and operators to do so. USTs containing radioactive materials regulated under the AEA are currently exempted from Ohio UST regulations (O.A.C. 1301: 7-9-04).

RCRA Subtitle I and the corresponding O.A.C. 1301: 7-9 govern the management of USTs containing regulated substances, as discussed above. These regulatory programs dictate the management practices to be followed by Mound Plant personnel responsible for the operational use of such tanks.

### 3.1.3. CERCLA

The CERCLA (42 U.S.C 9601-9675) was originally enacted in 1980 and was amended in 1986. CERCLA provides requirements for the cleanup of sites at which the presence of hazardous substances poses a threat or potential threat to human health or the environment. This federal law was primarily enacted to address sites where hazardous substances threaten the environment or the surrounding population because of hazardous substance releases (40 CFR Parts 300-311). As such, CERCLA generally differs from RCRA in that it addresses past management sites (pre-1980), for example, tanks that stored hazardous wastes but were closed prior to 1980. RCRA generally deals with more recent or active management sites (post-1980). Hazardous substances are listed in Table 302.4 of 40 CFR Part 300; a material is identified as a hazardous substance by being included on this table, and the term specifically excludes petroleum or any petroleum fractions.

It must also be recognized that the term "hazardous substance" has a significantly broader meaning in the FFA than in CERCLA. The FFA defines a hazardous substance as a substance including all CERCLA hazardous substances and any element, substance, compound or mixture, or combination thereof, including solids, liquids, semi-solids, or contained gases, and including oil and gasoline, that

after release to the environment may result in exposure to any living organisms through any route of entry. Such exposure to a substance must cause or be reasonably anticipated to cause death, disease, behavior abnormalities, cancer, genetic mutation, physiological malfunctions or physical deformities in such organisms or their offspring, or pose a real or potential hazard to human health and safety or the environment. Unless otherwise specified, references to hazardous substances made in this document refer to those substances as defined in the FFA.

Neither CERCLA nor the FFA provide specific requirements for the management and closure of USTs and other PRSs. CERCLA and the FFA do provide for appropriate responses to releases of hazardous substances, as defined by the FFA, that pose a threat to human health or the environment. In operating its facilities at Mound Plant, the DOE fully intends to comply with applicable laws and regulations, including those that provide management and closure requirements, such as RCRA Subtitle C and I [Ohio Administrative Code (O.A.C.) Sections 3745 and 1301: 7, respectively].

In 1986, Congress passed the Emergency Planning and Community Right-to-Know Act (EPCRA), also known as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA, or SARA Title III, requires states to establish state and local emergency planning groups to prepare for coordinated plans for responding to emergency releases of hazardous chemicals. The statute imposes numerous annual reporting requirements to ensure that state and local authorities are aware of the types and quantities of hazardous substances on facility premises, as well as the types and quantities of hazardous materials released to the environment from the facility. The statute requires facility operators to report immediately accidental releases to the environment of designated chemicals exceeding threshold amounts established by the EPA. Regulations under 40 CFR 302 establish a list of hazardous substances and reportable quantities and sets forth the notification requirements for release of these substances. The regulation also establishes reportable quantities for hazardous substances under Section 311(b)(A) of the Clean Water Act.

As an operating facility, Mound Plant maintains compliance with SARA Title III reporting requirements defined in 40 CFR 302.6

#### **3.1.4. AEA/CERCLA Integration**

The DOE has legal authority derived from the AEA [42 United States Code (U.S.C.) 2011] to conduct routine operations involving, among other things, underground tanks, equipment and other facilities. Routine operations include both the operation of currently active sites and the D&D of surplus sites. Environmental contamination may be known or may be discovered for both active and inactive tanks. The DOE has authority under the AEA to respond to any such contamination. Because the DOE has signed an FFA, it also has authority and responsibility derived from CERCLA and the FFA. The

authorities of the AEA and CERCLA overlap, but the integration of overlapping authorities is explicitly recognized by CERCLA, and there is a criterion to determine how to apply authorities that overlap. A D&D/ER Program agreement (Appendix C) defines the soil activity responsibilities between the two programs.

The AEA is the legal authority by which the DOE conducts its routine operations. These routine operations may result in either minor or major releases (as defined in 40 CFR 300.5 of the National Contingency Plan). Minor releases of hazardous substances are those that pose a minimal threat to the public health or welfare or the environment.

Typically, the DOE will use criteria such as its derived concentration guides for airborne contamination or its as low as reasonably achievable policy to determine whether a release was minor or major. The DOE can use its AEA authority to respond to minor releases. For major releases, the DOE has the authority under CERCLA to "take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate or eliminate the release". [40 CFR 300.415(b)(1)]. However, the DOE is first required to evaluate the availability of other appropriate federal response mechanisms to respond to the release [40 CFR 300.415(b)(2)(vii)]. Its routine operations are an available, appropriate federal response mechanism; therefore, the DOE can respond to major releases under its AEA authority. For example, the DOE can clean up radioactively contaminated soils using its AEA authority. The DOE will apply the CERCLA criteria and respond to releases in the most timely and cost-effective manner.

Responsibility for addressing radioactive contamination, pursuant to the AEA at Mound Plant, rests with the D&D Program. This includes the responsibility for providing corrective actions for released radionuclides from underground tanks, soils and other facilities. Underground radionuclide tank sites are considered closed under the AEA when all radionuclide-contaminated materials (soils, etc.) have been removed to DOE thresholds.

### **3.1.5. Clean Water Act**

Wastewater discharges are regulated under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.) also known as the CWA. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the surface waters. This objective is achieved through the control of discharges of pollutants, including direct discharges to waters of the United States, indirect discharges to publicly owned treatment works (POTW) and discharges of dredge and fill materials to waters of the United States and wetlands. Under Section 404 of the CWA, waters of the United States are defined as

"All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow

of the tide; all interstate waters, including interstate wetlands; all other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; all impoundments of waters; tributaries of waters above; the territorial sea; wetlands adjacent to waters above" (40 CFR 230.3).

Wetlands are additionally defined as

"Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (40 CFR 230.3 and 33 CFR 328.3).

The CWA has distinct regulatory features that include site-specific pollutant limitations and performance standards promulgated for protection of surface waters quality (e.g., regulation of point and non-point source discharges to surface waters). Control of discharges is implemented through the application of Federal, state and local discharge standards. The CWA prohibits the unpermitted discharge of any pollutant or combination of pollutants to waters of the United States from any point source. A point source is defined as

"... any discernible, confined and discrete conveyance, including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container ... from which any pollutants are or may be discharged" (40 CFR 122.2).

A pollutant is defined to include

"... dredged spoil, solid waste, incinerator residue, filter backwash, garbage, sewer sludge, munitions, chemical wastes, ... and industrial; municipal and agricultural waste discharged in water" (40 CFR 122.2).

All pollutants are regulated under the CWA according to their category, priority pollutants, conventional pollutants and nonconventional pollutants, as follows:

Priority pollutants include the 126 individual toxic pollutants contained in the 65 toxic compounds or classes of toxic compounds, including organics and metals adopted by EPA pursuant to Section 307(a)(1) of the CWA.

Conventional pollutants are classified as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease and pH pursuant to Section 304(a)(4) of the CWA.

Nonconventional pollutants include any pollutant not identified as either priority or conventional (i.e., ammonia, nitrogen, chemical oxygen demand, total organic carbon, total solids and nonpriority toxic pollutants) (40 CFR 122.21(i)(2)).

The NPDES program is the promulgated program for issuing, monitoring and enforcing permits for direct discharges to surface waters. The CWA established the NPDES program under Section 402 of the CWA to implement the regulations, limitations and standards promulgated pursuant to Sections 301, 304, 306, 307, 308, and 403 for point source direct discharges. The NPDES program is implemented under 40 CFR 122-125. NPDES permits contain applicable effluent standards (that are either technology based or waste-quality based), monitoring requirements and standard or special conditions for discharge. The NPDES program for the state of Ohio is administered by the Ohio EPA under the Ohio Water Pollution Control Act (Ohio Revised Code 6111).

CWA Section 404 regulates the discharge of dredge and fill materials into waters of the United States, as implemented through regulations set forth in 33 CFR 320 through 330. Guidelines for discharge of dredge and fill materials are promulgated as regulations in 40 CFR 230.10. These regulations provide that no discharges of dredge or fill materials shall be permitted that will cause or contribute to significant degradation of the waters of the United States (40 CFR 230.10(c)). The degradation or destruction of wetlands and other special aquatic sites should be avoided to the extent possible. Under the CWA guidelines (Section 404(b)(1)) no discharge of dredge or fill materials shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences (40 CFR 230.10(a)). Pursuant to 40 CFR 230.10(b), no discharges of dredge and fill materials shall be allowed if the discharge:

- causes or contributes to violations of any additional state water quality standard;
- violates any applicable toxic effluent standard or discharge prohibition under CWS Section 307; or
- jeopardizes endangered or threatened species specified under the Endangered Species Act of 1973.

As an operating facility, Mound Plant has an NPDES permit issued by the state of Ohio under the Ohio Water Pollution Control Act (ORC 6111). This permit establishes conditions of wastewater discharge from four onsite sources and two outfalls to the Great Miami river. Results of self-monitoring sampling and analysis are required to be submitted to the Ohio EPA monthly. Summaries of the sampling are published annually in the Mound Plant environmental monitoring reports.

PRs (Appendix A) include wastewater treatment tanks that discharge in accordance with the NPDES permit and tanks that do not discharge an effluent. PRs that are considered part of a wastewater treatment facility that discharges in accordance with Section 402 of the CWA are exempt from RCRA regulation, as discussed above. Although regulation under the NPDES permit establishes conditions

of discharge, there are no provisions in the CWA for closure of the units after operations cease. Closure of units can be considered a normal part of routine operations and may be an appropriate response mechanism. DOE can respond to both releases and closures of wastewater PRSs under its AEA authority. The DOE will apply the CERCLA criteria and respond to releases in the most timely and cost-effective manner.

PRSs listed in Appendix A may also be regulated under the CWA as waters of the United States and as wetlands. Portions of the Miami-Erie canal, the plant drainage ditch and the onsite ponds are, on a preliminary basis, considered to be waters of the United States (DOE 1992b). Other PRSs, such as the Area J Hillside catch basin, may be considered a wetland, but at this writing, a jurisdictional determination has not been received from the U.S. Army Corps of Engineers.

The CWA regulations that may be considered ARARs under the CERCLA program at Mound Plant are the requirements for 1) surface water quality; 2) direct discharges to surface waters; 3) indirect discharges to POTWs; and 4) discharges of dredge and fill materials to waters of the United States, including wetlands. Onsite discharge from a CERCLA release site to surface waters must meet the substantive requirements, but need not obtain an NPDES permit nor comply with the administrative requirements of the permitting process, consistent with CERCLA Section 121(e)(1). An offsite discharge, however, from a PRS to surface waters is required to obtain an NPDES permit and to meet both the substantive and the administrative NPDES requirements. CERCLA activities considered to be direct discharges from a point source include:

- Onsite waste treatment where wastewater is discharged from a treatment plant directly into or in very close proximity to a surface water body through a discernible conveyance such as a pipe, ditch, channel, tunnel, or well;
- Offsite treatment where wastewater from the site is piped or otherwise discharged through a discernible conveyance to an offsite surface water body; and
- any remedial action in which site runoff is channeled directly to a surface water body through a ditch, culvert, storm sewer, or other means.

CERCLA activities considered to be direct discharges from a nonpoint source include unchanneled runoff from a site into a surface water body.

Under the CWA, all discharges by nondomestic users into a POTW must meet pretreatment standards. The purpose is to avoid the introduction of pollutants into municipal wastewater treatment plants that pass through, interfere with, or are otherwise incompatible with such treatment standards. Any discharge from a CERCLA site to a POTW is considered an offsite activity. It is, therefore, subject to

both the substantive and administrative requirements of the national pretreatment program and all applicable state and local pretreatment regulations.

### **3.1.6. Clean Air Act**

The Clean Air Act (CAA) (42 U.S.C. 7401 et seq.) establishes requirements for emissions into the atmosphere. Controls on stationary and mobile sources of emissions are implemented through combined Federal, state and local programs. Pursuant to the CAA, EPA promulgates National Ambient Air Quality Standards, National Emission Standards for Hazardous Air Pollutants, and New Source Performance Standards. Under Section 109 of the CAA, EPA promulgates the National Ambient Air Quality Standards (NAAQS) under regulations 40 CFR Part 50. Primary and secondary standards are established to protect the public health and the public welfare, respectively. NAAQS promulgates six criteria pollutants: particulate matter equal to or less than 10 microns particle size, sulfur dioxide, carbon monoxide, ozone (which results from the photochemical oxidation of volatile organic compounds [VOCs]), nitrogen dioxide and lead. Pursuant to Section 107 of the CAA, the Ohio EPA has the primary responsibility for assuring that NAAQS are attained and maintained in the state of Ohio.

Pursuant to Section 112 of the CAA, EPA promulgates the National Emission Standards for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 61. NESHAPs identifies hazardous pollutants for which no ambient air quality standard exists. Hazardous air pollutants are those for which no ambient air quality standard exists, but which cause or contribute to air pollution that may reasonably be anticipated to result in an increase in mortality or in serious, irreversible, or incapacitating reversible illness. EPA first lists a pollutant as hazardous and then establishes emission standards for source types. NESHAPs are promulgated for specific source types that emit the following pollutants: arsenic, asbestos, benzene, beryllium, mercury, radionuclides, and vinyl chloride (40 CFR 61). Under 40 CFR 61 Subpart H - National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities, EPA regulates specific radiation dose limits to the public.

Section 111 of the CAA requires EPA to promulgate standards for new sources of air emissions, referred to as New Source Performance Standards. The purpose is to ensure the new stationary sources are designed, built, equipped, operated, and maintained in a manner that reduces emissions to a minimum. The CAA requires EPA to promulgate standards for categories of stationary sources that emit particular pollutants that cause, or may contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. Pollutants regulated under NSPS for which EPA has promulgated neither NAAQS nor NESHAPs are referred to as designated pollutants. Emission controls are to be based on the best demonstrated technology, which is the degree of

emission limitation achievable through the application of the best technological systems of continuous emission reduction that EPA determines by regulation has been adequately demonstrated, taking into consideration the costs of achieving such emission reduction, any air quality health and environmental impacts, and energy requirements.

As an operating facility, Mound Plant maintains permits to operate air contaminant sources under permits issued by the Ohio EPA (O.A.C. 3745-31-01) and the Regional Air Pollution Control Agency in accordance with O.A.C 3745-19-03(D). The permits for open burning establish conditions of control of operation, such as the total quantity of hazardous materials handled or the time of operation, but do not establish emission standards. There are no promulgated standards for particulate emissions from burning of explosives or the fire fighter training exercises. Emission limitations for particulates, sulfur oxide and volatile organic compounds are established by permit conditions.

Under 40 CFR 61 Subpart H - National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities, Mound Plant is required to report to EPA the results of environmental monitoring and modeling of the effective dose equivalent to the public using the AIRDOS-EPA and CAP-88 computer codes. For Mound Plant, the radionuclides include tritium, plutonium-238, plutonium-239, uranium-238 and uranium-234. Emissions from 10 stacks are monitored and modeled, and the results are published annually in the environmental monitoring reports.

Although regulation under the permits establish conditions or limitations of discharge, there are no provisions in the CAA for closure of the units after operations cease. Closure of units may be required under RCRA for devices that process hazardous wastes. DOE may respond to closure of PRSs that did not include hazardous materials, as defined by RCRA, under its AEA authority for routine operations. As with other response actions, the DOE will apply the CERCLA criteria and respond to releases in the most timely and cost-effective manner.

Actions under CERCLA may be relevant or appropriate during remedial activities. Emissions from CERCLA activities are not generally considered "major sources" of air emissions and are therefore, not expected to qualify for attainment of NAAQS. Under Section 121(e) of CERCLA, substantive requirements will only apply to major sources of air emissions, considering the aggregate of all sources of emissions at the site. Regions of the United States have been designated as attainment or non-attainment areas for each of the criteria pollutants. The Prevention of Significant Deterioration program promulgates requirements for attainment areas that apply to new stationary sources and major modifications in areas designated as being in attainment of the NAAQS for criteria pollutants. The purpose of the PSD program is to ensure that air quality in attainment areas does not significantly deteriorate. A CERCLA site would not be considered a major source unless it was expected to emit

25 tons or more of any regulated pollutant. An area may be designated non-attainment for any of the NAAQS. Non-attainment permits are issued by the state. A CERCLA site would not be considered a major source unless it was expected to emit 10 tons or more per year (t/yr) of the pollutant for which the area is designated non-attainment. Pollutant limits are reduced to 50, 25, and 10 t/yr in areas determined to be serious, severe, and extreme, respectively. Smaller sources are designated under the CAA of 1990 as "area sources". Attainment and non-attainment areas are designated in 40 CFR 81. Montgomery County, Ohio, is designated non-attainment for ozone (40 CFR 81 7-1-91). Montgomery County does not meet the primary standard for total suspended particulates, but is better than the national standard for sulfur dioxide (40 CFR 81 7-1-91).

During CERCLA activities, the requirements in 40 CFR 61 Subpart H, may be applicable to emissions of radionuclides. The current standard (10 millirem/year effective dose equivalent) must be maintained during CERCLA activities, but would not be relevant for air emissions from residual contamination after cleanup (when the facility is no longer in operation) as the standards were developed to limit radiation doses caused by operations that yield a beneficial product. The relevance of Subpart H must consider the aggregate of all sources emissions at the site, including operations D&D and CERCLA activities.

The CAA amendments of 1990 added paragraph (r) to section 112 for the prevention of chemical accidents. The goals of the chemical accident prevention provisions are to focus on chemicals that pose a significant hazard to the community should an accident occur, to prevent their accidental release, and to minimize the consequences of such releases. Section 112(r) establishes a general duty for owners and operators of stationary sources, who produce, process, handle, or store substances listed under Section 112(r)(3) and any other extremely hazardous substances, to comply with and perform specific activities to prevent and mitigate accidental releases. The general duty requirements apply to stationary sources regardless of the quantity of substance managed at the facility, as a general matter of business practice. On January 19, 1993, EPA proposed a list of 100 acutely toxic substances, 62 flammable gases and volatile flammable liquids, and high explosives (List of Regulated Substances and Thresholds for Accidental Release Prevention; Requirements for Petitions under Section 112(r) of the CAA as Amended, 58 Federal Register 5102). The list, when final, will identify stationary sources that will be covered by the chemical accident prevention regulations subsequently adopted under Section 112(r). The list is intended to focus accidental release prevention efforts on those stationary sources and substances that pose significant hazards to the community in keeping with EPCRA. The accident prevention regulations will apply to stationary sources that present more than a threshold quantity of a regulated substance

In reviewing the proposed list and the proposed threshold quantities, it is apparent that Mound Plant does not operate or manage facilities with quantities of substances near to exceeding the quantities

listed. Radionuclides were not included in the proposed list, but EPA additionally requested information to determine the need and appropriateness of listing radionuclides under the proposed rulemaking.

### **3.1.7. Safe Drinking Water Act**

The Safe Drinking Water Act (SDWA) (42 U.S.C. 300, as amended), as most recently amended in 1986, establishes regulations to protect human health from contaminants in drinking water. Under the SDWA, the EPA has established 1) drinking water standards; 2) a permit program for underground injection of wastes; and 3) groundwater protection programs, including the Sole Source Aquifer Program and the Wellhead Protection Program. Enforcement of standards is authorized to state environmental agencies.

Drinking water regulations are promulgated under 40 CFR 141-149. The drinking water regulations are applicable to community water systems that serve at least 25 people on a year round basis and 15 or more service connections. EPA has developed two sets of standards, referred to as the primary and secondary standards, to protect human health and ensure the aesthetic quality of drinking water, respectively. National primary standards (40 CFR 142) consist of contaminant-specific standards known as maximum contaminant levels (MCLs). MCLs are set as close as feasible to maximum contaminant level goals (MCLGs), which are purely health-based goals. MCLs are enforceable standards that apply to specific contaminants that EPA has determined to have adverse effects on human health above a given level (40 CFR 141.11-141.16). MCLGs are non-enforceable health-based goals established at levels at which no known or anticipated adverse effects on the health of persons will occur and which will allow an adequate margin of safety. No feasibility of attainment is considered for MCLGs.

To date (May 1993), MCLs are promulgated for 90 specific chemicals (24 inorganics and 66 organics including pesticides, total trihalomethanes, certain radionuclides, coliform bacteria and turbidity). Sixty-eight MCLs are considered final, 15 are proposed, and the remaining are tentative. All radionuclides are proposed and are not final. MCLGs are proposed for 62 additional organic and inorganic contaminants (40 CFR 141.50). If the MCLG is equal to zero, the EPA believes that it is not appropriate to set cleanup levels and the corresponding MCL will be the potential applicable or relevant and appropriate requirement (ARAR). The Drinking Water Regulations and Health Advisories are published semiannually by the EPA, Office of Water, Washington, D.C.

Secondary drinking water regulations consist of secondary maximum contaminant levels (SMCLs) for specific contaminants or water characteristics that may affect the aesthetic qualities of drinking water such as color, taste, and odor (40 CFR 143). SMCLs are non-enforceable limits intended as guidelines

for use by states in regulating water supplies. They are typically measured at the tap. EPA has proposed a list of 15 contaminants to be used as guides for public water systems, including chloride, copper, corrosivity, fluoride, aluminum, iron, manganese, zinc, silver, sulfate, odor, color, Ph, and total dissolved solids.

Underground injection wells are subject to control under the Underground Injection Control Program (UIC). Under the UIC program (40 CFR 144), owners and operators of certain classes of underground injection wells are required to obtain and adhere to the requirements of operating permits issued by the State authority. The operator must prove to the permitting authority that operation of the injection well does not endanger drinking water sources. According to 40 CFR 146.43, an underground source of drinking water is defined as

"any aquifer or its portion that 1) supplies any public water supply or contains a sufficient quantity of water to supply a public water system, and currently supplies drinking water for human consumption or contains fewer than 10,000 milligrams per liter total dissolved solids, and 2) is not an exempted aquifer according to 40 CFR 146.4."

An aquifer that is not currently used for drinking purposes, and cannot be used for drinking purposes in the future due to insufficient yield or excessive contamination, may be officially designated an "exempted aquifer" by EPA or the authorized State agency (subject to EPA approval) (40 CFR 146.4).

Underground injection wells are divided into five general classes of wells for permitting purpose. The State of Ohio program is outlined in 40 CFR 147.1801. The applicable UIC technical and procedural standards and criteria vary according to the class of well. The five classes are defined as:

- Class I. Wells used to inject industrial hazardous and municipal wastes beneath the lowermost formation containing, within a quarter mile of the well bore, an underground drinking water source.
- Class II. Wells used to dispose of fluids which are brought to the surface in connection with oil and gas production, to inject fluids for the enhanced recovery of oil and gas, or to store liquid hydrocarbons.
- Class III. Wells used to inject fluids for the extraction of minerals.
- Class IV. Wells used to inject hazardous wastes or radioactive wastes into or above a formation that, within one-quarter mile of the well, contains an underground drinking water source. Operation or construction of Class IV wells is prohibited and allowed only for the reinjection of treated wastes as part of a CERCLA or RCRA remedial action.
- Class V. Includes all wells not incorporated in Classes I-IV. Typical examples are recharge wells, septic system wells, and shallow industrial (non-hazardous) disposal wells.

Mound Plant does not have any injection wells. Of the five classes of injection wells, Classes I, IV and V may generally be associated with CERCLA actions. For example, a CERCLA site cleanup could involve the reinjection of wastewater that is not defined as hazardous (i.e., the wastewater would not meet the definition of hazardous waste) to a Class V well. For the purposes of the UIC Program, hazardous waste is defined in 40 CFR 264.3.

Under Section 1424(e) the SDWA permits EPA to designate as "sole source aquifer," aquifers that are the sole or principal source of drinking water for an area, and which, if contaminated, would present a significant hazard to human health. Criteria for identifying critical protection areas is presented in 40 CFR 149 Subpart A. Under the Sole Source Aquifer Program, Federal financial assistance may not be committed for any project that may contaminate a sole source aquifer so as to create a significant public health hazard. Federal funding may, however, be committed to design a project to avoid contamination of the aquifer.

The 1986 amendments to the SDWA directs States to develop and implement programs to protect wells and recharge areas that supply public drinking water from contaminants that flow into the well from the surface and subsurface. The EPA was instructed to implement guidance and to review State programs to ensure that they comply with the provisions of the SDWA, including the identification of all anthropogenic sources of contaminants, outlines of programs for protecting wells from such contaminants, and description of contingency plans for replacing wells affected by contaminants. Because the Well Head Protection (WHP) program is designed to be run by the states, the program involves no federal ARAR provisions. State WHP programs may impose requirements with which a federal agency must comply, unless specifically exempted by the President. Thus, there may be ARARs under the State WHP program with which CERCLA response actions must comply.

In Ohio, the SDWA requirements are enforced by the Ohio EPA Division of Drinking Water and Groundwater. The Mound Plant water supply is considered a non-transient non-community water system because it has fewer than 15 service connections with year round service, but regularly serves over 25 persons over six months per year (40 CFR 141 and OAC 3745-81). Monitoring requirements are established by EPA and enforced by Ohio EPA. DOE Order 5400.1 additionally requires an Environmental Monitoring Plan that demonstrates compliance with all applicable federal, state and local regulations. A Groundwater Protection Management Program Plan for the Mound Plant was implemented in 1990, and is being updated at this writing. This plan establishes the schedule, monitoring network, constituents required or identified to be monitored, sampling methods, analytical methods and data management (DOE 1993f). Results of monitoring for tritium and VOCs are published annually in the Mound Plant Environmental Monitoring Report (EG&G 1992).

In May 1990, the Ohio EPA presented a comprehensive bill to the Ohio legislature for implementation of the WHP Program, but the legislation failed to pass. The program is currently being implemented across the state on a voluntary basis by public water purveyors. The Ohio WHP Program consists of six elements, as follows:

- Delineation of the WHP area using the method most applicable to the type, setting, and resources of the public water system.
- Identification of potential pollution sources by determination of the past, present, and proposed land use activities in and adjacent to the WHP area.
- Development of management strategies that initiate policies and procedures to prevent contamination of present or proposed water supplies from the identified potential sources.
- Development of a groundwater monitoring plan that will adequately determine the need for monitoring and will provide early warning if implemented.
- Development or modification of contingency plans for emergency response and identification of alternative short- and long-term water sources.
- Development of public involvement and education programs to inform and allow participation by the public in planning efforts.

Many of the elements of the Ohio WHP Program are being addressed by monitoring conducted under the FFA. The Groundwater Protection Management Program Plan is under evaluation for implementation of elements not currently being conducted by the ER Program.

The Buried Valley aquifer from which Mound Plant obtains its drinking water was designated as a sole source aquifer on July 8, 1988 (53 Federal Register 25670). The Mound Plant production wells, as well as many of the monitoring wells, are completed in the Buried Valley aquifer. Construction details are included in the Site Scoping Report: Volume 2 - Geologic Log and Well Information Report (DOE 1992g). A review of existing contamination is given in the Operable Unit 9 Site-Wide RI/FS work plan (DOE 1992a). Releases from the Historic Landfill have contaminated the Buried Valley aquifer with VOCs. Under CERCLA, MCLs are relevant and appropriate as *in situ* cleanup standards where either surface water or groundwater is or may be used for drinking purposes. In general, CERCLA remedial actions would not in and of themselves be expected to increase pre-existing contamination of sole source aquifers. It is therefore unlikely that there would be federal funding restrictions. Nevertheless, a review of any potential problems associated with the Buried Valley aquifer should be part of the Mound Plant RI/FS.

Another of the PRSs listed in Table A.1 (Appendix A) is tritium in the Buried Valley aquifer. Through the efforts of the Potable Water Standards Project (Dames and Moore 1976a; Styron and Meyer 1981)

and the Buried Valley Aquifer Evaluation Project (Dames and Moore 1976b), tritium levels in the Buried Valley aquifer have been maintained in compliance with regulatory standards (40 CFR Part 141). As a follow-up to these projects, Mound Plant monitors tritium levels in the groundwater in the vicinity of the plant production wells on a weekly basis to maintain compliance as a non-public potable water supply under the SDWA. Sampling of an off-site abandoned Miamisburg production well is conducted at least monthly. When the tritium contamination exceeds the standard of 20 nCi/L, the well is pumped until concentrations are below 10 nCi/L. The discharge is routed through a closed pipeline to the Great Miami River to NPDES outfall 001. Historic data are discussed in Operable Unit 9 Site-Wide RI/FS work plan (DOE 1992a). Monitoring data are published annually in the Mound Plant Environmental Monitoring Report (e.g., EG&G 1992).

### **3.2. ASSIGNMENT OF POTENTIAL RELEASE SITES TO REGULATORY AUTHORITIES**

Mound Plant is an operating facility and has numerous processes and process units that it uses to perform its mission. In using these processes/units, Mound Plant maintains compliance with applicable regulatory programs, including facilities, equipment and tank maintenance, as well as monitoring, upgrade and closure activities. In general, nearly all of the PRSs at Mound Plant contain or have contained hazardous substances. Any releases of these hazardous substances that could threaten human health and the environment are subject to the jurisdiction of the FFA, which requires CERCLA compliance for all such releases. This jurisdiction does not specifically include the management or removal/closure of sites, but does include the investigation and remediation of sites that have released or may have released hazardous substances that may pose a threat to human health and the environment. If hazardous substances were released from a site or were suspected to have been released, CERCLA could require any necessary investigation or remediation to mitigate the actual or potential hazards posed by the substances. In requiring investigation or cleanup of hazardous substances areas, CERCLA would mandate compliance with all ARARs that affect the specific investigation or cleanup activities and the hazardous substances involved. For example, if cleanup involved the excavation of a hazardous substance that could be identified as hazardous waste, CERCLA could require compliance with RCRA regulations.

The complex interaction of the CERCLA RI/FS at Mound Plant within an operational facility requires an integration of effort for active units that may require remedial actions for historic activities, as well as closure activities for units currently in service, but which may be inactivated during the period of performance of the FFA. Any releases of hazardous substances that could threaten human health and the environment are subject to the jurisdiction of the FFA, which requires CERCLA compliance for all such releases. However, DOE and EPA believe corrective action at Mound Plant should be taken under whatever authority allows for the most expeditious or economical cleanup while maintaining effective

coordination and consistency (e.g., cleanup standards) among the different authorities. This is consistent with the National Contingency Plan that states that the availability of other appropriate federal or state response mechanisms shall be considered in responding to a release (40 CFR 300.415). Therefore, DOE has determined that releases from operational or active PRSs will be addressed under an applicable statutory or regulatory program, rather than the FFA. Operational PRSs are those that are currently subject to regulatory control as active management units. These sites will continue to be subject to regulatory control other than the FFA until the applicable compliance period is over, usually when the system is properly closed. Accordingly, the FFA will be applied to PRSs after the sites are closed. Table III.1 summarizes the regulatory authorities for release response. Releases from PRSs assigned to the ER Program will be subject to response under the FFA. For PRSs where there is no reason to believe hazardous substances as defined by the FFA have been released to the environment, the DOE believes the sites are not subject to the FFA or CERCLA.

The decision tree designed to establish the regulatory authorities for operation, spill response, closure and remedial investigation of the PRSs at Mound Plant is depicted in Figure 3.1. This methodology for determining whether a PRS is assigned to the ER Program or another regulatory authority is adopted directly from the strategy developed for the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992d). The status for any PRS can be followed through the flow diagram to establish the appropriate authorities for operation, spill response, remedial investigation (if any), and closure authority. The decision tree also distinguishes between sites that are active and still operational, but may require a response to current spills, as well as historic releases.

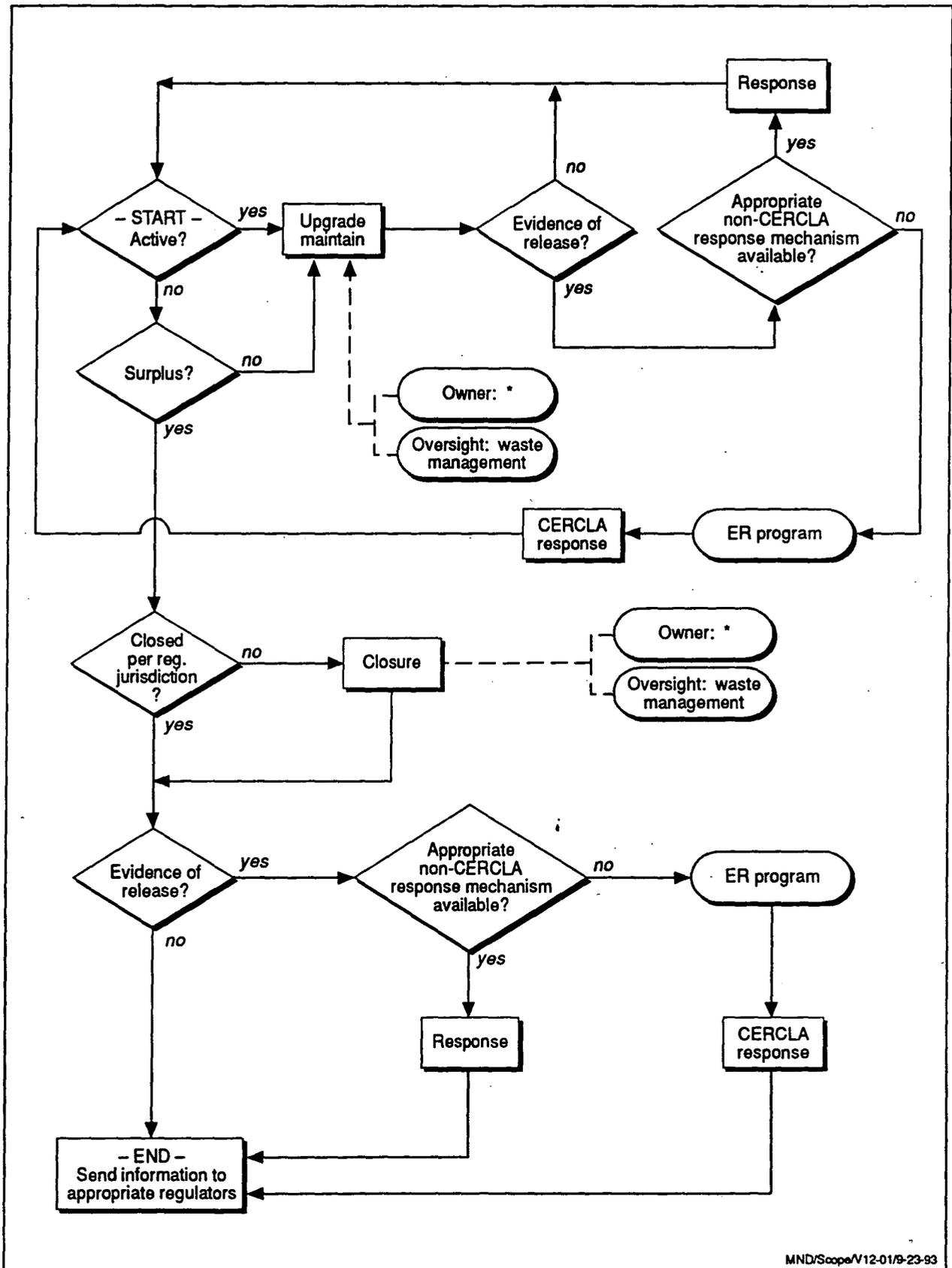
For the purposes of this report, the status of PRSs are subdivided into in service, inactive, surplus, grounds, and historical. In service are those PRSs that are now active and operational and part of Mound operations (e.g., Building 72 Hazardous waste storage). Inactive are those PRSs that are still in existence but not currently operational, but that may become operational again or may be declared surplus at some time in the future (e.g., glass melter furnace is not currently operational, but is in standby awaiting RCRA Part B permit approval). Surplus are those PRSs that still physically exist, but are not required for future operations (e.g., Building 27 leach pit, sump, concrete flume and filtration system). Grounds are those PRSs that are part of the facility grounds and are not considered restricted access areas or have been declared surplus. Historical are those PRSs that no longer exist in the form in which they were active, i.e., areas or facilities that have been modified or removed (e.g., lithium burn area, the area now occupied by Building 34 and other structures).

Table A.2 in Appendix A summarizes the results of applying the decision tree to the list of PRSs (Table A.1, Appendix A) and tabulates the appropriate authorities for operational regulation, spill response and response to historic releases. A regulated unit is defined in the FFA as a unit operating

Table III.1. Regulatory Authorities for Release Response

Release Type	Primary Release Response Regulatory Authority Reference	Comments
Radionuclide-bearing Wastes	AEA	DOE policy to operate in an environmentally safe manner (general duty clauses, e.g., DOE Order 5400.1) constitutes an appropriate federal response mechanism to the release (40 CFR 400.415). If the character of the release is such that continued response is more appropriate under a different authority, response may be continued under the FFA.
Non-radionuclide-bearing Wastes	AEA	DOE policy to operate in an environmentally safe manner (general duty clauses, e.g., DOE Order 5400.1) constitutes an appropriate federal response mechanism to the release (40 CFR 400.415). If the character of the release is such that continued response is more appropriate under a different authority, response may be continued under the FFA.
Petroleum or Other Regulated Substance	RCRA 40 CFR 280 Subpart F/BUSTR O.A.C. 1301: 7-7-36 and 7-9-13	Releases of petroleum substances that could reach navigable waters are also subject to Mound's Spill Prevention, Controls, and Countermeasures Plan.
Hazardous Waste	RCRA 40 CFR 264 Subpart J/O.A.C. 3745-51-20 et seq.	Releases of hazardous wastes also may cause Mound Plant to implement its hazardous waste contingency plan in response to the release.

AEA - Atomic Energy Act  
 DOE - U.S. Department of Energy  
 FFA - Federal Facility Agreement  
 RCRA - Resource Conservation and Recovery Act



MND/Scope/V12-01/9-23-93

Figure 3.1. Flow diagram illustrating ER Program site assignment process.

under conditions imposed by a regulation or permit by any federal or state regulatory body. PRSs that are still active and in service may require corrective actions in response to a spill or release as a result of upset of operations. As shown in Table A.2, routine emissions may be regulated under the CWA or the CAA, but releases to the environment beyond routine operations, such as the overflow of a tank onto surrounding soil, may require a response under the AEA authority. In the case of units regulated by RCRA, for example, the corrective actions will be conducted under that authority (Table III.1). If the threat of the release is large enough, no response under other authorities may be appropriate and CERCLA may respond. Under Title III of SARA, CERCLA may be the appropriate response to spills or other releases of significant consequences. Although not stated explicitly in Table A.2, SARA Title III is inherently part of the plant response to environmental releases as part of operations. In general, response under the FFA is not appropriate for releases from currently operational activities. PRSs that are appropriately managed by plant operations are assigned to operations and maintenance. PRSs such as the powerhouse fuel tanks are assigned to the Mound Plant AUST Program for further action. Operable Unit assignments are not appropriate for PRSs that are to be maintained by OM. If it is evident, however, that a release is due to historic practices, such as the B Building solvent storage shed, the appropriate response authority is the FFA. The PRS may or may not remain active through this process (Figure 3.1).

The assignment of tanks in Table A.2 follows exactly the assignments approved in the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review (DOE 1992c). Tanks assigned to the AUST Program (EG&G 1994) include active tanks, inactive tanks that are not surplus, and inactive tanks that have not been closed. A "closed UST system" is defined as a tank and its associated piping that have been closed in accordance with the statutory and regulatory requirements applicable to the tank. For tanks subject to RCRA or Bureau of Underground Storage Tank Regulation, there are well-defined closure requirements that must be met. For tanks subject to the AEA, the DOE considers the systems closed when the D&D Program has completed its cleanup activities. D&D activities such as inerting a tank by filling it with concrete or sand are intended to serve as interim measures to allow reuse of an area or to minimize the release of any radiological constituents that may be present in AEA tanks. Tanks for which such interim D&D measures have been taken are not considered "closed UST systems." For tanks whose effluents are subject to regulation under the CWA, spill response and closure requirements are not defined, so the authority reverts to the AEA and the policy for DOE to operate in an environmentally safe manner. DOE will consider such CWA systems to be "closed UST systems" when the systems are cleaned and taken out of service, and are not intended to be returned to service. In order for a tank system to be considered a closed UST system, the system must not be part of a building structure that is currently in use (e.g., tank that is a part of the interior floor of the building), unless there is evidence of a release from the system that may pose a threat to human health or the environment. Where evidence of a release exists for tanks that are

part of a building structure, the DOE will investigate and remediate the release as appropriate under the primary regulatory authority for the tank.

Since some of the active PRSs may exhibit evidence for a historic release that is appropriately responsive under the FFA, evidence of historic release was evaluated from data compiled in Table A.1 in Appendix A. These data included review of records of the Mound Plant safety office, health physics records, personnel interviews and other data used to compile the scoping report. The appropriate authority for response to historic releases may be either CERCLA under the FFA, or the D&D Program under the AEA. In those cases where the appropriate response is CERCLA under the FFA, an assignment is made to an operable unit according to the geographic location of the PRS. For those cases where the appropriate response is the AEA, no operable unit assignments are made unless the site is currently scheduled as part of Operable Unit 6, but recommendations are made that the PRS be evaluated and incorporated into the D&D program (Table A.2, Appendix A). At the point in time when the contaminated soil areas are scheduled for D&D cleanup, verification is still required by CERCLA.

#### Identification of Solid Waste Management Units

A requirement of the FFA, in addition to all regulated units and all areas suspected of contamination, is the identification of all SWMUs. As discussed in subsections 2.0 and 2.2, SWMUs are defined as areas associated with production processes at facilities which had become contaminated as a result of routine, systematic, and deliberate release of wastes or constituents, noting that a product could be come a waste if it is discarded or abandoned (50 Federal Register 28702). Table A.2 (Appendix A) lists all PRSs that should be considered SWMUs. This list includes all SWMUs identified in the RFA (EPA 1988a) as well as additional sites identified since that inspection. A total of 134 SWMUs are identified in accordance with the definition. The increase from the 86 identified in the RFA (EPA 1988a) is due to increased detail of the sanitary waste lines, increased recognition of the number of units within the WD treatment facility, and newly identified solvent storage facilities (DOE 1993a).

### **3.3. POTENTIAL RELEASE SITES RECOMMENDED FOR NO FURTHER ACTION**

For PRSs where there is no reason for the DOE to believe hazardous substances have been released to the environment, the DOE believes the PRS are not subject to the FFA or CERCLA, but are subject to regulatory programs such as the AEA and RCRA. When a release of a hazardous substance as defined by the FFA is found or suspected, the DOE will respond as directed by the FFA, RCRA, the Toxic Substance Control Act, etc., to ensure that human health and the environment are protected. However, part of the objectives of this report are to make recommendations for PRSs that require no further action (NFA). The recommendations are made on the basis of process information reviews,

including discussions with facility personnel, reviews of records of spills and response actions, available environmental sampling data and visual inspections. On the basis of this evaluation, Table A.2 tabulates PRSs that are recommended for NFA. The list of PRSs recommended for NFA includes PRSs that have no evidence of release or exhibit evidence of minor release that are of such a nature that they pose no threat to human health or the environment. Footnotes in Table A.2. describe conditions where Evidence of Release is YES and Further Action Recommended is NO or other non-CERCLA response. Where PRSs are designated NFA, operable unit assignments are made for administrative purposes only. As required by the FFA, additional evaluations of the PRSs recommended for NFA will be documented in the RI work plans, as appropriate.

Relative to anticipated operational activities, T Building presents a unique situation. Constructed in the late 1940s for atomic materials production, T Building was built underground for defense purposes. The entire building is made of reinforced concrete including the floor, which is 10 ft thick. All of the 22 USTs in T Building were formed in the concrete floor when the building was constructed. For this reason, T Building USTs are not considered to be potential release sources (DOE 1992d). Any piping or other ancillary equipment external to T Building may represent a threat of release and will be investigated, as appropriate.

#### 4. SITE CONCEPTUAL MODEL

The site conceptual model for Mound Plant is summarized in Figure 4.1. The site conceptual model was developed during the initial scoping phase of the RI and represents an initial environmental assessment of Mound Plant. The Operable Unit 9 site-wide RI work plan presents specific conceptual models developed for each operable unit. The models include the identification of primary and secondary sources, primary and secondary release mechanisms, predicted pathways and potential receptors. The Operable Unit 9 site-wide RI work plan (DOE 1992a) also presents a description of the community surrounding Mound Plant including demography, groundwater and surface water use and land use.

The PRSs at Mound Plant can be grouped into five types of primary sources from which contaminants have entered or may enter the environment. These are

- drums, tanks, and waste lines;
- landfills, the old cave, and other covered disposal sites;
- retention basins/wastewater treatment system;
- surface disposal sites; and
- operations or buildings.



Each of these primary sources may have contaminated surrounding soils through primary release mechanisms that include spills or leaks, leaching, infiltration, overflow, and runoff. These primary releases may lead to contaminated soil as a secondary source for further contaminant releases and potential exposures. The comprehensive tabulation of PRSs in Appendix A includes data on the anticipated contaminants and hazardous substances at each PRS, releases from each to the extent known and the currently available environmental data at each PRS. The tables in Appendix B provide details of the available concentration data for each PRS. Sites not listed in the tables in Appendix B do not have current environmental data.

Contaminated soil represents a potential direct route of exposure to humans and biota through incidental ingestion, dermal contact, and direct radiation. Secondary routes of exposure may occur due to uptake by plants, resuspension of dust, vapor transfer into the air, and surface and groundwater contamination. Both flora and fauna may incorporate contaminants from soil and may provide a route of exposure to humans and other terrestrial biota through ingestion. Descriptions of Mound Plant geology, pedology, hydrogeology, physiology, hydrology, water quality, meteorology, and air quality are presented in the Operable Unit 9 site-wide RI work plan (DOE 1992a).

Air exposure pathways result from contaminated soil that may be resuspended into air by the natural action of wind or by actions of man. Activities such as plowing and other agricultural field work can raise significant amounts of dust, as can such current activities as vehicle traffic, construction, and mowing. Additionally, certain contaminants such as volatile organics, tritium, or radon may directly enter the breathing zone. These vapors or gases may pass through an environmental medium first (e.g., soil), or they may enter air directly from the source.

Groundwater can become contaminated by the leaching and further percolation of hazardous material from contaminated soil. Contamination in the groundwater represents potential exposure pathways, including ingestion, inhalation, and dermal contact, from use of current onsite and offsite wells and from hypothetical future development of onsite residential wells. Terrestrial biota are not considered receptors in this scenario since they do not have access to groundwater from anthropogenic sources. Surface water and associated sediments can become contaminated as a result of runoff and erosion from areas of contaminated soil, from seepage of contaminated groundwater, or historically from direct spills and effluent releases. Surface water exposure routes to be considered include ingestion of fish that have fed in contaminated areas, incidental of sediment, dermal contact with surface water and sediments, direct radiation from contaminated sediments and canal banks, and ingestion of livestock (beef and milk) watered with contaminated surface water.

Potential exposure routes for terrestrial biota are ingestion of contaminated surface water, including water from seeps, and ingestion of biota from contaminated surface water. Exposure of aquatic biota can occur through contact with contaminated water and sediments and through bioaccumulation from other organisms lower in the food chain.

## 5. CONCLUSIONS

Through a systematic investigation of the points of current and historic waste handling and contaminant emissions, 325 potential releases sites are identified. These include regulated units, solid waste management units and other areas of suspected contamination. Details of each site are tabulated in Tables A.1 and A.2 in Appendix A of this report. Plate 1 depicts their locations. Not all of the 325 PRSs will be addressed by the ER Program. As Mound is an operating facility, other laws and regulatory programs are relevant and applicable. The complex interaction of the CERCLA RI/FS at Mound Plant within an operational facility requires an integration of effort for active units that may require remedial actions for historic activities, as well as closure activities for units currently in service, but which may be inactivated during the period of performance of the FFA. Any releases of hazardous substances that could threaten human health and the environment are subject to the jurisdiction of the FFA which require CERCLA compliance for all such releases. However, DOE, EPA, and OEPA believe corrective action at Mound Plant should be taken under whatever authority allows for the most expeditious or economical cleanup, while maintaining effective coordination and consistency (e.g., cleanup standards) among the different authorities. Therefore, DOE has determined that releases from active PRSs will be addressed under an applicable statutory or regulatory program rather than the FFA.

Table V.1 lists the PRSs recommended for inclusion into the ER Program. Sites are listed according to the recommended operable unit, but maintain the site number from Table A.1 for reference purposes. Figure 5.1 depicts the operable unit boundaries as currently defined. The PRSs listed include those recommended for further action, as well as PRSs recommended for No Further Action. Table V.1 does not include PRSs currently in Operable Unit 6, as these are discussed below.

Table V.2 lists the PRSs recommended for exclusion from the ER program as they are currently in service or are inactive and may be reactivated. The further action recommended is that facility operations and maintenance provide for the proper administration and closure of these facilities. Two PRSs (the cooling tower basins and Building 28 solvent storage shed) listed in Table V.1 are currently in service, but exhibit evidence of release that will be addressed under the FFA. These two sites are included in both Tables V.1 and V.2.

**Table V.1. Potential Release Sites Recommended for Inclusion in the ER Program,  
Listed by Operable Unit**

No.	Site Name	Evidence of Release <sup>a</sup>	Further Action Recommended <sup>a</sup>	FFA OU
8	Site Sanitary Landfill	No	Yes	1
9	Area 18, Site Sanitary Landfill Cover	Yes	Yes	1
10	Historic Landfill	Yes	Yes	1
11	Area 2, Thorium and Polonium-Contaminated Wastes (AKA Crushed Drums)	Yes	Yes	1
12	Area B Drum Storage Area	No	Yes	1
13	Trash incinerator	No	No	1
84	Building 56 Diesel Fuel Storage Tank (Tank 223)	No	Yes	2
91	Main Hill Seep 0601	Yes	Yes	2
92	Main Hill Seep 0602	Yes	Yes	2
93	Main Hill Seep 0603	Yes	Yes	2
94	Main Hill Seep 0604	Yes	Yes	2
95	Main Hill Seep 0605	Yes	Yes	2
96	Main Hill Seep 0606	Yes	Yes	2
97	Main Hill Seep 0607	Yes	Yes	2
98	Main Hill Seep 0608	Yes	Yes	2
99	Area 6, WD Building Filter-Cleaning Waste	No	Yes	2
100	Area F, Chromium Trench	No	Yes	2
101	Cooling Tower Basins	Yes	Yes	2
103	E Building Soils	Yes	Yes	2
105	E Building Solvent Storage Shed	Yes	Yes	2
106	G Building Soils (AKA Garage Area)	Yes	Yes	2
107	G Building Gasoline Tank (Tank 202)	Yes	Yes	2
108	G Building Gasoline Tank (Tank 203)	Yes	Yes	2
109	G Building Gasoline Tank (Tank 204)	Yes	Yes	2
110	I Building Soils	Yes	Yes	2
111	Monitor Well 0034	Yes	Yes	2
112	Paint Shop Area	Yes	Yes	2
113	Powerhouse Soils	Yes	Yes	2
114	Powerhouse Fuel Oil Storage Tank (Tank 113)	Yes	Yes	2
115	Powerhouse Fuel Oil Storage Tank (Tank 114)	Yes	Yes	2
116	Powerhouse Fuel Oil Storage Tank (Tank 115)	Yes	Yes	2

Table V.1. (page 2 of 5)

No.	Site Name	Evidence of Release <sup>a</sup>	Further Action Recommended <sup>a</sup>	FFA OU
117	Powerhouse Fuel Oil Storage Tank (Tank 116)	Yes	Yes	2
118	M Building Soils	Yes	Yes	2
119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	No	No	2
126	Building 28 Solvent Storage Area	No	No	2
127	Building 28 Solvent Storage Shed	Yes	Yes	2
129	B Building Solvent Storage Shed	Yes	Yes	2
130	B Building Temporary Drum Storage Area	Yes	Yes	2
131	SW Building Soils	Yes	Yes	2
147	HH Building Soils	Yes	Yes	2
234	Building 58 Diesel Fuel Storage Tank (Tank 222)	No	Yes	2
236	Site Survey Project Potential Hot Spots Location S0166	Yes	Yes	2
239	Site Survey Project Potential Hot Spot Location S0208	Yes	Yes	2
241	Northwest Parking Lots	Yes	Yes	2
242	VOC Potential Hot Spot Location 1016	Yes	Yes	2
243	VOC Potential Hot Spot Location 1064	Yes	Yes	2
244	VOC Potential Hot Spot Locations 1076, 1077, 1079 and 1080	Yes	Yes	2
245	VOC Potential Hot Spot Location 1085	Yes	Yes	2
246	VOC Potential Hot Spot Locations 1117 and 1118	Yes	Yes	2
247	VOC Potential Hot Spot Location 1129	Yes	Yes	2
332	Building G Waste Oil Tank (Tank 262)	No	Yes	2
1	Miami-Erie canal (north pond)	No	No	4
2	Miami-Erie canal (south pond)	No	No	4
3	Miami-Erie canal (north canal)	Yes	Yes	4
4	Miami-Erie canal (runoff hollow)	Yes	No	4

Table V.1. (page 3 of 5)

No.	Site Name	Evidence of Release <sup>a</sup>	Further Action Recommended <sup>a</sup>	FFA OU
5	Miami-Erie canal (south canal)	Yes	Yes	4
6	Miami-Erie canal (overflow creek)	Yes	Yes	4
14	Area C, Waste Storage Area (AKA, Drum Staging Area and Chemical Waste Storage Area)	No	No	5
15	Area C, Lithium Burn Area (AKA, Lithium Carbonate Disposal)	No	No	5
16	Area C, Past Hazardous Waste Storage Area (AKA, old Building 72) (see related site 345)	Yes, historically remediated	No	5
17	Oil Burn Structure	Yes	Yes	5
18	Building 34, Fire Fighting Training Facility Pits	Yes	Yes	5
19	Building 34, Historical Firefighting Training Pit	Yes	Yes	5
20	Building 34 Aviation Fuel Storage Tank (Tank 219)	Yes	No	5
21	Building 1 Leach Pit (Area I)	No	No	5
22	Building 1 Explosives Wastewater Settling Basin (AKA Building 1 Sump) (Tank 200)	No	No	5
23	Building 43 Explosives Wastewater Settling Basin (AKA Building 43 Sump) (Tank 201)	No	No	5
25	Building 27 Leach Pit (Area I)	No	No	5
26	Building 27 Concrete Flume (Tank 217)	No	No	5
27	Building 27 Settling Sump (Tank 218)	No	No	5
28	Building 27 Solvent/Drum Storage Area	No	No	5
37	Building 51 Waste Solvent Storage Tank (Tank 220)	Yes	Yes	5
38	Building 51 Waste Incinerator	No	No	5
39	Building 51 Waste Incinerator Scrubber	No	No	5
41	Area 3, Thorium Drum Storage and Redrumming Area	Yes	Yes	5
42	Area A, Construction Soils from T Building	Yes	No	5
57	Sludge Drying Beds	Yes	Yes	5

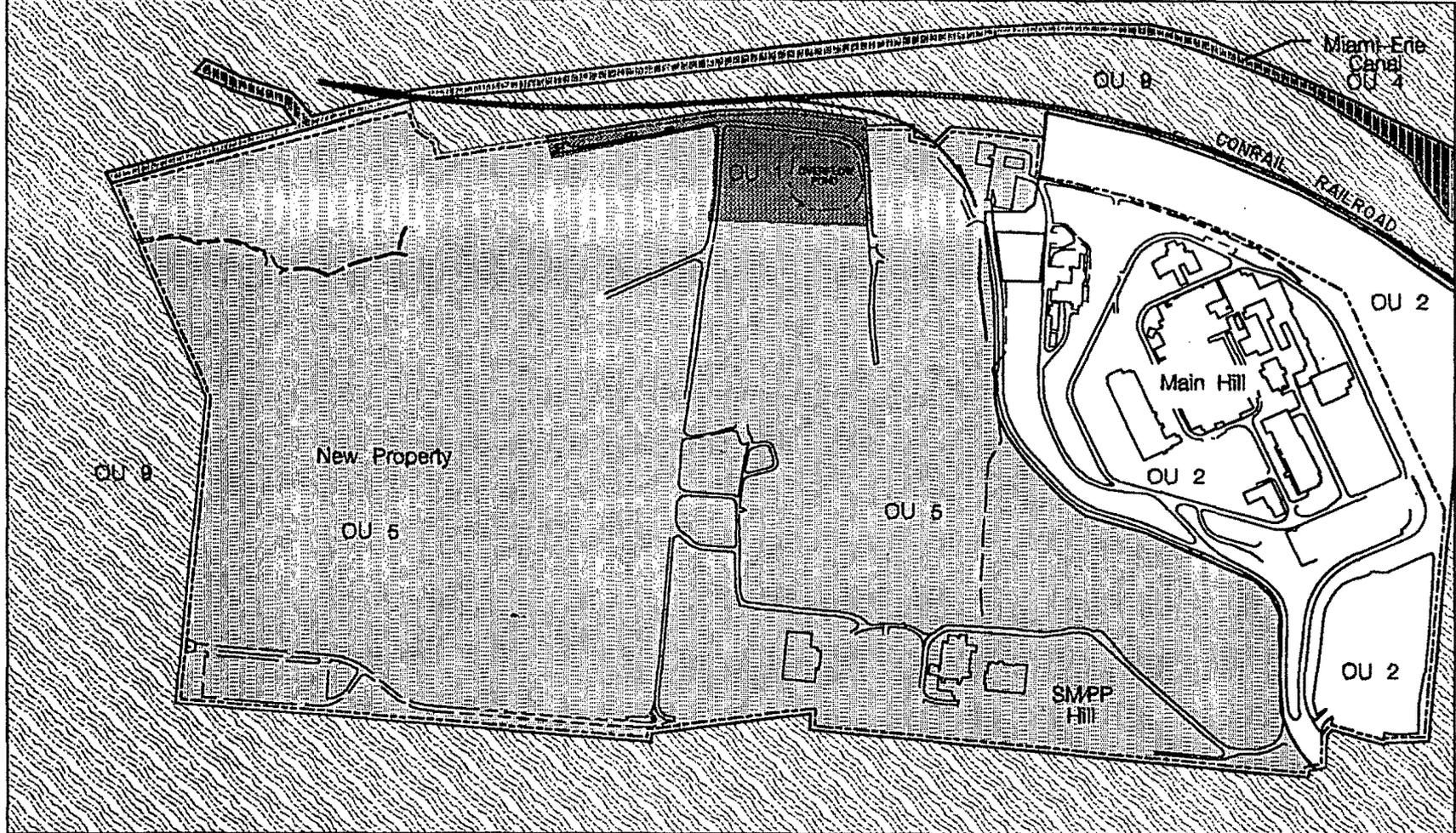
Table V.1. (page 4 of 5)

No.	Site Name	Evidence of Release <sup>a</sup>	Further Action Recommended <sup>a</sup>	FFA OU
58	Dredge Spoil Drying Beds	Yes	Yes	5
59	Contaminated Soil Box Storage Area	No	Yes	5
63	Building 19 Soils	Yes	Yes	5
64	Building 19 Historic Gasoline Tank (Tank 238)	No	Yes	5
65	Building 61 Area, Former Heavy Equipment Area	Yes	Yes	5
66	Area 7, Throium and Polonium Wastes (AKA old septic tank)	Yes	Yes	5
71	Building 85 Waste Solvent Tank (Tank 136)	No	No	5
72	Area 13, Polonium-Contaminated Wood from Dayton Unit IV	Yes	Yes	5
73	Evaporator Storage Area	No	No	5
74	Quonset Hut (former)	No	No	5
76	Warehouse 9	Yes	Yes	5
77	Warehouse 10	Yes	Yes	5
79	Warehouse 15	Yes	Yes	5
80	Warehouse 15A	Yes	Yes	5
81	Drilling Mud Drum Storage Areas (3 locations)	No	No	5
261	Trash Burner	No	No	5
269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	No	No	5
274	Area 21 Old Bunker	Yes	Yes	5
275	Area 21 Detonator Shack	Yes	Yes	5
276	Area 22, Orphan Soil from Other Areas	Yes	Yes	5
277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	Yes	Yes	5
278	Area J, Hillside catch basin	No	Yes	5
279	Old Firing Range Drum Storage Area	Yes	Yes	5
280	Waste Oil Drum Field Area	Yes	Yes	5
281	Area E, Waste Oil Spill	Yes	No	5
282	Spoils Disposal Area/Construction Spoils Area	Yes	Yes	5
304	Excavated Materials Disposal Area (AKA Rader's Hill)	No	Yes	5
306	SM/PP Hill Seep 0609	No	Yes	5

Table V.1. (page 5 of 5)

No.	Site Name	Evidence of Release <sup>a</sup>	Further Action Recommended <sup>a</sup>	FFA OU
311	Site Survey Project Potential Hot Spot Location S0706	Yes	Yes	5
312	Site Survey Project Potential Hot Spot Location S0971	Yes	Yes	5
314	Farm Trash Area	No	No	5
330	Building 2 Fuel Oil Tank (Tank 260)	No	No	5
331	Building 2 Tank (Tank 261)	No	Yes	5
338	Building 29 Septic Tank (Tank 270)	No	No	5
345	Area C, Former Equipment Storage Area (see related site 16)	No	No	5
7	Plant Sanitary Pipeline To Greater Miami River	Yes	Yes	9
67	Plant Drainage Ditch	Yes	Yes	9
68	Asphalt-Lined Pond	No	Yes	9
69	Overflow Pond	No	Yes	9
70	Retention Basins and Weir Basin	No	Yes	9

<sup>a</sup>See Table A.1 for detailed information.



Note: Operable Unit 9 encompasses the cumulative impact of all other operable units on the offsite environment, including characterization of the Buried Valley aquifer and the plant drainage system.

Operable Unit 6 occupies small areas within the larger boundaries depicted; these are not shown separately.

Legend

-  Structures
-  Paved roadway
-  Unpaved roadway
-  Mound Plant boundary
-  Operable unit boundaries

True North 

0 700  
Scale in Feet

Figure 5.1. Mound Plant operable unit boundaries.

**Table V.2. Potential Release Sites Recommended for Administration by  
Mound Operations and Maintenance**

No.	Site Name	Status <sup>a</sup>	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(s)		
29	Building 27 Filtration System	Inactive	HWMU included in Part B application	RCRA	RCRA	SWMU	No
31	Underground Sanitary Sewer Line G5	In service	Effluent to  wastewater  treatment  (Building 57)	CWA	AEA	SWMU	No
32	Underground Sanitary Sewer Line G12					SWMU	No
33	Underground Sanitary Sewer Line G14 EAST					SWMU	No
34	Underground Sanitary Sewer Line G14 WEST					SWMU	No
35	Underground Sanitary Sewer Lines G19 & G14					SWMU	No
36	Underground Sanitary Sewer Line G15					SWMU	No
43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)					SWMU	No
44	Building 57 Grit Conveyor					SWMU	No
45	Building 57 Comminuter (Tank 102)					SWMU	No
46	Building 57 Equalization Basin (Tank 103)	In service	Effluent permitted to discharge under NPDES	CWA	AEA	SWMU	No
47	Building 57 Equalization Basin (Tank 104)					SWMU	No
48	Building 57 Equalization Basin (Tank 105)					SWMU	No
49	Building 57 Equalization Basin (Tank 106)					SWMU	No
50	Building 57 Aeration Basin (Tank 107)					SWMU	No
51	Building 57 Aeration Basin (Tank 108)					SWMU	No
52	Building 57 Clarifier (Tank 109)					SWMU	No
53	Building 57 Clarifier (Tank 110)					SWMU	No
54	Building 57 Sand Filters (2 units)					SWMU	No
55	Building 57 Chlorine contact chamber (Tank 111)					SWMU	No
56	Building 57 Chlorine contact chamber (Tank 112)					SWMU	No
60	Hazardous Waste Storage Area (Building 72)	In service	HWMU included in Part B application	RCRA	RCRA	SWMU	No

Table V.2. (page 2 of 7)

No.	Site Name	Status*	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(a)		
61	Building 72 Outdoor Hazardous Waste Storage Area	Inactive		RCRA	RCRA	SWMU	No
62	Building 72 Empty Drum Storage Area	In service		RCRA	RCRA	SWMU	No
82	Building 57 Diesel Fuel Storage Tank (Tank 118)	In service		BUSTR	BUSTR		
83	Building 2 Propane Storage Tank (Tank 122)	Inactive		AEA	NA		No
85	Building 29 Solvent Storage Shed	Inactive	PBR	RCRA	RCRA	SWMU	No
87	Building 49 Solvent Storage Shed	Inactive	PBR	RCRA	RCRA	SWMU	No
88	Tritium in the Buried Valley Aquifer	Historical		SDWA			Yes
89	Test Fire Residual Storage Area	In Service	PBR	RCRA	RCRA	SWMU	No
101	Cooling Tower Basins	In Service	Discharge to plant drainage ditch	RCRA	RCRA	SWMU	Yes
102	Cooling Tower Drum Storage Area	In Service	PBR	RCRA	RCRA	SWMU	No
104	Scintillation Vial Storage Area	In Service	PBR	RCRA	RCRA	SWMU	No
120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	In Service	Effluent monitored under NPDES permit	CWA	AEA	SWMU	No
121	Vapor Degreasers (2 each)	In Service	PBR	RCRA	RCRA	SWMU	No
125	Underground Sewer Line G24	In Service		AEA	AEA	SWMU	No
127	Building 28 Solvent Storage Shed	In Service	PBR	RCRA	RCRA	SWMU	Yes
128	DS Building Solvent Storage Shed	In Service	PBR	RCRA	RCRA	SWMU	No
134	SW Building Drum Storage Area (AKA Drum Staging Area)	In Service	PBR	RCRA	RCRA	SWMU	No
135	Room SW-8 Beta Wastewater Tank (Tank 20)	In Service		AEA	AEA		No
136	Room SW-125 Beta Wastewater Tank (Tank 21)	In Service		AEA	AEA	SWMU	No
137	Room SW-143 Beta Wastewater Tank (Tank 22)	In Service		AEA	AEA	SWMU	No
140	Beta Waste Solidification Facility - SW Building	In Service		AEA	AEA		No
141	Tritium Effluent Removal System	In Service		AEA	AEA		No
142	SW/R Building Solid Radioactive Waste Compactor	In Service		AEA	AEA		No

Table V.2. (page 3 of 7)

No.	Site Name	Status <sup>a</sup>	Operational Jurisdiction			SWMU	Evidence Of Historic Release			
			Regulated Units	Regulatory Authority	Spill Response(a)					
143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	In Service		BUSTR	BUSTR		No			
144	R Building Sanitary Waste Collection Tank (Tank 120)	In Service	effluent to wastewater treatment	CWA	AEA		No			
145	Room R-128 Alpha Wastewater Tank (Tank 19)	In Service		AEA	AEA		No			
152	HH Building Beta Wastewater Sump (Tank 24)	In Service		AEA	AEA	AEA	No			
160	Mixed Waste Storage Area (Building 23)	In Service	HWMU included in Part B application	RCRA	RCRA	SWMU	No			
161	Glass Melter Furnace	Inactive				SWMU	No			
162	Glass Melter Feed Drum					SWMU	No			
163	Off-Gas Treatment System Deluge Tank					SWMU	No			
164	Off-Gas Treatment System Venturi Scrubber					SWMU	No			
165	Off-Gas Treatment System Cyclone Demister					SWMU	No			
166	Off-Gas Treatment System HEPA Filter					SWMU	No			
167	Off-Gas Treatment System WD Building Filter Bank					HWMU included in Part B application	RCRA	RCRA	SWMU	No
168	Off-Gas Treatment System Recycle Tank					SWMU	No			
169	Off-Gas Treatment System Strainer					SWMU	No			
172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	In Service		AEA	AEA	SWMU	No			
174	WD Building Drum Staging Area	In Service		AEA	AEA	SWMU	No			
179	WD Building Alpha Wastewater Influent Tank (Tank 3)	In Service		AEA	AEA	SWMU	No			
180	WD Building Alpha Wastewater Influent Tank (Tank 4)			AEA	AEA	SWMU	No			
181	WD Building Alpha Wastewater Influent Tank (Tank 5)			AEA	AEA	SWMU	No			
182	WD Building Alpha Wastewater Influent Tank (Tank 6)			AEA	AEA	SWMU	No			
183	Room WD-1 Basement Sump (Tank 12)			In Service		AEA	AEA		No	

Table V.2. (page 4 of 7)

No.	Site Name	Status*	Operational Jurisdiction			SWMU	Evidence Of Historic Release			
			Regulated Units	Regulatory Authority	Spill Response(s)					
184	Room WD-1 Alpha Wastewater Sump (Tank 17)	In Service		CWA	AEA		No			
185	Room WD-1 Sanitary Waste Sump (Tank 134)	In Service	effluent to wastewater treatment	CWA	AEA		No			
186	Room WD-8 Alpha Wastewater Sump (Tank 18)	In Service					No			
187	WD Building Alpha Wastewater Clariflocculators (2 units)	In Service	Wastewater Treatment Units  Effluent Released to Great Miami River	CWA	AEA	SWMU	No			
188	WD Building Alpha Wastewater Mixing Box	In Service				SWMU	No			
189	WD Building Alpha Wastewater Sand Filters (2 units)	In Service				SWMU	No			
190	WD Building Alpha Wastewater Bone Char Columns (2 units)	In Service				SWMU	No			
191	WD Building Alpha Wastewater Effluent Tank (Tank 7)					SWMU	No			
192	WD Building Alpha Wastewater Effluent Tank (Tank 8)	In Service				SWMU	No			
193	WD Building Alpha Wastewater Effluent Tank (Tank 9)					SWMU	No			
194	WD Building Alpha Wastewater Effluent Tank (Tank 10)					SWMU	No			
195	WD Building Alpha Wastewater Sludge Pits (2 units)	In Service					AEA	AEA	SWMU	No
196	WD Building Alpha Wastewater Sludge Solidification/Drumming Unit	In Service					AEA	AEA	SWMU	No
197	WD Building Solid Radioactive Waste Compactor	In Service		AEA			NO			
198	WDA Building Basement Sanitary Waste Tank (Tank 135)	In Service	effluent to wastewater treatment	CWA	AEA		No			
199	WDA Building Beta Wastewater Influent Tank (Tank 13)	In Service		AEA	AEA		No			
200	WDA Building Beta Wastewater Influent Tank (Tank 14)	In Service		AEA	AEA		No			
201	WDA Building Beta Wastewater Metering Station	In Service		AEA	AEA		No			

Table V.2. (page 5 of 7)

No.	Site Name	Status <sup>a</sup>	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(s)		
202	WDA Building Beta Wastewater Mixing/Solidification Unit	In Service		AEA	AEA		No
203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	In Service		AEA	AEA	SWMU	No
204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	In Service		AEA	AEA	SWMU	No
209	Building 62 Stack Deluge Tank (Tank 1)	In Service		AEA	AEA		No
210	Room H-131 Laundry Water Tank (Tank 2)	In Service		AEA	AEA		No
211	A Building Decontamination Shower Water Tank (Tank 28)	In Service		AEA	AEA		No
212	A Building Decontamination Shower Water Tank (Tank 29)	In Service		AEA	AEA		No
214	T Building Solid Radioactive Waste Compactor	In Service		AEA			No
215	Room T-1 Cooling Water Sump (Tank 124)	In Service	effluent to wastewater treatment	CWA	AEA		No
216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	In Service					No
217	Room T-11F Sanitary Wastewater Sump (Tank 126)	In Service					No
218	Room T-15 Sanitary Wastewater Sump (Tank 127)	In Service					No
219	T Building, Stair 3 Cooling Water Sump (Tank 128)	In Service					No
220	Room T-78 Steam Condensate Sump (Tank 129)	In Service					No
221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	In Service					No
222	Room T-78A Sanitary Wastewater Sump (Tank 131)	In Service		No			
223	Room T-90 Cooling System Condensate Sump (Tank 132)	In Service		No			
224	Room T-99 Sanitary Wastewater Sump (Tank 133)	In Service		No			
248	HH Building Stack	In Service	NESHAP	CAA	AEA		No
249	SW Building Stack (NCPDF)	In Service	NESHAP	CAA	AEA		No

Table V.2. (page 6 of 7)

No.	Site Name	Status*	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(a)		
250	SW Building Stack (SW1C)	In Service	NESHAP	CAA	AEA		No
251	SW Building Stack (HEFS)	In Service	NESHAP	CAA	AEA		No
253	T Building WEST Stack	In Service	NESHAP	CAA	AEA		No
254	T Building EAST Stack	In Service	NESHAP	CAA	AEA		No
255	WD Building Stack (ALR)	In Service	NESHAP	CAA	AEA		No
256	WD Building Stack (AHR)	In Service	NESHAP	CAA	AEA		No
257	WD Building Stack (SS)	In Service	NESHAP	CAA	AEA		No
258	Area H Open Burn Unit (AKA Pyrotechnic Waste Disposal Area)	In Service	HWMUs included in Part B application	RCRA	RCRA	SWMU	No
259	Pyrotechnic Waste Shed	In Service				SWMU	No
260	Thermal Treatment Unit	Inactive				SWMU	No
262	Retort	In Service	HWMU included in Part B application	RCRA	RCRA	SWMU	No
263	Building 90 Blockhouse					SWMU	No
264	Explosive Waste Storage Bunker (Magazine 53)	In Service	HWMU included in Part B application	RCRA	RCRA	SWMU	No
265	Biodegradation Unit	Inactive	HWMU included in Part B application	RCRA	RCRA	SWMU	No
268	Building 31, Contaminated Material Storage Building	In Service		AEA	AEA		No
270	Underground Sanitary Sewer Lines G6 & G7	In service		AEA	AEA	SWMU	No
271	Building 37 Sanitary Waste Tank (Tank 100)	In Service	effluent to wastewater treatment	CWA	AEA		No
278	Area J, Hillside catch basin	In Service	Potential wetlands (under Section 404 CWA)	AEA (CWA)		SWMU	No
296	Building 38 West Dock Sump (Tank 25)	In Service		AEA	AEA		No
297	Building 38 Alpha Wastewater Sump (Tank 26)	In Service	effluent to WD Building	CWA	AEA		No
298	Building 38 Alpha Wastewater Sump (Tank 27)	In Service	effluent to WD Building	CWA	AEA		No
299	Building 38 Diesel Fuel Storage Tank (Tank 121)	In Service		BUSTR	BUSTR		No
315	Waste Transport Vehicles	In Service	PBR	RCRA	RCRA	SWMU	No
316	Trash Dumpsters	In Service	PBR	RCRA	RCRA	SWMU	No
317	Ventilation Hoods	In Service	PBR	CAA/RCRA		SWMU	No

Table V.2. (page 7 of 7)

No.	Site Name	Status*	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(a)		
318	Transformers	In Service		TSCA	TSCA		No
319	Epoxy Resin Disposal	In Service	PBR	RCRA	RCRA	SWMU	No
326	Building 38 Sanitary in Service Sump (Tank 254)	In Service	effluent to wastewater treatment (Building 57)	CWA	AEA		No
329	Building 62 Hot Waste Sump (Tank 258)	In Service		AEA	AEA		No
333	Building 87 Explosive Surge Tank (Tank 263)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
334	Building 87 Explosive Surge Tank (Tank 264)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
335	Building 87 Explosive Surge Tank (Tank 265)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
336	Building 37 Waste Tank (Tank 267)	In Service		CWA	AEA		No
337	Building H Condensate Sump (Tank 268)	In Service		CWA	AEA		No
341	T-90 Condensate Sump (Tank 269)	In Service		CWA	AEA		No
342	T-1 Hot Side Fire Water Tank (Tank 271)	In Service		AEA	AEA		No
343	T-20 Fire Water Sump (Tank 272)	In Service		AEA	AEA		No
344	T-37 Fire Water Sump (Tank 273)	In Service		AEA	AEA		No

\*See text for descriptions

AEA - Atomic Energy Act of 1954

AKA - Also known as.

CAA - Clean Air Act

CWA - Clean Water Act

HWMU - hazardous waste management units

NA - Not applicable

NESHAP - National Emissions Standards for Hazardous Air Pollutants

NPDES - National Pollutant Discharge Elimination System

OM - Action to be taken by Mound operations and maintenance

PBR - permit by rule

RCRA - Resources Conservation and Recovery Act

SWMU - solid waste management unit

UST - Action to be taken by Mound Active Underground Storage Tank Program

Table V.2. (page 7 of 7)

No.	Site Name	Status*	Operational Jurisdiction			SWMU	Evidence Of Historic Release
			Regulated Units	Regulatory Authority	Spill Response(a)		
318	Transformers	In Service		TSCA	TSCA		No
319	Epoxy Resin Disposal	In Service	PBR	RCRA	RCRA	SWMU	No
326	Building 38 Sanitary in Service Sump (Tank 254)	In Service	effluent to wastewater treatment (Building 57)	CWA	AEA		No
329	Building 62 Hot Waste Sump (Tank 258)	In Service		AEA	AEA		No
333	Building 87 Explosive Surge Tank (Tank 263)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
334	Building 87 Explosive Surge Tank (Tank 264)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
335	Building 87 Explosive Surge Tank (Tank 265)	In Service	HMMU included in Part B Application	CAA	RCRA/AEA		No
336	Building 37 Waste Tank (Tank 267)	In Service		CWA	AEA		No
337	Building H Condensate Sump (Tank 268)	In Service		CWA	AEA		No
341	T-90 Condensate Sump (Tank 269)	In Service		CWA	AEA		No
342	T-1 Hot Side Fire Water Tank (Tank 271)	In Service		AEA	AEA		No
343	T-20 Fire Water Sump (Tank 272)	In Service		AEA	AEA		No
344	T-37 Fire Water Sump (Tank 273)	In Service		AEA	AEA		No

\*See text for descriptions

AEA - Atomic Energy Act of 1954

AKA - Also known as

CAA - Clean Air Act

CWA - Clean Water Act

HWMU - hazardous waste management units

NA - Not applicable

NESHAP - National Emissions Standards for Hazardous Air Pollutants

NPDES - National Pollutant Discharge Elimination System

OM - Action to be taken by Mound operations and maintenance

PBR - permit by rule

RCRA - Resources Conservation and Recovery Act

SWMU - solid waste management unit

UST - Action to be taken by Mound Active Underground Storage Tank Program

Table V.3 lists the PRSs that are currently in the Mound D&D Program, as well as those PRSs recommended for inclusion in the program. The sites currently in the D&D Program are included in Operable Unit 6 for verification purposes are so noted in Table V.3. The glass melter sump was recommended for D&D (DOE 1993c), and is still active; therefore, it is listed in Table V.2 and is not recommended for D&D until the WD facility is shut down. The guidelines for inclusion of PRSs in the D&D Program are provided in Appendix C.

Eighteen PRSs are listed in Table V.4 that are not carried forward by the ER Program, the D&D Program, or Mound Plant operations and maintenance. These include two aboveground propane tanks (Building 43 tank and Building 27 tank) and two pieces of equipment that have been physically removed from the off-gas treatment system (leaf filter and iodine filter); three historical incinerators in the HH Building, WD Building (the Cyclone incinerator) and the Building 38 in-line incinerator that have all been removed from service and no longer exist; and the Building 38 waste compactors and the T Building, HH Building, and WS Building waste solidification units that have long been removed from service and the areas have undergone D&D. The concrete pad and the site of the historic Warehouse 14 have been checked for radioactivity several times and nothing has been found.

Five former Monsanto facilities predated the construction of Mound Plant. The facility at Marion Ohio was originally constructed as a duplicate of Mound's T Building, but was never put into operation. It was released by the General Services Administration in 1954. Of the five former Dayton Units, two did not process materials associated with the Manhattan Project, in which Mound Plant has its roots. The Dayton Warehouse served as an isolation laboratory and no contaminants are suspected. The two remaining Dayton Units, known as Dayton Unit III and Dayton Unit IV, were closed in 1950 (DOE 1993a). It is recommended that Dayton Units III and IV be evaluated under the Formerly Utilized Sites Remedial Action Program.

## 6. REFERENCES

- Dames & Moore. 1976a. "Potable Water Standards Project Mound Laboratory." Report prepared for Monsanto Research Corporation. Cincinnati, Ohio. August 1976.
- Dames and Moore. 1976b. "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory." Report Prepared for Monsanto Research Corporation. Cincinnati, Ohio. December 1976.
- DOE. 1986. "Phase I: Installation Assessment Mound [DRAFT]." Comprehensive Environmental Assessment and Response Program. U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. April 1986.
- DOE. 1987. "Phase 2: Mound Installation Generic Monitoring Plan/Site Specific Monitoring Plan [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. January 1987.

**Table V.3. Potential Release Sites Currently in D&D Program and Sites Recommended for Inclusion in D&D Program**

No.	Site Name	Status <sup>a</sup>	Historic Activities		Further Action Recommended	FFA OU
			Evidence of Release	Response Authority		
40	Building 66 Lot	Grounds	Yes	AEA	D&D	
75	Railroad Siding	Inactive	Yes	AEA	D&D	
78	Warehouse 13	Historical	Yes	AEA	D&D	
86	Building 29 Septic Tank (Tank 224)	Historical	Yes	AEA	Yes	6
90	Site Survey Project Potential Hot Spot Location S0425	Grounds	Yes	AEA	Yes	6
122	Underground Radioactive Waste Lines (Main Hill)	Inactive	Yes	AEA	Yes	6
123	Area 5, Radioactive Waste Line Break	Grounds	Yes	AEA	Yes	6
124	Building 48 Hillside	Inactive	Yes	AEA	D&D	
132	Area 15, Entombed SW Cave (Room SW 1-B)	Historical	Yes	AEA	D&D	
133	SW Building Room 1-A	Historical	Yes	AEA	D&D	
138	Room SW-137 Alpha Wastewater Sump (Tank 23)	Surplus	No	AEA	Yes	6
139	Room SW-10 Beta Wastewater Sump (Tank 226)	Inactive	No	AEA	D&D	
146	R Building Rooms 121, 144, 146 and 148 Drains	Historical	Yes	AEA	D&D	
150	Room HH-15 Beta Wastewater Sump (Tank 236)	Inactive	No	AEA	D&D	
151	Room HH-6 Alpha Wastewater Sump (Tank 237)	Historical	No	AEA	D&D	
153	Area 20, Radioactive Waste Line Break	Grounds	Yes	AEA	Yes	6
154	Area 23, Thorium Contaminated Soil	Grounds	Yes	AEA	Yes	6
155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	Surplus	Yes	AEA	Yes	6
156	Old SD plant Tank (Tank 205)	Surplus	Yes	AEA	Yes	6
157	Old SD plant Tank (Tank 206)	Surplus	Yes	AEA	Yes	6

Table V.3. (page 2 of 4)

No.	Site Name	Status <sup>a</sup>	Historic Activities		Further Action Recommended	FFA OU
			Evidence of Release	Response Authority		
158	Old SD plant Tank (Tank 207)	Surplus	Yes	AEA	Yes	6
159	Area 4A, Sewage Sludge Drying Pits	Surplus	Yes	AEA	Yes	6
175	Area 4, WD Building Influent Tank Overflow	Grounds	Yes	AEA	Yes	6
176	Area 14, Radioactive Waste Line Break	Historical	Yes	AEA	Yes	6
177	Building 41 Alpha Wastewater Tank (Tank 208)	Historical	Yes	AEA	Yes	6
178	Building 41 Alpha Wastewater Tank (Tank 209)	Historical	Yes	AEA	Yes	6
205	WDA Building Alpha Effluent Tank (Tank 214)	Inactive	No	AEA	Yes	6
206	WDA Building Alpha Effluent Tank (Tank 215)		No	AEA	Yes	6
207	WDA Building Alpha Effluent Tank (Tank 216)		No	AEA	Yes	6
208	WDA Building Solidification Unit	Historical	No	AEA	D&D	
225	Room T-23 Beta Wastewater Sump (Tank 227)	Historical	No	AEA	D&D	
226	Room T-3 Floor Drain Sump (Tank 228)	Historical Inactive Filled with concrete 1985	No	AEA	D&D	
227	Room T-40 Alpha Wastewater Sump (Tank 229)	Historical Inactive Filled with concrete	No	AEA	D&D	
228	Room T-41 Alpha Wastewater Sump (Tank 230)	Historical Inactive Filled with concrete	No	AEA	D&D	
229	Room T-50 Alpha Wastewater Sump (Tank 231)	Historical Inactive Filled with concrete 1975	No	AEA	D&D	
230	Room T-50 Alpha Wastewater Sump (Tank 232)	Historical Inactive Filled with concrete 1975	No	AEA	D&D	

Table V.3. (page 3 of 4)

No.	Site Name	Status <sup>a</sup>	Historic Activities		Further Action Recommended	FFA OU
			Evidence of Release	Response Authority		
231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	Historical Inactive Filled with concrete 1982	No	AEA	D&D	
232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	Historical Inactive Filled with concrete 1982	No	AEA	D&D	
233	Room T-63 Alpha Wastewater Sump (Tank 235)	Historical Inactive Filled with concrete 1982	No	AEA	D&D	
235	Area of Possible Elevated Thorium Activity	Grounds	Yes	AEA	Yes	6
237	Hot Spot Location S1092	Grounds	Yes	AEA	Yes	6
238	Site Survey Project Hotspot S1029	Grounds	Yes	AEA	Yes	6
240	Site Survey Project Potential Hot Spot Location S0472	Grounds	Yes	AEA	Yes	6
252	B Building Stack	Inactive	No	AEA	D&D	
266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	Inactive	Yes	AEA	Yes	6
267	Area 9, Thorium Storage and Redrumming Area (AKA Former Throium Storage)	Inactive	Yes	AEA	Yes	6
272	Area 10, Concrete Debris	Inactive	Yes	AEA	Yes	6
273	Area 12, Throium-Contaminated Soil from Area 1	Inactive	Yes	AEA	Yes	6
283	Area 1, Bulk Transfer of Thorium Drums (AKA Plutonium Recoverable Waste Storage)	Grounds	Yes	AEA	Yes	6
284	Building 21, Thorium Sludge Storage Facility	Surplus	Yes	AEA	Yes	6
285	Area 11, Contamination from SM Building Operations	Historical	Yes	AEA	Yes	6
286	Area 16, SM Building Sanitary Sewage Septic Tank\Leach Field	Surplus	Yes	AEA	Yes	6

Table V.3. (page 4 of 4)

No.	Site Name	Status <sup>a</sup>	Historic Activities		Further Action Recommended	FFA OU
			Evidence of Release	Response Authority		
287	SM Building Historic Septic Tank (Tank 241)	Historical	No	AEA	Yes	6
288	Area 17, SM Building Soils	Surplus	Yes	AEA	Yes	6
289	SM Building Alpha Wastewater Tank (Tank 210)	Historical	Yes	AEA	Yes	6
290	SM Building Alpha Wastewater Tank (Tank 211)	Historical	Yes	AEA	Yes	6
291	SM Building Alpha Wastewater Tank (Tank 212)	Historical	Yes	AEA	Yes	6
292	SM Building Alpha Wastewater Tank (Tank 213)	Historical	Yes	AEA	Yes	6
293	SM Building Solidification Unit (Room SM-1)	Historical	Yes	AEA	Yes	6
300	Area 19, Underground Waste Transfer Line	Historical	Yes	AEA	Yes	6
302	Area D, Acid Leach Field	Historical	No	AEA	Yes	6
305	SM Stack	Surplus	No	AEA	Yes	6
307	Site Survey Project Potential Hot Spots Location C0007	Grounds	Yes	AEA	Yes	6
308	Site Survey Project Potential Hot Spot Location C0028	Grounds	Yes	AEA	Yes	6
309	Site Survey Project Potential Hot Spot Location S0307	Grounds	Yes	AEA	Yes	6
310	Site Survey Project Potential Hot Spot Location S0647	Grounds	Yes	AEA	Yes	6
313	Site Survey Project Potential Hot Spot Location S0982	Grounds	Yes	AEA	Yes	6
327	R-111 Colorimetry Bath (Tank 255)	Inactive	No	AEA	D&D	
328	R-111 Colorimetry Bath (Tank 256)	Inactive	No	AEA	D&D	
339	T-44 Wastewater Sump (Tank 250)	Historical	No	AEA	D&D	
340	T-16b Wastewater Sump (Tank 251)	Historical	No	AEA	D&D	

a - See subsection 3.2 for descriptions

AEA - Atomic Energy Act of 1954

AKA - Also known as'

D&D - Action to be taken by Mound Decommission and Decontamination Program

NA - Not applicable

**Table V.4. Potential Release Sites not Recommended for ER,  
D&D, or Operational Programs**

No.	Site Name	Status	Historic Activities		Comment
			Evidence of Release	Response Authority	
24	Building 43 Solvent Storage Tank (Tank 221)	Historical	No	NA	Never used Removed
30	Building 27 Diesel Fuel Storage Tank (Tank 123)	Historical	No	NA	Actually a propane tank
148	HH Building Solidification Unit	Historical	No	AEA	D&D early 1990s
149	HH Building Pilot incinerator	Historical	No	AEA	Removed early 1950s
170	Off-Gas Treatment System Leaf Solution Filter	Historical	No	NA	Removed 1988
171	Off-Gas Treatment System Iodine Absorption Filter	Historical	No	NA	Removed 1988
173	Cyclone Incinerator	Historical	No	AEA	D&D 1990
213	T Building Solidification Unit	Historical	No	AEA	D&D early 1970s
294	WS Building Solidification Unit	Historical	No	NA	D&D 1985
295	Building 38 Solid Radioactive Waste Compactors (2 units)	Historical	No	AEA	D&D 1988
301	Building 38 In-Line Incinerator	Historical	Yes	AEA	D&D 1988
303	Warehouse 14 (AKA Pad 14)	Grounds	No	AEA	
320	Dayton Unit I	Historical	No	NA	NM
321	Dayton Unit II	Historical	No	NA	NM
322	Dayton Unit III	Historical	Yes	FUSRAP	
323	Dayton Unit IV	Historical	Yes	FUSRAP	
324	Dayton Warehouse	Historical	No	NA	NS
325	Scioto Facility (Marion)	Historical	No	NA	Never used

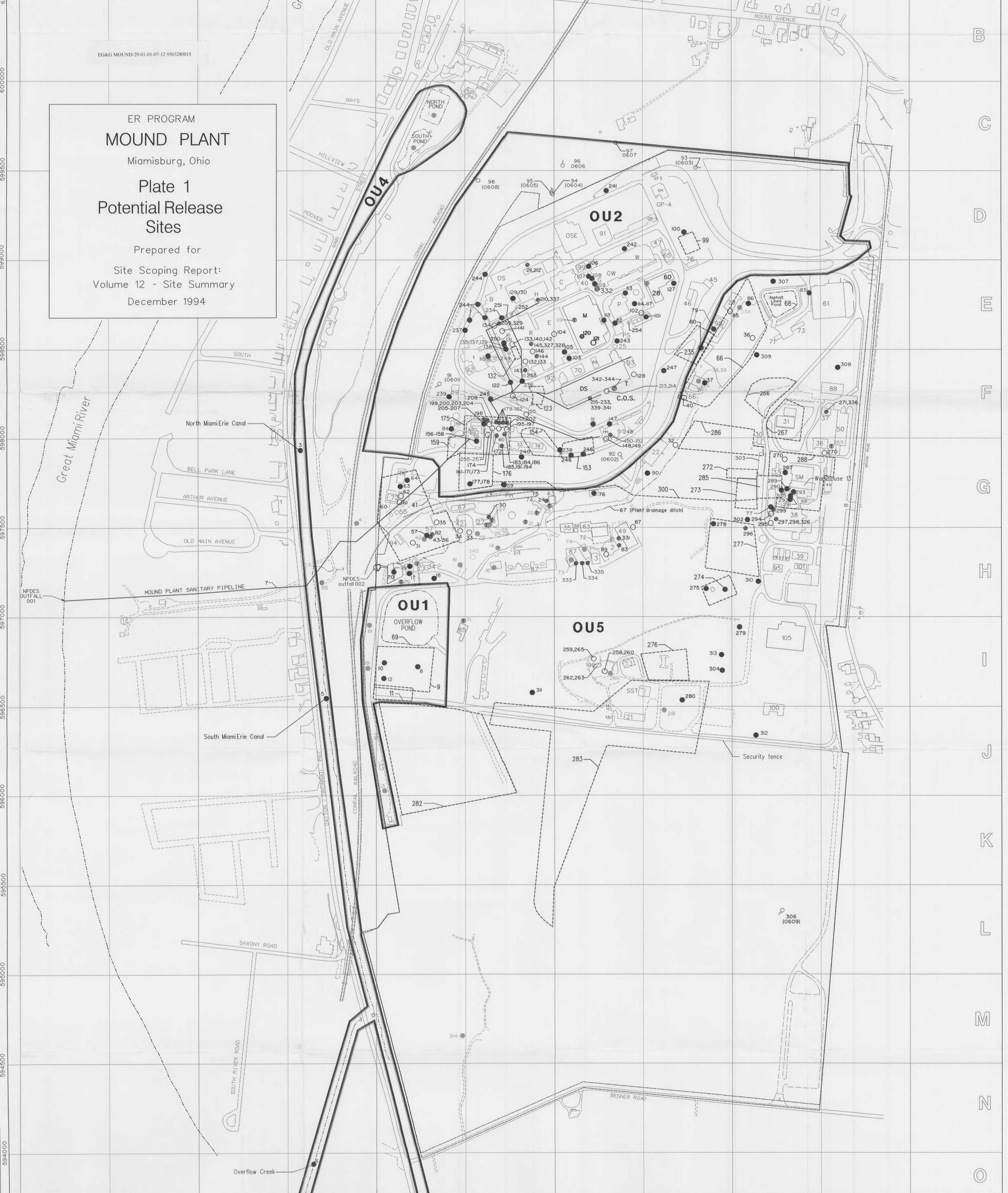
- AEA - Atomic Energy Act of 1954
- D&D - Action to be taken by Mound Decommission and Decontamination Program
- FUSRAP - Formally Utilized Sites Remedial Action Program
- NM - Not Manhattan Project related
- NS - Nothing suspected from process knowledge

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ER PROGRAM  
**MOUND PLANT**  
 Miamisburg, Ohio  
**Plate 1**  
**Potential Release Sites**  
 Prepared for  
 Site Scoping Report:  
 Volume 12 - Site Summary  
 December 1994



Legend	
	Structure
	Paved roadway
	Unpaved roadway
	Railroad
	Water
	Mound Plant fenceline
	Mound Plant property line
	Area boundary
	Operable Unit boundary
<b>OU5</b>	<b>Operable Unit Designation</b>
<b>Potential Release Sites</b> Numbers from Table A.1.	
	Tank (underground and aboveground)
	Site location
	Stack
	Seep
	No Further Action
	Scheduled for Removal
	Assessment Recommended
	CERCLA Tanks
	Operable Unit Designation

1. The electronic base map data file was obtained by WESTON from Woolpert Consultants, Inc., Dayton, Ohio. The data were photogrammetrically compiled from aerial photography dated 12/08/85.

2. WESTON converted MOUND plant coordinates to Ohio State Plane Coordinates using an algorithm provided by Oak Ridge National Laboratory, Grand Junction Project Office.

3. Area west of Dayton-Cincinnati Pike was digitized from a hand drafted map, dated 3/12/86 from Monsanto Research Corp.

1981 magnetic north declination at center of plant. Magnetic north is 3 degrees west of true north. Declination between state plane (grid) north is 1.13 degrees west of true north.

Grid system is based on the Ohio State Plane Coordinate System

Scale in Feet  
 0 100 200 400 600 800 1000

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**APPENDIX A**



**APPENDIX A  
POTENTIAL RELEASE SITES DATA**

Table A.1. Comprehensive Tabulation of Potential Release Sites

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
1	Miami-Erie canal (north pond)	C-5	Historical	Plutonium-238, tritium	1, 8, 5	Plutonium-238	S, SW	10	13	Table B.9	18, 19
2	Miami-Erie canal (south pond)	C-5	Waters of the U.S.						3, 13	Tables B.6, B.7, B.8, B.9, and B.11	15, 19
3	Miami-Erie canal (north canal)	D-4 E-4 F-4 G-4	Waters of the U.S.						2, 3, 4, 5, 6, 13, 16	Tables B.6, B.7, B.8, B.9, and B.10	16
4	Miami-Erie canal (runoff hollow)	G-4	Tributary Drainage						13	Table B.9	18, 19
5	Miami-Erie canal (south canal)	I-4 J-4 K-4 L-4	Waters of the U.S.						2, 3, 4, 5, 6, 13, 16	Tables B.9 and B.10	16
6	Miami-Erie canal (overflow creek)	M-4 N-4	Waters of the U.S.						13	Table B.9	16
7	Plant Sanitary Pipeline	H-5 I-3 I-4	In service	Plutonium-238		Suspected	S	4	16	see item 88	20
8	Site Sanitary Landfill	I-5	Historical	Contaminants listed under Historic Landfill	4, 5, 18	None Suspected			No Data		
9	Area 18, Site Sanitary Landfill Cover	I-5	In service	Plutonium-238  Thorium	1, 18				2, 3, 4, 5, 6, 10, 11, 14, 16	Table B.1 (Table IV.7 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6, 24
10	Historic Landfill	I-4 I-5	Historical	Administrative and laboratory trash  Beryllium, Mercury, Nickel carbonyl, Trichloroethene, carbon tetrachloride, Lithium hydride, Benzene, Alcohol, Acetone, Polychlorinated biphenyl oils, Waste antifreeze, Waste oil, Paints, Solvents, Photo-processing solutions, Plating solutions  Sediment from plant drainage ditch  Bioassay samples  Scintillation "cocktails"	1, 4, 5, 18	Suspected VOCs	GW, S	4, 18	14  2, 3, 4, 5, 6  3	Table B.9 (Table IV.7 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6  24

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
11	Area 2, Thorium and Polonium-Contaminated Wastes (AKA Crusted Drums)	I-4 I-5	Historical	Polonium-210, thorium-contaminated drums, Polonium-210 contaminated sand and debris  Thorium sludge constituents, Plutonium-238	1, 4, 5, 18	Thorium and daughters	S	1, 4	14 2, 3, 4, 5, 6 10, 11, 14, 16	Table B.1 (Table III.1 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6  24
12	Area B Drum Storage Area	I-5	Historical	Chemical wastes	4	None Suspected			2, 3, 4, 5, 6 10, 11, 14, 16	Tables B.6, B.7, B.8 and B.9	24
13	Trash Incinerator	J-5	Historical	Solid Waste	4	None Suspected			No Data		
14	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	H-6	Historical	VOCs	4, 5, 7	Suspected, not confirmed	S	7	3, 4, 5, 6  14	Tables B.6, B.7, B.8, and B.9  RSS <sup>c</sup> Location S0518 (Appendix E in Ref. 6)	7  6
15	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal)	H-5	Historical	Lithium Hydride	4	Possible lithium residues, not confirmed	S	4, 7	2, 3, 4, 5, 6, 7, 8, 9, 10  14	Tables B.6, B.7, B.8, and B.9  RSS <sup>c</sup> Locations S0552 and S0553 (Appendix E in Ref. 6)	7  6
16	Area C, Past Hazardous Waste Storage Area (AKA old Building 72) see related site 345	H-6	Historical	Potential contaminants listed under Hazardous Waste Storage Area	4, 5, 18	Minor, historically remediated	S	18	4	Table B.6	18
17	Oil Burn Structure	H-5	Inactive	Aviation fuel, benzene, toluene, ethyl benzene, xylenes	5, 7, 18	Confirmed EPH, dioxin/furans		7, 18	2, 3, 4, 5, 6, 7, 8, 9, 10	Tables B.6, B.7, B.8, and B.9	7
18	Building 34, Fire Fighting Training Facility Pits	H-5	Inactive	Diesel Fuel	5, 7, 18	Confirmed EPH		7, 18	3, 4, 5, 6, 7, 8, 9, 10  14	Tables B.6, B.7, B.8, and B.9  RSS Location S0556 (Appendix E in Ref. 6)	7  6
19	Building 34, Historical Firefighting Training Pit	H-5	Historical	Diesel Fuel		Suspected  Confirmed dioxin/furan	S, SW  S	10  7	2, 3, 4, 5, 6, 7, 8, 9	Tables B.6, B.7, B.8, and B.9	7

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
20	Building 34 Aviation Fuel Storage Tank (Tank 219)	H-5	Historical	Aviation fuel	3, 5, 18	Tank removed, VOC residuals		7, 18, 22	3, 4, 5, 6, 8	Tables B.6, B.7, and B.8	7, 22
21	Building 1 Leach Pit (Area I)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6 14	Tables B.6, B.7, B.8, and B.9 RSS <sup>c</sup> Location S0504 (Appendix E in Ref. 6)	7 6
22	Building 1 Explosives Wastewater Settling Basin (Tank 200)	G-6	Surplus	Wastewater from explosives processes Organic solvents	3, 4, 5, 18	Suspected		7, 18	No Data		4
23	Building 43 Explosives Wastewater Settling Basin (Tank 201)	G-6	Surplus	Explosives production process wastes	3, 11	Suspected		7, 18	No Data		
24	Building 43 Solvent Storage Tank (Tank 221)	G-6	Never used Removed	None suspected (never used)	3	Suspected		7, 18	No Data		
25	Building 27 Leach Pit (Area I)	H-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	4, 7
26	Building 27 Concrete Flume (Tank 217)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	3, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	4, 7
27	Building 27 Settling Sump (Tank 218)	G-6	Surplus	Wastewater from explosives processes Organic solvents (primarily acetone)	3, 4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	4, 7
28	Building 27 Solvent/Drum Storage Area	G-6	Surplus	Wastewater from explosives processes Organic solvents (acetone and ethanol)	4, 5, 18	Suspected, not confirmed		7, 18	3, 4, 5, 6, 12	Tables B.6, B.7, and B.8	7
29	Building 27 Filtration System	G-6	Inactive	Wastewater from explosives processes Organic solvents		Not Suspected		7, 18	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref.
30	Building 27 Diesel Fuel Storage Tank (Tank 123) (AKA Building 27 Propane Tank)	G-6	Inactive	Tank is actually above ground	3				Not Applicable		
31	Underground Sanitary Sewer Line G5	H-5	In service	Organic solvents	5, 18			7, 18	3, 4, 5, 6, 10, 11, 12, 14, 16	Tables B.6, B.7, and B.8	7
32	Underground Sanitary Sewer Line G12	F-8 G-8		Plating solutions, Laboratory chemicals  Nitric acid, Hydrochloric acid  Methylene chloride  Strong acids and bases		Suspected, not confirmed	S	2, 7	3, 4, 5, 6, 10, 11, 12, 14, 16	Tables B.6, B.7, B.8, and B.9	7
33	Underground Sanitary Sewer Line G14 EAST	H-5 H-6									
34	Underground Sanitary Sewer Line G14 WEST	H-5 H-6									
35	Underground Sanitary Sewer Lines G19 & G14	G-5									
36	Underground Sanitary Sewer Line G15	E-9									
37	Building 51 Waste Solvent Storage Tank (Tank 220)	F-8	Historical	Organic solvents, Paints, Waste oils	3, 4, 5, 18	Tank Removed 1991, VOC residuals	S	4, 23	3, 4, 5, 6, 8	Tables B.6, B.7 and B.8	7, 23
38	Building 51 Waste Incinerator	F-8	Historical	Contaminants listed under Bldg. 51 Waste Solvent Storage Tank (Tank 220)	4, 5		A	4	No Data		
39	Building 51 Waste Incinerator Scrubber	F-8	Historical	Combustion products from Bldg. 51 Waste Incinerator	4, 5	Water released to plant drainage ditch	SW	4	No Data		
40	Building 66 Lot	F-8	Grounds	Plutonium-238 from unknown source	6	Plutonium-238	S	6	13	Table B.1 RSS <sup>c</sup> Location S0323 (Appendix E in Ref. 6)	6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data						
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref				
41	Area 3, Thorium Drum Storage and Redrumming Area	G-5 H-5	Grounds	Thorium-232 and daughters	1, 4, 5, 6, 18	Thorium dust	S	4, 6	14, 16  1	Table B.1 (Table V.2 in Ref. 6)  SGS <sup>b</sup> , Table B.5 Locations 5221 and 5222	6  12				
42	Area A, Construction Soils from T Building	H-5	Grounds	Construction soil from T Bldg.	1	None Suspected			No Data						
43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)	H-5	In service	Sanitary wastewaters	3, 4, 5	None Suspected	S	4	No Data on soils						
44	Building 57 Grit Conveyor														
45	Building 57 Comminuter (Tank 102)			Water softener backwashes discharged to storm sewer											
46	Building 57 Equalization Basin (Tank 103)			Plutonium-238 and other radionuclides								Treated effluent	SW	4	Water analyses submitted monthly to OEPA in accordance with permit
47	Building 57 Equalization Basin (Tank 104)			released to Great Miami River via closed pipeline											
48	Building 57 Equalization Basin (Tank 105)														
49	Building 57 Equalization Basin (Tank 106)														
50	Building 57 Aeration Basin (Tank 107)														
51	Building 57 Aeration Basin (Tank 108)			NPDES permitted outfall 001											
52	Building 57 Clarifier (Tank 109)														
53	Building 57 Clarifier (Tank 110)														

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data						
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref				
54	Building 57 Sand Filters (2 units)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)						
55	Building 57 Chlorine contact chamber (Tank 111)														
56	Building 57 Chlorine contact chamber (Tank 112)														
57	Sludge Drying Beds	H-5	Historical	Plutonium-238	4, 5, 18	Suspected	S	4	14	Table B.9	6				
58	Dredge Spoil Drying Beds	H-5	Surplus	Contaminants listed under Asphalt-Lined Pond	4, 5, 18	Suspected	S	4	No Data						
59	Contaminated Soil Box Storage Area	G-6	Historical	Plutonium-238	4, 5, 18	Suspected			14	Table B.9	6				
60	Hazardous Waste Storage Area (Building 72)	G-5	In service	Combustible and flammable liquids, Waste oils, Solvent-containing wastes, Ignitable wastes, Plating wastes, Photo-processing wastes, Polymeric wastes, Toxic wastes	4, 5, 18	None Suspected			1	SGS <sup>b</sup> Table B.5 Locations 5221 and 5222  Table B.9 RSS <sup>c</sup> Location C0103 (Appendix E in Ref. 6)	12				
													14		6
61	Building 72 Outdoor Hazardous Waste Storage Area		Inactive	Waste oils	4, 5, 18								1	SGS <sup>b</sup> Table B.5 Locations 5221 and 5222  Table B.9 RSS <sup>c</sup> Location S0541 (Appendix E in Ref. 6)	12
								14		6					
62	Building 72 Empty Drum Storage Area		In service	None suspected	4, 5, 18				1	SGS <sup>b</sup> Table B.5 Locations 5221 and 5222	12				

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
63	Building 19 Soils	G-5	Grounds	Cobalt-60	10	Cobalt-60	S	10	1  14, 16	SGS <sup>b</sup> Table B.5 Location 5221  Table B.9 RSS <sup>c</sup> Locations C0099, C0100, S0530, S0532, S0533, S0534, S0535, S0538 (Appendix E in Ref. 6)	12  6
64	Building 19 Historic Gasoline Tank (Tank 238)	G-5	Historical	Gasoline	3	No information on when tanks were removed			No Data		
65	Building 61 Area, Former Heavy Equipment Area	E-10	Historical	Waste oil	1, 5, 7, 18	Suspected	S	7, 10	3, 4, 5, 6, 8  1  14	Tables B.6, B.7, B.8, and B.9  SGS <sup>b</sup> , Table B.3 Locations 2216 and 2217  RSS <sup>c</sup> Locations S0233, S0234, S0235, S0236, S0237, S0240 (Appendix E in Ref. 6)	7  12  6
66	Area 7, Thorium and Polonium Wastes	E-8 E-9 F-8 F-9	Historical	Plutonium-238, Thorium-232 and -238, Polonium-210, Actinium-227, Radium-226, Cesium-137	1, 4, 5, 18	Suspected	S	4, 12, 18	14, 15, 16  1	Table B.1 (Table III.5 in Ref. 6)  SGS <sup>b</sup> Table B.3	6  12

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref
67	Plant Drainage Ditch	F-4 F-5 F-6 F-7 F-8 G-4 G-5 G-6 G-7 G-8 H-4 H-5 H-6 H-7	In service, Waters of the U.S.	Plutonium-238, Thorium, Tritium  Fuel oil, boiler blowdown water, ethylene glycol, sodium sulfite, sodium phosphate, octadecylamin, cyclohexylamine  Effluent from asphalt-lined pond	4, 5, 18	Plutonium-238  Oil  Zinc chromate  Calcium chloride  Ethylene glycol	SW	10	1  14, 15	Table B.9 RSS <sup>c</sup> Locations S0401, S0420, S0442, S0443, S0449, S0505, S0506, S0514, S0554 (Appendix E and Table X.4 in Ref. 6)  SGS <sup>b</sup> Table B.3 Locations 4158 and 4159 Table B.1	6       12
68	Asphalt-Lined Pond	E-9	In service, Waters of the U.S.	Wastewater from SM/PP Hill Storm Sewers  Plutonium-238  Non-contact cooling water - cooling tower blowdown, regeneration of zeolite water softeners	4, 5, 18	Effluent to Plant Drainage Ditch	SW	4	3  2	Table B.8  Table B.9	18  18
69	Overflow Pond	H-5 I-5	In service, Waters of the U.S.	Site sanitary landfill leachate, plutonium-238  Effluent from plant drainage ditch  Stormwater runoff	4, 5, 18	Zinc chromate  Calcium chloride  Ethylene glycol	SW	10			
70	Retention Basins and Weir Basin	H-5	In service, Waters of the U.S.	Stormwater runoff  Effluent from Plant Drainage Ditch  Plutonium-238	4, 5, 18		SW				
71	Building 85 Waste Solvent Tank (Tank 136)	I-5	Inactive	None (never used)	3	Never Used			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
72	Area 13, Polonium-Contaminated Wood from Dayton Unit IV	H-7	Historical	Polonium-210	1, 4, 5	None Suspected	S	6	14	Tables B.1 and B.9	6
73	Evaporator Storage Area (AKA Lower storage area)	H-7	Historical	Actinium-227, Cesium-137, Radium-226	4				14, 15, 16	Table B.9 RSS <sup>c</sup> Locations S0692 and S0697 (Appendix E in Ref. 6)	6
74	Quonset Hut (former)	H-7	Historical	Polonium-210, cobalt-60, bismuth					14	Table B.9 RSS <sup>c</sup> Locations S0684, S0685, and S0689 (Appendix E in Ref. 6)	6
75	Railroad Siding	G-6 G-7	Inactive	Thorium and daughters	4	Suspected thorium	S	4	14	Table B.1	6
76	Warehouse 9	G-7	Historical	Thorium-232	4	Suspected thorium	S	4	No Data		
77	Warehouse 10	G-9	Historical	Polonium-210	4	None suspected			No Data		
78	Warehouse 13	G-9	Historical	Reactor waste including Strontium-90, Cesium-137, and Nickel-63	4	Cesium 137	S	4	No Data		
79	Warehouse 15	E-8	Historical	Radioactive waste  Plutonium-238 wastes and sludge  Thorium sludge constituents (c)	4	Suspected	S	4	See Area 7 (No. 66)	Table B.9	6
80	Warehouse 15A	F-8	Historical	Plutonium-238, thorium	4						
81	Drilling Mud Drum Storage Areas (3 locations)	H-5 I-4	Historical	Barium	4, 5, 18	None Suspected			No Data		
82	Building 57 Diesel Fuel Storage Tank (Tank 118)	H-5	In service	Diesel fuel	3				No Data		
83	Building 2 Propane Storage Tank (Tank 122)	H-7	Inactive	Propane	3				No Data		
84	Building 56 Diesel Fuel Storage Tank (Tank 223)	F-5	Historical	Diesel fuel	3	Tank Removed			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
85	Building 29 Solvent Storage Shed	E-8	Inactive	Acetone	4	Suspected	S	4	1 14	SGS <sup>b</sup> Table B.3 Location 2137  Table B.9 RSS Location S0275	12 6
86	Building 29 Septic Tank (Tank 224)	E-9	Historical	Actinium-227, Radon-222, Thorium-228, Radium-226	3, 4, 6	Suspected	S	4, 6	2	Table B.9 (See discussion for Area 7 in Ref. 6)	6
87	Building 49 Solvent Storage Shed	G-7	Inactive	Organic solvents (including trichloroethene, isopropanol, ethanol, freon-TF, hexane)	4, 9	Suspected	S	4	No Data		
88	Tritium in Buried Valley Aquifer	H-4	Historical	Tritium	1, 18	Tritium, historically remediated	GW	18	16	Table B.9	11, 18
89	Test Fire Residual Storage Area	H-7	In service	Unexploded detonation devices	4, 5, 18	None Suspected		5	No Data		
90	Site Survey Project Potential Hot Spot Location S0425	G-8	Grounds	Thorium	6	Unknown			14	Table B.9 (Appendix E in Ref. 6)	6
91	Main Hill Seep 0601	F-5	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
92	Main Hill Seep 0602	G-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
93	Main Hill Seep 0603	D-8	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
94	Main Hill Seep 0604	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
95	Main Hill Seep 0605	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
96	Main Hill Seep 0606	C-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	No Data		
97	Main Hill Seep 0607	C-7	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18
98	Main Hill Seep 0608	D-6	NA	Tritium, VOCs	5, 18	Tritium, VOCs	SW	13	3, 4, 5, 10, 11, 16	Tables B.6, B.7, B.8, and B.9	18

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
99	Area 6, WD Building Filter-Cleaning Waste	D-8	Historical	Polonium-210, Cobalt-60, Radium-226	1, 4, 5, 6, 18	Suspected	S	4	2, 14	Table B.1 (Table III.4 in Ref. 6)	6
100	Area F, Chromium Trench	D-8	Historical	Chromium plating bath solution treated with sodium bisulfide, cadmium, nickel, silver	1, 4, 5, 18	Suspected	S	4	1	SGS <sup>b</sup> Table B.4 Locations 1109, 1110	12
101	Cooling Tower Basins	E-7 E-8	In service	<p>Sulfuric acid</p> <p>Chromates</p> <p>NALCO 2575 (phosphonate base, tolytriazole, polyacrylate, sodium chromate)</p> <p>NALCO 2532 (bistributyltin) oxide, n-alkyldimethylbenzyl ammonium chloride, potassium hydroxide)</p> <p>NALCO 2590 (calcium hypochlorite)</p> <p>ANCO CSA (phosphonate base, tolytriazole, polyacrylate)</p> <p>MICROBICIDE 77 (5-chloro-2 methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one)</p> <p>ANCO ALGAECIDE No. 1 (2-benzyl-4-chlorophenol, sodium hydroxide)</p> <p>SILTEX (sodium polyacrylate)</p> <p>ANCOCIDE 4020 (glutaraldehyde)</p> <p>ANCOSPERSE 3830 (polyalkylene glycol, n-alkyldimethylbenzylammonium chloride)</p> <p>ANCOOL 3310 (phosphonate, triazole, sodium molybdate, sodium hydroxide)</p>	4, 5, 18	Blowdown water is released to storm sewer and drainage ditch.		4	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
102	Cooling Tower Drum Storage Area	E-7 E-8	In service	Contaminants listed under Cooling Tower Basins  Ethylene glycol	4, 5				No Data		
103	E Building Soils	E-6 E-7 F-7	Grounds			Indicated by Soil Gas Survey	S	12	1	SGS <sup>b</sup> Table B.4 Locations 1046, 1047, 1048, 1066, 1067	12
									14	Table B.9 RSS <sup>c</sup> Locations S0152, S0153, S0164 (Appendix E in Ref. 6)	6
104	Scintillation Vial Storage Area	E-6	In service	Tritium, Trimethylbenzene	4, 5, 18	None suspected (within E Building)			No Data		
105	E Building Solvent Storage Shed	F-6	Historical	Trichloroethene, Ethanol, Methanol	4, 5, 18	Closed before construction of E Building Annex, soil removed	S	4	1	SGS <sup>b</sup> Table B.4 Location 1066	12
106	G Building Soils (AKA Garage Area)	E-7	Grounds	Waste oil, Waste antifreeze, Automotive batteries  Asbestos	1, 4, 18	Suspected petroleum products			1	SGS <sup>b</sup> Table B.4 Locations 1019	12
									14	Table B.9 RSS <sup>c</sup> Locations S0137 and S0141 (Appendix E in Ref. 6)	6
107	G Building Gasoline Tank (Tank 202)	E-7	Historical	Gasoline	3, 18	Tanks removed 1986, petroleum contaminated soils removed		3, 18	No Data		
108	G Building Gasoline Tank (Tank 203)	E-7	Historical								

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
109	G Building Gasoline Tank (Tank 204)	E-7	Historical	(Cont.)	(Cont.)	(Cont.)		(Cont.)	(Cont.)		
110	I Building Soils	E-6 F-6	Grounds	Toluene, acetone, Freon	4	Indicated by Soil Gas Survey	S	12	1  14, 16	SGS <sup>b</sup> Table B.4 Locations 1075, 1227, 1228  Table B.9 RSS Locations S0171, S0178, S0181, S0183, S0186, S0187, S0190, S0193, S0195, S0255 (Appendix E in Ref. 6)	12  6
111	Monitor Well 0034	F-7	Surplus	Waste oil	5, 18	Suspected	GW	5	No Data		
112	Paint Shop Area	E-7	In service	Paints, Thinners, Solvents (including toluene and methylene chloride) Lead, Chromates	1, 4, 5, 18	Suspected, confirmed lead	S	5	3, 4, 5, 6, 16	Tables B.6, B.7, B.8, and B.9	7
113	Powerhouse Soils	E-7	Grounds	Calcium chloride, magnesium chloride, zinc chromate, PCBs	4	Indicated by Soil Gas Survey	S	12	1  14, 16	SGS <sup>b</sup> Table B.4 Location 1052  Table B.9 RSS <sup>c</sup> Locations S0155, S0156, S0158, S0253 (Appendix E in Ref. 6)	12  6
114	Powerhouse Fuel Oil Storage Tank (Tank 113)	E-7	In service	Fuel oil	1, 3, 5, 7, 18	Fuel Oil, confirmed EPH	S	10, 7	3, 4, 5, 6, 8	Tables B.6, B.7, and B.8	7
115	Powerhouse Fuel Oil Storage Tank (Tank 114)										
116	Powerhouse Fuel Oil Storage Tank (Tank 115)										
117	Powerhouse Fuel Oil Storage Tank (Tank 116)										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
118	M Building Soils	E-7	Grounds	Copper cyanide, Silver cyanide  Machine oils, Solvents	4	Oils, Copper cyanide, Silver cyanide	S	10	1  14	SGS <sup>b</sup> Table B.4 Locations 1050, 1051, 1062  Table B.9 RSS <sup>c</sup> Locations S0162, S0163, S0252 (Appendix E in Ref. 6)	12  6
119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	E-7	Surplus	Rinse waters from metal plating operations. Possible contaminants include nickel, cadmium, silver, gold, manganese, cyanide, and aluminum.  Sodium hydroxide solution Potassium permanganate	3, 4	None Suspected			No Data		
120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	E-7	In service	Rinse waters from metal plating operations. copper, gold, silver, nickel, aluminum, and uranium	3, 4	Silver cyanide	SW	10	No Data		
121	Vapor Degreasers	E-7	In service	Perclene D (perchloroethylene)	4, 5, 18	None Suspected			No Data		
122	Underground Radioactive Waste Lines (Main Hill)	E-6 F-6	Inactive	Alpha wastes from SW Bldg., R Bldg., and H Bldg.  Wastewater from B Building Plutonium-238, Cobalt-60	4, 18	Suspected	S	4, 10	No Data		
123	Area 5, Radioactive Waste Line Break	F-6 F-7	Grounds	Cobalt-60, Cesium-137, Plutonium-238	1, 5, 18	Cobalt-60	S	1, 18	2, 14, 16	Table B.1 (Table III.3 in Ref. 6)	6
124	Building 48 Hillside	F-6	Inactive	Plutonium-238		Plutonium-238	S	6	14	Table B.1	6
125	Underground Sanitary Sewer Line G24	F-6	In service	Organic solvents, Plating Solutions, Laboratory chemicals, Nitric acid, Hydrochloric acid, Methylene chloride, Strong acids and bases		Suspected	S	5, 18	3, 4, 5, 6, 14, 16	Tables B.6, B.7, and B.8	7
126	Building 28 Solvent Storage Area	E-8	Grounds	Organic solvents (including alcohol, methylene chloride, and acetone)	4, 5, 9, 18	Suspected	S	4	1	SGS <sup>b</sup> Table B.4 Location 1054	12

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
127	Building 28 Solvent Storage Shed	E-8	In Service	Organic solvents (including alcohol, methylene chloride, and acetone)	4, 5, 18	Suspected	S	4	1	SGS <sup>b</sup> Table B.4 Locations 1190 and 1231	12
128	DS Building Solvent Storage Shed	F-7	In service	Organic solvents (including 1,1,1-trichloroethane, trichlorofluoromethane, ethanol, and trichloroethane)	4, 5, 18	Suspected	S	4	1  14	SGS <sup>b</sup> Table B.4 Location 1194 No Hits  Table B.9 RSS <sup>c</sup> Location S0128 (Appendix E in Ref. 6)	12  6
129	B Building Solvent Storage Shed	E-6	Inactive	Organic solvents ( including trichloroethene, trichlorofluoromethane, ethanol, methonal, isopropanol, acetone, methylene chloride, toluelene)  Oils	4, 5, 18	Suspected	S	4	1  14	SGS <sup>b</sup> Table B.4 Locations 1202, 1203  Table B.9 RSS <sup>c</sup> Location S0146 (Appendix E in Ref. 6)	12  6
130	B Building Temporary Drum Storage Area	E-6	Inactive	Waste solvents, waste oil, and trash from E and B Bldgs.	4						
131	SW Building Soils	E-6 F-6	Grounds	Tritium, Radium-226, Actinium-227, Thorium-232	4, 6, 18	Tritium beneath the building	S	1, 18	14, 16	Table B.1 RSS <sup>c</sup> Locations S0154 and S0180 (Appendix E in Ref. 6)	6
132	Area 15, Entombed SW Cave (Room SW 1-B)	F-6	Historical	Radon-222, Radium-226, Actinium-227, Thorium-228	1, 4, 6, 18	Radon-222	A	1, 6	No Data		
133	SW Building Room 1-A	F-6	Historical	High-activity wastewater from radium and actinium processing, reactor waste including Radium-226, Actinium-227, Cesium-137, Plutonium-238, and Uranium-238.	4	Cesium-137 (sealed in concrete in building floor)		4	No Data		
134	SW Building Drum Storage Area	E-6	In service	Hazardous wastes  Asbestos, Waste oils, Antifreeze	4, 5, 18				14	Table B.9 RSS <sup>c</sup> Location S0180 (Appendix E in Ref. 6)	6
135	Room SW-8 Beta Wastewater Tank (Tank 20)	F-6	In service	Tritium	3, 4				No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
136	Room SW-125 Beta Wastewater Tank (Tank 21)	F-6	In service	Tritium	3, 4	Suspected historical leaks			No Data		
137	Room SW-143 Beta Wastewater Tank (Tank 22)	F-6	In service	Tritium	3, 4	Tanks lined			No Data		
138	Room SW-137 Alpha Wastewater Sump (Tank 23)	E-6 F-6	Inactive	Alpha wastewater from drains, sinks, and processes in SW Bldg - Uranium-238.	3, 4	Suspected uranium-233			No Data		
139	Room SW-10 Beta Wastewater Sump (Tank 226)	F-6	Inactive	tritium	3, 4	Suspected historical leaks, tank lined			No Data		
140	Beta Waste Solidification Facility - SW Building	E-6 F-6	In service	tritium  Waste oils including vacuum pump, gear box, and diffusion pump oils.	4				No Data		
141	Tritium Effluent Removal System	E-6	In service	Vacuum pump oils  Organic solvents  Tritium wastewater		Tritium	A	4, 10	No Data		
142	SW/R Building Solid Radioactive Waste Compactor	E-6 F-6	In service	Tritium	4				No Data		
143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	F-6	In service	Diesel fuel	3				1	SGS <sup>b</sup> Table B.5 Location 1021	12
144	R Building Sanitary Waste Collection Tank (Tank 120)	F-6	In service	Sanitary wastes	3, 4				No Data		
145	Room R-128 Alpha Wastewater Tank (Tank 19)	E-6	In service	Alpha wastewater generated in R Bldg. Possible contaminants include Pu-238,-239, Ra-226, and Ac-227	3, 4				No Data		
146	R Building Rooms 121, 144, 146, and 148 entombed drains	F-6	Historical	Radium-226, Actinium-227	4	Sealed in concrete in building floor drains		4	No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
147	HH Building Soils	F-7	Grounds	Polonium-210, cobalt-60, tritium	4, 18	Indicated by Soil Gas Survey	S	12	1	SGS <sup>b</sup> Table B.4 Locations 1114, 1119, 1206, 1207, 1230	12
148	HH Building Solidification Unit	F-7	Historical	Cobalt-60, Polonium-210	4	Unknown			No Data		
149	HH Building Pilot Incinerator	F-7	Historical	Polonium-210	4	Probable air releases in 1951	A		No Data		
150	Room HH-15 Beta Wastewater Sump (Tank 236)	F-7	Inactive	Beta wastewater from restrooms and process area floor drains - tritium	3	Unknown			No Data		
151	Room HH-6 Alpha Wastewater Sump (Tank 237)	F-7	Historical	Alpha wastewater from process area floor drains. Possible contaminants include polonium-210, cobalt-60, and bismuth.	3, 4	Unknown - filled with concrete			No Data		
152	HH Building Beta Wastewater Sump (Tank 24)	F-7	In service	Beta wastewater from process area sinks and floor drains	3, 4	Unknown			No Data		
153	Area 20, Radioactive Waste Line Break	G-7	Grounds	Sodium nitrate, Plutonium-238, Cesium-137, Thorium, Cobalt-60	4, 5, 18	Cobalt-60	S	6, 18	1  2, 14, 16	SGS <sup>b</sup> Table B.4 Locations 1119 and 1120  Table B.1 (Table III.8 in Ref. 6)	12  6
154	Area 23, Thorium Contaminated Soil	F-6 G-6	Grounds	Thorium-230	18	Thorium-230	S	6	1  2	SGS <sup>b</sup> Table B.4 Location 1122  Table B.1 RSS <sup>c</sup> Location S1092 (Appendix E in Ref. 6)	12  6
155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	F-6	Surplus	Chromic acid, Calcium cyanide, Nickel sulfate, Nickel chloride, Black oxide, Copper cyanide	4, 5, 18	Unknown			No Data		
156	Old SD plant Tank (Tank 205)	F-6	Surplus	Polonium-210, Cobalt-60	3, 5						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
157	Old SD plant Tank (Tank 206)	F-6	Surplus	Photo-processing solutions	3, 5	Unknown			No Data		
158	Old SD plant Tank (Tank 207)	F-6	Surplus	Metal Finishing Rinse Water							
159	Area 4A, Sewage Sludge Drying Pits	F-5 F-6 G-5 G-6	Surplus	Sanitary wastewaters Sludge from old sanitary wastewater treatment plant Plutonium-238, Thorium, Cesium-137, Cobalt-60 Calcium cyanide, Nickel Sulfate, Nickel chloride, Black oxide, Copper Cyanide Radioactive wastes, Process effluent, Metal finishing rinse water		SD Plant effluent was released to pit	S	4, 6	1  4, 5, 6  14, 16  3	SGS <sup>b</sup> Table B.4 Locations 1124 and 1127 Table B.5 Location 5225 Tables B.6 and B.7 Table B.1 (Table III.2 in Ref. 6) Table B.8	12  8  6  8
160	Mixed Waste Storage Area (Building 23)	G-6	In service	Tritium, Thorium compounds, Uranium compounds, Plutonium-238 Trimethylbenzene, Octane, Oils, cleaning materials, Polychlorinated biphenyls, Lead Various chemicals (including mercury, acids, solvents)	4, 5, 18	None Suspected			No Data		
161	Glass Melter Furnace	F-6	Inactive	Ion exchange resins Plutonium-238, Cobalt, Strontium, Cesium SD Building sludge Scintillation fluid constituents Acetonitriles Nitrate salt wastes Liquid solvent wastes	4, 5, 18	Test burns only	A	4, 7	No Data		
162	Glass Melter Feed Drum										
163	Off-Gas Treatment System Deluge Tank										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
164	Off-Gas Treatment System Venturi Scrubber	F-6	Inactive	Contaminants listed under Glass Melter Furnace and Cyclone Incinerator	4, 5, 18	Test burns only	A	4, 7	No Data		
165	Off-Gas Treatment System Cyclone Demister										
166	Off-Gas Treatment System HEPA Filter										
167	Off-Gas Treatment System WD Building Filter Bank										
168	Off-Gas Treatment System Recycle Tank										
169	Off-Gas Treatment System Strainer										
170	Off-Gas Treatment System Leaf Solution Filter	F-6	Historical			Filter removed and replaced			No Data		
171	Off-Gas Treatment System Iodine Absorption Filter	F-6	Historical	None suspected (never used)	4, 5, 18				No Data		
172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	F-6	In service	Alpha wastewater from floor and sink drains in WD Annex Bldg. Possible contaminants include acrylonitrile, phenol, acetonitrile, kerosene, chlorobenzene, carbon tetrachloride, xylene, acetone, ethanol, and methylene chloride.	3, 4, 5, 18	None Suspected beyond routine operation			3, 4, 5, 6, 8, 16	Tables B.6, B.7, B.8, and B.9	3, 7
173	Cyclone Incinerator	F-6 G-6	Historical	Plutonium-238  Tributyl phosphate Kerosene Vacuum pump oils	4, 5, 18	None Suspected			No Data		
174	WD Building Drum Staging Area	F-6	In service	Solidified plutonium sludge from the Alpha Wastewater Treatment System  Low specific activity decontamination and decommissioning wastes	4, 5, 18	Suspected, not confirmed	S	4	3, 4, 5, 6, 13, 16	Tables B.6, B.7, B.8, and B.9	7

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
175	Area 4, WD Building Influent Tank Overflow	F-6	Surplus	Plutonium-238	1, 4, 5, 18	Low risk waste overflowed influent tank	S	10	1 4, 5, 6 14, 16	SGS <sup>b</sup> Table B.4 Locations 1124 and 1127 Table B.5 Location 5225 Tables B.6, B.7, and B.8 Table B.1 (Table III.2 in Ref. 6)	12 8 6
176	Area 14, Radioactive Waste Line Break	G-5 G-6	Historical	Plutonium-238, nitric acid	1, 4, 5, 18	Plutonium-238	S, SW	6, 10	1 4, 5, 6 14, 15	SGS <sup>b</sup> Table B.4 Locations 1125 and 1126 No Hits Tables B.6, B.7, and B.8 Table B.1 (Table IV.4 in Ref. 6)	12 8 6
177	Building 41 Alpha Wastewater Tank (Tank 208)	G-6	Historical	Alpha wastewater from SM Bldg. and Bldg. 38 Plutonium-238, nitric acid	3, 4	Suspected Plutonium-238, removed 1985	S	10	See data for Area 19		
178	Building 41 Alpha Wastewater Tank (Tank 209)										
179	WD Building Alpha Wastewater Influent Tank (Tank 3)	F-6	In service	Influent alpha wastewater from H Bldg., SW/R Complex, SM Bldg. and Bldg. 38. Possible contaminants include polonium-210, bismuth, plutonium-238, -239, radium-226, thorium-230,-232,-234, uranium-238, -234, -235, tritium, and actinium-227.  Supernatant liquids from polonium processes in the HH Bldg. Possible contaminants include Protactinium-231, Cobalt-60, Radium-226 and aluminum chloride and bismuth chloride.  Detergents, Organic solvents, waste chemicals, Lubricating oil	1, 3, 4, 5	Overflow of tanks recorded, see Area 4A			See Area 4A		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
(Cont.)	(Cont.)	(Cont.)	(Cont.)	Citric acid, Chelating agents, Sodium nitrate, Sodium Nitrite, Sodium hydroxide, Formic acid, Sodium tartrate, Formaldehyde, Potassium carbonate, Potassium Sulfate, Copper Sulfate, Calcium carbonate, Oxalic acid, Lithium chloride, Zirconium oxide, Sodium carbonate, Potassium bromide, Nickel sulfate, Asbestos fiber, Methylene blue, Mercury, Lead, Beryllium, Cyanides,	(Cont.)	(Cont.)			(Cont.)		
180	WD Building Alpha Wastewater Influent Tank (Tank 4)	F-6	In service								
181	WD Building Alpha Wastewater Influent Tank (Tank 5)										
182	WD Building Alpha Wastewater Influent Tank (Tank 6)										
183	Room WD-1 Basement Sump (Tank 12)	F-6	In service	Alpha wastewater from floor and sink drains in the WD Bldg. Possible contaminants include Plutonium-238,-239, Thorium-230,-232,-234, Radium-226, tritium and Cobalt-60.	3	None Suspected			No Data		
184	Room WD-1 Alpha Wastewater Sump (Tank 17)	F-6	In service		3	None Suspected			No Data		
185	Room WD-1 Sanitary Waste Sump (Tank 134)	G-6	In service	Sanitary wastes	3						
186	Room WD-8 Alpha Wastewater Sump (Tank 18)	F-6	In service	Alpha wastewater from floor drains	3						
187	WD Building Alpha Wastewater Clariflocculators (2 units)	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18						
188	WD Building Alpha Wastewater Mixing Box										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
189	WD Building Alpha Wastewater Sand Filters (2 units)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)			(Cont.)		
190	WD Building Alpha Wastewater Bone Char Columns (2 units)										
191	WD Building Alpha Wastewater Effluent Tank (Tank 7)	G-6	In service	Treated alpha wastewater prior to discharge	3, 4, 5, 18	Released through closed pipeline to Great Miami river NPDES Outfall 001 effluent less than DOE Effluent release criteria	SW	4	No Data		
192	WD Building Alpha Wastewater Effluent Tank (Tank 8)										
193	WD Building Alpha Wastewater Effluent Tank (Tank 9)										
194	WD Building Alpha Wastewater Effluent Tank (Tank 10)	G-6	In service	Treated alpha wastewater prior to discharge	3, 4, 5, 18	Ibid	SW	4	No Data		
195	WD Building Alpha Wastewater Sludge Pits (2 units)	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18	None Suspected			No Data		
196	WD Building Alpha Wastewater Sludge Solidification/Drumming Unit	F-6 G-6	In service	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	4, 5, 18	None Suspected			No Data		
197	WD Building Solid Radioactive Waste Compactor	F-6 G-6	In service	Solid alpha wastes	4	None Suspected			No Data		
198	WDA Building Basement Sanitary Waste Tank (Tank 135)	F-6	In service	Sanitary wastewater from WD Bldg. Annex Penthouse	3	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
199	WDA Building Beta Wastewater Influent Tank (Tank 13)	F-6	In service	Beta wastewater from T Bldg. equipment decontamination, floor mopping, and sprinkler system including tritium and solvents	3, 4, 5, 18	Historic effluent released to plant drainage ditch, effluent less than AEC release criteria	SW	4	No Data		
200	WDA Building Beta Wastewater Influent Tank (Tank 14)	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	3, 4, 5, 18	None Suspected			No Data		
201	WDA Building Beta Wastewater Metering Station	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	4, 5, 18						
202	WDA Building Beta Wastewater Mixing/Solidification Unit	F-6	In service	Contaminants listed under WD Bldg. Beta Wastewater Influent Tank (Tank 13)	4, 5, 18						
203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	F-6	In service	Influent alpha wastewater. Possible contaminants include Polonium-210, Cobalt-60, Plutonium-238, Radium-226, Actinium-227, Cesium-137, thorium, Uranium-238.	3, 4						
204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	F-6	In service	Ibid	3,4	None Suspected			No Data		
205	WDA Building Alpha Effluent Tank (Tank 214)	F-6	Inactive	Contaminants listed under WD Building Alpha Wastewater Influent Tank (Tank 3)	3, 4	Effluent released to plant drainage ditch, effluent less than AEA Release criteria	S, SW	4	No Data		
206	WDA Building Alpha Effluent Tank (Tank 215)										
207	WDA Building Alpha Effluent Tank (Tank 216)										
208	WDA Building Solidification Unit	F-6	Historical	Plutonium-238	4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
209	Building 62 Stack Deluge Tank (Tank 1)	E-6	In service	None suspected (never used)	3	None Suspected			No Data		
210	Room H-131 Laundry Water Tank (Tank 2)	E-6	In service	Alpha wastewater from laundry operations. Possible contaminants include Pu-238, Th-230,-232,-234, tritium, Ra-226,-228, and Ac-227.  Ethylene glycol monbutyl ether, Sodium hydroxide, Ammonium bicarbonate, Sodium hexametaphosphate	3, 4	None Suspected			No Data		
211	A Building Decontamination Shower Water Tank (Tank 28)	E-6	In service	Wastewater from medical decontamination shower. Plutonium-238 and -239, Thorium-228, -230, and -232, Radium-226 and -228, and tritium	3	None Suspected			No Data		
212	A Building Decontamination Shower Water Tank (Tank 29)	E-6	In service	Wastewater from medical decontamination shower. Plutonium-238 and -239, Thorium-228, -230, and -232, Radium-226 and -228, and tritium	3	None Suspected			No Data		
213	T Building Solidification Unit	F-7	Historical	Cobalt-60, Polonium-210	4	None Suspected			No Data		
214	T Building Solid Radioactive Waste Compactor	F-7	In service	Low specific activity beta wastes - tritium	4						
215	Room T-1 Cooling Water Sump (Tank 124)	F-7	In service	Single pass non-contact cooling water	3, 4						
216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	F-7	In service	Sanitary wastewaters from restrooms	3						
217	Room T-11F Sanitary Wastewater Sump (Tank 126)	F-7	In service	Sanitary wastewaters	3						
218	Room T-15 Sanitary Wastewater Sump (Tank 127)	F-7	In service	Sanitary wastewaters from restrooms and non-work area sinks	3						
219	T Building, Stair 3 Cooling Water Sump (Tank 128)	F-7	In service	Single pass cooling water from floor drains in air handling area	3, 4						
220	Room T-78 Steam Condensate Sump (Tank 129)	F-7	In service	Steam condensate from heating system in air handling area	3						

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
233	Room T-63 Alpha Wastewater Sump (Tank 235)	F-7	Historical Filled with concrete 1982	Alpha wastewater from process area floor drains	3, 4	Unknown - filled with concrete			No Data		
234	Building 58 Diesel Fuel Storage Tank (Tank 222)	E-6	Historical	Diesel fuel	3	Tank Removed			No Data		
235	Area of Possible Elevated Thorium Activity	E-8	Grounds	Thorium	6	Possible fugitive dust	S	4, 6	1	SGS <sup>b</sup> Table B.3 Locations 2021, 2148, and 2149	12
									14, 15	Table B.1	6
236	Site Survey Project Potential Hot Spot Location S0166	F-6	Grounds	Plutonium-238	6	Isolated activity from unknown sources			13	Table B.9 (Appendix E in Ref. 6)	6
237	Site Survey Project Potential Hot Spot Location S0175	E-5 E-6	Grounds	Cobalt-60, Cesium-137	6				14, 15	Table B.9 (Appendix E in Ref. 6)	6
238	Site Survey Project Potential Hot Spot Location S1092	G-7	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6
239	Site Survey Project Potential Hot Spot Location S0208	F-5	Grounds	Plutonium-238	6				13	Table B.9 (Appendix E in Ref. 6)	6
240	Site Survey Project Potential Hot Spot Location S0472	G-6	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data			
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.	
241	Northwest Parking Lots	D-7	Grounds	Toluene, Freon-113, Trichloroethene	12	Indicated by Soil Gas Survey	S	12	1	SGS <sup>b</sup> Table B.4 Locations 1002, 1007, 1008, 1009, 1010, 1014, 1101, 1102, 1106, 1109, 1110	12	
242	VOC Potential Hot Spot Location 1016	D-7	Grounds	Toluene, Trichloroethene	12				1	SGS <sup>b</sup> Table B.4	12	
243	VOC Potential Hot Spot Location 1064	E-7	Grounds	Toluene	12							
244	VOC Potential Hot Spot Locations 1076, 1077, 1079, and 1080	E-6	Grounds	Toluene, Freon-113, 1,1,1-Trichloroethane	12							
245	VOC Potential Hot Spot Location 1085	F-6	Grounds	Freon-113, Trichloroethene, 1,1,1-Trichloroethane	12							
246	VOC Potential Hot Spot Locations 1117 and 1118	G-7	Grounds	Tetrachloroethene	12							
247	VOC Potential Hot Spot Location 1129	F-8	Grounds	Freon-113, Trichloroethene, 1,1,1-Trichloroethane, Tetrachloroethene	12	Indicated by soil gas survey	S	12	1	SGS <sup>b</sup> Table B.4	12	
248	HH Building Stack	F-7	In service	Polonium-210, Tritium	4, 18	None suspected beyond routine emissions	A	4, 18	Emissions reported in Annual Environmental Monitoring Reports		18	
249	SW Building Stack (NCPDF)	E-6	In service	Tritium	4, 18							
250	SW Building Stack (SW1C)	E-6	In service	Uranium-238	4, 18							
251	SW Building Stack (HEFS)	E-6	In service	Tritium	4, 18							
252	B Building Stack	E-6	Inactive	Polonium-210, Tritium	4, 18							
253	T Building WEST Stack	F-6	In service	Tritium, Plutonium-238 -239, Uranium-238	4, 18							
254	T Building EAST Stack	E-7	In service	Tritium, Plutonium-238, Uranium-238	4, 18							
255	WD Building Stack (ALR)	F-6	In service	Plutonium-238	4, 18							

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
256	WD Building Stack (AHR)	F-6	In service	Plutonium-238	4, 18	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)
257	WD Building Stack (SS)	F-6	In service	Plutonium-238	4, 18						
258	Area H Open Burn Unit (AKA Pyrotechnic Waste Disposal Area)	I-7	In service	Wastewater from explosives processes Organic solvents (primarily acetone)	1, 4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 10, 11, 12 14	Tables B.6, B.7, and B.8  Table B.9 RSS <sup>c</sup> Location S0783 (Appendix E in Ref. 6)	7  6
259	Pyrotechnic Waste Shed	I-7	In service	Pyrotechnic powders Pyrotechnic-contaminated wastes Mineral oil	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12 14	Tables B.6, B.7, and B.8  Table B.9 RSS <sup>c</sup> Location S0780 (Appendix E in Ref. 6)	7  6
260	Thermal Treatment Unit	I-7	Inactive	Antifreeze Explosives Program waste Mild detonating cords and fuses Pyrotechnic powders Solid primary explosives	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12 14	Tables B.6, B.7, and B.8  Table B.9 RSS <sup>c</sup> Location S0783 (Appendix E in Ref. 6)	7  6
261	Trash Burner Area	I-7	Historical	Mild detonating fuses Pyrotechnic material Thermite Freon Acetone	4, 5, 18	Suspected, not confirmed	S	7, 18	3, 4, 5, 6, 12, 13	Tables B.6, B.7, and B.8	7
262	Retort	I-7	In service	Explosives Programs constituents Metals, Asbestos Diallyl-phthalates-based plastic components	4, 5, 18	Gaseous and particulate emissions released to atmosphere	A	4	No Data		
263	Building 90 Blockhouse										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
264	Explosive Waste Storage Bunker (Magazine 53)	I-7	In service	Classified, non-explosive wastes  Explosion residuals (primarily aluminum residuals)  Contaminants listed under Explosive Waste Storage Bunker (Magazine 53)  Detonators, Detonating cord, Thermite, Pyrotechnic powders, Primary explosives  High explosive powder, PETN, PBX, RDX, HMX, HNS, CP  HNS (hexanitrostilbene)	4, 5, 18	None Suspected			No Data		
265	Biodegradation Unit	I-7	Inactive	Soapy wastewater containing explosives constituents	4, 5, 18	Suspected	S	7, 18	See Pyrotechnic Waste Shed		4
266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	F-9	Grounds	Thorium-232, Plutonium-238	1, 4, 5, 18	Thorium	S	4, 6	14, 15, 16	Table B.1 (Table V.3 in Ref. 6)	6
267	Area 9, Thorium Storage and Redrumming Area	F-9 G-9	Grounds	Plutonium-238, Thorium  Thorium sludge constituents (c)	1, 4, 5, 18	Thorium	S	4, 6	14	Table B.1 (Table V.4 in Ref. 6)	6
268	Building 31, Contaminated Material Storage Building	F-9	In service	Plutonium-238  Thorium  Tritium	4  3	None Suspected			See Area 9	Table B.9	6
269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	G-10	Historical	Gasoline	3	No information on when tanks were removed			No Data		
270	Underground Sanitary Sewer Lines G6 & G7	G-10	In Service	Organic solvents, plating solutions, laboratory chemicals, nitric acid, hydrochloric acid, methylene chloride, strong acids and bases	4	Suspected VOCs	S	4	3, 4, 5, 6, 9, 10, 11, 12, 13, 16	Tables B.6, B.7, B.8, and B.9	7
271	Building 37 Sanitary Waste Tank (Tank 100)	F-10	In service	Sanitary wastes	3, 4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
272	Area 10, Concrete Debris	G-8 G-9	Grounds	Polonium-210, Cobalt-60, Plutonium-238 (from runoff)	1, 4, 5, 18	Suspected	S	4, 6	14	Table B.1 (Table III.6 in Ref. 6)	6
273	Area 12, Thorium-Contaminated Soil from Area 1	G-9	Grounds	Thorium, Plutonium-238 (from runoff)	1, 4, 5, 18	Suspected thorium	S	4, 6	14, 15	Table B.1 (Table V.5 in Ref. 6)	6
274	Area 21, Old Bunker	H-9	Grounds	Cesium-137, Strontium-90, Actinium-227, Radium-226	4, 5, 18	Suspected thorium	S	4, 6	14, 15, 16	Table B.1 (Table VII.2 in Ref. 6)	6
275	Area 21, Detonator Shack	H-8	Grounds	Cesium-137, Strontium-90, Actinium-227, Radium-226	4, 5, 18	Suspected thorium	S	4, 6	14, 15, 16	Table B.1 (Table VII.2 in Ref. 6)	6
276	Area 22, Orphan Soil from other Areas	I-8	Inactive	Polonium-210, Radium-226, Cobalt-60, Plutonium-238, Cesium-237	4, 5, 18	Suspected	S	6	14, 15, 16	Table B.1 (Table X.1 in Ref. 6)	6
277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	H-8 H-9	Historical	Construction/building debris, Paints, Thinners, Chemical contaminants, Asbestos, Thorium, Plutonium-238	1, 4, 18	Suspected VOCs	S	4	1  14, 15, 16	SGS <sup>b</sup> Table B.2  Table B.1 (Table X.2 in Ref. 6)	12  6
278	Area J, Hillside catch basin	H-8	In service	Plutonium-238 (from runoff)	1, 4, 18	Suspected	SW	18	No Data		
279	Old Firing Range Drum Storage Area	H-9	Historical	Liquid chemical wastes	5, 18	Confirmed VOCs	S	4	1  2, 3, 4, 5, 6  14, 15	SGS <sup>b</sup> Table B.2 Locations 3152, 3153, and 3187  Tables B.6, B.7, B.8, and B.9  RSS <sup>c</sup> Locations S0162, S0163, and S0647 (Appendix E in Ref. 6)	12  7  6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
280	Waste Oil Drum Field Area	I-8	Historical	Waste oil  Plating Operations waste Explosive/solvent waste Herbicides Waste chemicals Photo-processing waste Batteries Kitchen grease Epoxy resins Ethylene glycol Scintillation vials	4, 5, 18	Confirmed VOCs	S	4	3, 4, 5, 6, 8, 12	Tables B.6, B.7, and B.8  RSS <sup>c</sup> Locations S0263, S0164, S0265, and S0266 (Appendix E in Ref.6) Table B.9	7  6
281	Area E, Waste Oil Spill	J-8	Historical	Waste oil	1	Minor oil	S	1	No Data		
282	Spoils Disposal Area/Construction Spoils Area	J-5 K-5	In service	Plutonium-238, Thorium  Gasoline contaminated soils from G Building	4, 5, 18	Plutonium-238 < 25 pci/gm Thorium < 5 pci/gm	S	6	14, 15, 16	Table B.1 (Table X.3 in Ref. 6)	6
283	Area 1, Bulk Transfer of Thorium Drums (AKA, Plutonium Recoverable Waste Storage)	I to L 6 to 8	Grounds	Thorium sludge constituents, Plutonium-238	1, 4, 5, 18	Thorium dust, Plutonium-238	S	6	3, 4  14, 15, 16	Tables B.6, B.7, and B.8  Table B.1 (Table IV.2 in Ref. 6)	8  6
284	Building 21, Thorium Sludge Storage Facility	J-7 J-8	Surplus	Thorium sludge constituents	4	Thorium dust	S	4, 6	See Area 1		
285	Area 11, Contamination from SM Building Operations	G-9	Surplus	Plutonium-238	1, 4, 5, 18	Plutonium-238	S	6	3, 4, 5, 6  14, 16	Tables B.6, B.7, and B.8  Table B.1 (Table IV.3 in Ref. 6)	8  6
286	Area 16, SM Building Sanitary Sewage Septic Tank Leach Field	F-9 G-9	Surplus	Plutonium-238, Thorium  Sanitary wastes from SM Building	1, 4, 5, 18	Plutonium-238	S	6	3, 4, 6  14, 15, 16	Tables B.6, B.7, and B.8  Table B.1 (Table IV.5 in Ref. 6)	8  6

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
287	SM Building Historic Septic Tank (Tank 241)	G-9	Historical	Plutonium-238	3, 4	Plutonium-238			No Data		
288	Area 17, SM Building Soils	G-9 G-10	Surplus	Plutonium-238, Thorium	1, 5, 18	Plutonium-238	S	6	4, 6  14, 15	Table B.6, B.7, and B.8  Table B.1 (Table IV.6 in Ref. 6)	8  6
289	SM Building Alpha Wastewater Tank (Tank 210)	G-9	Historical	Alpha wastewater from plutonium processing	3, 4	Tanks removed 1986-1988			See Area 17		
290	SM Building Alpha Wastewater Tank (Tank 211)										
291	SM Building Alpha Wastewater Tank (Tank 212)										
292	SM Building Alpha Wastewater Tank (Tank 213)										
293	SM Building Solidification Unit (Room SM-1)	G-9	Historical	Plutonium-238	4	None Suspected, equipment removed 1970		4	No Data		
294	WS Building Solidification Unit	G-9	Historical	Plutonium-238	4	None Suspected D&D 1983			No Data		
295	Building 38 Solid Radioactive Waste Compactors (2 units)	G-9 H-9	Inactive	Plutonium-238	4	None Suspected D&D 1986			No Data		
296	Building 38 West Dock Sump (Tank 25)	H-9	In service	Precipitation and potentially spilled waste material from a radiological waste drum storage pad - Pu-238	3	None Suspected			No Data		
297	Building 38 Alpha Wastewater Sump (Tank 26)	G-9	In service	Wastewater from floor drains and decontamination showers	3, 4	None Suspected			No Data		
298	Building 38 Alpha Wastewater Sump (Tank 27)	G-9	In service	Wastewater from floor drains and decontamination showers	3, 4	None Suspected			No Data		
299	Building 38 Diesel Fuel Storage Tank (Tank 121)	G-9	In service	Diesel fuel	3	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
300	Area 19, Underground Waste Transfer Line	G-6 G-7 G-8 G-9	Historical	Plutonium-238, Nitric acid	1, 4, 5, 18	Plutonium-238	S	1, 6, 18	14	Tables B.1, B.6, B.7, and B.8	6, 8
301	Building 38 In-Line Incinerator	G-9	Historical	Plutonium-238	2, 4	None Suspected D&D 1986			No Data - pending verification		
302	Area D, Acid Leach Field	H-8 H-9 G-8 G-9	Historical	Plutonium-238, Thorium	1, 4, 5, 18	Plutonium-238	S	6	4, 6  14	Tables B.6, B.7, and B.8  Table B.1 (Table IV.10 in Ref. 6)	8  6
303	Warehouse 14 (AKA Pad 14)	G-9	Grounds	Thorium sludge constituents  Plutonium-238	4	None Suspected			14	Table B.9 RSS <sup>c</sup> Locations C0127 and C0128 (Appendix E in Ref. 6)	6
304	Excavated Materials Disposal Area (AKA Rader's Hill)	I-8	Grounds	Thorium	4	Thorium < 2 pci/gm	S	6	14	Table B.1	6
305	SM Stack	G-9	In service	Plutonium-238	4	None suspected beyond routine emissions	A	4, 18	No Data		
306	SM/PP Hill Seep 0609	L-9	NA	None suspected	5, 18	None suspected			No Data		
307	Site Survey Project Potential Hot Spot Location C0007	E-9	Grounds	Thorium	6	Isolated activity from unknown source			14	Table B.9 (Appendix E in Ref. 6)	6
308	Site Survey Project Potential Hot Spot Location C0028	F-10	Grounds	Thorium	6						
309	Site Survey Project Potential Hot Spot Location S0307	F-9	Grounds	Thorium	6						
310	Site Survey Project Potential Hot Spot Location S0647	H-9	Grounds	Cesium-137	6		15	Table B.9 (Appendix E in Ref. 6)			

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
311	Site Survey Project Potential Hot Spot Location S0706	I-6	Grounds	Plutonium-238	6	(Cont.)			13	Table B.9 (Appendix E in Ref. 6)	6
312	Site Survey Project Potential Hot Spot Location S0971	J-9	Grounds	Thorium	6				14	Table B.9 (Appendix E in Ref. 6)	6
313	Site Survey Project Potential Hot Spot Location S0982	I-8	Grounds	Thorium	6						
314	Farm Trash Area	M-5	Historical	Waste oil	5, 18	Suspected, not confirmed			3, 4, 5, 6  14	Tables B.6, B.7, and B.8  Table B.9 RSS <sup>c</sup> Location S0237 (Appendix E in Ref. 6)	7  6
315	Waste Transport Vehicles	SITE-WIDE	In service	Explosives Programs wastes  Mixed wastes  Laboratory chemicals  Low activity wastewater from SM/PP Complex to WD Building	4, 5, 18	None Suspected			No Data		
316	Trash Dumpsters	SITE-WIDE	In service	Solid wastes	4, 5, 18	None Suspected			No Data		
317	Ventilation Hoods	SITE-WIDE	In service	Paint fumes, Acidic and caustic gases  Asbestos, Acetone, Trichloroethylene, Benzene, Chloroform, Toluene	4, 5, 18	None Suspected			No Data		
318	Transformers	SITE-WIDE	In service	Polychlorinated biphenyls	4	All PCB oils replaced			No Data		
319	Epoxy Resin Disposal	G-7 H-7	In service	Epoxy resins	5, 18	None Suspected			No Data	Table B.9	6
320	Dayton Unit I	Dayton	Historical	Radioisotopes (including plutonium-239) Spent acids (including hydrochloric acid)	1, 4	None Suspected			No Data		

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref.	Releases	Media	Ref.	Analytes <sup>a</sup>	Results	Ref.
321	Dayton Unit II	Dayton	Historical	Explosives (including ammonium picrate and ammonium nitrate) Rocket propellant	1, 4	None Suspected			No Data		
322	Dayton Unit III	Dayton	Historical	Polonium-210, Tellurium, Bismuth, Cobalt, Nickel, Beryllium, Thorium	1, 4	Suspected Cobalt-60	S	4	No Data		
323	Dayton Unit IV	Dayton	Historical	Contaminants listed under Dayton Unit III	1, 4	Suspected Cobalt-60	S	4	No Data		
324	Dayton Warehouse	Dayton	Historical	Polonium-210	4	None Suspected			No Data		
325	Scioto Facility (Marion)	Scioto	Historical	Facility never used	4	None Suspected			No Data		
326	Building 38 Sanitary Sump (Tank 254)	G-9	In Service	Sanitary wastewater	25	None Suspected			No Data		
327	R-111 Calorimetry Bath (Tank 255)	E-6	Inactive	Deionized water with potential alpha contamination	25	None Suspected			No Data		
328	R-111 Calorimetry Bath (Tank 266)										
329	Building 62 Hot Waste Sump (Tank 258)	E-6	In Service	Sanitary wastewater with potential alpha contamination	25	None Suspected Tank removed			No Data		
330	Building 2 Fuel Oil Tank (Tank 260)	H-7	Historical	Fuel oil	25	Unknown			No Data		
331	Building 2 Tank (Tank 261)	H-7	Historical	Sanitary Wastes	25	Unknown Closed in place			No Data		
332	Building G Waste Oil Tank (Tank 262)	E-7	Inactive	Waste oils	25	Unknown			No Data		
333	Building 87 Explosive Surge Tank (Tank 263)	H-7	In Service	Exhaust air from explosives testing	25	None Suspected			No Data		
334	Building 87 Explosive Surge Tank (Tank 264)										
335	Building 87 Explosive Surge Tank (Tank 265)										

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes <sup>a</sup>	Results	Ref
336	Building 37 Waste Tank (AKA Low Risk Waste Tank) (Tank 267)	F-10	Inactive	Wastewater	25	None Suspected Never used for low-risk wastewaters			No Data		
337	Building H Condensate Sump (Tank 268)	E-6	In Service	Condensate wastewater	25	None Suspected			No Data		
338	Building 29 Septic Tank (Tank 270)	E-9	Inactive	Sanitary wastewater	25	None Suspected (Abandoned in place?)			No Data		
339	T-44 Wastewater Sump (Tank 250)	F-7	Historical	Wastewater	25	Unknown - filled with concrete			No Data		
340	T-16b Wastewater Sump (Tank 251)	F-7	Historical	Wastewater	25	Unknown - filled with concrete			No Data		
341	T-90 Condensate Sump (Tank 269)	F-7	In Service	Condensate wastewater	25	None Suspected			No Data		
342	T-1 Hot Side Fire Water Tank (Tank 271)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
343	T-20 Fire Water Sump (Tank 272)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
344	T-37 Fire Water Sump (Tank 273)	F-7	In Service	Wastewater/Radioactive wastewater	25	None Suspected			No Data		
345	Former Equipment Storage Area see related site 16	H-6	Historical	Potential contaminants listed under Hazardous Waste Storage Area	4, 5, 18	Historically related to site 16	S	7, 18	No Analytical Data		7

<sup>a</sup>Analyte List Codes

<sup>b</sup>SGS, Soil Gas Survey

<sup>c</sup>RSS, Radiological Site Survey

- 1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene
- 2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40
- 3 - Target Analyte List
- 4 - Target Compound List (VOC)
- 5 - Target Compound List (SVOC)
- 6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
- 7 - Dioxins/Furans
- 8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
- 9 - Lithium
- 10 - Nitrate/Nitrite
- 11 - Chloride
- 12 - Explosives
- 13 - Plutonium-238
- 14 - Plutonium-238, Thorium-232
- 15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
- 16 - Tritium

Reference List

1. DOE 1986
2. DOE 1992a
3. DOE 1992c
4. DOE 1993a
5. EPA 1988a
6. DOE 1993d
7. DOE 1993c
8. DOE 1992d
9. Fentiman 1990
10. DOE 1992f
11. Styron and Meyer 1981
12. DOE 1993b
13. DOE 1993d
14. DOE 1991b
15. Halford 1990
16. DOE 1993e
17. DOE 1990
18. DOE 1992a
19. Rogers 1975
20. DOE 1992h
21. Dames and Moore 1976a, b
22. DOE 1992i
23. DOE 1992j
24. DOE 1994
25. EG&G 1994

- 1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene
- 2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40
- 3 - Target Analyte List
- 4 - Target Compound List (VOC)
- 5 - Target Compound List (SVOC)
- 6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
- 7 - Dioxins/Furans
- 8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
- 9 - Lithium
- 10 - Nitrate/Nitrite
- 11 - Chloride
- 12 - Explosives
- 13 - Plutonium-238
- 14 - Plutonium-238, Thorium-232
- 15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
- 16 - Tritium

#### Reference List

1. DOE 1986 "Phase I: Installation Assessment Mound [DRAFT]."
2. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
3. DOE 1992c "Mound Plant Underground Storage Tank Program Plan & Regulatory Status Review (Final)."
4. DOE 1993a "Site Scoping Report: Vol. 7 - Waste Management (FINAL)."
5. EPA 1988a "Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant"
6. DOE 1993d "Operable Unit 9, Site Scoping Report: Vol. 3 - Radiological Site Survey (FINAL)."
7. DOE 1993c "Operable Unit 3, Misc. Sites Limited Field Investigation Report."
8. DOE 1992d "Reconnaissance Sampling Report Decontamination & Decommissioning Areas, OUG, (FINAL)."
9. Fentiman 1990 "Characterization of Mound's Hazardous, Radioactive and Mixed Wastes."
10. DOE 1992f "Operable Unit 9, Site Scoping Report: Vol. 9 - Spills and Response Actions (FINAL)."
11. Styron and Meyer 1981 "Potable Water Standards Project: Final Report."
12. DOE 1993b "Reconnaissance Sampling Report - Soil Gas Survey & Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (FINAL)."
13. DOE 1993d "Operable Unit 9, Site Scoping Report: Vol. 3 - Radiological Site Survey (FINAL)."
14. DOE 1991b "Main Hill Seeps, Operable Unit 2, On-Scene Coordinator Report for CERCLA Section 104 Remedial Action, West Powerhouse PCB Site."
15. Halford 1990 "Results of South Pond Sampling."
16. DOE 1993e "Operable Unit 4, Special Canal Sampling Report, Miami Erle Canal."
17. DOE 1990 "Preliminary Results of Reconnaissance Magnetic Survey of Mound Plant Areas 2, 6, 7, and C."
18. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (FINAL)."
19. Rogers 1975 "Mound Laboratory Environmental Plutonium Study, 1974."
20. DOE 1992h "Ground Water and Seep Water Quality Data Report Through First Quarter, FY92."
21. Dames and Moore 1976a, b "Potable Water Standards Project Mound Laboratory" and "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory."
22. DOE 1992i "Closure Report, Building 34 - Aviation Fuel Storage Tank."
23. DOE 1992j "Closure Report, Building 51 - Waste Storage Tank."
24. DOE 1994 "Operable Unit 1, Remedial Investigation Report."
25. EG&G 1994 "Active Underground Storage Tank Plan."

Table A.2. Assignment of Regulatory Authorities to Potential Release Sites and Recommendations for Further Action

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
1	Miami-Erie canal (north pond)	C-5	Historical		NA			No	CERCLA	No	4
2	Miami-Erie canal (south pond)	C-5	Waters of the U.S.		CWA			No	CERCLA	No	4
3	Miami-Erie canal (north canal)	D-4 E-4 F-4 G-4	Waters of the U.S.		CWA			Yes	CERCLA	Yes	4
4	Miami-Erie canal (runoff hollow)	G-4	Tributary drainage		NA			Yes <sup>a</sup>	CERCLA	No	4
5	Miami-Erie canal (south canal)	I-4 J-4 K-4 L-4	Waters of the U.S.	Receives effluent from NPDES outfall 002 below point of regulation	CWA	AEA		Yes	CERCLA	Yes	4
6	Miami-Erie canal (overflow creek)	M-4 N-4	Waters of the U.S.		CWA	AEA		Yes	CERCLA	Yes	4
7	Plant Sanitary Pipeline To Greater Miami River	H-5 I-4 I-3	In service	NPDES Outfall 001	CWA	AEA		Yes	CERCLA	Yes	9
8	Site Sanitary Landfill	I-5	Historical		NA	NA	SWMU	No	CERCLA	Yes	1
9	Area 18, Site Sanitary Landfill Cover	I-5	In Service		NA	NA		Yes	CERCLA	Yes	1
10	Historic Landfill	I-4 I-5	Historical		NA	NA	SWMU	Yes	CERCLA	Yes	1
11	Area 2, Thorium and Polonium-Contaminated Wastes (AKA Crushed Drums)	I-4 I-5	Historical		NA	NA		Yes	CERCLA	Yes	1
12	Area B Drum Storage Area	I-5	Historical		NA	NA	SWMU	No	CERCLA	Yes	1
13	Trash incinerator	J-5	Historical		NA	NA		No	CERCLA	No	1
14	Area C, Waste Storage Area (AKA, Drum Staging Area and Chemical Waste Storage Area)	H-6	Historical		NA	NA	SWMU	No	CERCLA	No	5
15	Area C, Lithium Burn Area (AKA, Lithium Carbonate Disposal)	H-5	Historical		NA	NA	SWMU	No	CERCLA	No	5
16	Area C, Past Hazardous Waste Storage Area (See Related Site 345)(AKA, old Building 72)	H-6	Historical		NA		SWMU	Yes historically remediated	CERCLA	No	5

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
17	Oil Burn Structure	H-6	Inactive		NA		SWMU	Yes	CERCLA	Yes	5
18	Building 34, Fire Fighting Training Facility Pits	H-5	Inactive	Permit for open burn by RAPCA	CAA		SWMU	Yes	CERCLA	Yes	5
19	Building 34, Historical Firefighting Training Pit	H-5	Historical		NA		SWMU	Yes	CERCLA	Yes	5
20	Building 34 Aviation Fuel Storage Tank (Tank 219)	H-5	Historical			FFA	SWMU	Yes <sup>b</sup>	CERCLA	No	5
21	Building 1 Leach Pit (Area I)	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
22	Building 1 Explosives Wastewater Settling Basin (AKA Building 1 Sump) (Tank 200)	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
23	Building 43 Explosives Wastewater Settling Basin (AKA Building 43 Sump) (Tank 201)	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
24	Building 43 Solvent Storage Tank (Tank 221)	G-6	Never Used removed		NA			No	NA	No	
25	Building 27 Leach Pit (Area I)	H-6	Surplus		NA		SWMU	No	CERCLA	No	5
26	Building 27 Concrete Flume (Tank 217)	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
27	Building 27 Settling Sump (Tank 218)	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
28	Building 27 Solvent/Drum Storage Area	G-6	Surplus		NA		SWMU	No	CERCLA	No	5
29	Building 27 Filtration System	G-6	Inactive	Included in RCRA Part B permit application	RCRA	RCRA	SWMU	No	NA	OM	
30	Building 27 Diesel Fuel Storage Tank (Tank 123) (actually a propane tank)	G-6	Inactive		NA			No	NA	No	
31	Underground Sanitary Sewer Line G5	H-5	In service	Effluent to wastewater treatment (Building 57)	CWA	AEA	SWMU	No	NA	OM	
32	Underground Sanitary Sewer Line G12	F-8					SWMU	No	NA	OM	
33	Underground Sanitary Sewer Line G14 EAST	H-5 H-6					SWMU	No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units (Cont.)	Regulatory Authority (Cont.)	Spill Response (Cont.)		Evidence Of Release	Response Authority		
34	Underground Sanitary Sewer Line G14 WEST	H-5 H-6	(Cont.)	(Cont.)	(Cont.)	(Cont.)	SWMU	No	NA	OM	
35	Underground Sanitary Sewer Lines G19 & G14	G-5					SWMU	No	NA	OM	
36	Underground Sanitary Sewer Line G15	E-9					SWMU	No	NA	OM	
37	Building 51 Waste Solvent Storage Tank (Tank 220)	F-8	Historical		NA		SWMU	Yes	CERCLA	Yes	5
38	Building 51 Waste Incinerator	F-8	Historical		NA		SWMU	No	CERCLA	No	5
39	Building 51 Waste Incinerator Scrubber	F-8	Historical		NA		SWMU	No	CERCLA	No	5
40	Building 66 Lot	F-8	Grounds		AEA	AEA		Yes	AEA	D&D	
41	Area 3, Thorium Drum Storage and Redrumming Area	G-5 H-5	Grounds		AEA	AEA		Yes	CERCLA	Yes	5
42	Area A, Construction Soils from T Building	H-5	Grounds		AEA	AEA		Yes <sup>c</sup>	CERCLA	No	5
43	Wastewater Treatment plant Building 57 Grit Chamber (Tank 101)						SWMU	No	NA	OM	
44	Building 57 Grit Conveyor						SWMU	No	NA	OM	
45	Building 57 Comminuter (Tank 102)						SWMU	No	NA	OM	
46	Building 57 Equalization Basin (Tank 103)	H-5	In service	Effluent permitted to discharge under NPDES	CWA	AEA	SWMU	No	NA	OM	
47	Building 57 Equalization Basin (Tank 104)						SWMU	No	NA	OM	
48	Building 57 Equalization Basin (Tank 105)						SWMU	No	NA	OM	
49	Building 57 Equalization Basin (Tank 106)						SWMU	No	NA	OM	
50	Building 57 Aeration Basin (Tank 107)						SWMU	No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
51	Building 57 Aeration Basin (Tank 108)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	SWMU	No	NA	OM	
52	Building 57 Clarifier (Tank 109)						SWMU	No	NA	OM	
53	Building 57 Clarifier (Tank 110)						SWMU	No	NA	OM	
54	Building 57 Sand Filters (2 units)						SWMU	No	NA	OM	
55	Building 57 Chlorine contact chamber (Tank 111)						SWMU	No	NA	OM	
56	Building 57 Chlorine contact chamber (Tank 112)						SWMU	No	NA	OM	
57	Sludge Drying Beds	H-5	Historical		NA		SWMU	Yes	CERCLA	Yes	5
58	Dredge Spoil Drying Beds	H-5	Surplus		NA		SWMU	Yes	CERCLA	Yes	5
59	Contaminated Soil Box Storage Area	G-6	Historical		NA			No	CERCLA	Yes	5
60	Hazardous Waste Storage Area (Building 72)	G-5	In service	HWMU included in Part B application	RCRA	RCRA	SWMU	No	NA	OM	
61	Building 72 Outdoor Hazardous Waste Storage Area		Inactive		RCRA	RCRA	SWMU	No	NA	OM	
62	Building 72 Empty Drum Storage Area		In service		RCRA	RCRA	SWMU	No	NA	OM	
63	Building 19 Soils	G-5	Grounds		AEA	AEA		Yes	CERCLA	Yes	5
64	Building 19 Historic Gasoline Tank (Tank 238)	G-5	Historical		NA			No	CERCLA	Yes	5
65	Building 61 Area, Former Heavy Equipment Area	E-10	Historical		AEA	AEA		Yes	CERCLA	Yes	5
66	Area 7, Thorium and Polonium Wastes	E-8 E-9 F-8 F-9	Historical		NA			Yes	AEA	Yes	5
67	Plant Drainage Ditch	F-4 F-5 F-6 F-7 F-8 G-4 G-5 G-6 G-7 G-8 H-4 H-5 H-6 H-7	Waters of the U.S.	Effluent permitted to discharge under NPDES (outfall 002)	CWA	AEA	SWMU	Yes	CERCLA	Yes	9
68	Asphalt-Lined Pond	E-9	Waters of the U.S.				SWMU	No	CERCLA	Yes	9

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
69	Overflow Pond	H-5 I-5	Waters of the U.S.	(Cont.)	(Cont.)	(Cont.)	SWMU	No	CERCLA	Yes	9
70	Retention Basins and Weir Basin	H-5	Waters of the U.S.				SWMU	No	CERCLA	Yes	9
71	Building 85 Waste Solvent Tank (Tank 136)	I-5	Inactive	PBR	RCRA	RCRA	SWMU	No	CERCLA	No	5
72	Area 13, Polonium-Contaminated Wood from Dayton Unit IV	H-7	Historical	Runoff to plant drainage ditch	NA			Yes	CERCLA	Yes	5
73	Evaporator Storage Area	H-7	Historical		NA			No	CERCLA	No	5
74	Quonset Hut (former)	H-7	Historical		NA			No	CERCLA	No	5
75	Railroad Siding	G-6 G-7	Inactive		AEA	AEA		Yes	AEA	D&D	
76	Warehouse 9	G-7	Historical		NA			Yes	CERCLA	Yes	5
77	Warehouse 10	G-9	Historical		NA			Yes	CERCLA	Yes	5
78	Warehouse 13	G-9	Historical		NA			Yes	AEA	D&D	
79	Warehouse 15	E-8	Historical		NA			Yes	CERCLA	Yes	5
80	Warehouse 15A	F-8	Historical		NA			Yes	CERCLA	Yes	5
81	Drilling Mud Drum Storage Areas (3 locations)	H-5 I-4	Historical		NA		SWMU	No	CERCLA	No	5
82	Building 57 Diesel Fuel Storage Tank (Tank 118)	H-5	In service		BUSTR	BUSTR			NA	OM	
83	Building 2 Propane Storage Tank (Tank 122)	H-7	Inactive		AEA	NA		No	NA	OM	
84	Building 56 Diesel Fuel Storage Tank (Tank 223)	F-5	Historical		NA			No	CERCLA	Yes	2
85	Building 29 Solvent Storage Shed	E-8	Inactive	PBR	RCRA	RCRA	SWMU	No	NA	OM	
86	Building 29 Septic Tank (Tank 224)	E-9	Historical		NA			Yes	AEA	Yes	6
87	Building 49 Solvent Storage Shed	G-7	Inactive	PBR	RCRA	RCRA	SWMU	No	NA	OM	
88	Tritium in Buried Valley Aquifer	H-4	Historical		SDWA			Yes <sup>d</sup>	AEA	OM	
89	Test Fire Residual Storage Area	H-7	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
90	Site Survey Project Potential Hot Spot Location S0425	G-8	Grounds		AEA	NA		Yes	AEA	Yes	6
91	Main Hill Seep 0601	F-5	NA		NA			Yes	CERCLA	Yes	2
92	Main Hill Seep 0602	G-7	NA		NA			Yes	CERCLA	Yes	2

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
93	Main Hill Seep 0603	D-8	NA		NA			Yes	CERCLA	Yes	2
94	Main Hill Seep 0604	D-6	NA		NA			Yes	CERCLA	Yes	2
95	Main Hill Seep 0605	D-6	NA		NA			Yes	CERCLA	Yes	2
96	Main Hill Seep 0606	D-7	NA		NA			Yes	CERCLA	Yes	2
97	Main Hill Seep 0607	C-7	NA		NA			Yes	CERCLA	Yes	2
98	Main Hill Seep 0608	D-6	NA		NA			Yes	CERCLA	Yes	2
99	Area 6, WD Building Filter-Cleaning Waste	D-8	Historical		NA			No	CERCLA	Yes	2
100	Area F, Chromium Trench	D-8	Historical		NA		SWMU	No	CERCLA	Yes	2
101	Cooling Tower Basins	E-7 E-8	In Service	Discharge to plant drainage ditch	RCRA	RCRA	SWMU	Yes	CERCLA	Yes	2
102	Cooling Tower Drum Storage Area	E-7 E-8	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
103	E Building Soils	E-6 E-7	Grounds		AEA			Yes	CERCLA	Yes	2
104	Scintillation Vial Storage Area	E-6	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
105	E Building Solvent Storage Shed	F-7	Historical		NA		SWMU	Yes	CERCLA	Yes	2
106	G Building Soils (AKA Garage Area)	E-7	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
107	G Building Gasoline Tank (Tank 202)	E-7	Historical		NA			Yes	CERCLA	Yes	2
108	G Building Gasoline Tank (Tank 203)	E-7	Historical		NA			Yes	CERCLA	Yes	2
109	G Building Gasoline Tank (Tank 204)	E-7	Historical		NA			Yes	CERCLA	Yes	2
110	I Building Soils	F-6	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
111	Monitor Well 0034	F-7	Surplus		NA		SWMU	Yes	CERCLA	Yes	2
112	Paint Shop Area	E-7	In Service		AEA	AEA		Yes	CERCLA	Yes	2
113	Powerhouse Soils	E-7	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
114	Powerhouse Fuel Oil Storage Tank (Tank 113)	E-7	In Service		AEA	CWA		Yes	CERCLA	Yes	2
115	Powerhouse Fuel Oil Storage Tank (Tank 114)						Yes	CERCLA	Yes	2	
116	Powerhouse Fuel Oil Storage Tank (Tank 115)						Yes	CERCLA	Yes	2	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
117	Powerhouse Fuel Oil Storage Tank (Tank 116)	(Cont.)	(Cont.)		(Cont.)	(Cont.)		Yes	CERCLA	Yes	2
118	M Building Soils	E-7	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
119	Room M-38 Metal Plating Rinse Water Sump (Tank 225)	E-7	Surplus		NA	NA	SWMU	No	CERCLA	No	2
120	Room M-108 Metal Plating Rinse Water Tank (Tank 119)	E-7	In Service	Effluent monitored under NPDES permit	CWA	AEA	SWMU	No	NA	OM	
121	Vapor Degreasers (2 each)	E-7	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
122	Underground Radioactive Waste Lines (Main Hill)	E-6 F-6	Inactive		AEA	AEA		Yes	AEA	Yes	6
123	Area 5, Radioactive Waste Line Break	F-6 F-7	Grounds		NA			Yes	AEA	Yes	6
124	Building 48 Hillside	F-6	Inactive		AEA	AEA		Yes	AEA	D&D	
125	Underground Sewer Line G24	F-6	In Service		AEA	AEA	SWMU	No		OM	
126	Building 28 Solvent Storage Area	E-8	Grounds		AEA	AEA	SWMU	No	CERCLA	No	2
127	Building 28 Solvent Storage Shed	E-8	In Service	PBR	RCRA	RCRA	SWMU	Yes	CERCLA	Yes	2
128	DS Building Solvent Storage Shed	F-7	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
129	B Building Solvent Storage Shed	E-6	Inactive		NA		SWMU	Yes	CERCLA	Yes	2
130	B Building Temporary Drum Storage Area	E-6	Inactive		NA		SWMU	Yes	CERCLA	Yes	2
131	SW Building Soils	E-6 F-6	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
132	Area 15, Entombed SW Cave (Room SW 1-B)	F-6	Historical		AEA	AEA		Yes	AEA	D&D	
133	SW Building Room 1-A	E-6	Historical		AEA	AEA		Yes	AEA	D&D	
134	SW Building Drum Storage Area (AKA Drum Staging Area)	E-6	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
135	Room SW-8 Beta Wastewater Tank (Tank 20)	F-6	Surplus		AEA	AEA		No	NA	OM	
136	Room SW-125 Beta Wastewater Tank (Tank 21)	F-6	In Service		AEA	AEA		No	NA	OM	
137	Room SW-143 Beta Wastewater Tank (Tank 22)	F-6	In Service		AEA	AEA		No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
138	Room SW-137 Alpha Wastewater Sump (Tank 23)	E-6 F-6	Surplus		AEA	AEA		No	AEA	Yes	6
139	Room SW-10 Beta Wastewater Sump (Tank 226)	F-6	Inactive		AEA	AEA		No	AEA	D&D	
140	Beta Waste Solidification Facility - SW Building	E-6 F-6	In Service		AEA	AEA		No	NA	OM	
141	Tritium Effluent Removal System	E-6	In Service		AEA	AEA		No	NA	OM	
142	SW/R Building Solid Radioactive Waste Compactor	E-6 F-6	In Service		AEA	AEA		No	NA	OM	
143	R/SW/T Building Stack Diesel Fuel Storage Tank (Tank 117)	F-6	In Service		BUSTR	BUSTR		No	NA	OM	
144	R Building Sanitary Waste Collection Tank (Tank 120)	F-6	In Service	effluent to wastewater treatment	CWA	AEA		No	NA	OM	
145	Room R-128 Alpha Wastewater Tank (Tank 19)	E-6	In Service		AEA	AEA		No	NA	OM	
146	R Building Rooms 121, 144, 146 and 148	F-6	Historical		AEA	AEA		Yes	AEA	D&D	
147	HH Building Soils	F-7	Grounds		AEA	AEA		Yes	CERCLA	Yes	2
148	HH Building Solidification Unit	F-7	Historical		NA	NA		No	AEA	No	
149	HH Building Pilot incinerator	F-7	Historical		NA			No	AEA	No	
150	Room HH-15 Beta Wastewater Sump (Tank 236)	F-7	Inactive		NA			No	AEA	D&D	
151	Room HH-6 Alpha Wastewater Sump (Tank 237)	F-7	Historical		NA				AEA	D&D	
152	HH Building Beta Wastewater Sump (Tank 24)	F-7	In Service		AEA	AEA			NA	OM	
153	Area 20, Radioactive Waste Line Break	G-7	Grounds		NA			Yes	AEA	Yes	6
154	Area 23, Thorium Contaminated Soil	F-6 G-6	Grounds		AEA	AEA		Yes	AEA	Yes	6
155	Old Sanitary Disposal (SD) Plant (AKA Old Sanitary Wastewater Treatment Plant)	F-6	Surplus		NA		SWMU	Yes	AEA	D&D	
156	Old SD plant Tank (Tank 205)	F-6	Surplus		NA		SWMU	Yes	AEA	Yes	6

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
157	Old SD plant Tank (Tank 206)	F-6	Surplus		NA		SWMU	Yes	AEA	Yes	6
158	Old SD plant Tank (Tank 207)	F-6	Surplus		NA		SWMU	Yes	AEA	Yes	6
159	Area 4A, Sewage Sludge Drying Pits	F-5 G-5 F-6 G-6	Surplus		NA			Yes	AEA	Yes	6
160	Mixed Waste Storage Area (Building 23)	G-6	In Service	HWMU included in Part B application	RCRA	RCRA	SWMU	No	NA	OM	
161	Glass Melter Furnace	F-6	Inactive	HWMU included in Part B application	RCRA	RCRA	SWMU	No	NA	OM	
162	Glass Melter Feed Drum						SWMU	No	NA	OM	
163	Off-Gas Treatment System Deluge Tank						SWMU	No	NA	OM	
164	Off-Gas Treatment System Venturi Scrubber						SWMU	No	NA	OM	
165	Off-Gas Treatment System Cyclone Demister						SWMU	No	NA	OM	
166	Off-Gas Treatment System HEPA Filter						SWMU	No	NA	OM	
167	Off-Gas Treatment System WD Building Filter Bank						SWMU	No	NA	OM	
168	Off-Gas Treatment System Recycle Tank						SWMU	No	NA	OM	
169	Off-Gas Treatment System Strainer						SWMU	No	NA	OM	
170	Off-Gas Treatment System Leaf Solution Filter	F-6	Historical		NA		SWMU	No	NA	No	
171	Off-Gas Treatment System Iodine Absorption Filter	F-6	Historical		NA		SWMU	No	NA	No	
172	WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump)	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
173	Cyclone Incinerator	F-6 G-6	Historical		NA		SWMU	No	AEA	No	
174	WD Building Drum Staging Area	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
175	Area 4, WD Building Influent Tank Overflow	F-6	Surplus	runoff to plant drainage ditch	AEA	AEA		Yes	AEA	Yes	6

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
176	Area 14, Radioactive Waste Line Break	G-5 G-6	Historical		NA			Yes	AEA	Yes	6
177	Building 41 Alpha Wastewater Tank (Tank 208)	G-6	Historical		NA			Yes	AEA	Yes	6
178	Building 41 Alpha Wastewater Tank (Tank 209)	G-6	Historical		NA			Yes	AEA	Yes	6
179	WD Building Alpha Wastewater Influent Tank (Tank 3)	F-6	In Service		AEA	AEA	SWMU	No	AEA	OM	
180	WD Building Alpha Wastewater Influent Tank (Tank 4)				AEA	AEA	SWMU	No	AEA	OM	
181	WD Building Alpha Wastewater Influent Tank (Tank 5)				AEA	AEA	SWMU	No	AEA	OM	
182	WD Building Alpha Wastewater Influent Tank (Tank 6)				AEA	AEA	SWMU	No	AEA	OM	
183	Room WD-1 Basement Sump (Tank 12)	F-6	In Service		AEA	AEA		No	AEA	OM	
184	Room WD-1 Alpha Wastewater Sump (Tank 17)	F-6	In Service		CWA	AEA		No	NA	OM	
185	Room WD-1 Sanitary Waste Sump (Tank 134)	G-6	In Service	effluent to wastewater treatment	CWA	AEA		No	NA	OM	
186	Room WD-8 Alpha Wastewater Sump (Tank 18)	F-6	In Service						No	NA	OM
187	WD Building Alpha Wastewater Clariflocculators (2 units)	F-6 G-6	In Service	Wastewater	CWA	AEA	SWMU	No	NA	OM	
188	WD Building Alpha Wastewater Mixing Box	F-6 G-6	In Service	Treatment Units			SWMU	No	NA	OM	
189	WD Building Alpha Wastewater Sand Filters (2 units)	F-6 G-6	In Service	Wastewater Treatment Units			SWMU	No	NA	OM	
190	WD Building Alpha Wastewater Bone Char Columns (2 units)	F-6 G-6	In Service	Wastewater Treatment Units			SWMU	No	NA	OM	
191	WD Building Alpha Wastewater Effluent Tank (Tank 7)	G-6	In Service	Effluent	CWA	AEA	SWMU	No	NA	OM	
192	WD Building Alpha Wastewater Effluent Tank (Tank 8)			Released to Great Miami River			SWMU	No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
193	WD Building Alpha Wastewater Effluent Tank (Tank 9)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	(Cont.)	SWMU	No	NA	OM	
194	WD Building Alpha Wastewater Effluent Tank (Tank 10)						SWMU	No	NA	OM	
195	WD Building Alpha Wastewater Sludge Pits (2 units)	F-6 G-6	In Service		AEA	AEA	SWMU	No	NA	OM	
196	WD Building Alpha Wastewater Sludge Solidification/Drumming Unit	F-6 G-6	In Service		AEA	AEA	SWMU	No	NA	OM	
197	WD Building Solid Radioactive Waste Compactor	F-6 G-6	In Service		AEA			NO	NA	OM	
198	WDA Building Basement Sanitary Waste Tank (Tank 135)	F-6	In Service	effluent to wastewater treatment	CWA	AEA		No	NA	OM	
199	WDA Building Beta Wastewater Influent Tank (Tank 13)	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
200	WDA Building Beta Wastewater Influent Tank (Tank 14)	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
201	WDA Building Beta Wastewater Metering Station	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
202	WDA Building Beta Wastewater Mixing/Solidification Unit	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
203	WDA Building Alpha Wastewater Influent Tank (Tank 15)	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
204	WDA Building Alpha Wastewater Influent Tank (Tank 16)	F-6	In Service		AEA	AEA	SWMU	No	NA	OM	
205	WDA Building Alpha Effluent Tank (Tank 214)	F-6	Inactive		AEA	AEA	SWMU	No	AEA	Yes	6
206	WDA Building Alpha Effluent Tank (Tank 215)				AEA	AEA	SWMU	No	AEA	Yes	6
207	WDA Building Alpha Effluent Tank (Tank 216)				AEA	AEA	SWMU	No	AEA	Yes	6
208	WDA Building Solidification Unit	F-6	Historical		NA			No	AEA	D&D	
209	Building 62 Stack Deluge Tank (Tank 1)	E-6	In Service		AEA	AEA		No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
210	Room H-131 Laundry Water Tank (Tank 2)	E-6	In Service		AEA	AEA		No	NA	OM	
211	A Building Decontamination Shower Water Tank (Tank 28)	E-6	In Service		AEA	AEA		No	NA	OM	
212	A Building Decontamination Shower Water Tank (Tank 29)				AEA	AEA		No	NA	OM	
213	T Building Solidification Unit	F-7	Historical		NA			No	AEA	No	
214	T Building Solid Radioactive Waste Compactor	F-7	In Service		AEA			No	NA	OM	
215	Room T-1 Cooling Water Sump (Tank 124)	F-7	In Service	Effluent to wastewater treatment	CWA	AEA		No	NA	OM	
216	T Building, Corridor 2 Sanitary Wastewater Sump (Tank 125)	F-7	In Service					No	NA	OM	
217	Room T-11F Sanitary Wastewater Sump (Tank 126)	F-7	In Service					No	NA	OM	
218	Room T-15 Sanitary Wastewater Sump (Tank 127)	F-7	In Service					No	NA	OM	
219	T Building, Stair 3 Cooling Water Sump (Tank 128)	F-7	In Service					No	NA	OM	
220	Room T-78 Steam Condensate Sump (Tank 129)	F-7	In Service					No	NA	OM	
221	T Building, Corridor 8 Sanitary Wastewater Sump (Tank 130)	F-7	In Service					No	NA	OM	
222	Room T-78A Sanitary Wastewater Sump (Tank 131)	F-7	In Service					No	NA	OM	
223	Room T-90 Cooling System Condensate Sump (Tank 132)	F-7	In Service					No	NA	OM	
224	Room T-99 Sanitary Wastewater Sump (Tank 133)	F-7	In Service					No	NA	OM	
225	Room T-23 Beta Wastewater Sump (Tank 227)	F-7	Historical					NA			No
226	Room T-3 Floor Drain Sump (Tank 228)	F-7	Historical Filled with concrete 1985		NA			No	AEA	D&D	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
227	Room T-40 Alpha Wastewater Sump (Tank 229)	F-7	Historical Filled with concrete		NA			No	AEA	D&D	
228	Room T-41 Alpha Wastewater Sump (Tank 230)	F-7	Historical Filled with concrete		NA			No	AEA	D&D	
229	Room T-50 Alpha Wastewater Sump (Tank 231)	F-7	Historical Filled with concrete 1975		NA			No	AEA	D&D	
230	Room T-50 Alpha Wastewater Sump (Tank 232)	F-7	Historical Filled with concrete 1975		NA			No	AEA	D&D	
231	T Building, Corridor 8 Alpha Wastewater Sump (Tank 233)	F-7	Historical Filled with concrete 1982		NA			No	AEA	D&D	
232	T Building, Corridor 7 Alpha Wastewater Sump (Tank 234)	F-7	Historical Filled with concrete 1982		NA			No	AEA	D&D	
233	Room T-63 Alpha Wastewater Sump (Tank 235)	F-7	Historical Filled with concrete 1982		NA			No	AEA	D&D	
234	Building 58 Diesel Fuel Storage Tank (Tank 222)	E-6	Historical		NA			No	CERCLA	Yes	2
235	Area of Possible Elevated Thorium Activity	E-8	Grounds		AEA	AEA		Yes	AEA	Yes	6
236	Site Survey Project Potential Hot Spots Location S0166	F-6	Grounds		AEA			Yes	CERCLA	Yes	2
237	Site Survey Project Potential Hot Spots Location S0175	E-5 E-6	Grounds		AEA			Yes	AEA	Yes	6
238	Site Survey Project Potential Hot Spot Location S1092	G-7	Grounds		AEA			Yes	AEA	Yes	6
239	Site Survey Project Potential Hot Spot Location S0208	F-5	Grounds		AEA			Yes	CERCLA	Yes	2

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
240	Site Survey Project Potential Hot Spot Location S0472	G-6	Grounds		AEA			Yes	AEA	Yes	6
241	Northwest Parking Lots	D-6 D-7	Grounds		AEA			Yes	CERCLA	Yes	2
242	VOC Potential Hot Spot Location 1016	D-7	Grounds		AEA			Yes	CERCLA	Yes	2
243	VOC Potential Hot Spot Location 1064	E-7	Grounds		AEA			Yes	CERCLA	Yes	2
244	VOC Potential Hot Spot Locations 1076, 1077, 1079 and 1080	E-6	Grounds		AEA			Yes	CERCLA	Yes	2
245	VOC Potential Hot Spot Location 1085	F-6	Grounds		AEA			Yes	CERCLA	Yes	2
246	VOC Potential Hot Spot Locations 1117 and 1118	G-7	Grounds		AEA			Yes	CERCLA	Yes	2
247	VOC Potential Hot Spot Location 1129	F-8	Grounds		AEA			Yes	CERCLA	Yes	2
248	HH Building Stack	F-7	In Service	NESHAP	CAA	AEA		No	NA	OM	
249	SW Building Stack (NCPDF)	F-6	In Service	NESHAP	CAA	AEA		No	NA	OM	
250	SW Building Stack (SW1C)	F-6	In Service					No	NA	OM	
251	SW Building Stack (HEFS)	F-6	In Service					No	NA	OM	
252	B Building Stack	E-6	Inactive		AEA	AEA		No	AEA	D&D	
253	T Building WEST Stack	F-7	In Service	NESHAP	CAA	AEA		No	NA	OM	
254	T Building EAST Stack	F-7	In Service					No	NA	OM	
255	WD Building Stack (ALR)	F-6	In Service					No	NA	OM	
256	WD Building Stack (AHR)	F-6	In Service					No	NA	OM	
257	WD Building Stack (SS)	F-6	In Service					No	NA	OM	
258	Area H Open Burn Unit (AKA Pyrotechnic Waste Disposal Area)	I-7	In Service	HWMUs included in Part B application	RCRA	RCRA	SWMU	No	NA	OM	
259	Pyrotechnic Waste Shed	I-7	In Service					No	NA	OM	
260	Thermal Treatment Unit	I-7	Inactive					No	NA	OM	
261	Trash Burner	I-7	Historical		NA	NA	SWMU	No	CERCLA	No	5
262	Retort	I-7	In Service	HWMU included in Part B application	RCRA	RCRA	SWMU	No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU	
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority			
263	Building 90 Blockhouse	I-7	In Service	(Cont.)	(Cont.)	(Cont.)	SWMU	No	NA	OM		
264	Explosive Waste Storage Bunker (Magazine 53)	I-7	In Service				SWMU	No	NA	OM		
265	Biodegradation Unit	I-7	Inactive				SWMU	No	NA	OM		
266	Area 8, Thorium-Contaminated Soils from Areas 1 and 9	F-9	Grounds	runoff to asphalt-lined pond	AEA	AEA		Yes	AEA	Yes	6	
267	Area 9, Thorium Storage and Redrumming Area (AKA Former Thorium Storage)	F-9 G-9	Grounds		AEA	AEA		Yes	AEA	Yes	6	
268	Building 31, Contaminated Material Storage Building	F-9	In Service		AEA	AEA		No	NA	OM		
269	Building 36 Historic Gasoline Tanks (Tanks 239 and 240)	G-10	Historical		NA	NA		No	CERCLA	No	5	
270	Underground Sanitary Sewer Lines G6 & G7	G-10	In service		AEA	AEA	SWMU	No	NA	OM		
271	Building 37 Sanitary Waste Tank (Tank 100)	F-10	In Service	effluent to wastewater treatment	CWA	AEA		No	NA	OM		
272	Area 10, Concrete Debris	G-8 G-9	Grounds	runoff to plant drainage ditch	AEA			Yes	AEA	Yes	6	
273	Area 12, Thorium-Contaminated Soil from Area 1	G-9						Yes	AEA	Yes	6	
274	Area 21 Old Bunker	H-9						Yes	CERCLA	Yes	5	
275	Area 21 Detonator Shack	H-8					Grounds		Yes	CERCLA	Yes	5
276	Area 22, Orphan Soil from other Areas	I-8					Inactive		Yes	CERCLA	Yes	5
277	Area J, Hillside Disposal Area (AKA Dredged Material Disposal Area 11a)	H-8 H-9					Historical			SWMU	Yes	CERCLA
278	Area J, Hillside catch basin	H-8	In Service	Potential wetlands (under Section 404 CWA)	AEA (CWA)		SWMU	No	CERCLA	Yes	5	
279	Old Firing Range Drum Storage Area	H-9	Historical		NA		SWMU	Yes	CERCLA	Yes	5	
280	Waste Oil Drum Field Area	I-8	Historical		NA		SWMU	Yes	CERCLA	Yes	5	
281	Area E, Waste Oil Spill	J-8	Historical		NA			Yes <sup>o</sup>	CERCLA	No	5	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
282	Spoils Disposal Area/Construction Spoils Area	J-5 K-5	In Service		AEA	AEA	SWMU	Yes	CERCLA	Yes	5
283	Area 1, Bulk Transfer of Thorium Drums (AKA Plutonium Recoverable Waste Storage)	I to L- 6 to 8	Grounds	runoff to plant drainage ditch	AEA			Yes	AEA	Yes	6
284	Building 21, Thorium Sludge Storage Facility	J-7 J-8	Surplus		AEA			Yes	AEA	Yes	6
285	Area 11, Contamination from SM Building Operations	G-9	Surplus	runoff to plant drainage ditch	NA			Yes	AEA	Yes	6
286	Area 16, SM Building Sanitary Sewage Septic Tank/Leach Field	F-9 G-9	Surplus	runoff to plant drainage ditch	NA			Yes	AEA	Yes	6
287	SM Building Historic Septic Tank (Tank 241)	G-9	Historical		NA			No	AEA	Yes	6
288	Area 17, SM Building Soils	G-9 G-10	Surplus	runoff to asphalt-lined pond	AEA			Yes	AEA	Yes	6
289	SM Building Alpha Wastewater Tank (Tank 210)	G-9	Historical		AEA	AEA		Yes	AEA	Yes	6
290	SM Building Alpha Wastewater Tank (Tank 211)	G-9	Historical		NA			Yes	AEA	Yes	6
291	SM Building Alpha Wastewater Tank (Tank 212)	G-9	Historical		NA			Yes	AEA	Yes	6
292	SM Building Alpha Wastewater Tank (Tank 213)	G-9	Historical		NA			Yes	AEA	Yes	6
293	SM Building Solidification Unit (Room SM-1)	G-9	Historical		NA			Yes	AEA	Yes	6
294	WS Building Solidification Unit	G-9	Historical		NA			No	NA	No	
295	Building 38 Solid Radioactive Waste Compactors (2 units)	G-9 H-9	Historical		AEA	AEA		No	AEA	No	
296	Building 38 West Dock Sump (Tank 25)	H-9	In Service		AEA	AEA		No	NA	OM	
297	Building 38 Alpha Wastewater Sump (Tank 26)	G-9	In Service	effluent to WD Building	CWA	AEA		No	AEA	OM	
298	Building 38 Alpha Wastewater Sump (Tank 27)	G-9	In Service	effluent to WD Building	CWA	AEA		No	AEA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
299	Building 38 Diesel Fuel Storage Tank (Tank 121)	G-9	In Service		BUSTR	BUSTR		No	BUSTR	OM	
300	Area 19, Underground Waste Transfer Line	G-6 G-7 G-8 G-9	Historical		NA		SWMU	Yes	AEA	Yes	6
301	Building 38 In-Line Incinerator	G-9	Historical		NA		SWMU	No	AEA	No	
302	Area D, Acid Leach Field	H-8 H-9 G-8 G-9	Historical		AEA		SWMU	No	AEA	Yes	6
303	Warehouse 14 (AKA Pad 14)	G-9	Grounds		AEA			No	AEA	No	
304	Excavated Materials Disposal Area (AKA Rader's Hill)	I-8	Grounds	runoff to overflow pond	AEA			No	CERCLA	Yes	5
305	SM Stack	G-9	Surplus		NA			No	AEA	Yes	6
306	SM/PP Hill Seep 0609	L-9	NA		AEA			No	CERCLA	Yes	5
307	Site Survey Project Potential Hot Spots Location C0007	E-9	Grounds		AEA			Yes	AEA	Yes	6
308	Site Survey Project Potential Hot Spots Location C0028	F-10	Grounds		AEA			Yes	AEA	Yes	6
309	Site Survey Project Potential Hot Spot Location S0307	F-9	Grounds		AEA			Yes	AEA	Yes	6
310	Site Survey Project Potential Hot Spot Location S0647	H-9	Grounds		AEA			Yes	AEA	Yes	6
311	Site Survey Project Potential Hot Spot Location S0706	I-6	Grounds		AEA			Yes	CERCLA	Yes	5
312	Site Survey Project Potential Hot Spot Location S0971	J-9	Grounds		AEA			Yes	CERCLA	Yes	5
313	Site Survey Project Potential Hot Spot Location S0982	I-8	Grounds		AEA			Yes	CERCLA	Yes	6
314	Farm Trash Area	M-5	Historical		AEA		SWMU	No	CERCLA	No	5

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
315	Waste Transport Vehicles	SITE-WIDE	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
316	Trash Dumpsters	SITE-WIDE	In Service	PBR	RCRA	RCRA	SWMU	No	NA	OM	
317	Ventilation Hoods	SITE-WIDE	In Service	PBR	CAA/RCRA		SWMU	No	NA	OM	
318	Transformers	SITE-WIDE	In Service		TSCA	TSCA		No	NA	OM	
319	Epoxy Resin Disposal	G-7 H-7	In Service	PBR	RCRA	RCRA		No	NA	OM	
320	Dayton Unit I	Dayton	Historical		NA			No	NA	No	
321	Dayton Unit II	Dayton	Historical		NA			No	NA	No	
322	Dayton Unit III	Dayton	Historical		NA			Yes	FUSRAP		
323	Dayton Unit IV	Dayton	Historical		NA			Yes	FUSRAP		
324	Dayton Warehouse	Dayton	Historical		NA			No	NA	No	
325	Scioto Facility (Marion)	Marion	Historical		NA			No	NA	No	
326	Building 38 Sanitary Sump (Tank 254)	G-9	In Service	effluent to wastewater treatment (Building 57)	CWA	AEA		No	NA	OM	
327	R-111 Calorimetry Bath (Tank 255)	E-6	Inactive		AEA	AEA		No	NA	D&D	
328	R-111 Calorimetry Bath (Tank 256)	E-6	Inactive		AEA	AEA		No	NA	D&D	
329	Building 62 Hot Waste Sump (Tank 258)	E-6	In Service		AEA	AEA		No	NA	OM	
330	Building 2 Fuel Oil Tank (Tank 260)	H-7	Historical		NA	NA		No	CERCLA	No	5
331	Building 2 Tank (Tank 261)	H-7	Historical		NA	NA		No	CERCLA	Yes	5
332	Building G Waste Oil Tank (Tank 262)	E-7	Inactive		AEA	AEA	SWMU	No	CERCLA	Yes	2
333	Building 87 Explosive Surge Tank (Tank 263)	H-7	In Service	HWMU included in Part B application	CAA	RCRA/AEA		No	NA	OM	
334	Building 87 Explosive Surge Tank (Tank 264)	H-7	In Service	HWMU included in Part B application	CAA	RCRA/AEA		No	NA	OM	
335	Building 87 Explosive Surge Tank (Tank 265)	H-7	In Service	HWMU included in Part B application	CAA	RCRA/AEA		No	NA	OM	

No.	Site Name	Location	Status	Operational Jurisdiction			SWMU	Historic Activities		Further Action Recommended	FFA OU
				Regulated Units	Regulatory Authority	Spill Response		Evidence Of Release	Response Authority		
336	Building 37 Waste Tank (AKA Low Risk Waste Tank (Tank 267))	F-10	In Service	effluent to wastewater treatment (Building 57)	CWA	AEA		No	NA	OM	
337	Building H Condensate Sump (Tank 268)	E-6	In Service		CWA	AEA		No	NA	OM	
338	Building 29 Septic Tank (Tank 270)	E-9	Inactive		AEA	AEA		No	CERCLA	No	5
339	T-44 Wastewater Sump (Tank 250)	F-7	Historical		NA	NA		No	AEA	D&D	
340	T-16b Wastewater Sump (Tank 251)	F-7	Historical		NA	NA		No	AEA	D&D	
341	T-90 Condensate Sump (Tank 269)	F-7	In Service		CWA	AEA		No	NA	OM	
342	T-1 Hot Side Fire Water Tank (Tank 271)	F-7	In Service		AEA	AEA		No	NA	OM	
343	T-20 Fire Water Sump (Tank 272)	F-7	In Service		AEA	AEA		No	NA	OM	
344	T-37 Fire Water Sump (Tank 273)	F-7	In Service		AEA	AEA		No	NA	OM	
345	Area C, Former Equipment Storage Area	H-6	Historical		NA			No	CERCLA	No	5

AEA - Atomic Energy Act of 1954

AKA - Also known as

BUSTR - Bureau of underground storage tank regulation

CAA - Clean Air Act

CWA - Clean Water Act

D&D - Action to be taken by Mound Plant Decommission and Decontamination Program

FUSRAP - Formerly Utilized Sites Remedial Action Program

HWMU - Hazardous waste management unit

NA - Not applicable

<sup>a</sup> - Highest plutonium-238 concentration 31.4 pCi/g.

<sup>b</sup> - Tank closed August 1992 (DOE 1992i).

<sup>c</sup> - To be included as part of Area 3 (#41) investigation.

<sup>d</sup> - Actual location unknown, maintained non-public water supply source under SDWA.

<sup>e</sup> - Five gallon release less than reportable quantity. (RQ)

NESHAP - National Emission Standard for Hazardous Air Pollutants

NPDES - Nation Pollution Discharge Elimination System

OM - Action to be taken by Mound Plant operations and maintenance

PBR - permit by rule

RAPCA - Regional Air Pollution Control Authority

RCRA - Resources Conservation and Recovery Act

SDWA - Safe Drinking Water Act

SWMU - Solid waste Management unit

**APPENDIX B**

**APPENDIX B**  
**SUMMARIES OF ENVIRONMENTAL DATA**

**Table B.1. Maximum Radioactivity Concentrations in Soil Samples from Major Areas (reprinted from Table XI.1 Site Scoping Report: Volume 3 (DOE 1993d)).**

**Table B.2. Summary of Positive Soil Gas Detections - Area J (reprinted from Table II.6 Reconnaissance Sampling Report (DOE 1993b)).**

**Figure B.1. Total VOC detections for Area J (reprinted from Figure 2.28 Reconnaissance Sampling Report (DOE 1993b)).**

**Table B.3. Summary of Positive Soil Gas Detections - Area 7 (reprinted from Table II.10 Reconnaissance Sampling Report (DOE 1993b)).**

**Figure B.2. Total VOC detections for Area 7 (reprinted from Figure 2.36 Reconnaissance Sampling Report (DOE 1993b)).**

**Table B.4. Summary of Positive Soil Gas Detections - Main Hill (reprinted from Table II.4 Reconnaissance Sampling Report (DOE 1993b)).**

**Table B.5. Summary of Positive Soil Gas Detections - Main Parking lot and Southwest of Main Hill (reprinted from Table II.12 Reconnaissance Sampling Report (DOE 1993b)).**

**Figure B.3. Total VOC detections for Main Hill (reprinted from Figure 2.43 Reconnaissance Sampling Report (DOE 1993b)).**

**Table B.6. Summary of Volatile Organic Compound Data.**

**Table B.7. Summary of Semi-Volatile Organic Compound Data.**

**Table B.8. Summary of Inorganic Compound Data.**

**Table B.9. Summary of Radionuclide Data.**

**Table B.10. Maximum Radiologic and Chemical Concentration by Location, Miami-Erie canal (reprinted from ES.1 Special Sampling report, Miami-Erie Canal(DOE 1993e)).**

**Figure B.4. Special Sampling locations at Miami-Erie Canal (northern half) (reprinted from Figure ES.1 Special Sampling report, Miami-Erie Canal (DOE 1993e)).**

**Figure B.5. Special Sampling locations at Miami-Erie Canal (southern half) (reprinted from Figure ES.2 Special Sampling report, Miami-Erie Canal (DOE 1993e)).**

**Table B.11. Plutonium-238 Concentrations in South Pond Samples (reprinted from Table 3 South Pond Sampling Letter Report (Halford 1990)).**

**Figure B.6. South Pond Sampling Locations (reprinted from Figure 2 South Pond Sampling Letter Report (Halford 1990)).**

Table XI.1. Maximum Radioactivity Concentrations in Soil Samples from Major Areas

Site	Plutonium-238 [pCi/g]	Thorium [pCi/g]	Tritium [pCi/ml]	Cobalt-60 [pCi/g]	Cesium-137 [pCi/g]	Radium-226 [pCi/g]	Americium-241 [pCi/g]	Actinium-227 [pCi/g]	Bismuth-207 [pCi/g]	Bismuth-210m [pCi/g]
Area 1	34,000	924.2	1.67	LDL	0.6	1.1	LDL	--	--	--
Area 2	17.10	3.31	--	--	--	--	--	--	--	--
Area 3	1,235	63	--	--	--	--	--	--	--	--
Area 4/4a	355.00	<2	--	LDL	LDL	1.2	1.0	--	--	--
Area 5	0.35 <sup>b</sup>	<2 <sup>b</sup>	--	250	1.6	0.6	LDL	--	--	--
Area 6	--	--	--	LDL	LDL	0.9	LDL	--	--	--
Area 7	7.40 <sup>d</sup>	20.52	5.23	LDL	1.2	2.0	LDL	1,400	--	--
Area 8	24.40	254.30	1.12	LDL	LDL	3.3	LDL	--	--	--
Area 9	8.15	150	--	--	--	--	--	--	--	--
Area 10	99	<2	--	--	--	--	--	--	--	--
Area 11	100,000	69	--	--	--	--	--	--	--	--
Area 12	313.00	189.90	--	LDL	LDL	1.1	LDL	--	--	--
Area 13	5.74	<2	--	--	--	--	--	--	--	--
Area 14	29 <sup>i</sup>	2.24	--	LDL	LDL	1.2	LDL	--	--	--
Area 15 <sup>e</sup>	--	--	--	--	--	--	--	--	--	--
Area 16	8,000	3.46	0.35	LDL	LDL	1.2	LDL	--	--	--
Area 17	3,300	1,000	--	LDL	LDL	0.9	LDL	--	--	--
Area 18	3.71	<2	--	--	--	--	--	--	--	--
Area 19 <sup>d</sup>	185 <sup>m</sup>	1.2	--	--	--	--	--	--	--	--
Area 20	1.90 <sup>b</sup>	4.02 <sup>b</sup>	--	800	200	0.9	LDL	--	70	400
Area 21	1.12	<2	0.77	LDL	31	1.2	LDL	--	--	--
Area 22	1.67	<2	0.99	143	7.0	0.7	LDL	--	--	--
Area 23	--	6,000 <sup>h</sup>	--	--	--	--	--	--	--	--
Area D	0.98	<2	--	--	--	--	--	--	--	--
Area J	147	30.42	6.84	3.0	LDL	1.0	LDL	--	--	--
Spillie Disposal	8.30	<2	1.90	LDL	LDL	0.94	LDL	--	--	--

Table XI.1. (page 2 of 2)

Site	Plutonium-238 [pCi/g]	Thorium [pCi/g]	Tritium [pCi/mL]	Cobalt-60 [pCi/g]	Cesium-137 [pCi/g]	Radium-226 [pCi/g]	Americium-241 [pCi/g]	Actinium-227 [pCi/g]	Bismuth-207 [pCi/g]	Bismuth-210m [pCi/g]
Possible Elevated Thorium	8.97	37.69	--	LDL	LDL	1.5	LDL	--	--	--
Drainage Ditch	535.00	--	--	--	--	--	--	--	--	--
Railroad Sliding	573	107	--	--	--	--	--	--	--	--
Overflow Pond	--	268	--	--	--	--	--	--	--	--
SW Building <sup>g</sup> Soils	--	--	3.83x10 <sup>6</sup>	--	--	--	--	--	--	--
Building 48 Hillside	32,000	--	--	--	--	--	--	--	--	--
Building 66 Lot	7,000	--	--	--	--	--	--	--	--	--
Cobalt-60 Hot Spots	NR	NR	--	82	10	0.8	LDL	--	--	--
Plutonium-238 Hot Spots	61.0	< 2	--	--	--	--	--	--	--	--
Remedial Action Guidelines <sup>i</sup>	100/25 <sup>g</sup>	5 surface <sup>h</sup> 15 subsurface	5,200 <sup>j</sup>	NE	80 <sup>j</sup>	5 surface <sup>h</sup> 15 subsurface	20 <sup>j</sup>	NE	NE	NE

<sup>a</sup>The total thorium concentration was less than the background level of 2 pCi/g, using FIDLER screening; therefore, radiochemical analysis was not performed.

<sup>b</sup>Most of the results for this radionuclide for this area are reported as NR. See the area-specific tabulated results.

<sup>c</sup>Area 15 emits 1 Ci per year of radon, indicating the presence of radium-226.

<sup>d</sup>Sampling of Area 19 was verification sampling conducted after remedial action.

<sup>e</sup>SW Building soils were sampled in 1977 (Dames and Moore 1977).

<sup>f</sup>Current remedial action guidelines are subject to change, pending additional pathways analysis and risk assessment.

<sup>g</sup>Current D&D cleanup level is 100 pCi/g (DOE 1983); 25 pCi/g, if feasible (as low as reasonably achievable [ALARA]).

<sup>h</sup>remedial action guideline (CFR 1990)

<sup>i</sup>remedial action guideline (DOE 1983)

<sup>j</sup>value for Area 7 does not include value at Building 66

<sup>k</sup>value indicated is thorium-230 isotope

<sup>l</sup>value is mean during verification sampling after cleanup

<sup>m</sup>highest residual level after verification cleanup

-- Dashes indicate that no data are available for the given area and given radionuclide.

FIDLER - field instrument for the detection of low-energy radiation

LDL - The measured concentration was below the lower detection limit, estimated to be 0.5 pCi/g for cobalt-60, cesium-137, and americium-241; and 1 pCi/g for radium-226 and actinium-227.

NE - Not established

NR - No result

pCi/g - picocuries per gram

pCi/mL - picocuries per milliliter

Cl - curie

TABLE II.8 SUMMARY OF POSITIVE DETECTIONS - AREA J  
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-3153-0005	27 AUG 82	---	---	---	---	---	---	---	11
MND-01-3154-0005	27 AUG 82	43	---	---	---	---	---	---	---
MND-01-3154-1005	27 AUG 82	46	---	---	---	7	10*	13	---
MND-01-3155-0005	27 AUG 82	---	---	---	---	---	---	---	5
MND-01-3171-0005	31 AUG 82	2	---	---	---	---	15	---	---
MND-01-3173-0005	31 AUG 82	---	---	---	---	---	---	---	5*
MND-01-3175-0005	1 SEP 82	---	---	---	---	37	---	---	---
MND-01-3176-0005	31 AUG 82	---	---	---	---	---	---	---	8*
MND-01-3187-0005	1 SEP 82	5	---	---	---	---	---	---	---
MND-01-3209-0017	28 SEP 82	---	---	---	---	---	---	---	5

Notes:

Only sample locations having positive detections are shown.

\*: Associated trip, ambient, equipment or field blank contained specified compound.

B: Indicates blank sample.

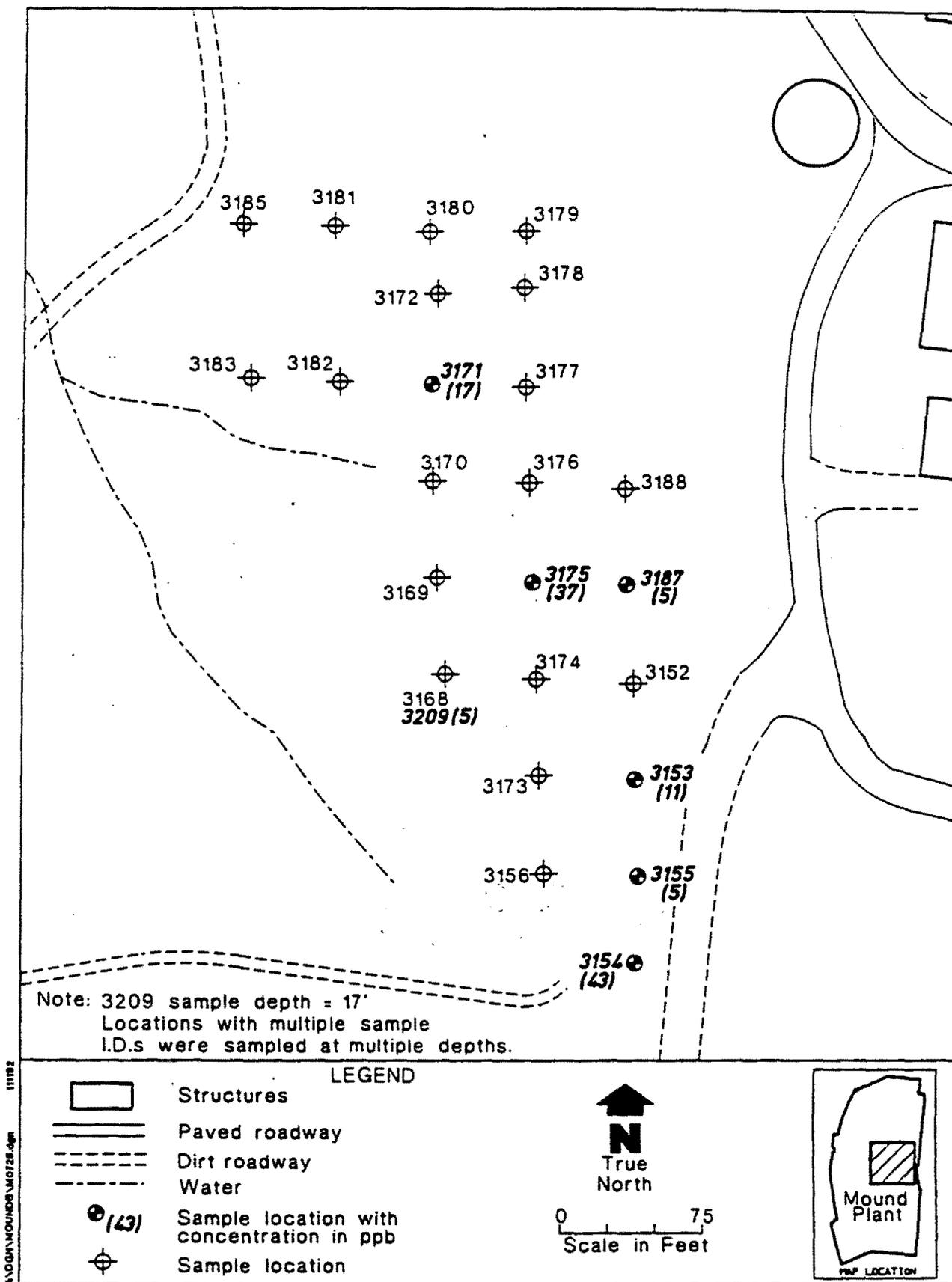


Figure 2.28. Total VOCs detection map for Area J .

TABLE II.10 SUMMARY OF POSITIVE DETECTIONS-AREA 7  
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-2021-0005	1 AUG 92	---	---	---	---	---	---	---	3
MND-01-2022-0005	1 AUG 92	---	---	---	---	---	---	---	3
MND-01-2023-0005	1 AUG 92	---	---	---	---	---	---	---	3
MND-01-2024-0005	1 AUG 92	---	---	---	---	---	---	---	3
MND-01-2025-0005	1 AUG 92	---	---	---	---	---	---	---	37
MND-01-2026-0005	1 AUG 92	---	---	---	---	---	---	---	133
MND-01-2027-0005	1 AUG 92	---	---	---	---	9	---	---	825
MND-01-2031-0005	1 AUG 92	---	---	---	---	---	---	---	13
MND-01-2032-0005	2 AUG 92	---	---	---	---	---	---	---	3
MND-01-2033-0005	2 AUG 92	---	---	---	---	---	---	---	3
MND-01-2034-0005	2 AUG 92	---	---	---	---	---	---	---	3
MND-01-2034-1005	2 AUG 92	---	---	---	---	---	---	---	3
MND-01-2038-0005 w	3 AUG 92	---	---	---	---	---	---	---	242 *
MND-01-2038-1005 w	3 AUG 92	---	---	---	---	---	---	---	218 *
MND-01-2039-0005	2 AUG 92	---	---	---	3	---	---	---	---
MND-01-2044-0005	3 AUG 92	---	---	---	---	---	---	---	13 *
MND-01-2137-1005	24 AUG 92	---	---	---	---	6	---	---	5
MND-01-2138-0005	24 AUG 92	11	---	---	---	2	---	---	80
MND-01-2139-0005	25 AUG 92	32	4	---	---	---	---	---	3 *
MND-01-2141-0005	25 AUG 92	---	---	---	10	---	---	---	5 *
MND-01-2142-0005	25 AUG 92	---	---	---	---	---	---	---	11*
MND-01-2142-1005	25 AUG 92	---	---	---	---	---	---	---	11*
MND-01-2145-0005	25 AUG 92	---	---	---	---	---	---	---	5 *
MND-01-2146-0005	25 AUG 92	---	33	---	---	---	6	---	---
MND-01-2147-0005	25 AUG 92	---	13	---	---	---	---	---	---
MND-01-2148-0005	28 AUG 92	---	---	---	---	22	---	---	---
MND-01-2149-0005	28 AUG 92	---	---	---	---	---	---	---	5 *
MND-01-2149-1005	28 AUG 92	---	---	---	---	---	---	---	5 *
MND-01-2150-0005	28 AUG 92	---	---	---	---	2	---	---	5 *
MND-01-2162-0005	30 AUG 92	7	---	---	---	---	---	---	---
MND-01-2212-0015	26 SEP 92	---	10	---	---	---	---	---	---
MND-01-2213-0005	26 SEP 92	---	---	---	---	---	---	---	11
MND-01-2214-0005	26 SEP 92	---	---	---	---	---	7	---	5
MND-01-2215-0005	26 SEP 92	---	---	---	---	---	---	---	11

Notes:

- Only sample locations having positive detections are shown.
- \*: Associated trip, ambient, equipment or field blank contained specified compound.
- B: Indicates blank sample.
- w: Indicates water sample.

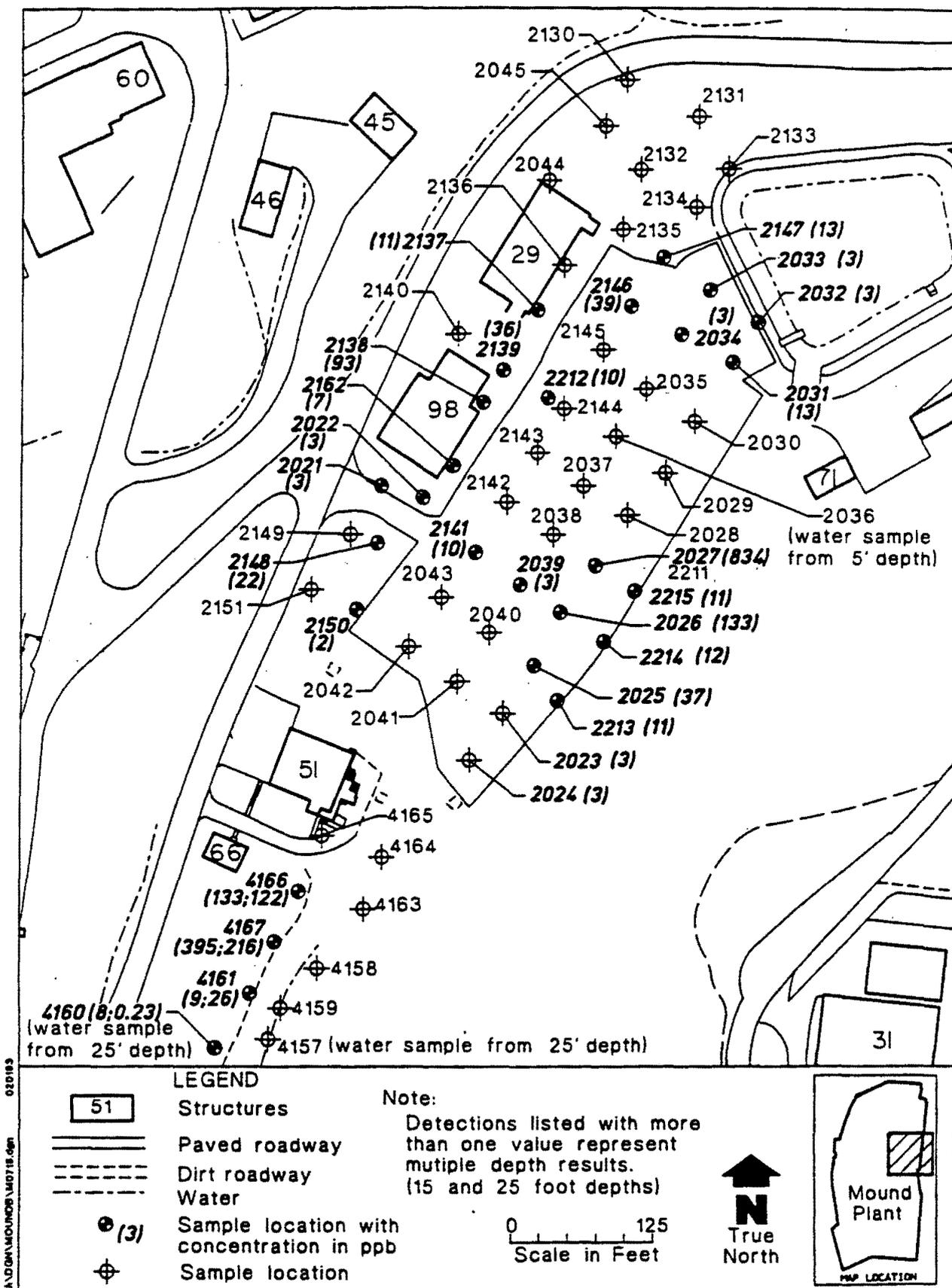


Figure 2.36. Total VOCs detection map for Area 7 and Building 51.

TABLE II.4. SUMMARY OF POSITIVE DETECTIONS—MAIN HILL  
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-1002-1003	28 JUL 92	---	---	---	---	---	---	---	40
MND-01-1003-0005	28 JUL 92	---	---	---	---	---	---	---	3*
MND-01-1005-0005	28 JUL 92	---	---	---	---	---	---	---	21*
MND-01-1007-0005	29 JUL 92	---	---	---	---	---	---	2	---
MND-01-1008-0005	29 JUL 92	---	---	---	---	---	---	---	5
MND-01-1008-1005	29 JUL 92	---	---	---	---	---	---	---	3
MND-01-1009-0005	29 JUL 92	---	---	---	---	---	---	4	19
MND-01-1010-0005	29 JUL 92	---	---	---	---	---	---	---	13
MND-01-1014-0005	29 JUL 92	---	---	---	---	---	---	---	8
MND-01-1016-0003	30 JUL 92	---	---	---	---	---	---	2	8
MND-01-1046-0005	4 AUG 92	---	---	---	---	2	---	188	3*
MND-01-1047-0005	4 AUG 92	---	---	---	---	7	---	4	---
MND-01-1048-0005	4 AUG 92	---	---	---	---	6	---	4	---
MND-01-1050-0003	4 AUG 92	---	---	---	---	---	---	8	---
MND-01-1050-1003	4 AUG 92	---	---	---	---	---	---	17	27*
MND-01-1051-0003	4 AUG 92	---	---	---	---	---	---	8	5*
MND-01-1052-0003	4 AUG 92	---	---	---	---	---	---	---	13*
MND-01-1053-0002	5 AUG 92	2	---	---	---	---	---	---	447
MND-01-1054-0005	5 AUG 92	4	---	---	---	7	---	228*	11
MND-01-1055-1005	5 AUG 92	---	---	---	---	---	---	4*	5
MND-01-1057-0005	5 AUG 92	---	---	---	---	---	---	---	24
MND-01-1062-0003	5 AUG 92	---	---	---	---	13	---	6	---
MND-01-1064-0005	11 AUG 92	---	---	---	---	---	---	---	19
MND-01-1066-0005	11 AUG 92	---	---	---	---	6	---	---	228
MND-01-1067-0005	11 AUG 92	---	---	---	---	---	---	11	133
MND-01-1069-1005	12 AUG 92	---	---	---	---	---	---	---	37
MND-01-1070-0005	12 AUG 92	---	---	---	---	---	---	---	5
MND-01-1070-1005	12 AUG 92	---	---	---	---	---	---	---	5
MND-01-1072-0005	12 AUG 92	---	---	---	---	---	---	---	108
MND-01-1074-0005	12 AUG 92	---	789	---	---	---	1191	---	5
MND-01-1074-1005	12 AUG 92	---	812	---	---	---	1117	---	5
MND-01-1075-0005	12 AUG 92	---	---	---	---	---	---	---	80
MND-01-1076-0005	12 AUG 92	---	2934	---	---	148	---	---	---
MND-01-1077-0005	12 AUG 92	---	---	---	---	---	---	---	27
MND-01-1079-0005	13 AUG 92	---	13	---	---	---	---	---	---
MND-01-1080-0005	13 AUG 92	---	13	---	---	---	---	---	---
MND-01-1085-0005	13 AUG 92	---	102	---	---	22	---	41	---
MND-01-1086-0005	13 AUG 92	---	47	---	---	---	---	---	---
MND-01-1093-0005	15 AUG 92	---	**131000	247	40800	---	---	**34780	53*
MND-01-1094-0005	14 AUG 92	---	83	13	485	---	---	978	---
MND-01-1097-0002	14 AUG 92	---	---	---	---	---	---	6	8
MND-01-1099-0005	15 AUG 92	---	---	---	---	---	---	4	8*
MND-01-1101-0005	16 AUG 92	---	865	---	---	---	---	---	8
MND-01-1102-0005	16 AUG 92	---	419	---	---	---	---	---	13
MND-01-1106-0003	16 AUG 92	---	329	---	---	---	---	6	---
MND-01-1108-0005	16 AUG 92	---	---	---	---	---	---	6	---
MND-01-1109-0005	16 AUG 92	---	---	---	---	---	---	8	13
MND-01-1110-0005	16 AUG 92	---	---	---	---	---	---	---	255

TABLE II.4. SUMMARY OF POSITIVE DETECTIONS—MAIN HILL  
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN- 12DCE	CIS- 12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-1113-0005	17 AUG 82	----	----	----	----	----	----	11	----
MND-01-1114-0005	17 AUG 82	----	9	----	----	315	10	357	5*
MND-01-1114-1005	17 AUG 82	----	----	----	----	259	9	263	3*
MND-01-1115-0005	17 AUG 82	----	----	----	----	58	----	13	----
MND-01-1117-0005	18 AUG 82	----	----	----	----	----	12	8	----
MND-01-1117-1005	18 AUG 82	----	----	----	----	----	15	9	----
MND-01-1118-0005	18 AUG 82	----	----	----	----	----	3	----	----
MND-01-1119-0005	18 AUG 82	----	----	----	----	----	----	----	213
MND-01-1122-0005	18 AUG 82	801	13	----	----	----	----	----	----
MND-01-1123-0005	18 AUG 82	----	----	----	----	----	----	----	5*
MND-01-1124-0005	18 AUG 82	----	----	----	----	----	----	----	8884*
MND-01-1127-0005	18 AUG 82	----	----	----	----	----	4	----	27*
MND-01-1128-0005	18 AUG 82	----	10	----	----	37	12	4	11*
MND-01-1190-0005	24 SEP 82	240	477	----	----	----	----	----	3*
MND-01-1190-1005	24 SEP 82	287	707	----	----	----	----	----	3*
MND-01-1192-0005	24 SEP 82	----	----	----	----	----	----	----	5*
MND-01-1193-0005	24 SEP 82	----	----	----	----	----	----	----	18*
MND-01-1196-0005	25 SEP 82	----	----	----	----	----	----	4	64
MND-01-1197-0002	25 SEP 82	----	----	----	----	----	----	23	5
MND-01-1198-0006	25 SEP 82	----	24	13	518	33	----	474	5
MND-01-1198-0002	25 SEP 82	----	10218	----	120	----	----	479	----
MND-01-1201-0007	25 SEP 82	----	4718	13	811	----	----	130	48
MND-01-1201-1007	25 SEP 82	----	5695	----	612	----	----	117	43
MND-01-1202-0002	25 SEP 82	----	6419	66	2499	9	----	1821	3
MND-01-1202-1002	25 SEP 82	----	9301	41	1706	----	----	1737	----
MND-01-1203-0002	25 SEP 82	----	1475	----	334	----	----	45	192
MND-01-1204-0005	25 SEP 82	----	453	----	----	----	----	11	5
MND-01-1205-0005	25 SEP 82	----	----	----	----	----	----	----	21
MND-01-1206-0005	26 SEP 82	----	----	----	----	----	----	----	23142
MND-01-1207-0005	26 SEP 82	----	----	----	----	----	----	----	90-
MND-01-1227-0005	28 SEP 82	----	10	----	----	----	----	----	4788
MND-01-1228-0005	28 SEP 82	----	----	----	----	----	----	----	11
MND-01-1230-0005	28 SEP 82	----	----	----	----	----	----	----	13
MND-01-1230-1005	28 SEP 82	----	----	----	----	----	----	----	5
MND-01-1231-0005	28 SEP 82	----	48	----	----	----	34	21	5
MND-01-1232-0005	28 SEP 82	----	4	----	----	----	13	8	24
MND-01-1233-0002	29 SEP 82	----	29	----	----	----	----	----	72
MND-01-1233-1002	29 SEP 82	----	29	----	----	----	----	----	64

Notes:

Only sample locations having positive detections are shown.

\*: Associated trip, ambient, equipment or field blank contained specified compound.

B: Indicates blank sample.

w: Indicates water sample.

\*\* : Freon 113 & TCE Off-Scale

**TABLE II.12. SUMMARY OF POSITIVE DETECTIONS—MAIN PARKING LOT AND SOUTHWEST OF MAIN HILL  
(ppb)**

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN-12DCE	CIS-12DCE	111TCA	PCE	TCE	TOLUENE
MND-01-2218-0005	28 SEP 92	----	---	----	----	----	----	----	104
MND-01-2219-0005	28 SEP 92	----	---	----	----	----	----	----	11
MND-01-5221-0005	27 SEP 92	21	131	----	----	----	----	68	18 *
MND-01-5222-0005	27 SEP 92	----	---	----	----	----	----	----	11 *
MND-01-5222-1005	27 SEP 92	----	---	----	----	----	----	----	18 *
MND-01-5225-0005	27 SEP 92	----	---	----	----	----	----	----	13 *
MND-01-5226-0005	27 SEP 92	----	---	----	----	----	----	----	82 *

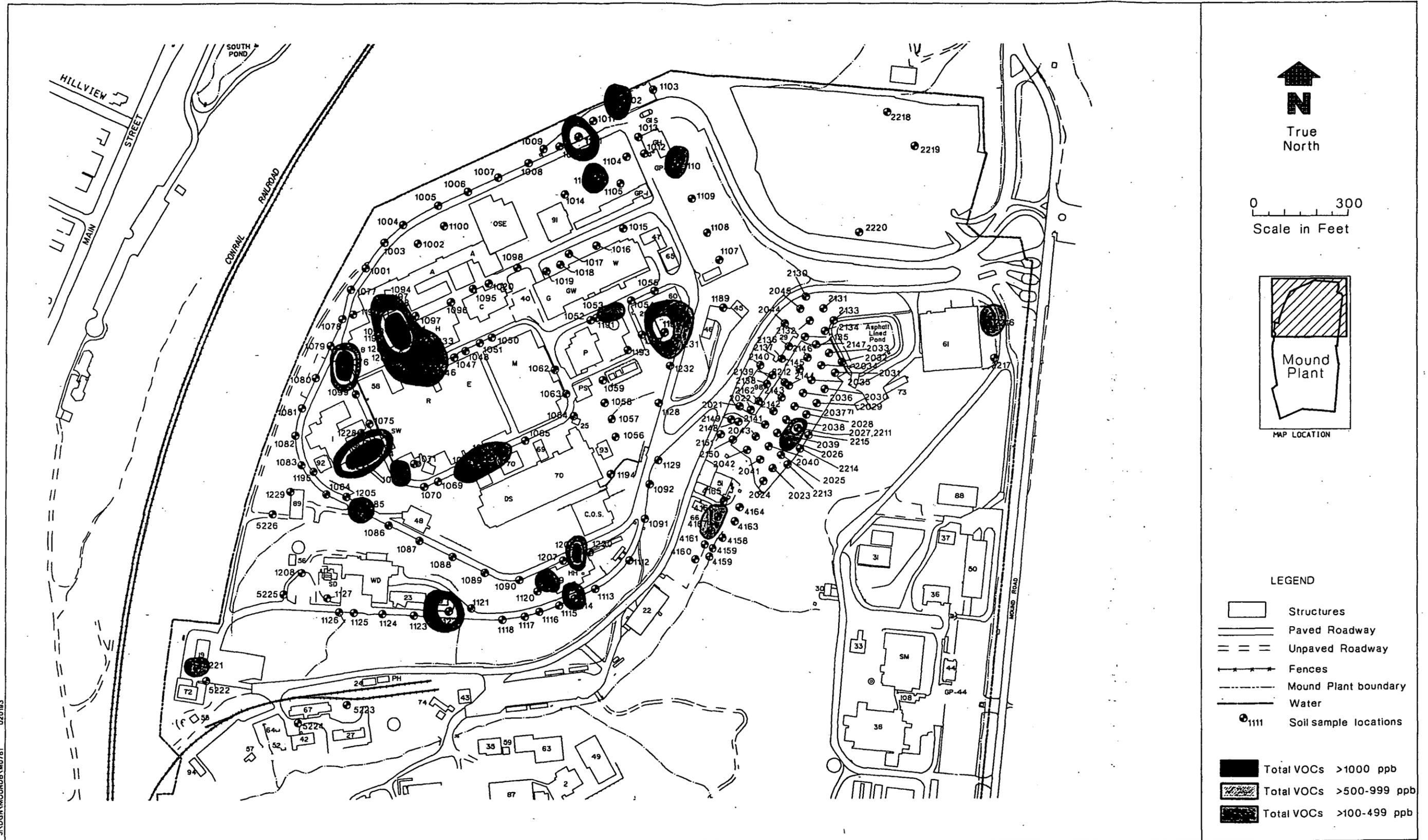
**Notes:**

Only sample locations having positive detections are shown.

\*: Associated trip, ambient, equipment or field blank contained specified compound.

B: Indicates blank sample.

Figure B.3.



J:\DCN\MOUND\MD761 020193

Figure 2.43. Color illustration of elevated detection locations.







Table B.6 - Target Compound List - VOC (a,b)

SITE NAME	Acetone	2-Butanone	Toluene	Benzene	Ethyl Benzene	Xylenes	1,2-Dichloroethane	Methylene Chloride	Perchloroethylene	2-Hexanone	4-Methyl-2-Pentanone	Trichloroethene	1,1,2-Trichloroethane	Carbon Disulfide	1,1,1-Trichloroethane	Chloroform	Freon 11	Freon 113	1,1-Dichloroethane	Bromo-dichloromethane	Bromoform	Reference	
283. Area 1, Bulk Transfer of Thorium Drums (AKA Plutonium Recoverable Waste Storage)	96		10													24							8
285. Area 11, Contamination from SM Building Operations	23	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	41	ND	ND	ND	ND	ND	ND		8
286. Area 16, SM Building Sanitary Sewage Septic Tank/Leach Basin								38							6	11							8
288. Area 17, SM Building Soils												21			19	10							8
300. Area 19, Underground Waste Transfer Line		13																					8
302. Area D, Acid Leach Field	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
314. Farm Trash Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7

- (a) - All units reported in mg/Kg unless noted otherwise.
- (b) - No soil gas data results are presented.
- (c) - Unit of measure is ug/Kg.
- (d) - No volatile organic constituents were detected in the canal. See reference 16.
- (e) - Note deleted in revision.
- (f) - This site is the same as Site #19.
- (g) - Unit of measure in g/kg
- ND - Not detected.
- Blank - Not analyzed for.

- References:
- 7) DOE 1993c
  - 8) DOE 1992d
  - 15) Halford 1990
  - 16) DOE 1993e
  - 18) DOE 1992a
  - 22) DOE 1992i
  - 24) DOE 1994

Table B.7. Target Compound List - SVOC, P/PCB, PAH, and EPH (a)

MOU09M95SDFA.TB8 09/27/94

SITE NAME	SVOC	Polycyclic Aromatic Hydrocarbons (PAH)											Pesticides, Polychlorinated Biphenyls						EPH & TPH		
	Bis(2-ethylhexyl)phthalate	Acenaphthene	Anthracene	Phenanthrene	Pyrene	Fluoranthene	Benzopyrene	Benzo(a)fluoranthene	Benzo(a)anthracene	Indeno(1,2,3-CD)pyrene	Chrysene	Benzo(g,h,i)perylene	PCBs	Chlordane	Endrin	Alpha,Beta,Delta,BHC (Lindane)	Dieldrin	4,4'-DDT, 4,4'-DDE	Extractable Petrol. Hydrocarbons	Total Petrol. Hydrocarbons	Reference
2. Miami-Erie Canal (south pond)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			15
3. Miami-Erie Canal (north canal) (b)	4.1	3.7	9.3	43	55	53	22	25	25	16	24	17	19	6.8	0.22	0.105	0.21	0.007			16
5. Miami-Erie Canal (south canal) (b)	1.1	1.0	0.81	6.3	6.8	7.0	2.0	2.6	2.8	1.8	2.5	2.2	0.34	0.021	0.034	0.004	0.011	0.013			16
9. Area 18, Site Sanitary Landfill Cover					120	120	140	190	90	71	95	44									24
10. Historic Landfill		1500		7400	7200	1200	2500	4000	3400	1200	2600	850									24
11. Area 2, Thorium and Polonium Wastes						39															24
12. Area B, Drum Storage Area					140	160	55	80	66		70										24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	1.1	ND	0.46	2.5	3.1	3.4	1.2	2.0	1.5	0.9	1.9	1.1	ND	ND	ND	ND	ND	ND			7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (c)																					7
17. Oil Burn Structure	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	23		7
18. Building 34, Fire Fighting Training Facility Pits (c)	0.025	ND	38	38	46	7.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	116.7		7
19. Building 34, Historical Firefighter Training Pit	ND	ND	ND	ND	ND	0.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	39.3		7
20. Building 34, Aviation Fuel Storage Tank (Tank 219)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		7, 22



**Table B.7. Target Compound List - SVOC, P/PCB, PAH, and EPH (a)**

SITE NAME	SVOC	Polycyclic Aromatic Hydrocarbons (PAH)											Pesticides, Polychlorinated Biphenyls						EPH & TPH			
	Bis(2-ethylhexyl)phthalate	Acenaphthene	Anthracene	Phenanthrene	Pyrene	Fluoranthene	Benzopyrene	Benzo(a)fluoranthene	Benzo(a)anthracene	Indeno(1,2,3-CD)pyrene	Chrysene	Benzo(g,h,i)perylene	PCBs	Chlordane	Endrin	Alpha,Beta,Delta,BHC (Lindane)	Dieldrin	4,4'-DDT, 4,4'-DDE	Extractable Petrol. Hydrocarbons	Total Petrol. Hydrocarbons	Reference	
95. Main Hill Seep 0605 (d)																					18	
97. Main Hill Seep 0607 (d)																						18
98. Main Hill Seep 0608 (d)																						18
112. Paint Shop Area	1.7	ND	ND	0.83	1.3	1.3	0.35	0.75	0.51	ND	0.73	ND	ND	ND	ND	ND	ND	ND			7	
114-117. Powerhouse Area Fuel Tanks (Tanks 113, 114, 115, 116)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	48000		7	
125. Underground Sanitary Sewer Line G24																					7	
159. Area 4A, Sewage Sludge Drying Pits																					8	
172. WDA Building Basement Wash Sump (AKA Glass Melter Room Sump)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		7	
174. WD Building Drum Staging Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7	
175. Area 4, WD Building Influent Tank Overflow																					8	
176. Area 14, Radioactive Waste Line Break	4,800				2,800											13.0	2754				8	
258. Area H Open Burn Pit (AKA Pyrotechnic Waste Disposal Area)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7	
259. Pyrotechnic Waste Shed	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7	
260. Thermal Treatment Unit	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7	

**Table B.7. Target Compound List - SVOC, P/PCB, PAH, and EPH (a)**

SITE NAME	Polycyclic Aromatic Hydrocarbons (PAH)												Pesticides, Polychlorinated Biphenyls						EPH & TPH		
	Bis(2-ethylhexyl)phthalate	Acenaphthene	Anthracene	Phenanthrene	Pyrene	Fluoranthene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[a]anthracene	Indeno[1,2,3-cd]pyrene	Chrysene	Benzo[g,h,i]perylene	PCBs	Chlordane	Endrin	Alpha, Beta, Delta, BHC (Lindane)	Dieldrin	4,4'-DDT, 4,4'-DDE	Extractable Petrol. Hydrocarbons	Total Petrol. Hydrocarbons	Reference
261. Trash Burner	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7
270. Underground Sewer Lines G6 and G7	0.89	ND	ND	3.0	3.2	5.2	1.7	1.5	1.9	1.3	2.2	1.3	ND	ND	ND	ND	ND	ND			7
279. Old Firing Range Drum Storage Area	4.2	6.8	15	73	83	98	35	59	43	23	55	19	0.56	ND	ND	ND	ND	ND			7
280. Waste Oil Drum Field Area	6.5	ND	2.8	11	9.7	11	3.6	2.8	4.2	1.9	ND	2.1	1.15	0.098	0.023	ND	ND	ND		1500	7
283. Area 1, Bulk transfer of Thorium drums (AKA Plutonium recoverable waste storage)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
285. Area 11, Contamination from SM Building Operations	4700	ND	ND	ND	5000	ND	ND	ND	ND	ND	ND	ND	ND	ND	39	50	ND	ND	ND	ND	8
286. Area 16, SM Building sanitary sewage septic tank/leach field	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
288. Area 17, SM Building soils	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
300. Area 19, underground waste transfer line			900	790	900	1,000															8
302. Area D, Acid Leach Field															20	12					8
314. Farm Trash Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7

(a) - All units are reported in mg/Kg unless noted otherwise.  
 (b) - Additional data on other analytes are available in reference 16.  
 (c) - This site is the same as Site #19.  
 (d) - Groundwater data. Unit of measure is mg/L.  
 (e) - Unit of measure is g/Kg

References:  
 7) DOE 1933c  
 8) DOE 1992d  
 15) Halford 1990  
 16) DOE 1993e  
 18) DOE 1992a  
 24) DOE 1994

Table B.8. Target Analyte List (TAL) - Inorganics<sup>(a)</sup>

SITE NAME		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chloride	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Nitrate	Nitrite	Silver	Thallium	Zinc	Cyanide	Lithium	Mercury	Vanadium	Reference
2.	Miami-Erie Canal (south pond)	ND	9.6	104	ND	ND	NA	18	NA	34	23	NA	22	NA	NA	4.8	ND	58.4	ND	NA	0.20	22	15
3.	Miami-Erie Canal (north canal) (b)	19.7	127	126	1.2	2.4	ND	145	14.3	143	248	928	31.2	ND	ND	11.8	0.6	323	ND	ND	0.76	33.1	16
5.	Miami-Erie Canal (south canal) (b)	37.3	12	178	1.4	1.8	ND	334	14.4	225	579	1430	33.9	ND	ND	16.9	1.4	255	ND	ND	0.74	48.9	16
9.	Area 18, Site Sanitary Landfill Cover	ND	8.8	51.9	.29	ND	9.3	9.1	5.3	14.5	10.3	389	14.9	3.3		3.9	ND	44	ND	11.1	ND	18	24
10.	Historic Landfill	3.8	6.1	104	.51	0.9	32.4	13.1	9.7	681	121	470	28.4	ND		ND	ND	1330	ND	17	2.7	23.7	24
11.	Area 2, Thorium and Polonium Wastes	ND	6	33.2	ND	.22	23.4	ND	ND	11.9	ND	289	ND	ND		ND	.29	ND	ND	16.2	.07	ND	24
12.	Area B, Drum Storage Area	ND	4.4	33.5	ND	.31	81.2	ND	ND	42.7	10.2	372	ND	ND		ND	ND	ND	ND	18.1	.06	ND	24
14.	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	31.3	6.3	66.6	0.79	5.8		26.2	10.5	20.8	13.2	35.9	24.6			17	ND	62.5	0.14		ND	23.4	7
15.	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (c)																						7
17.	Oil Burn Structure	69	9	131	0.96	24.2		92.1	28	3,100	829	107	ND	ND	17.7	0.5313	791.53	0.7579	29.1	ND	29	41.8	7
18.	Building 34, Fire Fighting Training Facility Pits	36.6	10	74.8	0.77	7.5		26.58	12.3	23.4	12.8	481	29.5	ND	ND	18	ND	71.8	0.26	25.1	ND	48.8	7
19.	Building 34, Historical Firefighting Training Pit	37.7	7.2	119	0.96	8.2		29.9	15.8	22.4	86.4	914	32.4			17.9	ND	66.2	ND	12.3	ND	35	7
20.	Building 34, Aviation Fuel Storage Tank (Tank 219)	4.8	8.67	101	0.43	ND		9.7	5.3	15.1	9.4	264	13			ND	0.37	43.2	ND		ND	16.7	7
21.	Building 1 Leach Pit (Area I)	42.8	3.6	103	0.8	8.3		33.5	16.7	41.4	18.5	862	27.1			21.5	ND	150	0.31		1.2	35.2	7
25.	Building 27 Leach Pit (Area I)	44.6	3.5	43.4	0.97	9.3		112	20.7	446	15.1	691	50.8			20.5	ND	125	0.14		.53	29.8	7
26.	Building 27 Concrete Flume (Tank 217)	27.1	4.8	40.4	0.99	4.8		33.1	17.3	25.3	10.0	766	29.9			15.7	ND	61.7	ND		ND	27.6	7
27.	Building 27 Settling Sump (Tank 218)	20.8	3.9	65.5	0.92	ND		28.4	13.7	25.3	21.5	543	26.1			14.7	ND	62.5	ND		0.13	27.6	7



Table B.8. Target Analyte List (TAL) - Inorganics<sup>(a)</sup>

SITE NAME	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chloride	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Nitrate	Nitrite	Silver	Thallium	Zinc	Cyanide	Lithium	Mercury	Vanadium	Reference
159. Area A4 WD building sewage sludge drying pits		18.6								105												8
172. WDA Building Basement Wash Sump (Tank 11) (AKA Glass Melter Room Sump) (4)	ND	ND	0.0062	ND	ND		ND	ND	0.0157	ND	0.0079	ND			ND	ND	0.0757	ND		ND	ND	7
174. WD Building Drum Staging Area	26.9	3.3	127	0.67	4.7		163	9.8	36.2	123	639	71.6			14.8	ND	126	ND		ND	19.5	7
175. Area 4, WD building influent tank overflow		7.6	465	1.2	7.5			13.6	13.3	27.2	565						303				20.2	8
176. Area 14, radioactive waste line break		6.2	623	1.3	7.2			19.9				46.7			4.0					0.91	22.3	8
258. Area H Open Burn Pit (AKA Pyrotechnic Waste Disposal Area)	44.5	9.1	13.9	1.8	11.7	ND	31.3	15.2	38.7	23.7	982	44.1	54.8	ND	20.4	ND	91.2	0.32		1.4	35.7	7
259. Pyrotechnic Waste Shed	25.1	8.6	89.1	1.7	4		37	11.6	27.5	15	538	27.9			20.8	ND	72.1	1.7		0.32	33.1	7
260. Thermal Treatment Unit	29.7	11.4	117	2.3	5.7		32.2	14	240	220	8,190	154			17.7	0.65	80.9	0.45		0.31	40	7
261. Trash Burner	5.7	19.5	82.7	2.2	1.1		15.3	11.4	1,100	15.4	290	14.8			3.7	ND	463	ND		ND	31.9	7
270. Underground Sewer Lines G6 and G7	32.3	7.1	58.8	1.4	7.9	121.3	25.1	9	63.2	39.1	562	22.7	129	5.02	16.7	ND	288	ND	ND	ND	20.9	7
279. Old Firing Range Drum Storage Area	39.2	7.5	90.4	0.98	10.2		28.9	14.2	25.2	31.3	698	25.6			18.6	ND	754	0.62		0.04	27	7
280. Waste Oil Drum Field Area	13.6	19.2	116	0.91	1.8		29.9	13.5	29.7	35.2	688	33.7			17	ND	73.4	8.9		1.0	35	7
283. Area 1, Bulk Transfer of Thorium Drums (AKA Plutonium Recoverable Waste Storage)		10.9	604	1.9	8.1		34.8	17.7	18.5	45.0		796			4.4		825			1.4	33.4	8
285. Area 11, Contamination from SM Building Operations		5.3	481	1.3	8.0		17.8	13.8	12.9	15.7		39.9									26.1	8
286. Area 16, SM Building Sanitary Sewage Septic Tank/Leach Field		6.5	491	1.6	5.0			16.6	14.5	41.7	440	39			2.8		327			0.24	22.2	8
288. Area 17, SM Building soils		9.6		1.1	9.6		19.0	16.8	18.1	27.0		31.7			3.2							8

Table B.8. Target Analyte List (TAL) - Inorganics<sup>(a)</sup>

SITE NAME	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chloride	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Nitrate	Nitrite	Silver	Thallium	Zinc	Cyanide	Lithium	Mercury	Vanadium	Reference
300: Area 19: Underground Waste Transfer Line		10.3	521	1.1	4.3		19.8	18.6	17.2	15.1	1,500	43.0			4.2		349				20.7	8
302: Area D, Acid Leach Field		11.7	564	1.8	5.5		21	20.1	20.4	25.7	545	41.1			3.9		342			0.79	26.3	8
314: Farm Trash Area	42.4	5.9	32.4	0.71	7.7		30.5	8.5	18	10.1	306	25.8			17	ND	40.4	0.38		ND	24.2	7

(a) - All units are reported in mg/Kg unless otherwise noted.

(b) - Additional data on other analytes are available in reference #19.

(c) - this site is the same as Site #19.

(d) - Groundwater data. Unit of measure is mg/L.

ND - Not detected.

NA - Not analyzed for.

References:

- 7) DOE 1993c
- 8) DOE 1992d
- 15) Halford 1990
- 16) DOE 1993e
- 18) DOE 1992a
- 24) DOE 1994

Table B.9. Summary of Radiological Data<sup>(a,b)</sup>

Site Name	Radiological Contaminants															
	Potassium-40	Uranium-239	Plutonium-238	Cesium-137	Thorium-Total	Tritium	Thorium-232	Cobalt-60	Radium-224, -226, -228	Radon-222	Americium-241	Actinium-227	Uranium-233, -234, -238	Bismuth-210m	Bismuth-207	Reference
1. Miami-Erie Canal (north)																19
2. Miami (south)				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
3. Miami-E (north)				0.45	14.9	180	3.2	<0.58	<5.6	NA	<2.0	<5.3	4.54	<0.97	<2.0	16
4. Miami (runoff)																19
5. Miami-Er (south canal)	28	22	1000	0.52	14.3	100	2.7	<0.61	<6.2	NA	<1.6	<3.8	83.7	<1.5	0.58	16
6. Miami-Erie Canal (overflow creek)			270													19
9. Area 18, Site Sanitary Landfill Cover	10.2	.06	.21			.15	.37		.67				.87			24
10. Historic Landfill (d)	15.7	1.2	17.8	.06		32.2	.67		1.1				1.4			24
11. Area 2, Thorium and Polonium Wastes	11.7	.08	2.06	.04		.97	.52		.88				.92			24
12. Area B, Drum Storage Area	11.5	.13	.5	ND		2.1	.41		.84				1.			24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	NA	NA	1.12	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (e)	NA	NA	41.7	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
17. Oil Burn Structure	19.3			0.163	1.38				1.13							7
18. Building 34, Fire Fighting Training Facility Pits	15.7		6.65		5.44	NA	NA	NA	0.901							7
19. Building 34, Historical Firefighting Training Pit	16.8				1.44				1.12							7







**Table B.9. Summary of Radiological Data<sup>(a,b)</sup>**

Site Name	Radiological Contaminants														Reference	
	Potassium-40	Plutonium-239	Plutonium-238	Cesium-137	Thorium-Total	Tritium	Thorium-232	Cobalt-60	Radium-224, -226, -228	Radon-222	Americium-241	Actinium-227	Uranium-233, -234, -238	Bismuth-210m		Bismuth-207
308. Site Survey Project Potential Hot Spot Location C0028			11.4		109.											6
309. Site Survey Project Potential Hot Spot Location S0307			5.36		6.46											6
310. Site Survey Project Potential Hot Spot Location S0647				270				1.3								6
311. Site Survey Project Potential Hot Spot Location S0706			28.9													6
312. Site Survey Project Potential Hot Spot Location S0971			0.15		5.02	2										6
313. Site Survey Project Potential Hot Spot Location S0982			0.43		14.94											6
314. Farm Trash Area			0.02				<2									7
319. Epoxy Resin Disposal																7

- (a) - All units are reported in pCi/g unless otherwise noted.
- (b) - Blank spaces implies not sampled.
- (c) - Additional data on other analytes are available in reference 16.
- (d) - Groundwater data. Unit of measure is pCi/L.
- (e) - This site is the same as Site #19.
- (f) - Groundwater data. Unit of measure is nCi/L.

LDL - Lower Detection Limit.  
 ND - Not detected.  
 NA - Not analyzed for.  
 NR - No result reported.

References:  
 6) DOE 1993d  
 7) DOE 1993c  
 11) Styron and Meyer 1981  
 13) DOE 1993d  
 18) DOE 1992a  
 24) DOE 1994

Table ES.1. Maximum Radiological and Chemical Concentration  
by Location, Miami-Erie Canal (1992 Study)  
Page 1 of 2

Location	Maximum Concentration *				Remarks
	Radiological (pCi/g)	SVOC (ug/kg)	Toxic Inorganic (mg/kg)	Pesticide/PCB (ug/kg)	
<b>North Canal</b>					
DL2	20 (Pu-238)	55000 (Pyrene)	82 (Pb)	19000 (Aroclor-1248)	Highest PCB, PAH
E	170 (Pu-238)	1700 (Fluoranthene)	53 (Cr)	2400 (Aroclor-1248)	
YL	390 (Pu-238) 180 (H-3)	180 (Pyrene)	74 (Pb)	6.5 (DDT)	Highest Tritium
YI	530 (Pu-238) 77 (H-3)	1900 (Fluoranthene)	116 (Ba)	170 (Aroclor-1248)	
YF	520 (Pu-238) 130 (H-3)	870 (Fluoranthene)	122 (Cr)	150 (Aroclor-1248)	
YYN	530 (Pu-238) 38 (Th-230)	7200 (Fluoroanthene)	127 (As) 0.76 (Hg) 248 (Pb)	840 (Aroclor-1248)	Highest Arsenic, Mercury Highest Thorium <sup>b</sup>
<b>Drainage Ditch</b>					
DL3	2.6 (Pu-238)	ND	90 (Ba)	ND	
<b>South Canal</b>					
YQ	1x10 <sup>4</sup> (Pu-238)	5900 (Fluoranthene)	579 (Pb)	360 (Aroclor-1254)	Highest Pu-238 Highest Lead <sup>c</sup>
YYS	520 (Pu-238) 87 (Th-228)	6100 (Pyrene)	406 (Pb) 178 (Ba) 334 (Cr)	260 (Aroclor-1248 & 1254)	Highest Chromium, Barium
Maximum Concentration <sup>d</sup>					

**Table ES.1. Maximum Radiological and Chemical Concentration  
by Location, Miami-Erie Canal (1992 Study)**  
Page 2 of 2

Location	Radiological (pCi/g)	SVOC (ug/kg)	Toxic Inorganic (mg/kg)	Pesticide/PCB (ug/kg)	Remarks
<b>South Canal (Cont'd)</b>					
YS	760 (Pu-238) 100 (H-3) 11 (Th-230)	6800 (Pyrene)	101 (Ba)	340 (Arochlor-1254)	
DLI	600 (Pu-238) 70 (H-3) 5.7 (Th-230)	7000 (Fluoranthene)	104 (Cr)	260 (Arochlor-1254)	
W	96 (Pu-238) 43 (U-234)	210 (Pyrene)	115 (Ba)	1.1 (Endril)	Highest Uranium
XXX	0.95 (Pu-238)	180 (Fluoranthene)	90 (Ba)	3.5 (DDT)	

- a No VOCs were detected in the canal
- b DOE Order 5400.5 guideline is 5 pCi/g for Thorium
- c Proposed Action Level (background) for lead is 53 ppm (Table VII.3)
- ND Not Detected

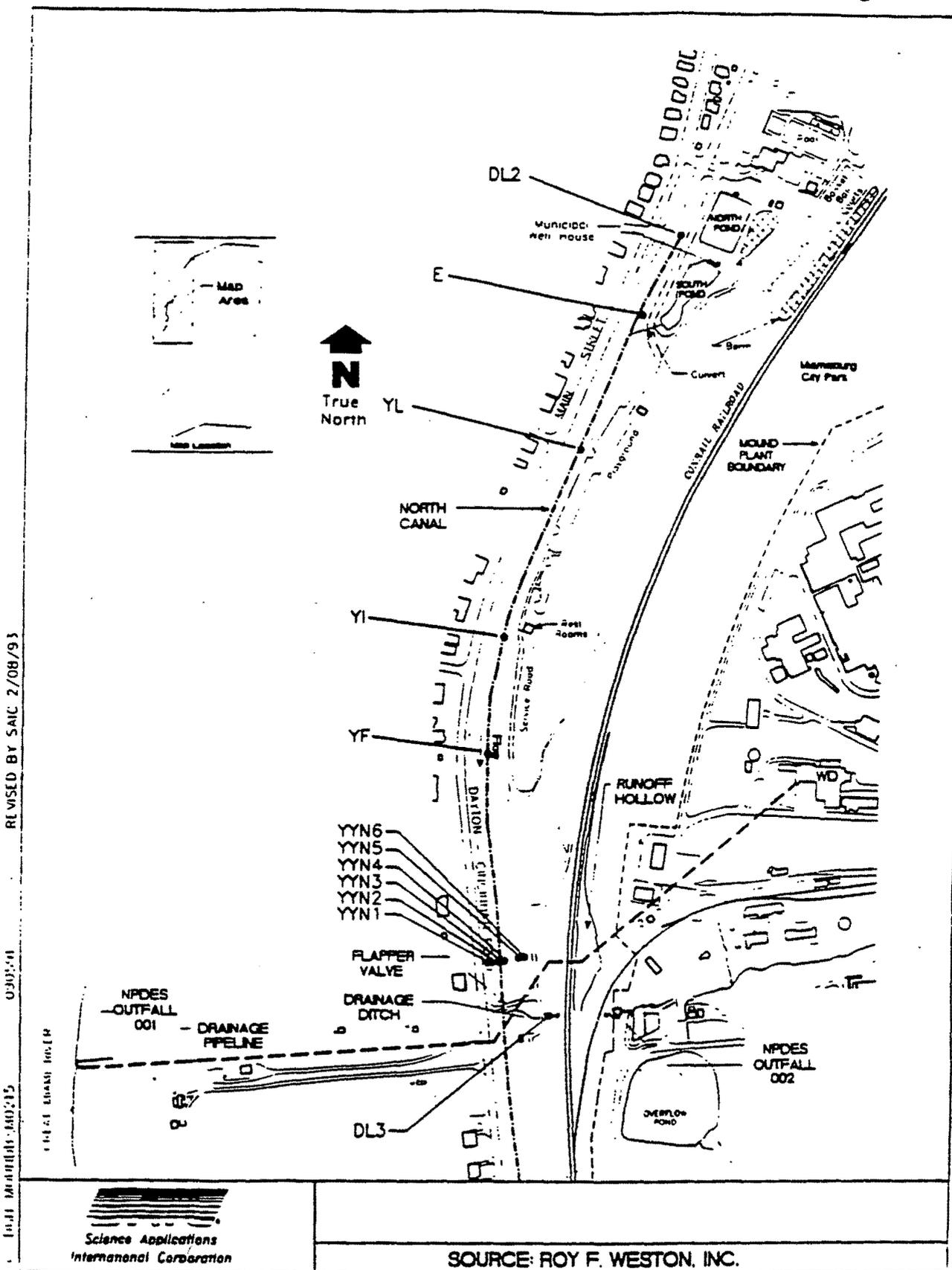


Figure ES.1 Special Sampling Locations at Miami-Erie Canal (northern half)

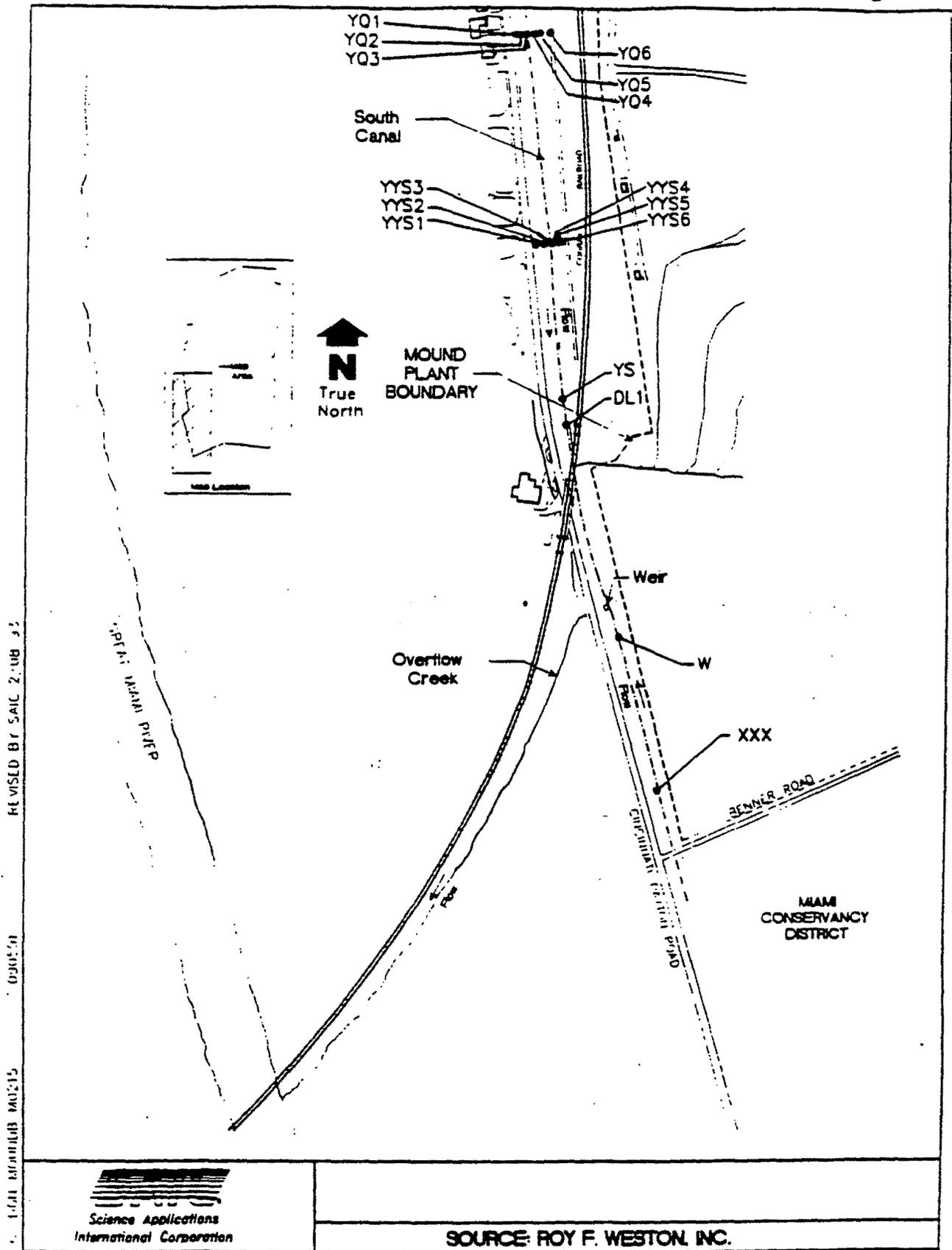


Figure ES.2 Special Sampling Locations at Miami-Erie Canal (southern half)

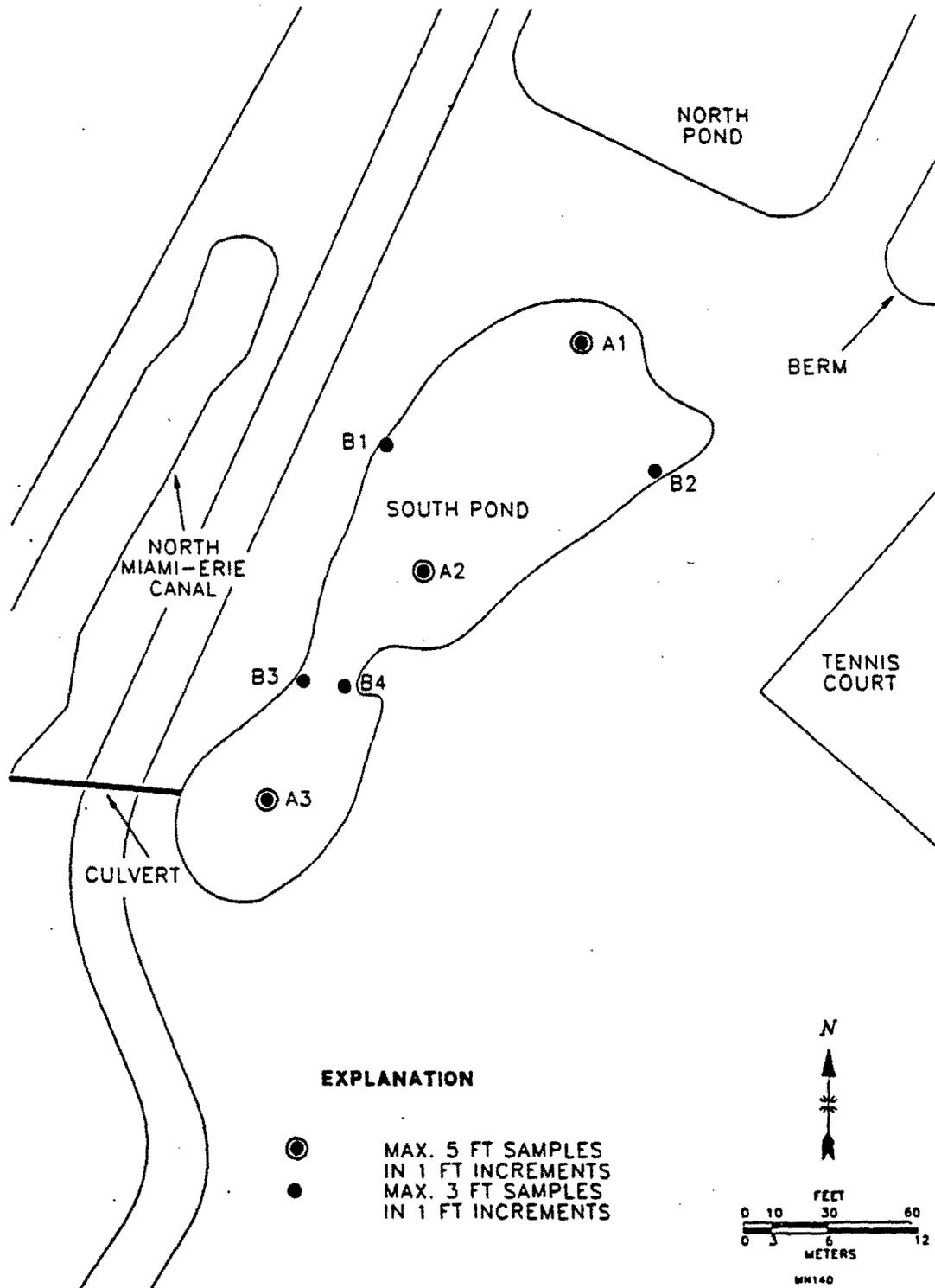


Fig. 2. South Pond sediment sample locations.

**APPENDIX C**

**APPENDIX C**

**D&D/RA INTER PROGRAM AGREEMENT**

**(APRIL 26, 1991)**

April 26, 1991

D&D/RA INTER PROGRAM AGREEMENT

This inter program agreement defines the soil activities responsibilities between the Decontamination and Decommissioning (D&D) Programs and the Remedial Action (RA) (CERCLA 120 FFA Program) Programs. These responsibilities where designated, include funding responsibility.

The Decontamination and Decommissioning (D&D) Program has the primary responsibility for assessment and cleanup of radioactively contaminated soils on the Mound Plant site. These soils are those suspected to be above Mound's current remedial action guidelines (see attachment).

Areas suspected to be below these guidelines for radioactive contamination will be assessed by the Remedial Action (RA) Program along with areas of hazardous chemical contamination.

Areas onsite that are suspected to contain both radioactive (above Mound's current remedial action guidelines) and hazardous chemical contamination are also the prime responsibility of the D&D Program for both assessment and cleanup. If hazardous chemical contamination is still present in an excavated area after the radioactive contamination has been removed, D&D will continue the cleanup as appropriate.

For past projects where D&D has already completed the excavation of the radioactively contaminated soil, the RA Program will have the responsibility for assessment and any needed remediation for hazardous chemical contamination.

For D&D projects currently underway, D&D will sample excavated areas and analyze for hazardous chemicals using a sampling plan designed to meet CERCLA criteria. This CERCLA characterization responsibility includes application of the generic sampling plan, preparing the Quality Assurance Project Plan, performing sampling and generating the final report. Unless a safety hazard or major program impact is present, D&D will not backfill the excavation until the results of this sampling and analysis phase are reviewed. If any radioactive or hazardous constituents are detected in the assessment (characterization) sampling phase, cleanup standards will be included in the site specific verification sampling plan. If this sampling occurs prior to the sampling plan receiving EPA approval, the RA Program may have to resample these areas at a later date.

If hazardous chemical contamination that causes the generation of mixed waste is found during a D&D soils project, the project will stop in an orderly fashion until a review and decision of the mixed waste disposal options are resolved.

For future D&D projects initial assessment (characterization) of the soil will include radioactive and hazardous chemical contamination sampling. D&D will be responsible for assuring that at the conclusion of radioactive contamination remediation the residual soil is free of both radioactive and hazardous chemical contamination within current release criteria.

D&D/RA INTER PROGRAM AGREEMENT

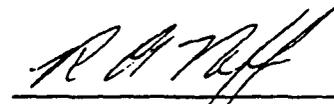
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The D&D Program also has the responsibility for future cleanup of radioactive contamination for any onsite location that may be found to have radioactive contamination above Mound's current action guidelines.

D&D will generate a schedule that will be incorporated into the FFA schedule. The primary focus of the FFA to D&D is to assure that residual contamination, i.e. contamination left in soil after D&D, meets the CERCLA requirements.

  
\_\_\_\_\_  
Ralph R. Jaeger  
Manager, D&D Program Management  
Engineering Department

  
\_\_\_\_\_  
Richard A. Neff  
Manager, ES&H Compliance and  
Remedial Action  
ES&H Department

**CURRENT MOUND PLANT RADIOACTIVITY CONTAMINATED SOIL REMEDIAL ACTION GUIDELINES\***

<u>Plutonium-238</u> <u>(pCi/g)</u>	<u>Thorium</u> <u>(pCi/g)</u>	<u>Colbalt-60</u> <u>(pCi/g)</u>	<u>Cesium-137</u> <u>(pCi/g)</u>	<u>Radium-226</u> <u>(pCi/g)</u>	<u>Americium-241</u> <u>(pCi/g)</u>	<u>Actinum-227</u> <u>(pCi/g)</u>
100 + ALARA	5 Surface 15 Subsurface	80 NE	80	5 Surface 15 Subsurface	20	25 NE

\*Current remedial action guidelines are subject to change, pending additional pathway analysis and risk assessment.

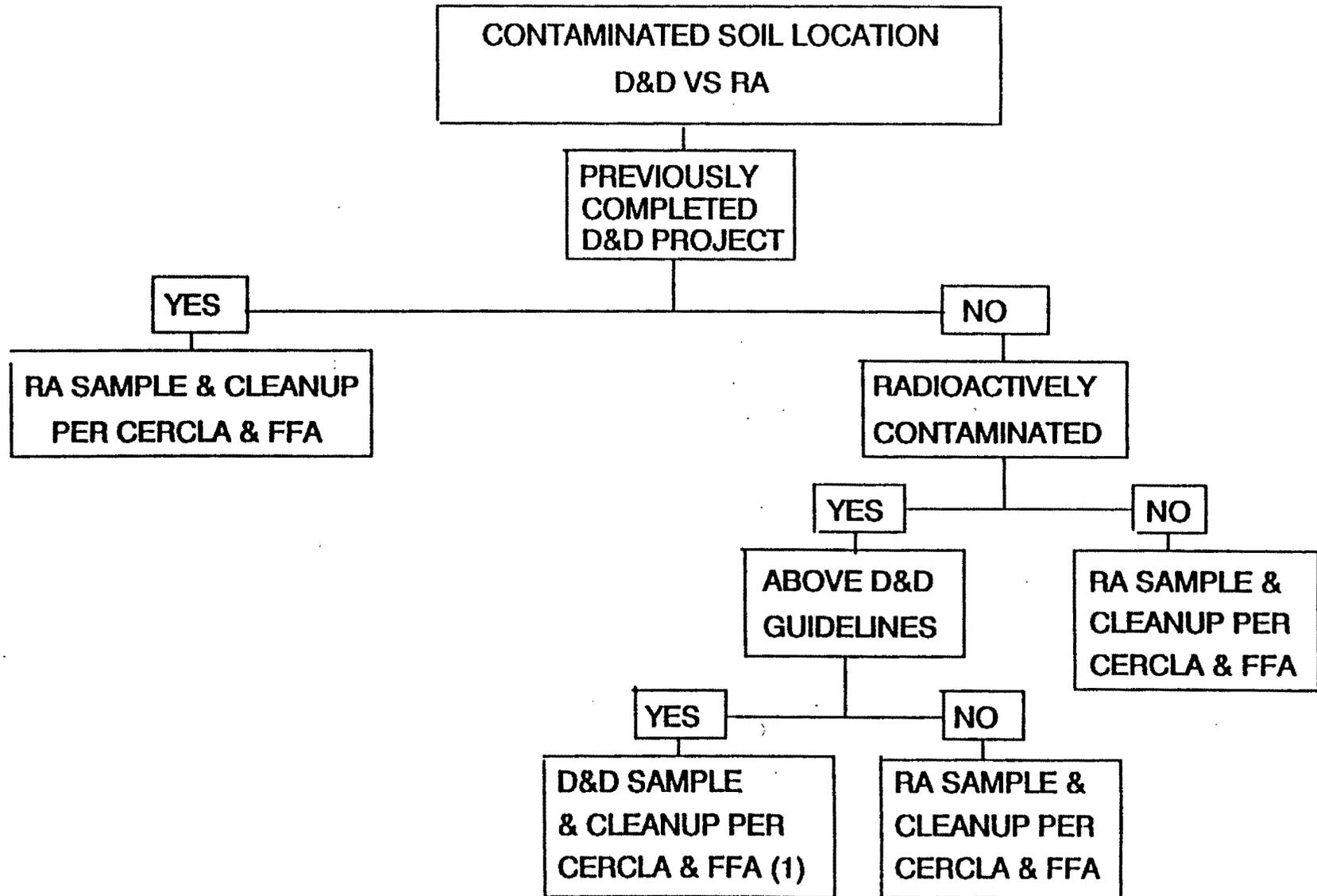
NE - Not established (Table revised in accordance with Site Scoping Report Volume 3 - Radiological Site Survey [Final] June 1993.)

**Source:**

Mound Plant, ER Program  
Draft (Revision 0)

Update of Operable Unit 9, Site Scoping Report  
Volume III, April, 1991

Executive Summary  
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(1) INCLUDES INITIAL CHARACTERIZATION OF SOIL FOR RADIOACTIVE & HAZARDOUS CONSTITUENTS, REMOVAL, APPLICATION OF GENERIC VERIFICATION PLAN, DEVELOPMENT OF THE QAPP, PERFORMING SAMPLING AND GENERATING THE FINAL REPORT.