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JUL 08 1993

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Ms. Martha Hatcher
Ohio Environmental Protection Agency
40 South Main Street
Dayton, OH 45402

RE:Glass Melter Furnace/Sump

Dear Ms. Mally, Ms. Spencer, and Ms. Hatcher:

This letter discusses the historical use of the glass melter and glass melter sump in response to comments from by the Ohio Environmental Protection Agency (OEPA) Division of Emergency and Remedial Response representative in the 14 April 1993 meeting for the Federal Facilities Agreement. The comments by OEPA were in reference to statements made in the Environmental Assessment for the glass melter that appear to conflict with descriptions provided in the Environmental Restoration (ER) Program Operable Unit (OU) 3 Limited Field Investigation (LFI) Report and the OU 9 Site Scoping Report: Volume 7 - Waste Management. The Environmental Assessment (EA) was prepared by Mound (December 1992) to evaluate the impacts associated with the operation of the glass melter in compliance with the National Environmental Policy Act. It was submitted to OEPA for informational purposes. The following paragraphs summarize information in these documents and provide clarification to the information provided in the ER Program documents. This letter should be placed in the Volume 7 Scoping Report in order to assure completeness of the glass melter information.

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In the EA, it was stated on page 1-2 that

> "...the glass melter was put into operation at Mound in early January 1982. Except for a downtime of 24 weeks preparing for radioactive experiments and other downtime of 4 weeks for furnace repair, the melter was held at an idle temperature or at an operational temperature for nearly three years. During that time 2,000 kg (2.2 tons) of wastes were successfully processed in the furnace (Klingler and Armstrong 1985)."

The OU 3 LFI report simply stated on page 2-14 that

> "To date, only test burns have been conducted in this furnace."

The OU 9 Site Scoping Report: Volume 7 - Waste Management report stated on page 4-24 that

> "The glass melter has been used only as a test system and has never been used for waste disposal on a routine basis. Waste materials processed by the glass melter during testing included ion-exchange resins, simulated lab trash, filters, SD Building sludge, scintillation fluid constituents, acetonitriles, nitrate salt wastes and trace quantities of cobalt, strontium and cesium."

Review of the Glass Furnace Project Final Report (L.M. Klingler and K.M. Armstrong 1985. Monsanto Research Corporation Report MLM-3229) indicates that these statements are not inconsistent. Klingler and Armstrong 1985 state on page 19 that

> "To investigate furnace response to thermal waste treatment, the major constituents of nuclear power plant waste deemed compatible with the system...were chosen for inclusion in a set of experiments...it was decided that these wastes would be simulated to conform as closely as possible to actual power plant waste streams, with the exception that there would be no contaminating radioactivity present."

and on page 39 that

> "The glass melter was put into operation at Mound in early January 1982. Except for a downtime of 24 weeks preparing for radioactive experiments and one of 4 weeks for furnace repair, the furnace has been at an idle temperature of 1,000 C or at an operational temperature of 1,300 C to 1370 C for the nearly three years since. During that time 2,000 kg of wastes have been processed in the furnace."

and on pages 48, 51 and 53 that

> "A test plan was established for the radioactively spiked waste processing experiments...cobalt-60, cesium-137 and strontium-90 were selected for the experiments...[since the] strontium-90 analysis...would be costly, complicated and time-consuming a substitution was considered. Manganese-54, a major activation product was selected. Introduction of the manganese isotope was in the same runs and simultaneously with strontium-90. The experimental plan essentially consisted of adding three isotopes, cesium-137, cobalt-60, and manganese-54 to two waste types, ion-exchange resin and dry solid combustible wastes... Thus, a total of 24 experimental runs was completed... The spike for each run was a 1-mCi quantity of a single isotope..."

From this information, it appears that the EA simply omitted the statements that the wastes simulated those from a nuclear power plant, and also omitted the isotope experiment information.

The ER Program documents are essentially correct in their brevity. The OU 3 LFI report is correct in stating that only test burns have been conducted and omitted any details about the tests. The OU 9 scoping report was correct in its description, but omitted the details of the mass of the elements of cobalt, strontium and cesium and the relationship between strontium and manganese. Based on these data, the OU 3 LFI report has been revised to state on page 2-14 that "simulated radioactive wastes (approximately 2,000 kg) were processed in the furnace in 1982. In 1983 and 1984, 24 experimental runs of solid combustible wastes and ion exchange resins, spiked with 1 mCi each of cobalt-60, cesium-137 or strontium-90 and manganese-54 were conducted. The furnace was held at idle or operational temperatures for over 3 years."

F-OU-9

Ms. Mally
Ms. Spencer
Ms. Hatcher

In addition as stated earlier, this letter should be placed in the OU9 Site Scoping Report, Volume 7, to provide further clarification.

Sincerely,

Michael A. Reker

Michael A. Reker
Chief, ES&H Branch

cc:
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Environmental Restoration Program

OPERABLE UNIT 3, MISCELLANEOUS SITES LIMITED FIELD INVESTIGATION REPORT

MOUND PLANT
MIAMISBURG, OHIO

VOLUME I LFI REPORT TEXT (SECTIONS 1-6)

July 1993

FINAL

(Revision 0)

Department of Energy

EG & G Mound Applied Technologies

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REFERENCE USE ONLY

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 3 — MISCELLANEOUS SITES
LIMITED FIELD INVESTIGATION REPORT
VOLUME I
SECTIONS 1-6

MOUND PLANT
MIAMISBURG, OHIO

July 1993

DEPARTMENT OF ENERGY

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL
(REVISION 0)

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ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 3 — MISCELLANEOUS SITES
LIMITED FIELD INVESTIGATION REPORT
VOLUME I
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MOUND PLANT
MIAMISBURG, OHIO

July 1993

DEPARTMENT OF ENERGY

ENVIRONMENTAL RESTORATION PROGRAM
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FINAL
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ACRONYM LIST

%D	percent difference
AEA	Atomic Energy Act
ARARs	applicable or relevant and appropriate requirements
BTEX	benzene, toluene, ethylbenzene, and xylene
BUSTR	Bureau of Underground Storage Tank Regulation
BVA	Buried Valley aquifer
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CRQL	Contract-Required-Quantitation-Limit
D&D	Decontamination and Decommissioning
DOE AL	DOE Albuquerque Operations Office
DOE	Department of Energy
EPH	extractable petroleum hydrocarbons
ER	Environmental Restoration
FFA	Federal Facility Agreement
FIDLER	field instrument for detection of low-energy radiation
GPC	Gel Permeation Chromatography
GPR	ground penetrating radar
HEAST	Health Effects Assessment Summary Tables"
ICP	inductively coupled plasma
IRIS	Integrated Risk Information System
LFI	limited field investigation
LFIs	Limited field investigations
MRC	Monsanto Research Corporation
MS/MSD	matrix spike and the matrix spike duplicate
NAWQA	National Water Quality Assessment
NEPA	National Environmental Policy Act of 1969
NPL	National Priorities List
OEPA	Ohio Environmental Protection Agency
OFRDSS	Old Firing Range Drum Storage Site
OUs	Operable Units
P/PCBs	Pesticides and Polychlorinated Biphenyls
PA/SI	Preliminary Assessment/Site Inspection
PAH	polycyclic aromatic hydrocarbon
PCE	tetrachloroethene
PRGs	preliminary remediation goals
QA	quality assurance
QAPP	Quality Assurance Project Plan
QCCs	quality control checks
R & R	R & R International
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
RPD	relative percent difference
RRFs	relative response factors
RSD	relative standard deviation
SARA	Superfund Amendments and Reauthorization Act
SM/PP	Special Metallurgical/Plutonium Processing
SOPs	Standard Operating Procedures
SVOCs	semivolatile organic compounds
TAL	Target Analyte List
TCA	trichloroethane

ACRONYM LIST
(Continued)

TCE	trichloroethene
TCL	target compound list
TCLP	Toxic Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
USTs	Underground Storage Tanks
VOCs	volatile organic compounds
WODF	Waste Oil Drum Field

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EXECUTIVE SUMMARY

This report was prepared to document a part of the scoping process for remedial investigations/feasibility studies (RI/FS) at the U.S. Department of Energy (DOE) Mound Plant. An RI/FS at Mound Plant is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and under the terms of a CERCLA Section 120 Federal Facility Agreement (FFA) between DOE and the U.S. Environmental Protection Agency (U.S. EPA), Region V. Mound Plant was placed on the CERCLA National Priorities List (NPL) in November 1989, and the FFA became effective 12 October 1990 (EPA 1990a).

Limited field investigations (LFIs) to facilitate scoping are specifically recognized by both U.S. EPA guidance and in the Mound Plant FFA. LFIs are performed during project scoping if available data are inadequate to develop a site conceptual model and adequately scope the project. At Mound Plant, many potential release sites have neither documented histories of contaminant releases nor observations of contaminant releases from visual site inspections. Therefore, an LFI was required to identify the presence and type of contaminants, if any, and provide adequate data to plan the RI/FS and write an RI/FS work plan.

Because of the size and complexity of the Mound Plant RI/FS, the Site has been divided into Operable Units (OUs) as a means of managing the investigation. The LFI documented in this report pertains to OU 3, Miscellaneous Sites, which is defined as those potential release sites for which little or no data are currently available. Those are listed in Table ES.1. The OU definition initially included the definition that none of the potential release sites had the potential for radioactive contamination. However, during the LFI it was determined from review of records that one of the sites stores radioactive materials from current operations, and two of the sites were overlapped with previously completed cleanup of small areas of low-level radioactivity.

A work plan and quality assurance project plan (QAPP) had previously been written to specify the sampling and analysis plan for the LFI. Both were reviewed and approved by U.S. EPA and reviewed and concurred with by Ohio EPA (OEPA). U.S. EPA and OEPA both provided some oversight during the field sampling and collected some duplicate soil samples. The results of the U.S. EPA and OEPA sampling and analysis are not included in this report.

The LFI included primarily soil sampling, and also very limited surface water and sediment sampling. The investigation focused primarily on source identification and site characterization and did not include all elements of an RI/FS. Characterization of hydrogeology and groundwater contamination was not addressed during the LFI.

Table ES.1. OU 3 Limited Field Investigation Sites

1. Paint Shop Area
2. Powerhouse Area Fuel Tanks
3. WD Building Drum Staging Area
4. WD Building Glass Melter Room Sump
5. Building 51 Waste Solvent Tank
6. Building 61 Former Heavy Equipment Area
7. Building 27 Solvent Storage Area
8. Building 27 Concrete Flume
9. Building 27 Sump
10. Area I Building 27 Leach Pit
11. Area I Building 1 Leach Pit
12. Building 34 Oil Burn Structure
13. Building 34 Fire-Fighting Training Pits
14. Building 34 Historical Fire-Fighting Training Pit
15. Building 34 Former Aviation Fuel Tank
16. Area C Former Equipment Storage Area
17. Area C Drum Staging Area
18. Area H Pyrotechnic Waste Disposal Area
19. Area H Trash Burner Area
20. Area H Thermal Treatment Unit
21. Area H Pyrotechnic Waste Shed
22. Waste Oil Drum Field
23. Old Firing Range Drum Storage Site
24. Farm Trash Area
25. Underground Sewer Lines Grid G5
26. Underground Sewer Lines Grids G6 and G7
27. Underground Sewer Lines Grid G12
28. Underground Sewer Lines Grid G14 West
29. Underground Sewer Lines Grid G14 East
30. Underground Sewer Lines Grid G15
31. Underground Sewer Lines Grid G19/14
32. Underground Sewer Lines Grid G24

Soil samples were analyzed for target compound list (TCL) and target analyte list (TAL) compounds, shown in Table ES.2. All soil samples were also analyzed onsite for plutonium and thorium using a fixed geometry field instrument for detection of low-energy radiation (FIDLER). All sampling locations also employed field screening for organic chemicals using a photoionization detector and/or flame ionization detector. In some cases, decisions about sampling were based on the results of the field screening for organic chemicals.

The analytical results of the LFI showed apparent contamination at some sites, primarily elevated concentrations of extractable petroleum hydrocarbons (EPH). At one site, the Building 34 Fire-Fighting Training Pits, free product (oil) was seen in a subsurface sample. In addition to the EPH contamination, low levels of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), dioxin/furans, and metals were reported. Polychlorinated biphenyls (PCBs) were reported at low concentrations at four OU 3 sites.

Site-specific background data for contaminants in soils, sediment, and surface water were not available for comparison of OU 3 LFI analytical data. In the absence of background information, the OU 3 LFI data were compared primarily to risk-based preliminary remediation goals (PRGs). Applicable regulatory guidance and literature values (for some inorganics) were also used for comparison purposes. The risk-based PRGs were calculated from EPA guidance and are based on screening-level assumptions. As such, the risk-based PRGs are not intended as a sole criterion in developing levels for removal or remedial action, but rather provide a basis for whether additional site evaluation is required.

Based on the comparison of OU 3 LFI analytical data to risk-based PRGs, contamination is generally limited to areas of EPH contamination. Contamination from VOCs and dioxins/furans may require further characterization at a few sites. The presence of SVOCs is attributed to normal processes such as runoff from asphalt roadways, and should not require further action. PCBs are present at the four sites, but below applicable regulatory limits. The reported concentrations of metals appear to be generally consistent with naturally occurring levels on a regional comparison and below PRGs.

The primary objective of the LFI is to identify the presence or absence of potential site contaminants, and types of contaminants, if any. The results of the investigation have been used to support a recommendation for "no further action," remedial response (including removal action), or the need for further site characterization. For sites requiring further characterization or remedial response, the primary contaminant of concern was noted and a recommendation for combining the site with another appropriate Mound OU was determined. Sites not requiring further characterization or remedial response will be assigned to Operable Unit 2 or 5, where each site will be closed out in the work plan for the particular operable unit. Those recommendations are shown in Table ES.3.

Table ES.2. OU 3 Limited Field Investigation Laboratory Analytical Parameters

- Target Compound List
  - Volatile Organic Compounds
  - Semivolatile Organic Compounds
  - Pesticides and Polychlorinated Biphenyls
- Target Analyte List
  - Inorganics (including cyanide)
- Extractable Petroleum Hydrocarbons
- Total Petroleum Hydrocarbons
- Explosives
- Lithium
- Acetonitrile
- Acrylonitrile
- Nitrate/Nitrite
- Chloride
- Gamma Spectroscopy
  - Cesium-137
  - Potassium-40
  - Radium-224, -226, and -228
  - Thorium-234
- Dioxin/Furans
- Tritium

Table ES.3. OU 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 Grid G19/14	No	No		OU 2
Underground Sewer Lines Grid G24	No	No		OU 2

*Disposition of site undetermined

1. TECHNICAL SCOPE OF WORK

1.1. BACKGROUND

The Environmental Restoration (ER) Program, formerly known as the Comprehensive Environmental Assessment and Response Program (CEARP), was initiated by the DOE Albuquerque Operations Office (DOE AL) in 1984 to fulfill its obligations under the following environmental laws:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 300);
- The Resource Conservation and Recovery Act (RCRA) (40 CFR 260-270);
- The National Environmental Policy Act of 1969 (NEPA) (Volume 83, page 852 of the U.S. Statutes and Chapter 42, Section 4321 of the U.S. Code); and
- The Atomic Energy Act (AEA) of 1954 (Volume 68, page 1919 of the U.S. Statutes and Chapter 42, Section 2011 of the U.S. Code).

The ER Program, which consists of three phases, is patterned after the U.S. EPA CERCLA program. Phase I, Preliminary Assessment/Site Inspection (PA/SI), was completed at Mound Plant in 1986 and was reported in the Installation Assessment Report (DOE 1986). Phase II, a Remedial Investigation/Feasibility Study (RI/FS), is currently underway at Mound Plant. Phase III, Remedial Design/Remedial Action (RD/RA), will implement the remedial alternative chosen in the feasibility study of Phase II. The RD/RA phase includes the design of the remedial action; and the actual performance of the remedial action. Figure 1.1 shows the three phases and the components, or tasks, included in each phase. These tasks have been identified by U.S. EPA to describe the activities that are performed during the PA/SI, RI/FS, and RD/RA phases of the CERCLA process.

Mound Plant was placed on the CERCLA (i.e., Superfund) National Priorities List (NPL) in November 1989. Pursuant to that status a CERCLA Section 120 Federal Facilities Agreement (FFA) was signed between DOE and U.S. EPA. This FFA became effective 12 October 1990 (EPA 1990a). Because of this, the RI/FS process at Mound Plant follows the methodology that the Superfund program has established for characterizing the nature and extent of risks posed by uncontrolled hazardous waste sites and for evaluating potential remedial options (EPA 1988b). Additional details on the Mound Plant ER Program can be found elsewhere (DOE 1992a).

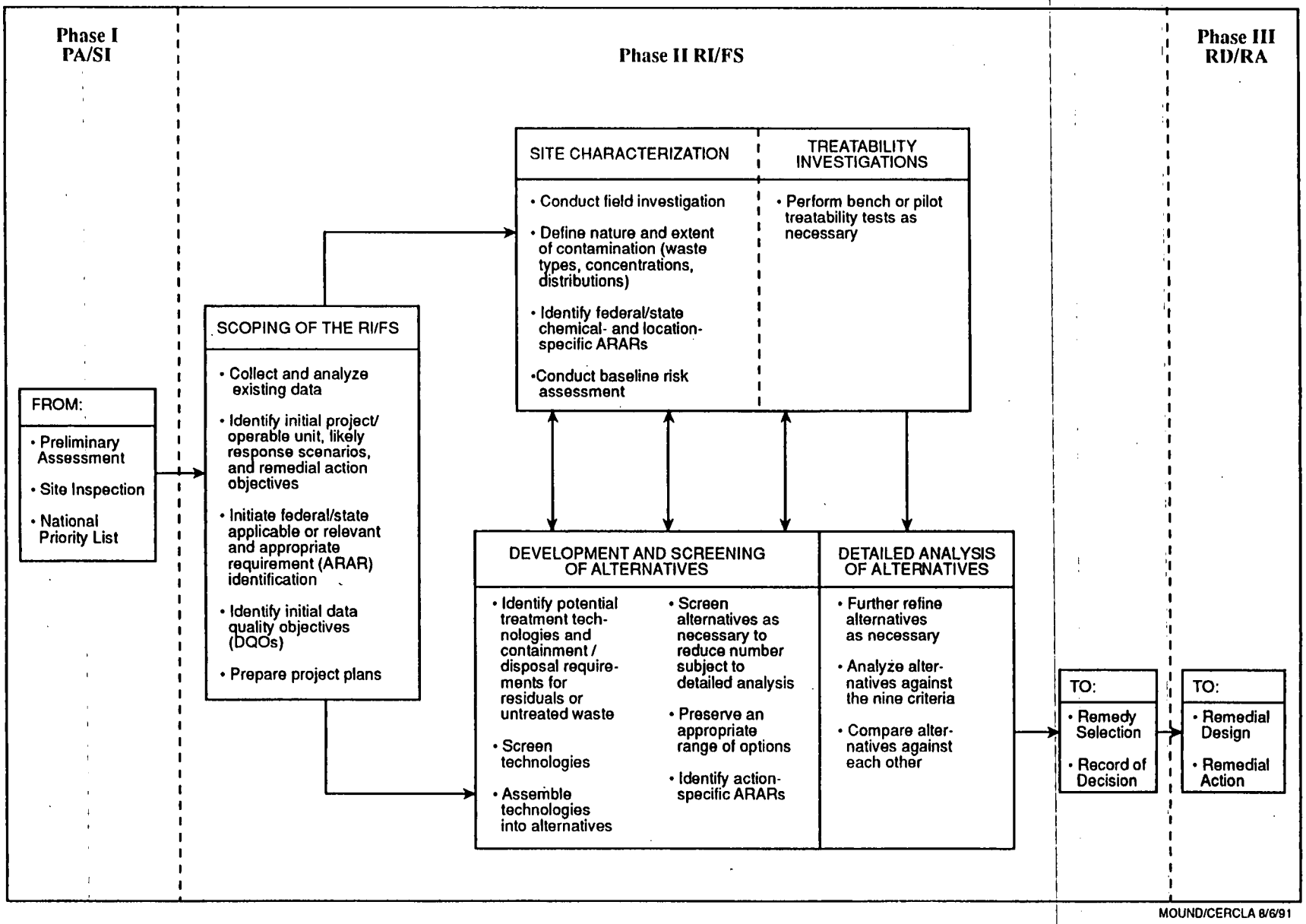

Figure 1.1. Phases of the CERCLA process (EPA 1988e).

The FFA defines the Mound Plant Site as follows:

> 'Site' shall mean any area where hazardous substances, pollutants, or contaminants have come to be located, due to the activities at the Mound Plant (hereafter referred to as the Site). U.S. EPA, after consulting with Ohio EPA (OEPA) and U.S. DOE, may change the Site designation on the basis of additional investigations to more accurately reflect the areas contaminated by hazardous substances, pollutants, or contaminants, related in whole or in part to the Mound Plant. The work to be performed in this Agreement will conform to the definition of the Site as established by U.S. EPA.

Consistent with this definition, DOE is proposing RI/FS activities for a broad geographic area that includes the area within Mound Plant as well as areas beyond the Mound Plant boundaries.

Because of the magnitude and complexity of the Mound Plant RI/FS, the Site has been divided into Operable Units (OUs) as a means of managing the investigation. Regardless of the current subdivision of the Site, the RI/FS must ultimately address all CERCLA- and RCRA-regulated environmental releases and not allow any problem to be overlooked. Also, the results of individual OU investigations shall be assembled in aggregate to provide a coherent, unified understanding of the Site.

The currently defined nine OUs and current objectives are as follows:

- Area B, OU 1, includes a historical waste disposal area (landfill) from which there has been a known release of volatile organic compounds (VOCs) to the Buried Valley aquifer (BVA). Two stages of the remedial investigation have been performed for Area B, and a third is underway (DOE 1987a,b; DOE 1989d).

- Main Hill Seeps, OU 2, addresses potential release sites on the Mound Plant Main Hill, including some peripheral groundwater seeps. Its scope includes characterization of the indurated bedrock and unconsolidated overburden on the Main Hill, associated soils, and groundwater.

- Miscellaneous Sites, OU 3, includes those potential release sites for which little or no data concerning site contamination or releases are available. A limited field investigation (LFI) was performed to identify the presence or absence of potential site contaminants, and types of potential site contaminants. The results of the investigation will be used to support a decision for "no further action," remedial response (including removal action), or the need for further site characterization. If remedial response or further characterization is required, the investigation results will be used to plan the RI/FS, write an RI/FS Work Plan, or combine any site with an appropriate Mound Plant OU. This report addresses the OU 3 sites.

- Miami-Erie Canal, OU 4, addresses an abandoned segment of the Miami-Erie Canal, west of Mound Plant, which contains plutonium-contaminated sediments from a 1969 waste line break, and tritium-contaminated soils. Although 1 mile long, it is considered a single potential release site.

- Radioactively Contaminated Soils, OU 5, includes soils with known or suspected radioactive contamination (DOE 1989d). The sites within OU 5 are not currently scheduled for Decontamination and Decommissioning (D&D) under the D&D Program at Mound. It is anticipated that as sites obtain funding under the D&D Program, they may be moved from OU 5 to OU 6, described below. Since many of the known radioactively contaminated sites are located on the Special Metallurgical/Plutonium Processing (SM/PP) Hill, OU 5 has the geographic responsibility for the SM/PP Hill. As with the Main Hill, investigations of the potential source terms on the SM/PP Hill may require characterization of the bedrock and unconsolidated overburden.

- D&D Program Sites, OU 6, includes potential release sites with radioactively contaminated soils that are undergoing cleanup or are scheduled for cleanup in the near future. Because it is already known that the contaminated soil will be cleaned up, and because the D&D Program is an ongoing activity under the AEA that reduces potential impacts to human health and the environment, the scope of the RI/FS for these sites is verification of cleanup after the soil is removed. The cleanup levels are to be determined through the CERCLA risk assessment process.

- Limited Action Sites, OU 7, includes potential release sites that are believed to have no contamination based on a review of site histories and an August 1990 joint visual site inspection by DOE, U.S. EPA, and OEPA.

- Inactive Underground Storage Tanks (USTs), OU 8, includes a review to determine the regulatory status of all underground tanks at Mound Plant, resulting in a distribution of responsibility for the tanks between the ER Program and a Mound Plant underground tank compliance program under RCRA Subtitle I, to be administered by the state of Ohio. Those tanks remaining in the ER Program were assigned to other OUs.

- Site-Wide RI/FS, OU 9, includes off-plant migration of contaminants in groundwater, soils, surface water, sediments, airborne contamination, and ecology. The site-wide RI/FS will additionally ensure that a comprehensive investigation is performed by compiling all data from individual OU investigations into a comprehensive report. Data reports from specific site-wide investigations conducted pursuant to their particular work plans will be initially reported in interim reports or technical memoranda to ensure that the off-plant and regional data are available early.

A more detailed description of the OUs can be found elsewhere (DOE 1992a).

Mound Plant originated as part of the Manhattan Engineering District in 1943. Its purpose was to determine the chemical and metallurgical properties of polonium (DOE 1986). The work was performed for the U.S. Army at several locations in Dayton, Ohio, by Monsanto Research Corporation (MRC). In 1946, 182 acres were purchased for the permanent Mound Plant Site on the outskirts of the city of Miamisburg, in Montgomery County, Ohio (Figure 1.2). The Site is approximately 10 miles south-southwest of Dayton and 45 miles north of Cincinnati. In 1948, work being performed at the Dayton units was moved to this Site. A detailed description of the history of the Mound Plant, including the management of wastes, can be found elsewhere (DOE 1992a).

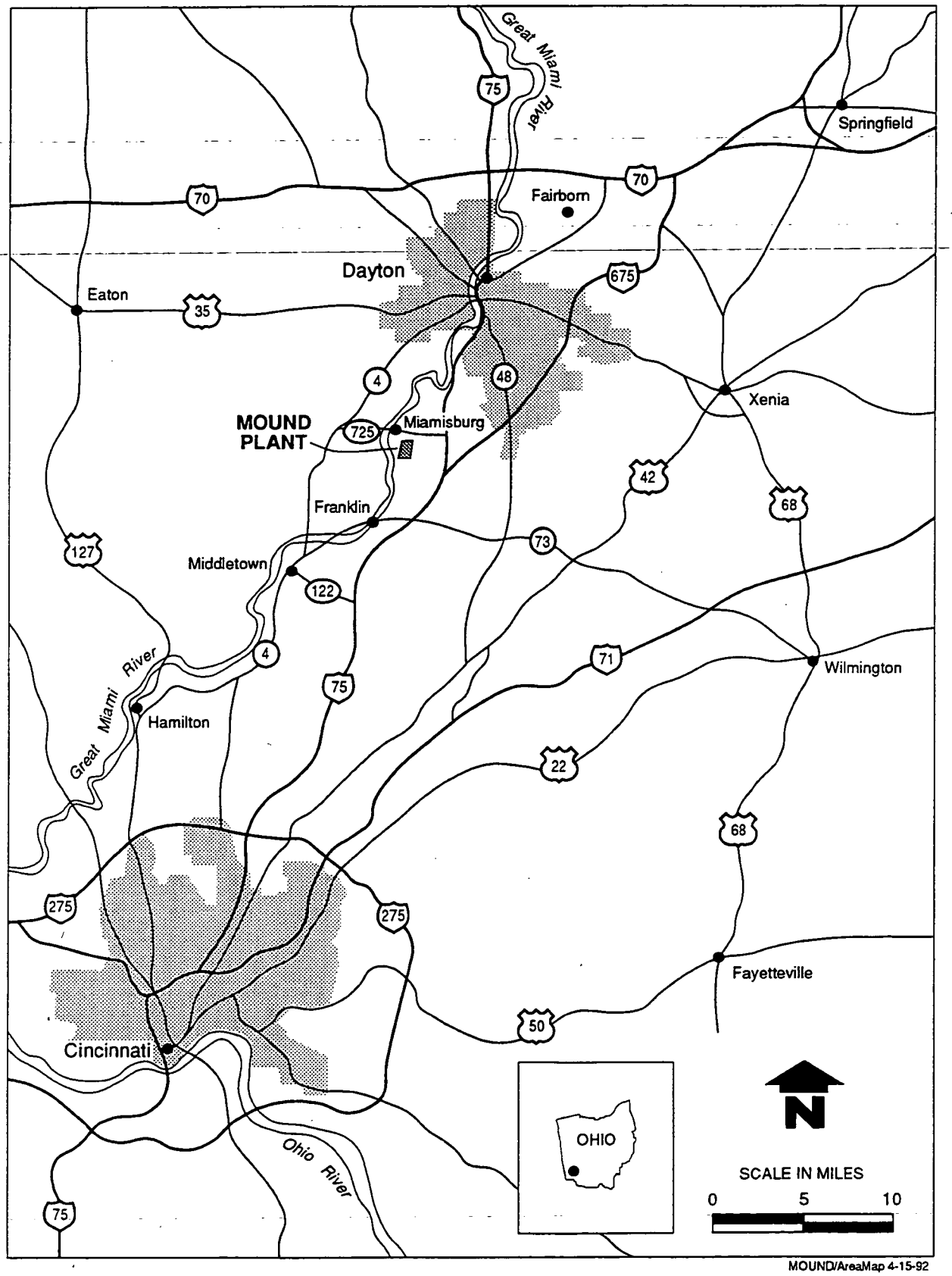

Figure 1.2. Regional location of Mound Plant.

An additional 124 acres of land south of the original 182 acres was purchased in 1981 to make up the current Plant property. The new property remains undeveloped. Mound Plant is now an integrated research, development, and production facility that operates in support of the DOE weapons and energy programs. Mound Plant manufactures non-nuclear components and tritium-containing components for nuclear weapons.

1.2. SCOPE/OBJECTIVES OF LIMITED FIELD INVESTIGATION REPORT

The FFA between the DOE and U.S. EPA provides for limited studies as interim scoping tasks for those areas of Mound Plant where the understanding of potential contamination is poor and the collection of site-specific data would enhance the scoping effort. This is consistent with guidance for CERCLA that provides for LFIs during project scoping if available data are inadequate to develop a site conceptual model and adequately scope the project (EPA 1988b). When the OU 3 Work Plan was written, approximately half (57 of the then 109 sites) of the potential release sites at Mound Plant had neither documented histories of contaminant releases nor observations of contaminant releases from visual site inspection. Therefore, an LFI was required to identify the presence and types of contaminants, if any, and provide adequate data to plan the RI/FS and write an RI/FS work plan. Miscellaneous Sites, OU 3, includes 22 of those 57 sites for which additional data needs were identified. The remaining 35 of these 57 sites are included in the Limited Action Sites, OU 7, where it has been determined that no additional sampling or site characterization is necessary. The investigation sites included in the Miscellaneous Sites LFI were identified in either the Installation Assessment Report (DOE 1986) or the Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant Report (RFA 1988), or both. Twenty-two general areas were identified as requiring an LFI since little or no data were available. Many of the sites identified by the visual site inspection (RFA 1988) were not known to be contaminated or suspected of being contaminated. The locations of the OU 3 LFI sites are shown in Figure 1.3. In order to evaluate each site in detail, the original 22 sites were further subdivided and resulted in 32 separate investigation sites (see Table I.1).

This LFI report will serve to document the results of investigation for the OU 3 Miscellaneous Sites LFI. The investigation focused primarily on source identification and site characterization and did not include all elements of an RI/FS. For example, characterization of hydrogeology and groundwater contamination was not addressed during the LFI.

The primary objective of the LFI report is to identify the presence or absence of potential site contaminants, and types of potential site contaminants. The results of the investigation will be used to support a decision for "no further action," remedial response (including removal action), or the need for further site characterization. If remedial response or further characterization is required, the results of the investigation will be used to plan the RI/FS, write an RI/FS Work Plan, or combine any site with another appropriate Mound Plant OU.

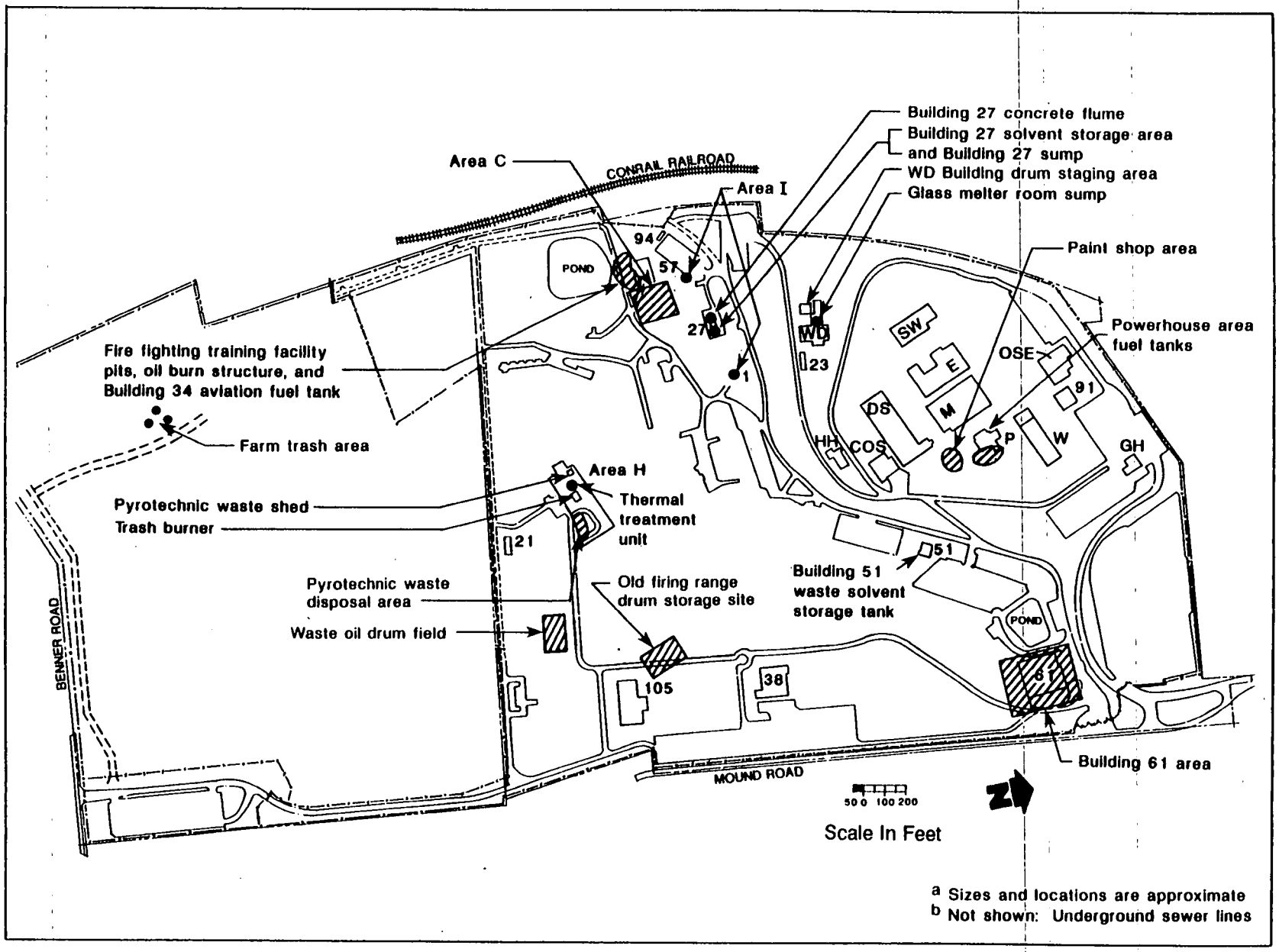

Figure 1.3. Operable Unit 3 LFI sites.[a,b]

Table I.1. OU 3 Limited Field Investigation Sites

1. Paint Shop Area
2. Powerhouse Area Fuel Tanks
3. WD Building Drum Staging Area
4. WD Building Glass Melter Room Sump
5. Building 51 Waste Solvent Tank
6. Building 61 Former Heavy Equipment Area
7. Building 27 Solvent Storage Area
8. Building 27 Concrete Flume
9. Building 27 Sump
10. Area I Building 27 Leach Pit
11. Area I Building 1 Leach Pit
12. Building 34 Oil Burn Structure
13. Building 34 Fire-Fighting Training Pits
14. Building 34 Historical Fire-Fighting Training Pit
15. Building 34 Former Aviation Fuel Tank
16. Area C Former Equipment Storage Area
17. Area C Drum Staging Area
18. Area H Pyrotechnic Waste Disposal Area
19. Area H Trash Burner Area
20. Area H Thermal Treatment Unit
21. Area H Pyrotechnic Waste Shed
22. Waste Oil Drum Field
23. Old Firing Range Drum Storage Site
24. Farm Trash Area
25. Underground Sewer Lines Grid G5
26. Underground Sewer Lines Grids G6 and G7
27. Underground Sewer Lines Grid G12
28. Underground Sewer Lines Grid G14 West
29. Underground Sewer Lines Grid G14 East
30. Underground Sewer Lines Grid G15
31. Underground Sewer Lines Grid G19/14
32. Underground Sewer Lines Grid G24

The site history, potential site contaminants, and field investigative procedures for each of the 32 LFI sites are presented in section 2 of this LFI report. The nature of contamination at each site, which includes a summary of detected contaminants, and an evaluation concerning the disposition of each site are presented in section 3. The quality assurance and quality control issues relevant to the LFI, including a detailed data quality assessment, are discussed in section 4. The conclusions drawn from the OU 3 LFI are summarized in section 5. A complete data summary for all laboratory analytical results for the LFI is presented in Appendix A. The site sampling activity reports which were compiled immediately following the completion of field activities at each investigation site are presented in Appendix B. Geologic boring logs for each soil sample location sampled during the OU 3 LFI are presented in Appendix C.

2. STUDY AREA INVESTIGATION

This section provides a summarized history of each investigation area, including potential area contaminants. Field investigation procedures are also summarized in this section for each investigation area and include sample specifications, figures showing each sample location, and a summary of deviations from the approved sampling protocol.

Field activities for the OU 3 LFI followed the approved protocol as documented in the OU 3 Work Plan and the Quality Assurance Project Plan (QAPP) and included the ER Program Standard Operating Procedures (SOPs). All soil, sediment, and surface water samples collected during the OU 3 LFI were field screened for VOCs and radioactivity. Surface water samples were field tested for a number of additional parameters as documented in the OU 3 Work Plan. Additional field parameters were collected at each sample area as detailed in the OU 3 Work Plan, QAPP, and Health and Safety Plan. The results of the field screening program were used to guide sampling activities and sample collection. Individual field screening results for each sample collected are not included in this report.

Prior environmental samples were collected for analysis from the Area H Thermal Treatment Unit, the Waste Oil Drum Field, and the Farm Trash Area during the 1987 DOE Environmental Survey. However, the results of this study were not available for inclusion into the OU 3 LFI report.

Three OU 3 investigation sites are included in the RCRA Part B Permit Application (DOE 1993). Additional activities may be performed as part of the RCRA work at the Area H Thermal Treatment Unit, the glass melter room thermal treatment unit, and the Building 27 filtration system. The details of the RCRA activities have not been incorporated into this report.

Sample designation for the OU 3 LFI involved five types of quality assurance/quality control (QA/QC) samples. The QA/QC sample type and nomenclature is presented below:

MND33 (OU 3 designation) - 0000 (sample location) - 0000 (sample ID number)

Sample Type	Nomenclature
Field Duplicates	MND33-0000-1000
Trip Blanks	MND33-0000-2000
Sample Bank Blanks	MND33-0000-3000
Equipment Blanks	MND33-0000-4000
Field (Ambient) Blanks	MND33-0000-5000

Soil, sediment, and water samples collected for the OU 3 LFI were laboratory analyzed for one or more of the following analytes or analyte groups:

- Target Compound List (TCL)
  - Volatile Organic Compounds (VOCs)
  - Semivolatile Organic Compounds (SVOCs)
  - Pesticides and Polychlorinated Biphenyls (P/PCBs)
- Target Analyte List (TAL)
  - Inorganics (including cyanide)
- Extractable Petroleum Hydrocarbons (EPH)
- Total Petroleum Hydrocarbons (TPH)
- Explosives
- Lithium
- Acetonitrile
- Acrylonitrile
- Nitrate/nitrite
- Chloride
- Gamma Spectroscopy
  - Cesium-137
  - Potassium-40
  - Radium-224, -226, and -228
  - Thorium-234
- Dioxin/furans
- Tritium

Laboratory analytical methods for sample analyses and a detailed list of analytical parameters are presented in the QAPP. Duplicate samples were collected at some of the investigation areas by U.S. EPA and/or OEPA. Documentation of regulatory agency split sampling for each investigation area is provided in Appendix B. The following subsections describe the site history and field investigation procedures for each of the 32 investigation sites.

2.1. PAINT SHOP AREA

2.1.1. Site History

2.1.1.1. Description of the Paint Shop Area

The Paint Shop Area is located on the Mound Plant Main Hill, adjacent to the paint shop and southeast of Building M (Figure 1.3). This site covers approximately 3,600 ft^2 of surface area, most of which is covered with asphalt (RFA 1988). Bare ground is present only on the south side of the shop.

2.1.1.2. Potential Area Contaminants

Paint shop wastes include excess paints and thinners, outdated paint, and cleaning solutions from paint operations. The wastes are containerized in 55-gallon drums (DOE 1986). Unused commercial paints, thinners, and lacquers are also stored at the shop prior to use at Mound Plant (RFA 1988).

Historically, the paint shop wastes were placed at the Area B landfill (DOE 1989a). In the 1970s, this practice was replaced with offsite disposal by a contractor (DOE 1986). However, it is possible that leaks or spills could have contaminated the local area around the paint shop (DOE 1986). Currently, at least one 55-gallon drum of material is located at the paint shop building on an asphalt roadway on the north side of the building. There are no records that contaminants have been released onto soils in this area.

No prior environmental samples were collected at the Paint Shop Area.

2.1.2. Field Investigation Procedures

The objective of sampling at the Paint Shop Area was to identify hazardous contaminants that may be present from past surface leaks or surface spills of paint shop wastes. Because there was no record of any spills, only a limited number of samples were collected to verify the presence or absence of contaminants.

The Paint Shop Area sampling activities included surface soil sampling with a scoop and subsurface soil sampling with hollow stem auger drilling techniques. Soil sample collection was conducted by WESTON representatives on 19 and 20 November 1991, and all samples were sent to IT Laboratories, Oak Ridge, Tennessee, for analysis.

Soil samples were collected at two locations as shown on Figure 2.1. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested laboratory analyses is presented in Table II.1.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample collected is presented below:

- MND33-0062-0001 — The surface sample was offset three times to obtain the required sample volume.
- MND33-0062-0002 — The 5.0- to 6.2-ft BGS split spoon was needed to obtain the required sample volume. The TCL VOCs were obtained from the 3.0- to 4.75-ft BGS split spoon interval.
- MND33-0062-0003 — The 10.0- to 12.0-ft BGS split spoon was needed to obtain the required sample volume. The TCL VOCs were obtained from the 8.0- to 10.0-ft BGS split spoon. The 15.0-ft and 20.0-ft BGS intervals were not sampled according to OU 3 Work Plan procedures, because there were no OVA or HNu instrument readings above 1.0.

2.2. POWERHOUSE AREA FUEL TANKS

2.2.1. Site History

2.2.1.1. Description of the Powerhouse Area Fuel Tanks

The Powerhouse Area Fuel Tanks are located on the Main Hill, immediately east of Building P (the Powerhouse) and northeast of the Paint Shop Area (Figure 1.3). Four 25,000-gallon fuel oil tanks are located on the eastern side of Building P. The tanks are partially buried in-ground with a berm built up around them. Therefore, they are considered to be USTs. Contamination of the area may have resulted from either leakage of the tanks or spillage during refilling (RFA 1988).

2.2.1.2. Potential Area Contaminants

Stained soils (approximately 20 ft^2 in area) were observed on the fuel tank berm, indicating that fuel spills (overflows) may have occurred during tank filling operations (RFA 1988). A spill of No. 2 fuel oil has been reported, but a search of available documents has not substantiated this information. Unused oil from USTs is not regulated under RCRA, and the 29 September 1990 Toxic Characteristic Leaching Procedure (TCLP)

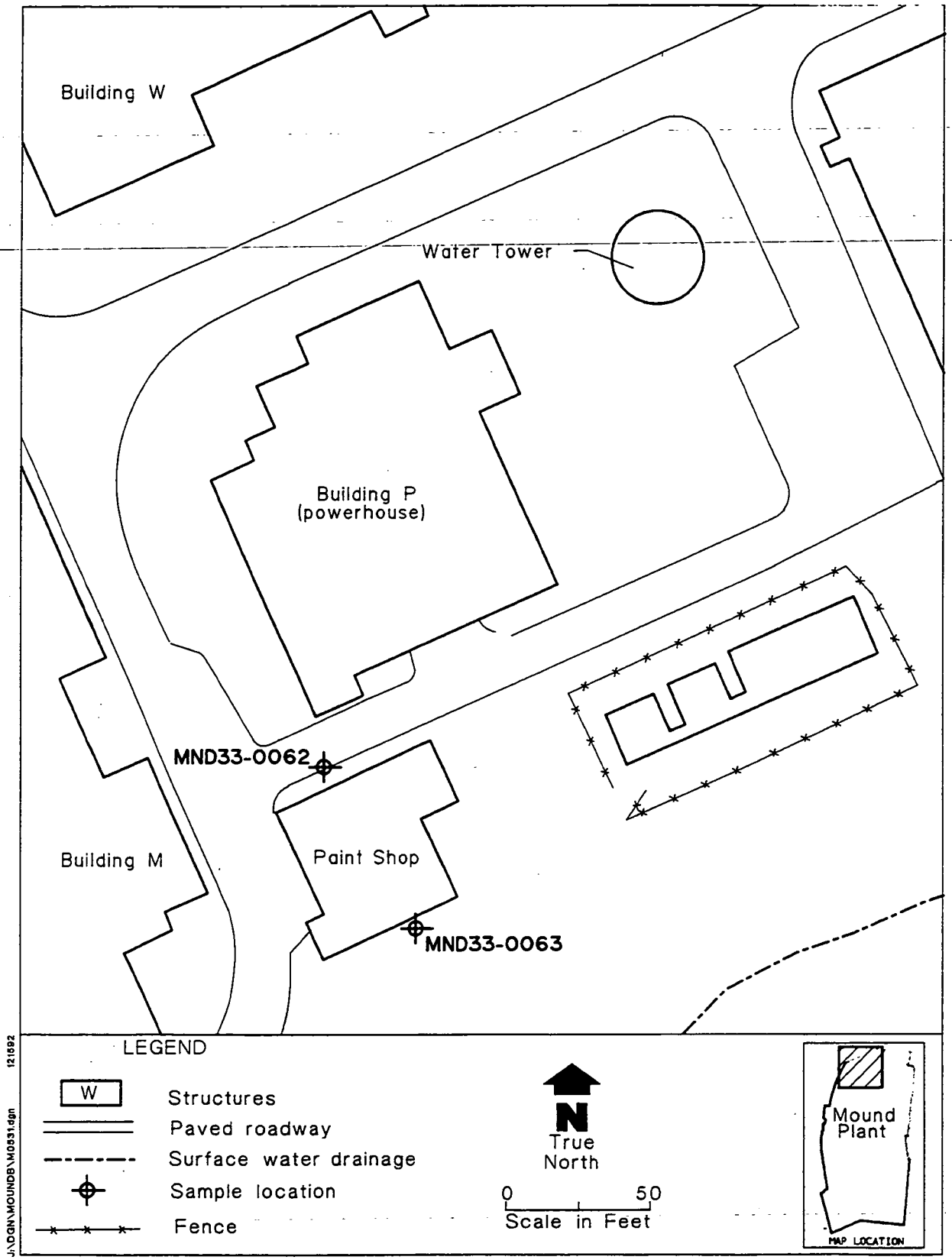

Figure 2.1. Paint Shop Area soil sample locations.

Table II.1. Paint Shop Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0062	MND33-0062-0001	Soil	11/19/91	0.0 – 2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
	MND33-0062-1001	Soil	11/19/91	0.0 – 2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
	MND33-0062-5001	Water	11/19/91	---	TCL VOCs.
	MND33-0062-0002	Soil	11/19/91	3.0 – 4.75 and 5.0 – 6.2	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
	MND33-0062-1002	Soil	11/19/91	3.0 – 4.75 and 5.0 – 6.2	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
	MND33-0062-0003	Soil	11/19/91	8.0 – 11.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
MND33-0063	MND33-0063-0001	Soil	11/20/91	0.0 – 0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; tritium.
	MND33-0063-5001	Water	11/20/91	---	TCL VOCs.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

does not currently apply to waste from UST cleanups. Any waste from cleanups performed at the Powerhouse Area Fuel Tanks will be subject to state of Ohio and federal UST regulations.

There have been no prior environmental samples collected at the Powerhouse Area Fuel Tanks.

2.2.2. Field Investigation Procedures

The objective of the sampling at the powerhouse area was to determine the extent of contamination from possible fuel oil spills. WESTON representatives conducted sampling activities at the powerhouse area on 26 June 1991 and 9 July 1991. Activities included surface soil sampling with a scoop and subsurface soil sampling using a hand auger and power auger. Soil samples were collected from three depth intervals at two locations at the powerhouse area. A fuel oil sample was also collected for laboratory characterization from the powerhouse area No. 2 fuel oil tank. All samples were shipped to IT Laboratories for analysis.

Sample locations are shown in Figure 2.2. The soils encountered in this area from a depth of 0.0 to 5.5 ft BGS ranged from a silty clay with fine to coarse gravel, to a silty sand. Groundwater was not encountered during drilling of boreholes in this area. A summary of the samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.2.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain an acceptable sample. A summary of deviations for each applicable sample is presented below:

- MND33-0001-0001 — Three hand auger locations were necessary to obtain the required sample volume.
- MND33-0001-0002 — Drilling was conducted to a depth of 1.5 ft BGS using a gasoline-powered two-man auger because of the steep slope and hand auger refusal.
- MND33-0001-0003 — Drilling was conducted to a depth of 4.5 ft BGS using a gasoline-powered two-man auger because of hand auger refusal.
- MND33-0002-0001 — Three hand auger locations were necessary to obtain the required sample volume.
- MND33-0002-0002 — Drilling was conducted to a depth of 1.5 ft BGS using a gasoline-powered two-man auger because of the steep slopes and hand auger refusal.
- MND33-0002-0003 — Drilling was conducted to a depth of 4.5 ft BGS using a gasoline-powered two-man auger because of hand auger refusal.

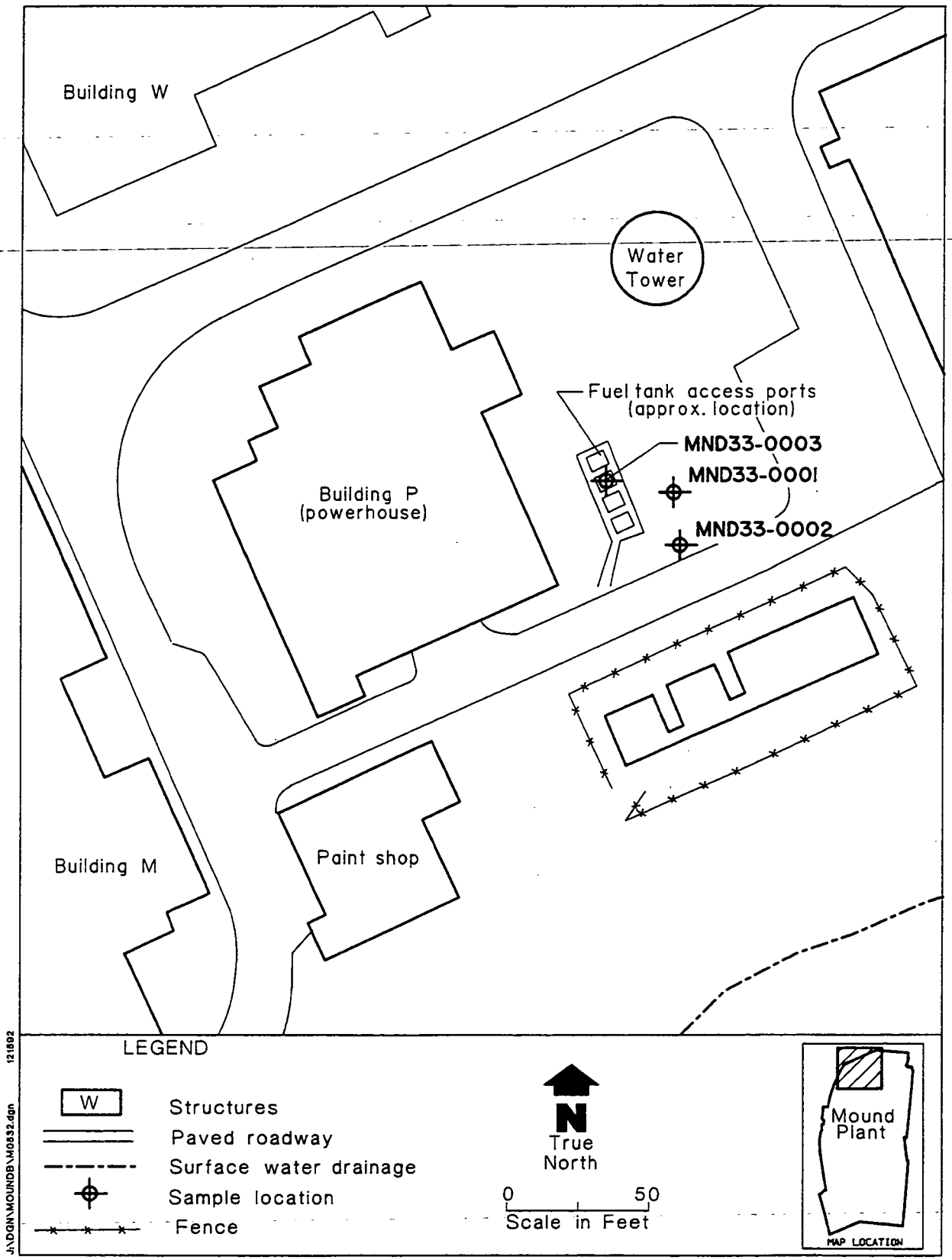

Figure 2.2. Powerhouse Area Fuel Tanks sample locations.

Table II.2. Powerhouse Area Fuel Tanks Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0001	MND33-0001-0001	Soil	06/26/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0001-0011 (Dup.)	Soil	06/26/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0001-0002	Soil	07/09/91	1.5-2.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0001-1002	Soil	07/09/91	1.5-2.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0001-0003	Soil	07/09/91	4.5-5.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
MND33-0002	MND33-0002-0001	Soil	06/26/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0002-0002	Soil	07/09/91	1.5-2.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0002-0003	Soil	07/09/91	4.5-5.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH (as fuel oil).
	MND33-0002-3003	Water	07/09/91	---	TCL VOCs.
MND33-0003	MND33-0003-0001	No. 2 fuel oil	07/26/91	---	Sample not analyzed.
	MND33-0004-0001 (E.B.)	Water	07/26/91	---	TCL VOCs.
	MND33-0005-0001 (T.B.)	Water	07/26/91	---	TCL VOCs.

BGS - Below Ground Surface
Dup. - Duplicate
E.B. - Equipment Blank
EPH - Extractable Petroleum Hydrocarbons
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
T.B. - Trip Blank
TCL - Target Compound List
VOCs - Volatile Organic Compounds

- MND33-0003-0001 — The No. 2 fuel oil sample was collected from one of the USTs onsite. This sample was delivered to IT Laboratories but laboratory analysis was not conducted.

2.3. WD BUILDING DRUM STAGING AREA

2.3.1. Site History

2.3.1.1. Description of the WD Building Drum Staging Area

The WD Building Drum Staging Area is located at the southwest corner of the WD Building (Figure 1.3). Both empty and partially filled 55-gallon drums are staged in this area. The drum staging area is underlain by a concrete pad, which is sloped to the south to drain precipitation runoff. There is no curbing on the pad. The drum staging area has been in use since 1981 to temporarily stage drums containing tritiated wastewater from building maintenance (mop water, wastewater, etc.) (RFA 1988). The filled drums are disposed of through routine waste management in the WD Building.

2.3.1.2. Potential Area Contaminants

Drums staged on the open pad reportedly contain tritiated wastewater from routine building maintenance, although no inventory is available (RFA 1988). Additionally, it was reported that some drums in the drum staging area were open and contained small pieces of glass from the glass melter furnace, which was operated for test burns in January 1985 and June 1987 (RFA 1988) and is located in the WD Building. Stains have been observed extending from the concrete pad to the adjacent soil. In addition, an internal inspection conducted at Mound Plant in June 1990 concluded that the tritiated wastewater handled at the WD Building did not contain any RCRA-listed materials.

The revised Mound Plant RCRA Part A Permit Application (DOE 1990) lists the materials used in the glass melter furnace test burns as including the following:

- Wastewater sludge spiked with acrylonitrile, carbon tetrachloride, chlorobenzene, phenol, and water (possibly RCRA listing D001 because of ignitability);
- acetonitrile waste consisting of water spiked with acetonitrile and acrylonitrile (RCRA listing D001 because of ignitability);
- a mixture consisting of kerosene, carbon-tetrachloride, chlorobenzene, phenol, and xylene (RCRA listing D001 because of ignitability); and
- a spent solvent mixture consisting of acetone, ethanol, methylene chloride, and water (RCRA listing F003).

There have been no prior environmental samples collected at the WD Building Drum Staging Area.

2.3.2. Field Investigation Procedures

The objective of sampling at the WD Building Drum Staging Area was to identify hazardous contaminants that may be present in soils adjacent to the pad because of possible leaks from the drums. Additionally, these samples should determine if tritium has migrated to the soils adjacent to the WD Building. The rationale for sampling soils was that the source of contamination is assumed to be runoff from the pad. The materials inside the drums were not sampled.

Sampling activities at the WD Building Drum Staging Area were conducted by WESTON representatives on 5 November 1991. Sampling activities consisted of surface soil sampling using a scoop and subsurface soil sampling using a hand auger and a power auger. Soil samples were collected from three locations downslope of the drum staging area. All soil samples and associated QC samples were shipped to IT Laboratories for analysis.

Soil samples were collected at three locations as shown on Figure 2.3. The soils encountered during drilling consisted of a yellow-brown gravelly, sandy silt from the 0.0- to 2.0-ft BGS interval. No water was encountered during drilling. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and parameters analyzed is presented in Table II.3.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0048 — The 5.0-ft BGS interval was not sampled because of hand auger refusal at 3.5 ft BGS at the original location, and refusal at 3.0 ft BGS at a second borehole located approximately 2 ft north of the original location.
- MND33-0049 — The original location was moved approximately 3 ft south because of underground utility lines. The 2.5-ft BGS and the 5.0-ft BGS intervals were not sampled because of power auger refusal. The power auger encountered refusal at 1.5 ft BGS.
- MND33-0050 — The original location was moved approximately 3 ft south because of the presence of underground utility lines. The 2.5-ft BGS and the 5.0-ft BGS intervals were not sampled because of power auger refusal. The power auger encountered refusal at 1.5 ft BGS.

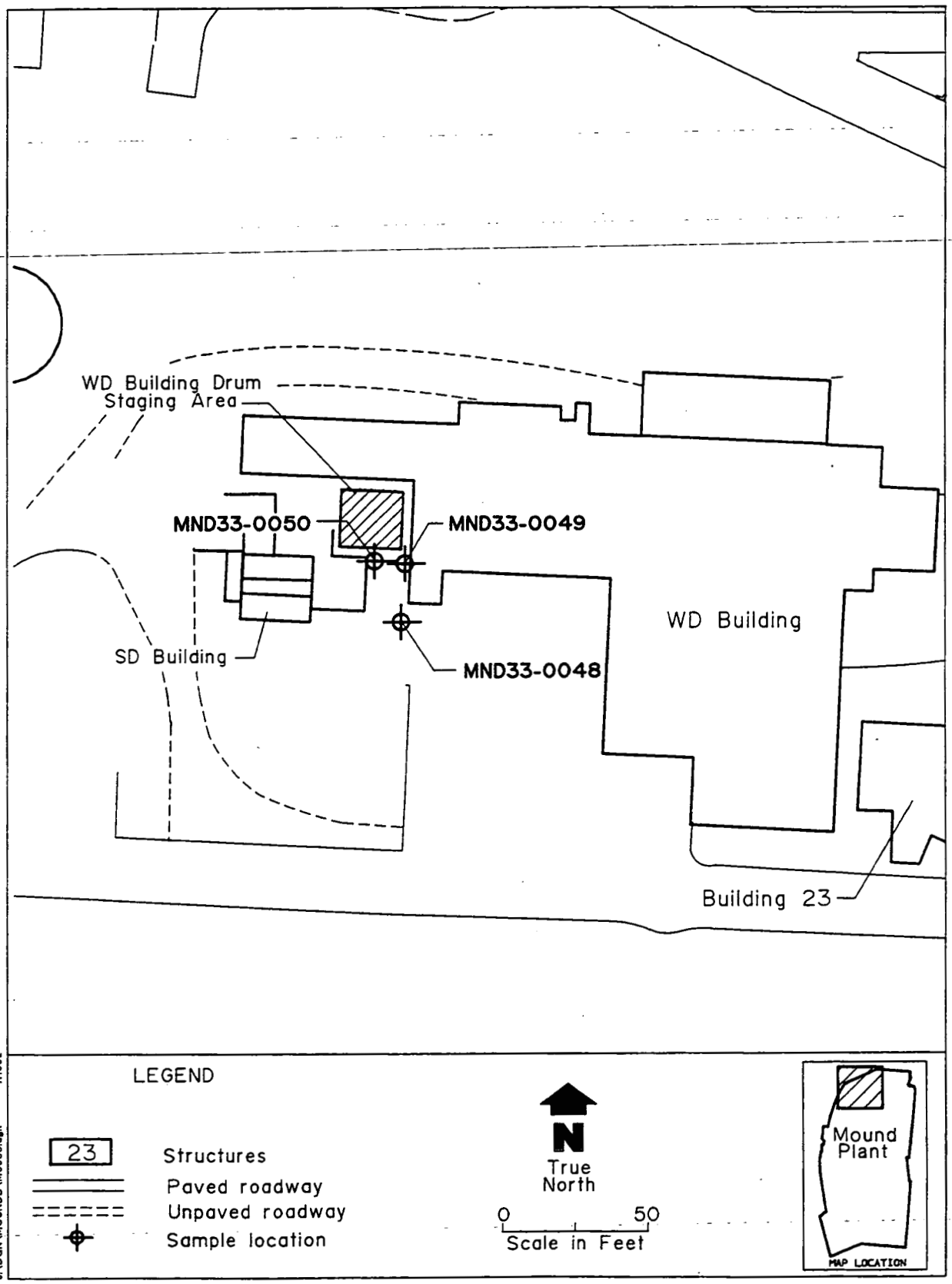

Figure 2.3. WD Building Drum Staging Area soil sample locations.

Table II.3. WD Building Drum Staging Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0048	MND33-0048-0001	Soil	11/05/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; tritium.
	MND33-0048-0002	Soil	11/05/91	2.0-2.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; tritium.
MND33-0049	MND33-0049-0001	Soil	11/05/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; tritium.
	MND33-0049-1001	Soil	11/05/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; tritium.
MND33-0050	MND33-0050-0001	Soil	11/05/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; tritium.
	MND33-0050-5001	Water	11/05/91	---	TCL VOCs.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.4. WD BUILDING GLASS MELTER ROOM SUMP

2.4.1. Site History

2.4.1.1. Description of the WD Building Glass Melter Room Sump

The glass melter room sump is located in a cinderblock walled, roofed structure, which is located against the outside wall of the WD Building, and which has a separate, secure entrance located outside the WD Building. The glass melter room furnace is located in the WD Building annex. The furnace and sump are adjacent to the portion of the WD Building (west side), where tritiated wastewater is solidified. The furnace is designed to incinerate various hazardous wastes and radioactive mixed wastes generated by on-site activities. Simulated radioactive wastes (approximately 2,000 kg) were processed in the furnace in 1982. In 1983 and 1984, 24 experimental runs of solid combustible waste and ion exchange resins spiked with 1 mCi each of cobalt-60, cesium-137 or strontium 90 and manganese-54 were conducted. The furnace was held at operational temperature for over three years. Mound Plant is currently in the process of acquiring an RCRA Part B permit that will cover operation of the glass melter furnace. The sump itself is approximately 4 ft in diameter and 8 ft deep and is covered with a metal lid. It is fed by floor drains that discharge wash water from the floor beneath the furnace. Because of its location, the sump may have received floor wash water containing tritium from the WD treatment facilities (DOE 1989b). The sump was also used to collect wastewater from several drains originating from the glass melter's off-gas treatment system room. At the time of sampling the sump was still in use.

2.4.1.2. Potential Sump Contaminants

Potential contamination of the sump will be associated with wastewater from the glass melter furnace and routine floor wash water. In addition, the sump may have received some materials from test burns conducted at the glass melter furnace in 1985 and 1987. The Revised Mound Plant RCRA Part A Permit Application lists the materials used in the glass melter furnace test burns as including the following:

- Wastewater sludge spiked with acrylonitrile, carbon tetrachloride, chlorobenzene, phenol, and water (possibly RCRA listing D001 because of ignitability);
- Acetonitrile waste consisting of water spiked with acetonitrile and acrylonitrile (RCRA listing D001 because of ignitability);
- A cocktail consisting of kerosene, carbon tetrachloride, chlorobenzene, phenol, and xylene (RCRA listing D001 because of ignitability); and
- A spent solvent mixture consisting of acetone, ethanol, methylene chloride, and water (RCRA listing F003).

No prior environmental samples have been collected in the glass melter room sump.

2.4.2. Field Investigation Procedures

The objective of investigating the glass melter room sump was to determine whether hazardous constituents have been released to the environment. WESTON representatives conducted sampling activities at the glass melter room sump on 19 February 1992. The location of the sump is indicated on Figure 2.4. Water samples from the sump were shipped to IT Laboratories for analysis.

Sludge from the sump was not containerized for laboratory analysis because of elevated radiation readings obtained using a field instrument for detection of low-energy radiation (FIDLER). A sludge sample was retained for analysis by the Mound Plant low-level radiation soils screening facility. Radiation screening confirmed that elevated levels of plutonium-238 were present in the sludge. Sediment sampling was suspended at the glass melter room sump as documented in the U.S. EPA letter to DOE dated 8 May 1992 (EPA 1992a).

A summary of the water samples collected and associated QC samples at the sump listing the sample identification number, sampling depth, date sampled, and requested analytical parameters is presented in Table II.4. Sump water sampling protocol at the Glass Melter Room Sump followed approved OU 3 LFI procedures.

2.5. BUILDING 51 WASTE SOLVENT TANK

2.5.1. Site History

2.5.1.1. Description of the Building 51 Waste Solvent Tank

Building 51 is located in the upper valley between Main Hill and SM/PP Hill. The upper valley area is located in the northeastern portion of the Mound Plant Site, south of the north parking lot (Figure 1.3). Building 51 was the location of a waste incinerator, which was completed in 1972 and operated for approximately 1 year. The tank at Building 51 was probably installed at the same time as the incinerator. The incinerator was used to burn nearly all of the Plant's nonradioactive solid wastes and some liquids including oils, paints, and solvents on an experimental basis. The overall operation of the incinerator was not successful and its use was discontinued because of excessive releases of particulates and because of changes in air pollution control regulations. The incinerator was dismantled in late 1972.

The Building 51 Waste Solvent Tank was removed as part of the Mound Plant underground tank program in December 1990. An undetermined amount of sludge material remained in the tank at the time of removal.

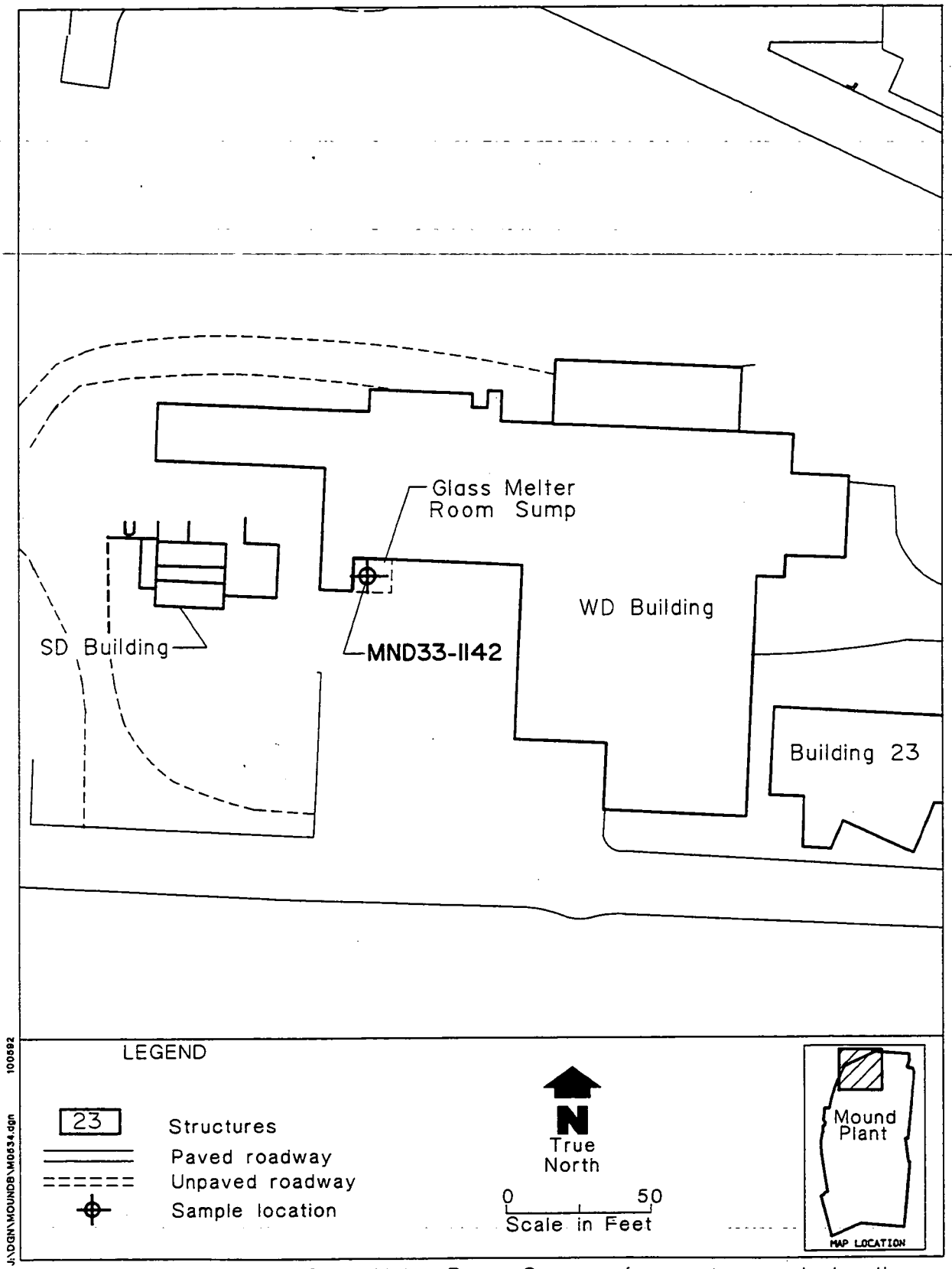

Figure 2.4. WD Building Glass Melter Room Sump surface water sample locations.

Table II.4. WD Building Glass Melter Room Sump Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-1142	MND33-1142-0001	Sump Water	02/19/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH; acetonitrile; acrylonitrile; tritium.
	MND33-1142-1001	Sump Water	02/19/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH; acetonitrile; acrylonitrile; tritium.
	MND33-1142-2001	Water	02/19/92	---	TCL VOCs.
	MND33-1142-2002	Water	02/19/92	---	TCL VOCs.
	MND33-1142-3001	Water	02/19/92	---	TCL VOCs.
	MND33-1142-5001	Water	02/19/92	---	TCL VOCs.

BGS – Below Ground Surface
EPH – Extractable Petroleum Hydrocarbons
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

The observation of only sludge remaining in the tank is consistent with reports that the liquid in the tank was pumped out when the tank was removed from service.

Prior environmental sampling has occurred at the site previous to the OU 3 LFI. The contents of the waste solvent tank were sampled by Bowser-Morner on 26 October 1990 (Bowser-Morner 1991). The sludge sample was analyzed for VOCs, heavy metals, TPH, phenol, cyanide, sulfide, total solids, PCBs, pH, and flashpoint (Bowser-Morner 1991).

During removal activities, three soil samples were collected by Mound Plant ER Program personnel on 4 December 1990. One soil sample was collected from each end of the concrete tank pad (8.0 to 8.5 ft BGS) and the other sample was collected from the middle of the pad (7.0 ft BGS). The soil samples collected from the tank excavation were analyzed by Bowser-Morner for VOCs, heavy metals, TPH, phenol, cyanide, sulfide, total solids, PCBs, pH, and flashpoint (Bowser-Morner 1991).

The OU 3 field sampling analytical results have previously been reported (DOE 1992d). The report was reviewed by U.S. EPA and OEPA, and was also submitted to the Ohio Bureau of Underground Storage Tank Regulation (BUSTR) in August 1992.

A soil gas survey was conducted south of the Building 51 Waste Solvent Tank area in August 1992 (DOE 1992e). Soil gas sample locations to the south of Building 51 are detailed in the August 1992 report (DOE 1992e). Results indicate soil vapor phase concentrations of a number of VOCs, including tetrachloroethene (PCE) and trichloroethene (TCE), at concentrations of up to 207 ppb (TCE).

2.5.1.2. Potential Area Contaminants

The 1,000-gallon underground waste tank was primarily used to store waste oils and waste solvents from various Mound Plant processes. Liquid waste was pumped from the tank to the incinerator in Building 51 for incineration. Waste materials stored in the waste solvent tank were primarily collected from fume hoods. The spent solvents may have included TCE (F001), acetone (F003), toluene (F005), benzene, enamel paint, lacquer paint, lacquer thinner, methanol, ethanol, and mineral spirits. These materials may be listed under RCRA because of ignitability (D001). Even though the tank was only operational for a short time, some leakage of waste solvents may have occurred while the tank was in the ground and out of service.

2.5.2. Field Investigation Procedures

The objective of sampling at the Building 51 Waste Solvent Tank Area was to assess whether the site is or has been a source of hazardous contaminant releases to the environment through spillage or leakage and

to verify the closure of the tank. The Building 51 Waste Solvent Tank sampling activities included the re-opening of the excavation and the sampling of soils through the use of a stainless steel scoop. Soil sample collection at the Building 51 Waste Solvent Tank Area was conducted by WESTON representatives on 28 August 1991. Four soil samples were collected at the edge of the concrete pad approximately 2 ft below the pad. Sample locations are shown in Figure 2.5. The samples were shipped to IT Laboratories for analysis. A summary of soil samples collected at each location listing the sample identification number, sampling depth, date collected, and requested analytical parameters is presented in Table II.5.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for the Building 51 Waste Solvent Tank sampling activity is presented below:

- The sampling depth for all surface soil samples at the Building 51 Waste Solvent Tank sites was extended deeper than 0 to 6 inches as specified in the Work Plan at the request of OEPA because of the possible loss of VOCs following tank excavation and removal.
- Because of underground utilities in the area, the tank site was excavated with steeply sloped side walls and excavation could not be sloped or benched to allow access by soil samplers. Therefore, soil samples were collected from the center of the backhoe bucket after the backhoe collected a sample from the designated sampling areas as described in the OU 3 Work Plan.
- The sampling protocol was modified to collect samples from the sides of the in-place concrete foundation pad.

2.6. BUILDING 61 FORMER HEAVY EQUIPMENT AREA

2.6.1. Site History

2.6.1.1. Description of the Building 61 Former Heavy Equipment Area

The Building 61 investigation area consisted of the area around Building 61 and an adjacent asphalt-lined pond. Building 61, the Mound Plant shipping and receiving center, is located in the upper valley between Main Hill and SM/PP Hill in the northeastern portion of Mound Plant (Figure 1.3). Its period of use as a heavy equipment staging area in the early decades of Plant operation (1940s and 1950s) predates the construction of Building 61. Currently, Building 61 is used as a warehouse and office building.

Building 61 is adjacent to the asphalt-lined pond, which is part of the site-wide surface water system designed to control precipitation runoff. The area surrounding Building 61, adjacent to the asphalt-lined pond, is largely covered with asphalt.

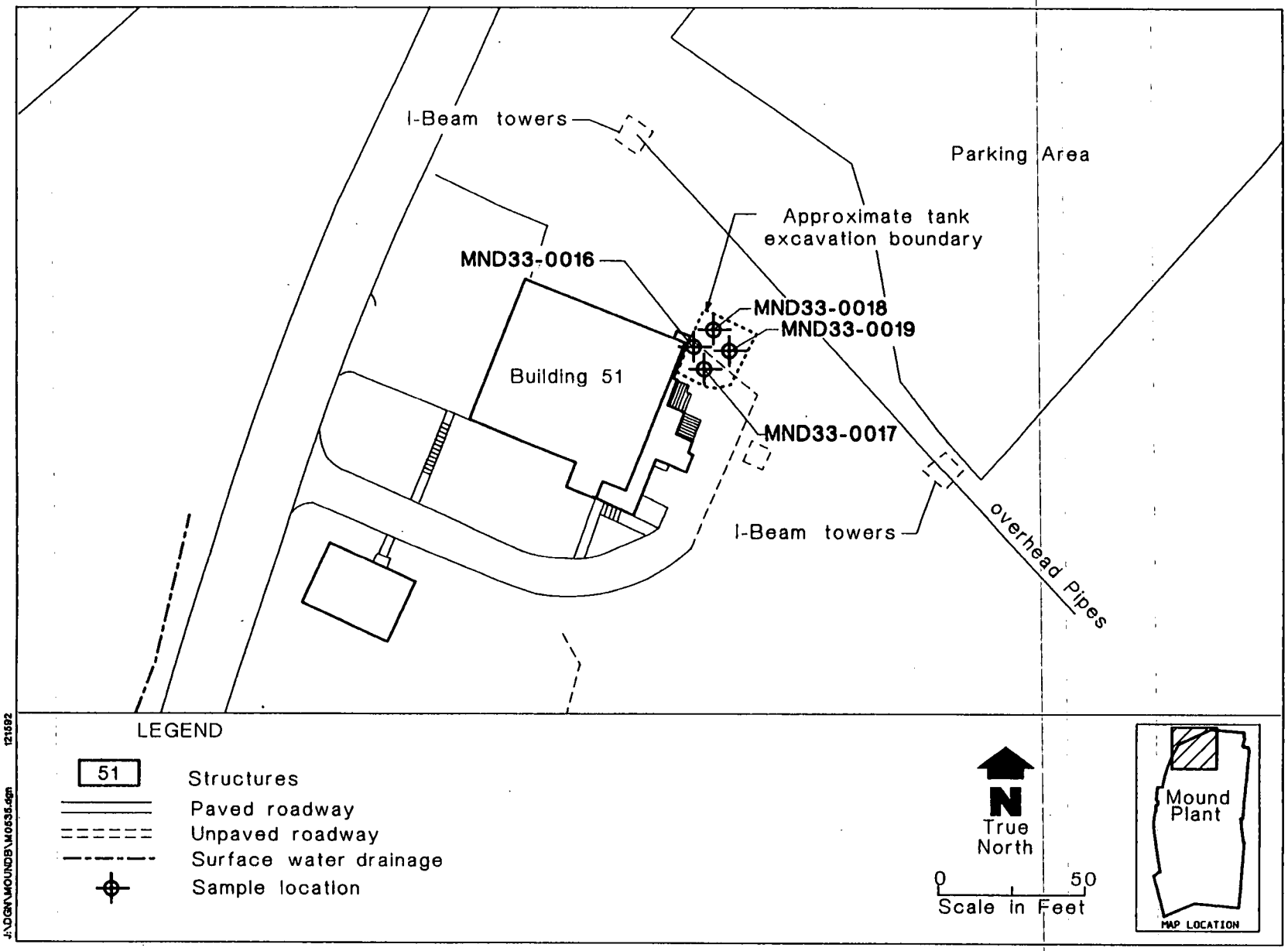

Figure 2.5. Building 51 Waste Solvent Tank soil sample locations.

Table II.5. Building 51 Waste Solvent Tank Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0016	MND33-0016-0001	Soil	8/28/91	1.0 – 2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0016-5001	Water	8/28/91	---	TCL VOCs.
MND33-0017	MND33-0017-0001	Soil	8/28/91	1.0 – 2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
MND33-0018	MND33-0018-0001	Soil	8/28/91	1.0 – 2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
MND33-0019	MND33-0019-0001	Soil	8/28/91	1.0 – 2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0019-1001	Soil	8/28/91	1.0 – 2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.

[a] Feet below base of excavation next to cement foundation pad.
ft – Feet
BGS – Below Ground Surface
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.6.1.2. Potential Area Contaminants

The Building 61 area was used for the staging of heavy equipment; therefore, the area may have been contaminated by the dumping or leakage of waste oil associated with equipment maintenance. However, no spills or waste disposals have been documented (DOE 1986).

2.6.2. Field Investigation Procedures

The objective of sampling at the Building 61 Former Heavy Equipment Area was to identify hazardous contaminants that may be present as a result of past practices at the site. Six soil boring locations were drilled in the area, as shown in Figure 2.6. Soil samples were collected at each boring location using the hollow stem auger and split spoon sampler method. Soil sample collection was conducted by WESTON representatives on 7 to 12 November 1991 and all samples were sent to IT Laboratories for analysis. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.6.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0051-0001 — Three surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because a concrete sidewalk was at the surface.
- MND33-0051-0002 — Additional sample from the 5.0- to 7.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0051-0003 — Additional samples from the 10.0- to 13.0-ft split spoons were necessary to obtain the required sample volume.
- MND33-0051-0004 — Additional sample from the 15.0- to 19.0-ft split spoons were necessary to obtain the required sample volume.
- MND33-0052-0001 — Three surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because of insufficient sample recovery.
- MND33-0052-0002 — Additional sample from the 5.0- to 7.0-ft BGS split spoon was necessary to obtain the required sample volume.

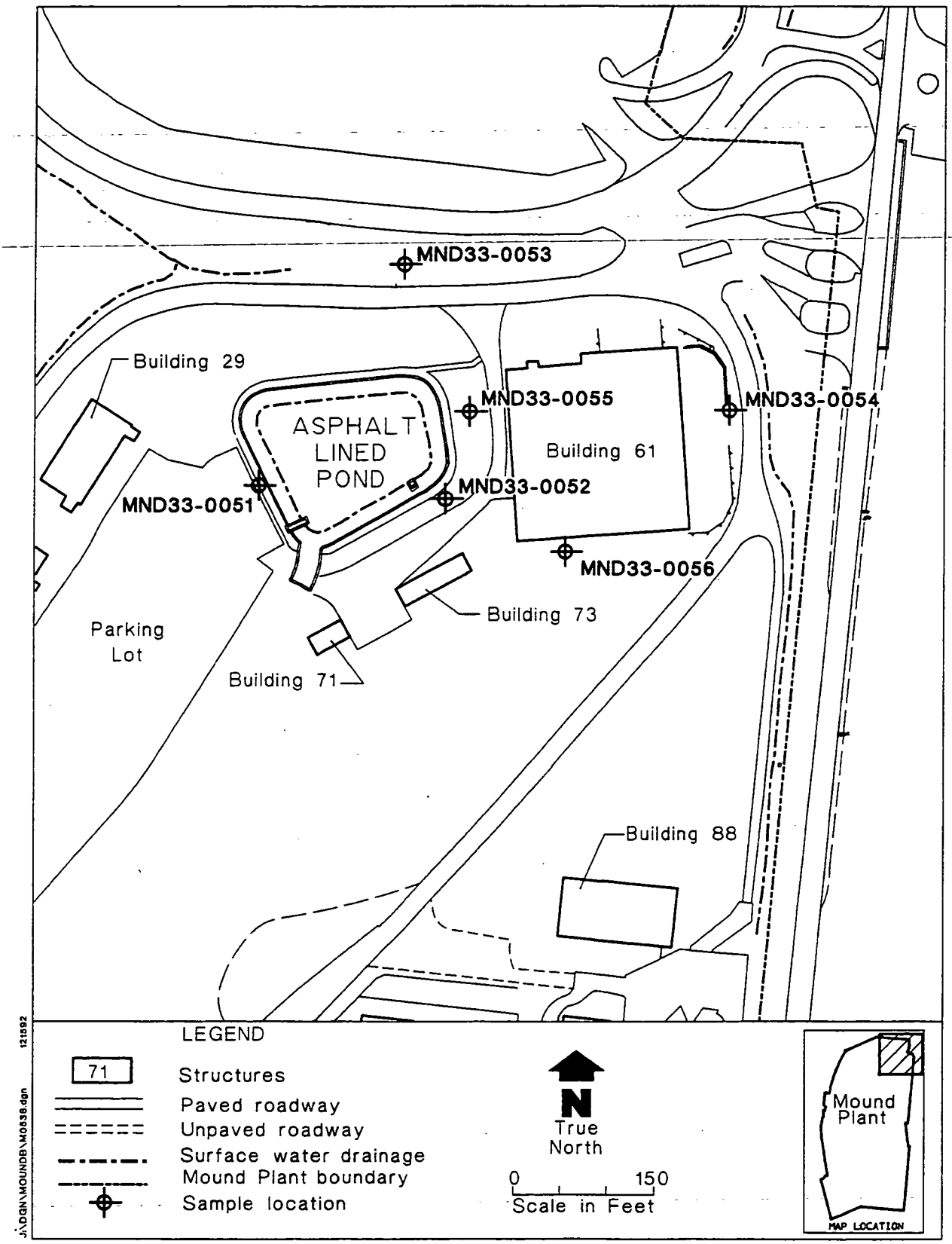

Figure 2.6. Building 61 Former Heavy Equipment Area soil sample locations.

Table II.6. Building 61 Former Heavy Equipment Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0051	MND33-0051-0001	Soil	11/7/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0051-0002	Soil	11/7/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0051-0003	Soil	11/7/91	8.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0051-1003	Soil	11/7/91	8.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0051-0004	Soil	11/7/91	13.0-19.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0052	MND33-0052-0001	Soil	11/8/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0052-1001	Soil	11/8/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0052-0002	Soil	11/8/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0052-0003	Soil	11/9/91	8.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0053	MND33-0053-0001	Soil	11/9/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0053-5001	Water	11/9/91	---	TCL VOCs.
	MND33-0053-0002	Soil	11/9/91	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0053-0003	Soil	11/9/91	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0053-0004	Soil	11/9/91	13.0-15.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0054	MND33-0054-0001	Soil	11/11/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0054-0002	Soil	11/11/91	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0054-0003	Soil	11/11/91	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0054-0004	Soil	11/11/91	13.0-15.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0055	MND33-0055-0001	Soil	11/11/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0055-5001	Water	11/11/91	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0055-0002	Soil	11/11/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0055-0003	Soil	11/11/91	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0055-0004	Soil	11/11/91	13.0-17.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0055-1004	Soil	11/11/91	13.0-17.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0056	MND33-0056-0001	Soil	11/12/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0056-0002	Soil	11/12/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0056-0003	Soil	11/12/91	8.0-9.9	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.

BGS – Below Ground Surface
EPH – Extractable petroleum hydrocarbons
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- MND33-0052-0003 — Additional sample from the 10.0- to 13.0-ft BGS split spoon samples were necessary to obtain the required sample volume. The 13.0- to 15.0-ft BGS interval was not sampled because of auger and split spoon refusal at 13.0 ft BGS.

- MND33-0053-0001 — Two surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because of insufficient sample recovery.

- MND33-0054-0001 — Three surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because of insufficient sample recovery.

- MND33-0055-0001 — Three surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because of insufficient sample recovery.

- MND33-0055-0002 — The 5.0- to 7.0-ft BGS split spoon sample was collected to obtain the required sample volume.

- MND33-0055-0004 — The 15.0- to 17.0-ft BGS split spoon sample was collected to obtain the required sample volume.

- MND33-0056-0001 — Three surface split spoon samples were necessary to obtain the required sample volume. The sampling interval was increased from 0.0 to 0.5 ft BGS to 0.0 to 1.0 ft BGS because of insufficient sample recovery.

- MND33-0056-0002 — The 5.0- to 7.0-ft BGS split spoon sample was collected to obtain the required sample volume.

- MND33-0056-0003 — The 8.0-ft BGS split spoon encountered refusal at 8.3 ft BGS. The augers over-drilled to 9.0 ft BGS and the 9.0-ft BGS split spoon encountered refusal at 9.9 ft BGS. The TCL VOC sample was collected at the 8.0- to 8.3-ft BGS interval. Soil for the remainder of the requested analytical parameters was collected at depths of 9.0 to 9.9 ft BGS.

2.7. BUILDING 27 SOLVENT STORAGE AREA

2.7.1. Site History

2.7.1.1. Description of the Building 27 Solvent Storage Area

The Building 27 Solvent Storage Area is adjacent to the Building 27 Concrete Flume and the Building 27 Sump, all of which are located directly behind (south of) Building 27 (Figure 1.3). The storage area is approximately 50 ft by 200 ft and the ground surface is covered with asphalt. Wastewater generated from

Building 27 activities is pumped into 55-gallon drums and temporarily stored onsite. The drummed wastewater is transported from the solvent storage area to the hazardous waste storage area (Building 72) approximately once a week. There is no berm surrounding the storage pad.

At the time of soil sampling, the drums in the Building 27 Solvent Storage Area appeared to be in good condition. The asphalt appeared to be in good condition, and no stained soils were observed near the storage site. However, distressed/dead vegetation was previously observed adjacent to the asphalt pad during an RCRA visual site inspection, suggesting releases may have occurred.

No prior environmental samples have been collected in the Building 27 area.

2.7.1.2. Potential Area Contaminants

A solvent/wastewater treatment system at Building 27 formerly utilized filtration to remove suspended explosives from spent solvents generated from recrystallization processes. The spent solvents were transferred to Building 72. The solvents typically used in the recrystallization process or related activities included acetonitrile, methylene chloride, toluene, isopropyl alcohol, acetone, dimethyl formamide, dioxane, and dimethyl sulfoxide (DOE 1991f). The suspended explosives removed in the filtration process included noninitiating explosives such as HMX, RDX, and PETN. The primary solvent in the wastewater is acetone. Acetone is RCRA regulated as a spent nonhalogenated solvent, F003. Explosives are regulated under the reactivity characteristic D003. No reports of leaks or spills have been reported at the Building 27 Solvent Storage Area.

2.7.2. Field Investigation Procedures

The objective of sampling at the Building 27 Solvent Storage Area was to assess whether the site is or has been a source of hazardous contaminants released to the environment through spillage or leakage. The Building 27 Solvent Storage Area sampling activities included soil sampling by hollow stem auger drilling techniques using split spoon samplers. Soil sample collection at the Building 27 sites was conducted by WESTON representatives from 27 June 1991 to 2 July 1991. The samples were shipped to IT Laboratories for analysis.

Soil samples were collected at three borehole locations as shown in Figure 2.7. Soil boring locations were placed on the edge of the asphalt surface which comprised the storage area. The soils in the vicinity of the solvent storage area ranged from a clayey silty soil to a sandy silty soil from the ground surface and graded into a silty sand at 3.0 ft BGS. At location MND33-0010, a clayey soil was present at the ground surface and

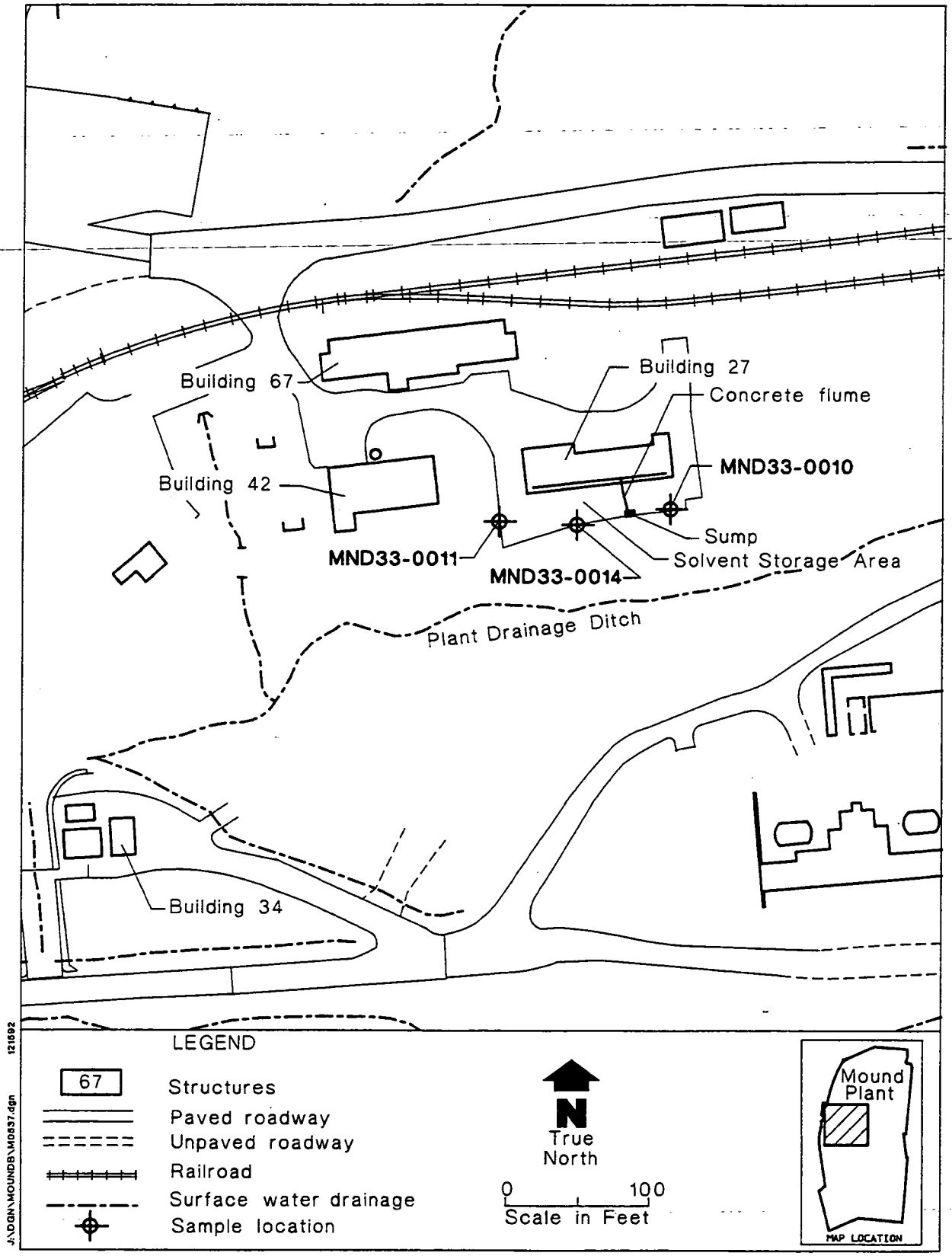

Figure 2.7. Building 27 Solvent Storage Area soil sample locations.

graded into a till unit at a depth of 2.5 ft BGS. Also, a plastic organic-rich clay layer occurred at a depth of approximately 16.0 ft BGS at the location. Groundwater in the site area was encountered between 8.0 and 14.0 ft BGS. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.7.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0010-0001 — Interval 0.0 to 0.5 ft BGS. Two additional 0.0- to 1.0-ft BGS split spoon samples were driven next to the original location to obtain the required sample volume.
- MND33-0010-0002 — Interval 1.5 to 2.0 ft BGS. Sample volume was not sufficient to fill all sample containers. No sample was obtained for TAL inorganics. Because of underground utilities, a second boring could not be installed to collect additional sample.
- MND33-0010-0004 — Interval 8.5 to 12.5 ft BGS. Sample volume not sufficient to fill all sample containers. Samples were obtained for TCL VOCs in the first boring attempt. Direct reading instruments indicated no readings above background levels at the 5.0-ft BGS interval and sample volume was sufficient at the 5.0-, 15.0-, and 20.0-ft intervals; because of underground utilities, installation of a second boring for sample collection was not possible.
- MND33-0011-0001 — Interval 0.0 to 1.5 ft BGS. Location was moved from original location on the southern edge of the asphalt pad outside of the fence line to adjacent western edge of asphalt pad because of underground utilities. Three surface split spoon samples were necessary to obtain the required sample volume.
- MND33-0014-0001 — Interval 0.0 to 2.0 ft BGS. Sampling location was moved from its original location to a location outside south gate, adjacent of the asphalt pad because of the presence of underground utilities. Two split spoons were necessary to obtain the required sample volume.

Table II.7. Building 27 Solvent Storage Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0010	MND33-0010-0001	Soil	6/29/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0010-0002	Soil	6/29/91	1.5-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0010-0003	Soil	6/29/91	2.5-6.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0010-0004	Soil	6/29/91	8.5-12.5	TCL VOCs.
	MND33-0010-0005	Soil	6/29/91	14.5-18.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0010-0006	Soil	6/29/91	18.5-20.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0011	MND33-0011-0001	Soil	6/30/91	0.0-1.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0011-1001	Soil	6/30/91	0.0-1.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0011-0002	Soil	6/30/91	1.5-3.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0011-5001	Water	6/30/91	---	TCL VOCs.
MND33-0014	MND33-0014-0001	Soil	7/1/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0014-0002	Soil	7/1/92	2.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.8. BUILDING 27 CONCRETE FLUME

2.8.1. Site History

2.8.1.1. Description of the Building 27 Concrete Flume

The Building 27 Concrete Flume is adjacent to the Building 27 Solvent Storage Area and Building 27 Sump, all of which are located directly behind or south of Building 27 (Figure 2.8). The Building 27 Concrete Flume is not in service. The site consists of an in-ground 20-ft-long, 10-inch-wide, and 12-inch-deep concrete structure. The capacity of the flume was approximately 100 gallons. The bottom and side walls of the flume are constructed of concrete, and the flume is covered with a metal lid. The surface is flush with the asphalt pad. No cracks in the flume or stained soils were observed during a visual inspection performed in September 1990. However, a crack in the concrete side wall of the flume was observed during the OU 3 investigation. Soil boring MND33-0009 was placed directly adjacent to this crack in the flume.

The concrete flume was used to convey wastewater from inside Building 27 to the Building 27 Sump. The flume is no longer active. Since the flume and sump were removed from service, the Building 27 wastewater has been pumped directly into drums.

2.8.1.2. Potential Area Contaminants

Wastewater that is stored in the Building 27 Concrete Flume may contain trace quantities of solvents. The solvents used in the treatment process included acetonitrile, methylene chloride, toluene, isopropyl alcohol, acetone, dimethyl formamide, dioxane, and dimethylsulfoxide. The suspended explosives removed in the Building 27 filtration process included noninitiating explosives such as HMX, RDX, and PETN. The primary solvent in the wastewater is acetone. The acetone is RCRA regulated as spent nonhalogenated solvent F003. Explosives are regulated under the reactivity characteristic D003. No reports of leaks or spills have been reported at the Building 27 Concrete Flume.

2.8.2. Field Investigation Procedures

The objectives of sampling at the Building 27 Concrete Flume was to assess whether the site is or has been a source of hazardous contaminants released to the environment through spillage or leakage.

The Building 27 Concrete Flume sampling activities included soil sampling by hollow stem auger drilling techniques using split spoon samplers. Soil sample collection at the Building 27 Concrete Flume sites was

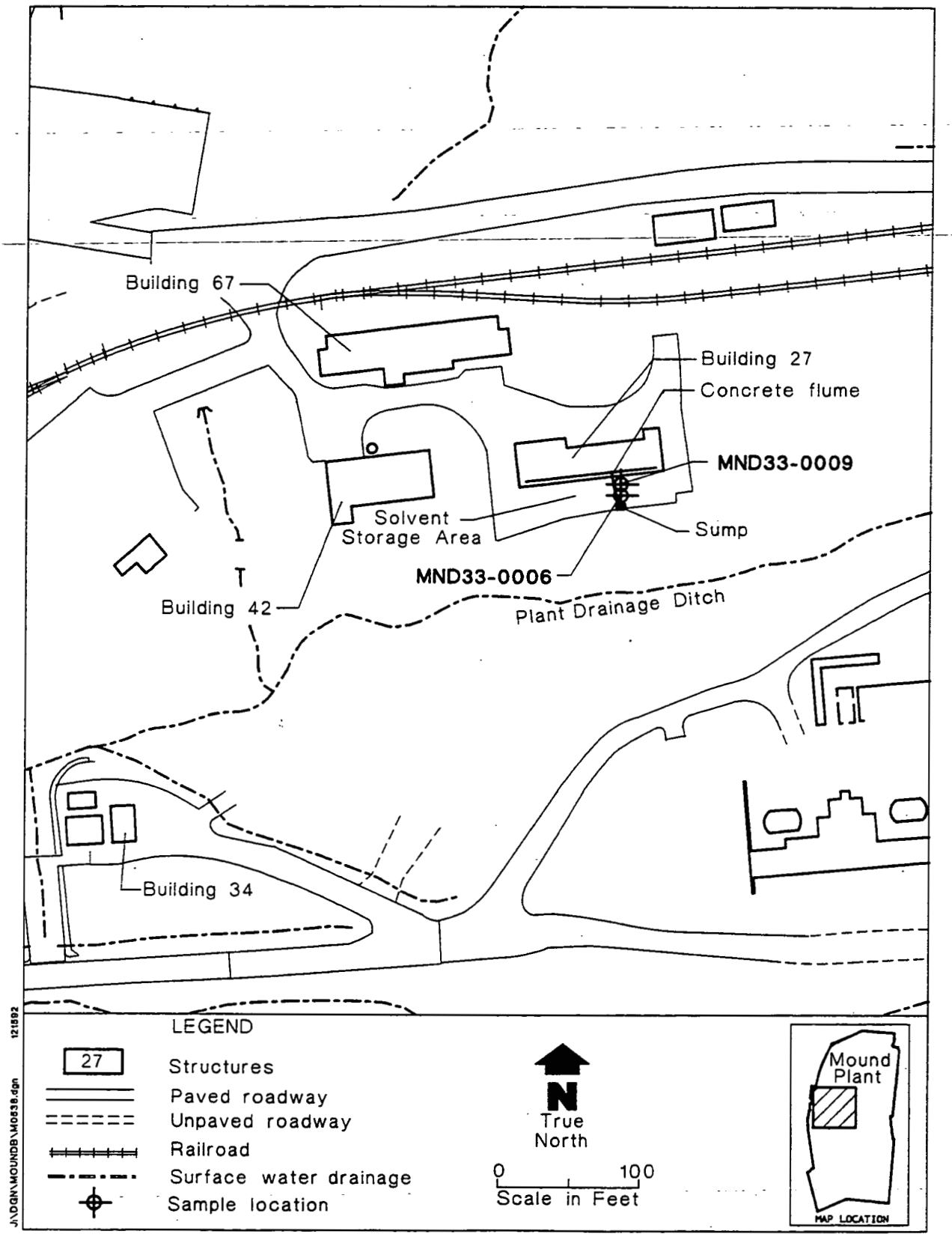

Figure 2.8. Building 27 Concrete Flume soil sample locations.

conducted by WESTON representatives on 27 and 28 June 1991. The samples were shipped to IT Laboratories for analysis.

Soil samples were collected at two locations in close proximity to the concrete flume as shown on Figure 2.8. The soils in the vicinity of the concrete flume range from a silty gravel at the ground surface and grade into a silty clayey gravel to a depth of 10.0 ft BGS. At approximately 10.0 ft BGS an organic-rich plastic clay layer occurs. Groundwater was not encountered during the drilling. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.8.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0006-0001 — Interval 0.0 to 2.0 ft BGS. Sample volume was not sufficient to fill sample containers. Only two 120-mL containers were obtained for TAL inorganics.
- MND33-0009-0001 — Interval 0.0 to 1.0 ft BGS. An additional boring was drilled adjacent to the original location to obtain the required sample volume.

Sample designation MND33-0007-0001 was used for an ambient field blank and was not a soil boring location or soil sample. Sample designation MND33-0008-0001 was used for a laboratory alpha-beta screening sample and was not a soil boring location.

2.9. BUILDING 27 SUMP

2.9.1. Site History

2.9.1.1. Description of the Building 27 Sump

The Building 27 Sump area is adjacent to the Building 27 Solvent Storage Area and the Building 27 Concrete Flume, all of which are located directly behind (south of) Building 27. The Building 27 Sump has been inactive since 1985. The sump consists of a 6-ft-long, 3-ft-wide, and 4-ft-deep concrete-lined pit with a metal cover. The sump was used to collect, via the concrete flume, and filter suspended contaminants from wastewater generated in Building 27. The sump is no longer used.

Table II.8. Building 27 Concrete Flume Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0006	MND33-0006-0001	Soil	6/27/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0006-0002	Soil	6/27/91	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0006-0003	Soil	6/27/91	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0007	MND33-0007-0001	Water	6/27/91	Ambient field blank	TCL VOCs.
MND33-0008	MND33-0008-0001	Soil	6/27/91	---	Alpha-beta screening.
MND33-0009	MND33-0009-0001	Soil	6/28/91	0.0-1.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0009-0002	Soil	6/28/91	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0009-0003	Soil	6/28/91	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

BGS - Below Ground Surface
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

Effluent from the sump was discharged by a gravity-fed underground pipeline to the Building 27 leach pit. The Building 27 leach pit is located approximately 200 ft west of the sump. The sump was dredged every 3 to 4 years to remove accumulated sludge. The sludge and spent filters were destroyed onsite by thermal treatment.

Wastewater currently generated at Building 27 does not reach the sump. No releases to the environment have been documented other than the former discharge to the leach pit, and no evidence of any release was observed during a visual site inspection. During a visual site inspection, the sump appeared to contain only rainwater and the concrete liner appeared to be in good condition.

2.9.1.2. Potential Area Contaminants

Wastewater from Building 27 that was stored in the sump may have contained trace quantities of solvents, including acetonitrile, methylene chloride, toluene, isopropyl alcohol, acetone, dimethyl formamide, dioxane, and dimethyl sulfoxide. The suspended explosives removed in the sump filtering process included noninitiating explosives such as HMX, RDX, and PETN (DOE 1991f). The Building 27 filtration system is scheduled for RCRA closure in the near future (DOE 1991f). The primary solvent in the wastewater was acetone. Acetone is RCRA regulated as spent nonhalogenated solvent F003. Explosives are regulated under the reactivity characteristic D003. No reports of leaks or spills have been reported at the Building 27 Sump.

2.9.2. Field Investigation Procedures

The objective of sampling at the Building 27 Sump was to assess whether the site was a source of hazardous contaminants released to the environment through spillage or leakage. The Building 27 Sump sampling activities included soil sampling by hollow stem auger drilling techniques using split spoon samplers. Soil sample collection at the Building 27 Sump was conducted by WESTON representatives on 2 July 1991. The samples were shipped to IT Laboratories for analysis.

The soil samples were collected at one borehole (MND33-0015), located just south of the sump, as shown on Figure 2.9. A summary of soil samples collected at this location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.9.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. Soil boring location 0015 was moved from its original location near the connection of the concrete flume and the sump to a location outside the fence, south of the sump, because of the presence of underground utilities. As with the original sampling location, the

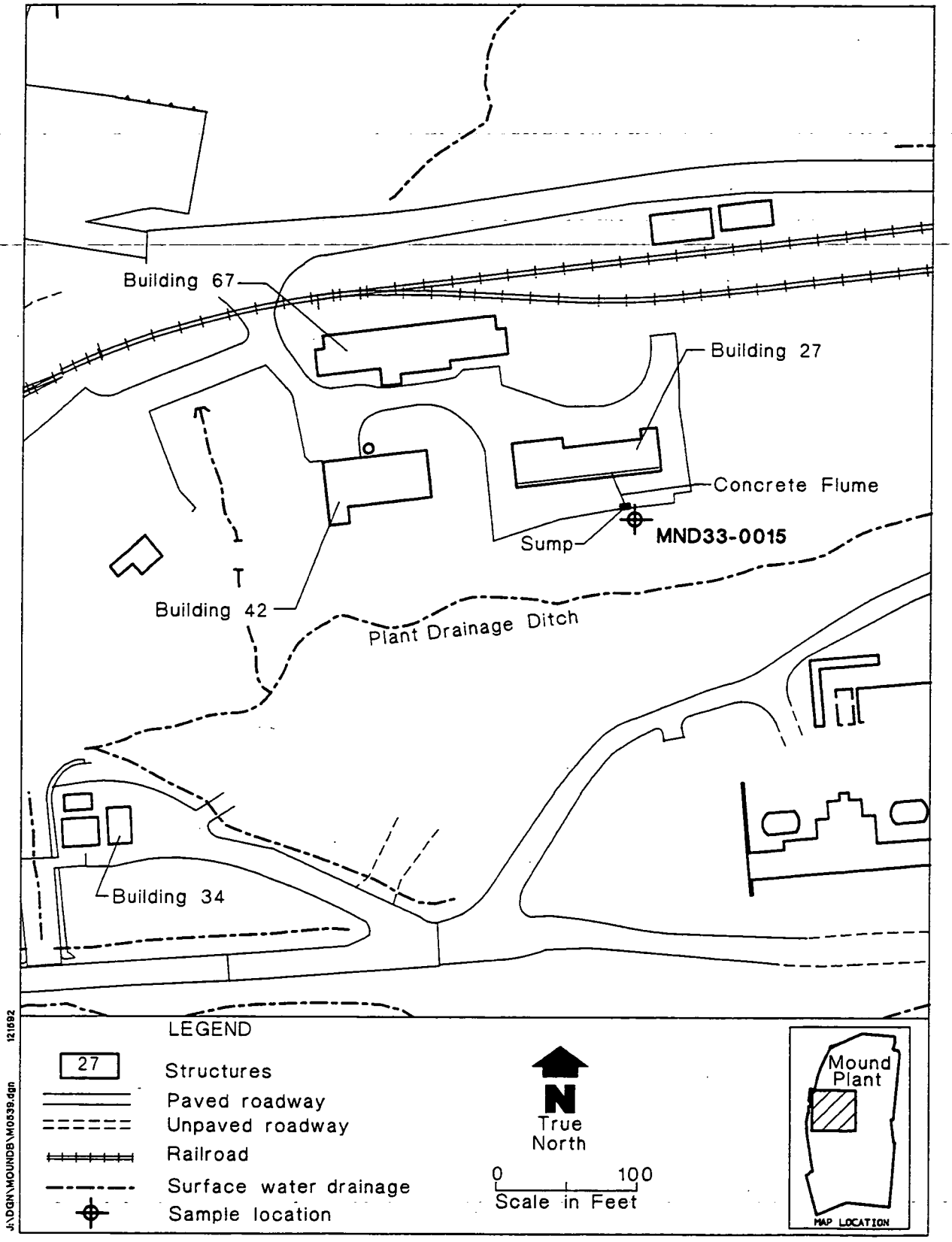

Figure 2.9. Building 27 Sump soil sample location.

Table II.9. Building 27 Sump Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0015	MND33-0015-0001	Soil	7/2/91	0.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0015-0002	Soil	7/2/91	3.5-8.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0015-0003	Soil	7/2/91	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

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ft – Feet
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SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

revised sampling location was directly adjacent to the sump and was designed to provide similar information concerning soil quality in the vicinity of the sump.

2.10. AREA I BUILDING 27 LEACH PIT

2.10.1. Site History

2.10.1.1. Description of the Area I Building 27 Leach Pit

The Area I Building 27 leach pit is located southwest of Building 27 and south of Building 42 (Figure 2.10). The operations at the Building 27 leach pit were initiated in the early 1960s and were part of the Building 27 solvent waste system. The Building 27 leach pit is unlined, square, and approximately 3 ft deep and 10 ft by 10 ft. The leach pit was designed to allow seepage and natural biodegradation of dissolved explosives along with the evaporation of acetone in a wastewater mixture.

Wastewater entered the Building 27 leach pit through a single underground pipe from the Building 27 Sump. Even though the pipe is currently in place, the Building 27 leach pit is inactive. Wastewater contributions from the Building 27 source were discontinued in 1985. The Building 27 leach pit also contains an outlet pipe through which excess liquids could have been discharged into the Plant drainage ditch. Review of a series of historical photographs indicates that the Building 27 leach pit was consistently full. The Plant drainage ditch is being addressed under OU 9 (DOE 1989c).

2.10.1.2. Potential Area Contaminants

Wastewater that entered the Building 27 leach pit may have contained trace quantities of acetone, ethanol, acetonitrile, methylene chloride, toluene, isopropyl alcohol, acetone, dimethyl formamide, dioxane, and dimethyl sulfoxide. Trace quantities of noninitiating explosives such as HMX, RDX, and PETN may have also been included in wastewater discharged to the leach pit (DOE 1991f). The primary solvent in the wastewater was acetone. The leach pits (also includes Building 1 leach pit) typically received about 1,000 gallons/year of wastewater containing dissolved explosives (ppm range) and about 1,000 gallons/year of acetone (RFA 1988). The acetone is RCRA regulated as spent nonhalogenated solvent F003. The explosives are regulated under the reactivity characteristic D003. The leach pits are potential sources of contaminants to the environment because of the potential for the infiltration of liquids into the subsurface.

As part of the Area B and Main Hill Seeps, Stage 1, Remedial Investigation in 1987, Mound Plant ER Program personnel collected five surface soil samples from the Building 27 leach pit. The soil samples were analyzed for TCL SVOCs and explosives. One sample from the Building 27 leach pit was also analyzed

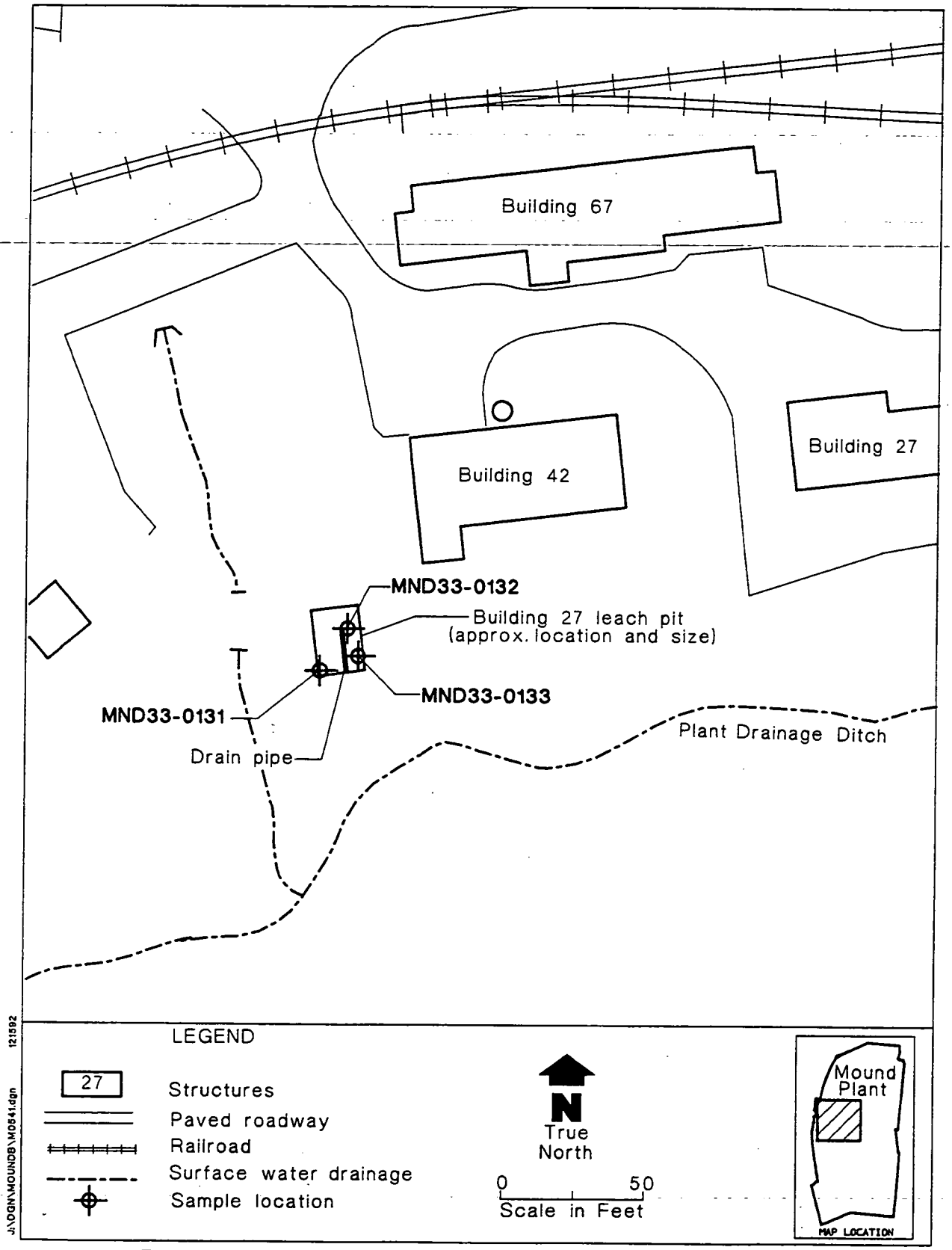


Figure 2.10. Area I: Building 27 Leach Pit soil sample locations.

for TCL VOCs, including acetone. Analytical results of the soil samples from Building 27 indicated the presence of the explosive RDX in one sample (6.85 $\mu g/g$). Bis(2-ethylhexyl)phthalate was identified in four soil samples collected (1,100; 14,000; 3,300; and 1,600 with units given in $\mu g/g$, respectively) at the Building 27 leach pit. However, this compound is a component of plastics and is a common laboratory contaminant. Three samples had tentatively identified SVOCs that are not on the TCL.

2.10.2. Field Investigation Procedures

The objective of sampling at the Area I Building 27 Leach Pit was to identify hazardous contaminants that may be present in the subsurface beneath the Building 27 leach pit as a result of past releases of wastewater to the pit. The Area I Building 27 Leach Pit sampling activities included soil sampling by hollow stem auger drilling techniques using split spoon samplers. Soil sample collection was conducted by WESTON representatives on 10 and 11 February 1992. The samples were shipped to IT Laboratories for analysis.

Soil borings were drilled at three locations as shown on Figure 2.10. Sampling locations included the pipe discharge point and the southeast and southwest corners. The soils in the vicinity of the Area I Building 27 Leach Pit consist of a gray gravelly silty clay to silty clay from the ground surface and grade into a gravelly clay to approximately 13.0 ft BGS. The apparent groundwater table is approximately located at a depth of 9.0 ft BGS in the vicinity of the Building 27 leach pit. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.10.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0131-0001 — Interval 0.0 to 3.0 ft BGS. Additional sample from the 2.0- to 3.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0131-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0131-0003 — Interval 7.0 to 13.0 ft BGS. Additional sample from the 11.0- to 13.0-ft BGS split spoon was necessary to obtain the required sample volume.
- MND33-0132-0001 — Interval 0.0 to 3.0 ft BGS. Additional sample from the 2.0- to 3.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0132-0002 — Interval 3.0 to 8.0 ft BGS. Additional samples from the 5.0- to 7.0-ft and 7.0- to 8.0-ft split spoons were necessary to obtain the required sample volume.

Table II.10. Area I Building 27 Leach Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0131	MND33-0131-0001	Soil	2/10/92	0.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0131-0002	Soil	2/10/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0131-0003	Soil	2/10/92	7.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0131-5001	Water	2/10/92	---	TCL VOCs.
MND33-0132	MND33-0132-0001	Soil	2/11/92	0.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0132-0002	Soil	2/11/92	3.0-8.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0132-0003	Soil	2/11/92	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0132-5001	Water	2/11/92	---	TCL VOCs.
MND33-0133	MND33-0133-0001	Soil	2/11/92	0.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0133-1001	Soil	2/11/92	0.0-3.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0133-0002	Soil	2/11/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0133-0003	Soil	2/11/92	7.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- MND33-0132-0003 — Interval 8.0 to 12.0 ft BGS. Additional sample from the 10.0- to 12.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0133-0001 — Interval 0.0 to 3.0 ft BGS. Additional sample from the 2.0- to 3.0-ft split spoon was necessary to obtain the necessary sample volume.
- MND33-0133-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft split spoon was necessary to obtain the required sample volume.

2.11. AREA I BUILDING 1 LEACH PIT

2.11.1. Site History

2.11.1.1. Description of the Area I Building 1 Leach Pit

The Area I Building 1 Leach Pit is located southwest of Building 1 near the Plant drainage ditch (Figures 1.3, 2.11). The Building 1 leach pit was put into use during the 1960s and is approximately 5 ft deep and triangular-shaped. Two sides of the leach pit are approximately 75 ft long and the third side is approximately 50 ft long. The leach pit was designed to allow seepage and natural biodegradation of dissolved explosives along with the evaporation of acetone in a wastewater mixture generated in Building 1.

The Building 1 leach pit was formed by removing soil to a depth of approximately 5 ft. The sides and bottom of the pit are not lined. Three pipes run to the pit: one to transport routine discharges from Building 43, one to carry Building 43 overflow, and one to carry liquids from the Building 1 sump and storm drains. A standpipe in the north end of the leach pit was used to route excess liquids to the Plant drainage ditch. The leach pit received approximately 260 gallons of acetone and approximately 1,000 gallons of wastewater containing dissolved explosive nitrate compounds per year (EPA 1988d). In 1985, discharge of wastewater from Building 1 was discontinued and the soil in the leach pit was excavated. The pit was filled with gravel and currently receives stormwater runoff from Buildings 1 and 43 (Way 1991). A series of historical aerial photographs indicates that the Building 1 leach pit was consistently empty.

2.11.1.2. Potential Area Contaminants

The wastewater that entered the Building 1 leach pit contained trace quantities of VOCs and explosives. The primary solvent in the wastewater was acetone. The acetone is RCRA regulated as spent nonhalogenated solvent F003. Explosives are regulated under the reactivity characteristic D003. The leach pit is a potential source of contaminants to the environment because of the potential for the infiltration of the liquids into the subsurface.

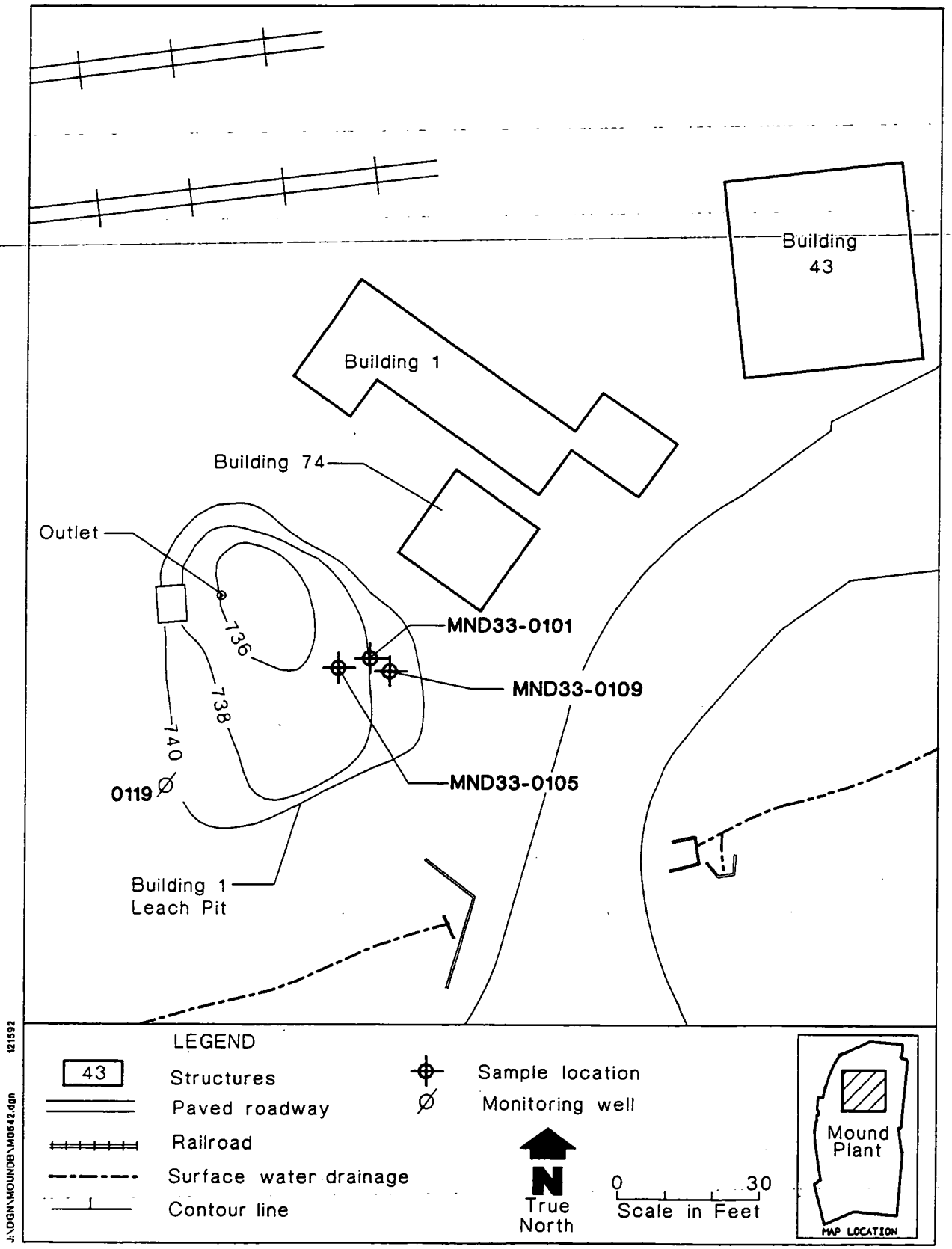


Figure 2.11. Area I Building 1 Leach Pit soil sample locations.

The only monitor well in the vicinity of the leach pit is well 0119. Monitor well 0119 is located to the southwest of the Building 1 leach pit. Water samples from monitor well 0119 have been analyzed for TCL VOCs, SVOCs; and TAL inorganics. Trichloroethane (TCA) was the only organic compound present above the detection limits in the water sample from monitor well 0119. The concentration of 650 µg/L TCA found in the December 1987 water sample from monitor well 0119 exceeded the MCL of 200 µg/L for drinking water. Subsequent sampling of monitor well 0119 in March, June, and September 1988, and in January, February, March, and April 1990 did not detect any organic compounds at concentrations above method detection limits.

As part of the Area B and Main Hill Seeps, Stage 1, Remedial Investigation in 1987, Mound Plant ER Program personnel collected four surface soil samples and one subsurface soil sample from the Building 1 leach pit. The samples were analyzed for TCL VOCs, SVOCs, and USATHAMA explosives. VOCs and SVOCs were not detected or had estimated concentration values because of high detection limits and high dilution factors used for analysis of these samples. Explosives were not detected in any of the samples.

2.11.2. Field Investigation Procedures

The objective of sampling at the Area I Building 1 Leach Pit was to identify hazardous contaminants that may be present in the subsurface beneath the pit as a result of past releases of wastewater to the leach pit. The Area I Building 1 Leach Pit sampling activities for OU 3 included soil sampling by hollow stem auger drilling techniques using split spoon samplers. Soil sample collection was conducted by WESTON representatives on 15, 17, and 20 January 1992. The samples were shipped to IT Laboratories for analysis.

Soil samples were collected at three locations as shown on Figure 2.11. Sampling locations were at pipe discharge points. Soil samples were collected from four intervals at one location, five intervals at a second location, and one interval at a third location. The soils in the vicinity of the Area I Building 1 Leach Pit consist of a gray-brown fine to coarse sand to a depth of 3.0 ft BGS. Underlying the sand unit is a gray silty clay to a depth of 11.5 ft. This silty clay grades downward into a sandy silty clay to a depth of 13.0 ft BGS. Below 13.0 ft the overburden consists of a silty sand with a trace of gravel. Groundwater was encountered at approximately 13.0 ft BGS. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.11.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

Table II.11. Area I Building 1 Leach Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0101	MND33-0101-0001	Soil	1/15/92	0.0-3.0	TCL VOCs.
	MND33-0101-0001	Soil	1/17/92	0.0-3.0	TCL SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0101-0002	Soil	1/15/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0101-0003	Soil	1/15/92	8.0-11.5	TCL VOCs.
	MND33-0101-0003	Soil	1/17/92	8.0-11.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0101-0004	Soil	1/17/92	13.0-15.0	TCL VOCs.
MND33-0105	MND33-0105-0001	Soil	1/17/92	0.0-3.0	TCL VOCs.
	MND33-0105-0001	Soil	1/20/92	0.0-3.0	TCL SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0105-5001	Water	1/17/92	---	TCL VOCs.
	MND33-0105-0002	Soil	1/17/92	3.0-5.0	TCL VOCs.
	MND33-0105-0002	Soil	1/20/92	3.0-5.0	TCL SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0105-0003	Soil	1/20/92	8.5-12.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0105-1003	Soil	1/20/92	8.5-12.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0105-0004	Soil	1/20/92	13.0-15.0	TCL VOCs.
	MND33-0105-0005	Soil	1/20/92	18.0-20.0	TCL VOCs.
MND33-0109	MND33-0109-0002	Soil	1/20/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- MND33-0101-0001 — Interval 0.0- to 3.0-ft BGS. TCL VOCs were collected from borehole 0101 at the 0.0- to 2.0-ft BGS interval. Additional samples from the 0.0- to 2.0-ft and 2.0- to 3.0-ft BGS intervals in the offset borehole (0101A) were necessary to obtain required volume of sample.

- MND33-0101-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS interval was necessary to obtain required volume of sample.

- MND33-0101-0003 — Interval 8.0 to 11.5 ft BGS. No recovery in the 8.0- to 10.0-ft interval split spoon from borehole 0101. Additional sample from the 10.0- to 11.5-ft BGS interval of borehole 0101 and the 8.0- to 10.0-ft BGS interval of offset borehole (0101A) was necessary to obtain the required sample volume.

- MND33-0101 Auger refusal was met in the borehole MND33-0101 at 15.0 ft BGS. Borehole MND33-0101A was offset approximately 2 ft to the north to collect the remaining samples.

- MND33-0105-0001 — Interval 0.0 to 3.0 ft BGS. Additional samples from the 2.0- to 3.0-ft BGS interval of borehole 0105 and from the 0.0- to 2.0-ft BGS intervals of offset boreholes 0105A and 0105B were necessary to obtain the required sample volume.

- MND33-0105-0002 — Interval 3.0 to 5.0 ft BGS. Additional sample from the 3.0- to 5.0-ft BGS interval of offset borehole 0105A was necessary to obtain required sample volume.

- MND33-0105-0003 — Interval 8.5 to 12.5 ft BGS. Additional sample from the 10.5- to 12.5-ft BGS interval was necessary to obtain required sample volume.

- MND33-0109 No samples were collected at 2.0 ft and 10.0 ft BGS because of insufficient soil recovery. Spoon refusal occurred at 8.0 ft BGS, and auger refusal occurred at 10.0 ft BGS. Drillers were unable to offset and drill additional borings because of interference with underground utilities.

- MND33-0109-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS interval was necessary to obtain the required sample volume.

2.12. BUILDING 34 OIL BURN STRUCTURE

2.12.1. Site History

2.12.1.1. Description of the Building 34 Oil Burn Structure

Building 34 is located in the lower valley area of the Mound Plant Site (Figure 2.12(a)). Building 34 was constructed in 1965 near the container testing facility to serve as a center for training emergency personnel. There are four sites associated with Building 34; the oil burn structure, the fire-fighting training pits, the

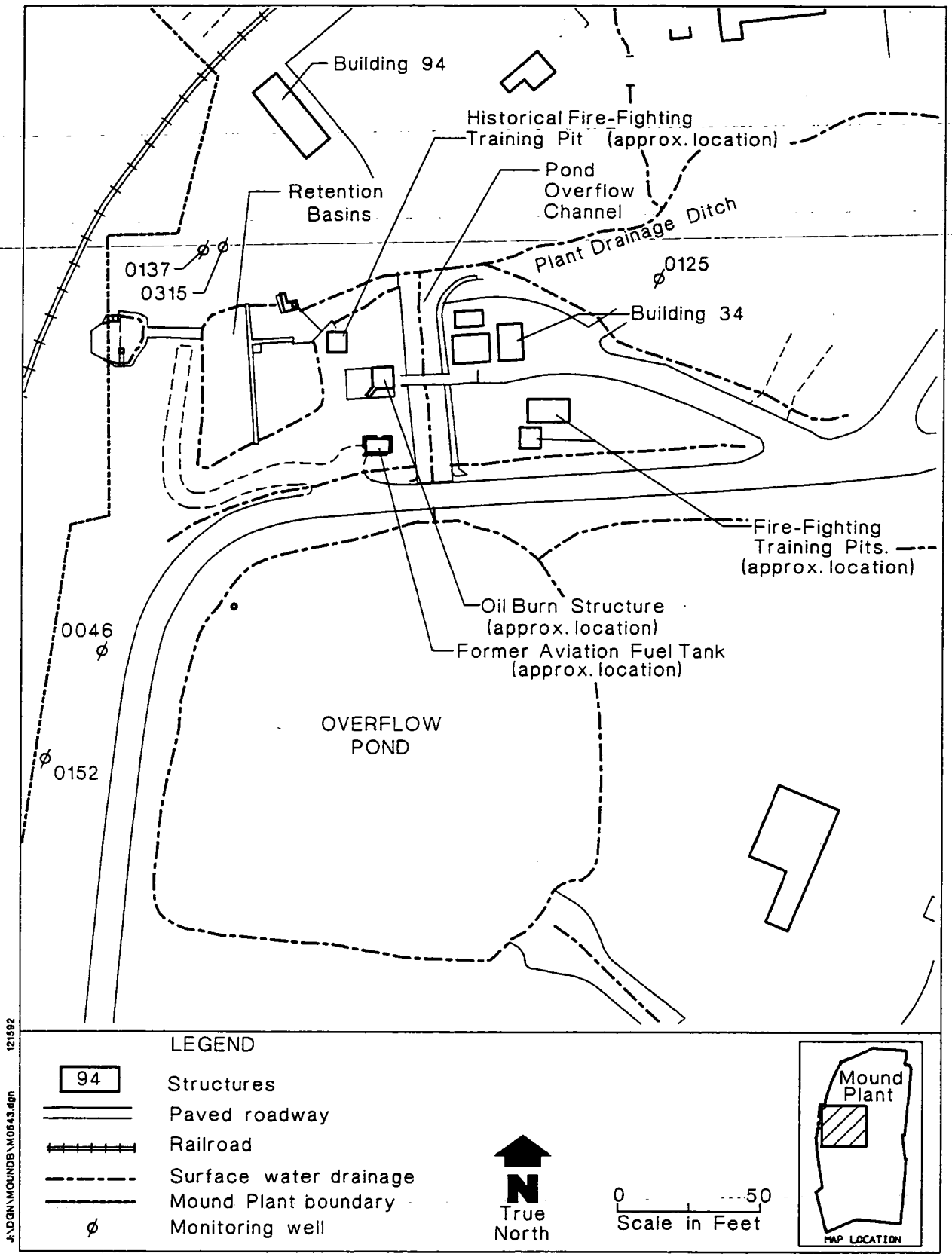


Figure 2.12(a). Building 34 sites.

historical fire-fighting training pit, and the former aviation fuel tank. All four sites are located in the area bounded by the overflow pond to the south, the retention basins to the northwest, and Building 34 to the northeast, as shown in Figure 2.12(a). Petroleum products were used or stored in all four of these sites (RFA 1988). The oil burn structure is the only site that will be discussed in this subsection. The three other sites will be discussed in subsequent subsections.

The Building 34 Oil Burn Structure is located west of Building 34, east of the retention basin, and north of the Building 34 Former Aviation Fuel Tank (Figure 2.12(a)). The Building 34 former Aviation Fuel Tank, which was located approximately 50 ft from the oil burn structure, supplied aviation fuel through underground lines to the oil burn structure. The underground lines were located on the west side of the channel to the overflow pond. As part of the removal activities for the Building 34 former Aviation Fuel Tank, an assessment of the underground line was conducted by Bowser-Morner (Bowser-Morner 1991). Elevated PID readings up to 160 units were reported by Bowser-Morner at a location east of the tank near the values for the test fire units. The oil burn structure was used to test barrels against shipping requirements by burning with a fuel fire for 15 minutes.

The oil burn structure is an open square pit, approximately 10 ft on each side and 8 ft deep, with 8-ft high walls. The oil burn structure is constructed of concrete block with brick-lined walls. The bottom is composed of an unknown thickness of concrete. The oil burn structure was removed from service in 1979 (RFA 1988). An unknown liquid was observed in the bottom of the oil burn structure in 1988. The condition of the concrete floor of the structure at the time of OU 3 sampling activities was observed as being cracked and broken in spots with enough soil in areas to support plant growth.

2.12.1.2. Potential Area Contaminants

Aviation fuel was used in the test-burning operations at the oil burn structure. Components of aviation fuel normally include benzene, toluene, ethylbenzene, and xylene (BTEX). No known materials regulated under RCRA were stored or handled at the Building 34 sites. The burning of solvents and oils at the oil burn structure has not been documented. However, burning events involving solvents and oils can result in possible contamination involving dioxin/furans, and these compounds have been considered as potential area contaminants.

Information obtained in July 1991 indicated that the disposal of lithium was not conducted in Area C as described in the OU 3 Work Plan. Instead, disposal occurred in a swampy area at the present location of Building 34. Based upon this information, lithium analysis was included for all the soil samples collected at the Building 34 Oil Burn Structure.

Recently obtained information provided by EG&G indicates that the Building 34 area was the location of a cleanup of a small amount of depleted uranium. The exact location of the cleanup or the amount of radioactive material is not known. Based on the information concerning a cleanup of depleted uranium at

the Building 34 area, surface and near surface soil samples and sediment samples were analyzed via gamma spectroscopy at IT Laboratories. The samples were analyzed by gamma spectroscopy to detect cesium-137; potassium-40; radium-224, -226, and -228; and thorium-234, a daughter of uranium-238. The analysis of thorium-234 was performed to detect any traces of depleted uranium.

Prior environmental soil gas samples have been collected near Building 34, one at Station 31 near the fire-fighting training pits, and at Station 30, which was near the former aviation fuel tank. The samples were collected as part of the Area B OU 1 Investigation. The samples were analyzed for TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. At Station 30, near the former aviation fuel tank, toluene was detected at 0.24 μg/L.

2.12.2. Field Investigation Procedures

The objective of sampling at the Building 34 Oil Burn Structure was to assess whether the site is or has been a source of hazardous contaminant releases to the environment. The Building 34 Oil Burn Structure sampling activities were conducted by hollow stem auger drilling techniques and surface sampling with a stainless steel scoop. Surface water was also collected for laboratory analyses from inside the oil burn structure. Soil sample collection from two boreholes at the Building 34 site was conducted by WESTON representatives on 27 and 28 January 1992. Soil boring locations are shown in Figure 2.12(b). The soils in the vicinity of the Building 34 Oil Burn Structure are generally composed of a gravelly, silty, sandy clay to a gravelly silty clay to a depth of 11.0 ft BGS. Groundwater was not encountered in the soil borings during sampling. Groundwater was encountered nearby at the Building 34 Fire-Fighting Training Pits soil boring MND33-0112 at a depth of approximately 12.0 ft BGS. Sampling of surface water and sediment at the oil burn structure was conducted on 20 February 1992. All samples were shipped to IT Laboratories for analysis. A summary of samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.12.

Soil, sediment, and surface water sampling for dioxin/furan analyses was conducted at the Building 34 Oil Burn Structure as requested by U.S. EPA during review of Revision 2 of the OU 3 LFI Work Plan. Dioxin/furan analyses were requested at sites where the burning of solvents and oils may have occurred. Dioxin/furan analyses were performed on subsurface soil samples from locations MND33-0114 and -0115 and on the sediment sample from inside the oil burn structure (MND33-0141). All samples collected were analyzed for dioxin/furan congener totals (tetra-octa) and for all 2,3,7,8- substituted isomers of dioxin/furans. All detections of 2,3,7,8- substituted isomers on the primary column were subjected to secondary column confirmation except for octa isomers of dioxin/furans.

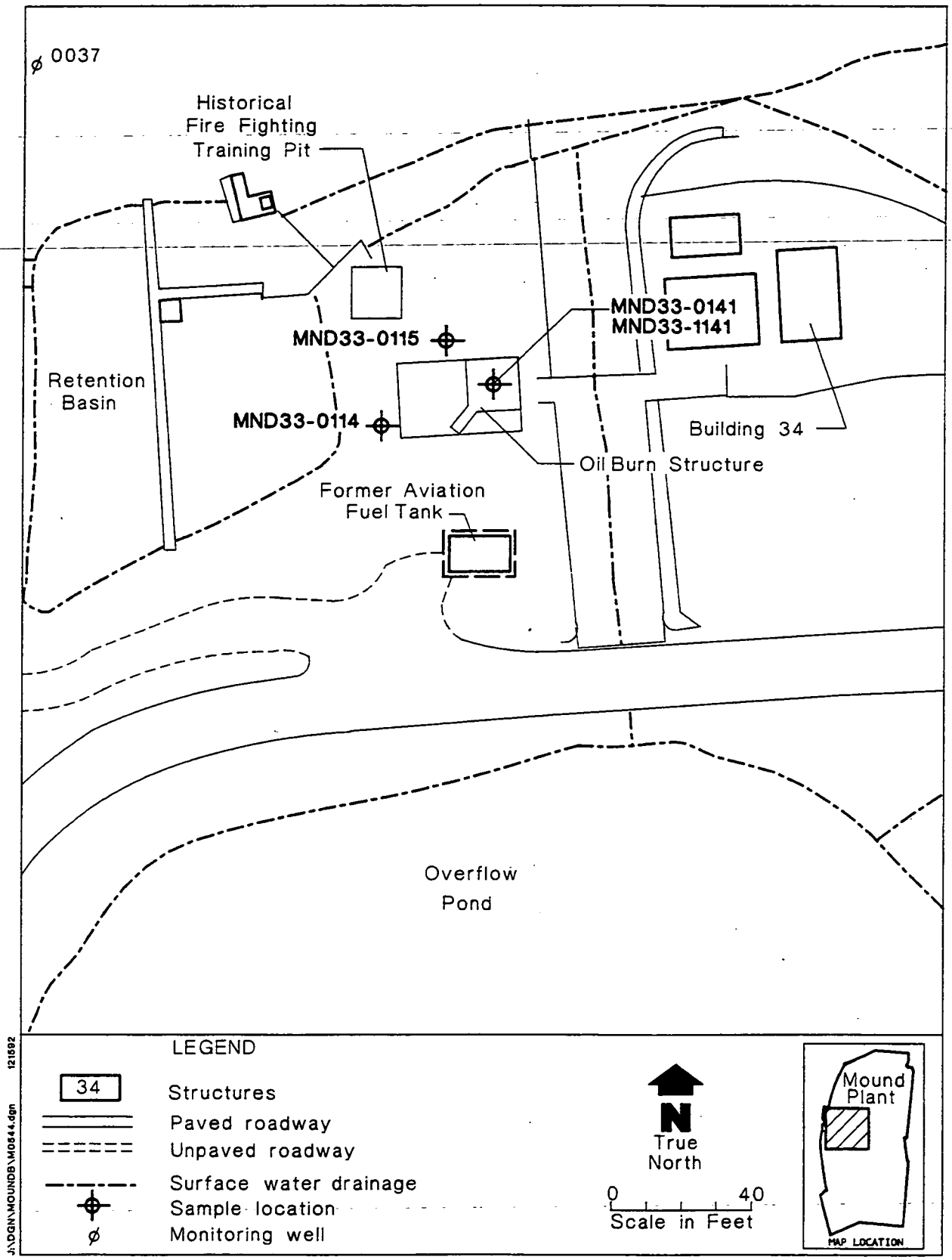


Figure 2.12(b). Building 34 Oil Burn Structure soil sample locations.

Table II.12. Building 34 Oil Burn Structure Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0114	MND33-0114-0001	Soil	1/28/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0114-1001	Soil	1/28/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.
	MND33-0114-0002	Soil	1/28/92	7.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
MND33-0115	MND33-0115-0001	Soil	1/28/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0115-0002	Soil	1/28/92	7.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxins/furans, nitrite/nitrate; EPH; gamma spec.
	MND33-0115-4002	Water	1/28/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.
MND33-0141	MND33-0141-0001	Sediment	2/15/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
MND33-1141	MND33-1141-0001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.
	MND33-1141-4001	Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.
	MND33-1141-2001	Water	2/20/92	---	TCL VOCs.
	MND33-1141-2002	Water	2/20/92	---	TCL VOCs.

BGS - Below Ground Surface
EPH - Extractable Petroleum Hydrocarbons
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for samples collected at the Building 34 Oil Burn Structure is presented below:

- MND33-0114-0001 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS split spoon was necessary to obtain the required sample volume.
- MND33-0114-0002 — Interval 7.0 to 11.0 ft BGS. Split spoon samples from the 7.0- to 9.0-ft and 9.0- to 11.0-ft BGS intervals were necessary to obtain required sample volume.
- MND33-0115-0001 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS split spoon was necessary to obtain the required sample volume.
- MND33-0115-0002 — Interval 7.0 to 11.0 ft BGS. Split spoon samples from the 7.0- to 9.0-ft and 9.0- to 11.0-ft BGS intervals were necessary to obtain required sample volume.

2.13. BUILDING 34 FIRE-FIGHTING TRAINING PITS

2.13.1. Site History

2.13.1.1. Description of the Building 34 Fire-Fighting Training Pits

There are four sites associated with Building 34; the fire-fighting training pits, the oil burn structure, the former aviation fuel tank, and the historical fire-fighting training pit. All four sites are located in the area bounded by the overflow pond to the south, the retention basin to the northwest, and Building 34 to the northeast (Figure 2.12(a)). Petroleum products were used or stored in all four of these sites (RFA 1988). The fire-fighting training pits are the only sites that will be discussed in this subsection.

The Building 34 Fire-Fighting Training Pits are located south of Building 34, north of the overflow pond, and east of the retention basins and the channel to the overflow pond (Figure 2.12(a)). The Building 34 Fire-Fighting Training Pits consist of two concrete pits, one approximately 10 ft by 10 ft by 1 ft deep, and the second approximately 20 ft by 10 ft by 1 ft deep. Three to five gallons of diesel fuel were used to create fires for fire-fighting training purposes. The fires were extinguished with water from a nearby hydrant. The operation period of the fire-fighting training pits is not documented. Black residue and rainwater have been observed in the smaller pit. Black residue has been observed in the larger pit, but water has not been observed in the pit. The concrete floors in both pits were cracked and broken in spots, and partially covered with sediment. Black-stained soils surround both of the pits.

2.13.1.2. Potential Area Contaminants

Diesel fuel was used in the fire-fighting training pits to create demonstration fires. Approximately 300 gallons of diesel fuel were used at the training pits in 1987 at a rate of 3 to 5 gallons per demonstration. BTEX are minor components of diesel fuel. No known materials regulated under RCRA were stored or handled at the Building 34 sites.

The burning of solvents and oils at the fire-fighting training pits has not been documented. However, burning events involving solvents and oils can result in possible contamination involving dioxin/furans, and these compounds have been considered as potential area contaminants.

Information obtained in July 1991 indicated that the disposal of lithium was not conducted in Area C as described in the OU 3 Work Plan. Instead, disposal occurred in a swampy area at the present location of Building 34. Based upon this information, lithium analyses were included for all the samples collected at the fire-fighting training pits.

Recently obtained information has included the Building 34 fire-fighting training area as a possible site where a cleanup of depleted uranium has occurred. Based on the information concerning a cleanup of depleted uranium at the Building 34 area, surface and near surface soil samples and sediment samples were analyzed via gamma spectroscopy at IT Laboratories. The samples were analyzed by gamma spectroscopy to detect cesium-137; potassium-40; radium-224, -226, and -228; and thorium-234, a daughter of uranium-238. The analysis of thorium-234 was performed to detect any traces of depleted uranium.

Prior environmental soil gas samples have been collected near Building 34, one at Station 31 near the fire-fighting training pits, and at Station 30, which was near the former aviation fuel tank. The samples were collected as part of the Area B OU 1 Investigation. The samples were analyzed for TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. At Station 30, toluene was found at 0.24 µg/L; and at Station 31, benzene and toluene were found at 0.07 µg/L and 0.14 µg/L, respectively.

2.13.2. Field Investigation Procedures

The objective of sampling at the Building 34 Fire-Fighting Training Pits was to assess whether the site is or has been a source of hazardous contaminant releases to the environment. The Building 34 Fire-Fighting Training Pit sampling activities were conducted by hollow stem auger drilling techniques using split spoon samplers and sediment sampling with stainless steel scoops. Subsurface soil samples were collected from four boreholes. In addition to the four soil borings drilled at the Building 34 Fire-Fighting Training Pits (boring numbers MND33-0110, -0111, -0112, and -0113), three additional soil borings were drilled next to

the southernmost pit. As detailed in a letter report dated 11 February 1992 (Mauzy 1992b), an oily product was detected on the water table at soil boring MND33-0112. This occurrence prompted the installation of three additional soil borings (numbers MND33-0119, -0120, and -0121) to delineate the extent of contamination. These soil borings were placed in the apparent downgradient direction for surface water and shallow groundwater flow. Soil samples for laboratory analyses were not collected from the three borings because field screening results were equal to or near background levels and oil was not detected in the soils. One surface water and duplicate and one sediment sample were collected from the fire-fighting training pits. Sample locations are shown in Figure 2.13. Soil sample collection at the Building 34 Fire-Fighting Training Pits was conducted by WESTON representatives on 21, 22, and 27 January 1992. Sampling of the surface water and sediment was completed by WESTON personnel on 15 and 20 February 1992. Samples were shipped to IT Laboratories for analysis.

Soil, sediment, and surface water sampling for analyses of dioxin/furans was conducted at the Building 34 Fire-Fighting Training Pits as requested by U.S. EPA during review of Revision 2 of the OU 3 LFI Work Plan. The analyses of dioxin/furans was requested at sites where the burning of solvents and oils may have occurred. Dioxin/furan analyses was performed on all surface and subsurface soil samples, the sediment sample collected from the fire-fighting training pits, and the surface water sample collected from within the fire-fighting training pit. All samples collected at the Building 34 Fire-Fighting Training Pits were analyzed for dioxin/furan congener totals (tetra-octa) and for all 2,3,7,8- substituted isomers of dioxin/furans. All detections of 2,3,7,8- substituted isomers on the primary analytical column were subjected to secondary column confirmation, except for octa isomers of dioxin/furans.

Based on recently obtained information concerning a cleanup of depleted uranium at the Building 34 area, surface and near surface soils and sediment samples were analyzed via gamma spectroscopy. The samples were analyzed for cesium-137; potassium-40; radium-224, -226, and -228, and thorium-234, a daughter of uranium-238. A sample summary table including the sample identification number, sampling interval, date sampled, and the analytical parameters requested is presented in Table II.13.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of the deviations for applicable samples collected at the Building 34 Fire-Fighting Training Pits is presented below:

- MND33-0110-0001 — Interval 0.0 to 2.0 ft BGS. Three 0.0- to 2.0-ft split spoon samples were necessary to obtain the required sample volume for this sample.
- MND33-0110-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft split spoon sample was necessary to obtain the required sample volume.

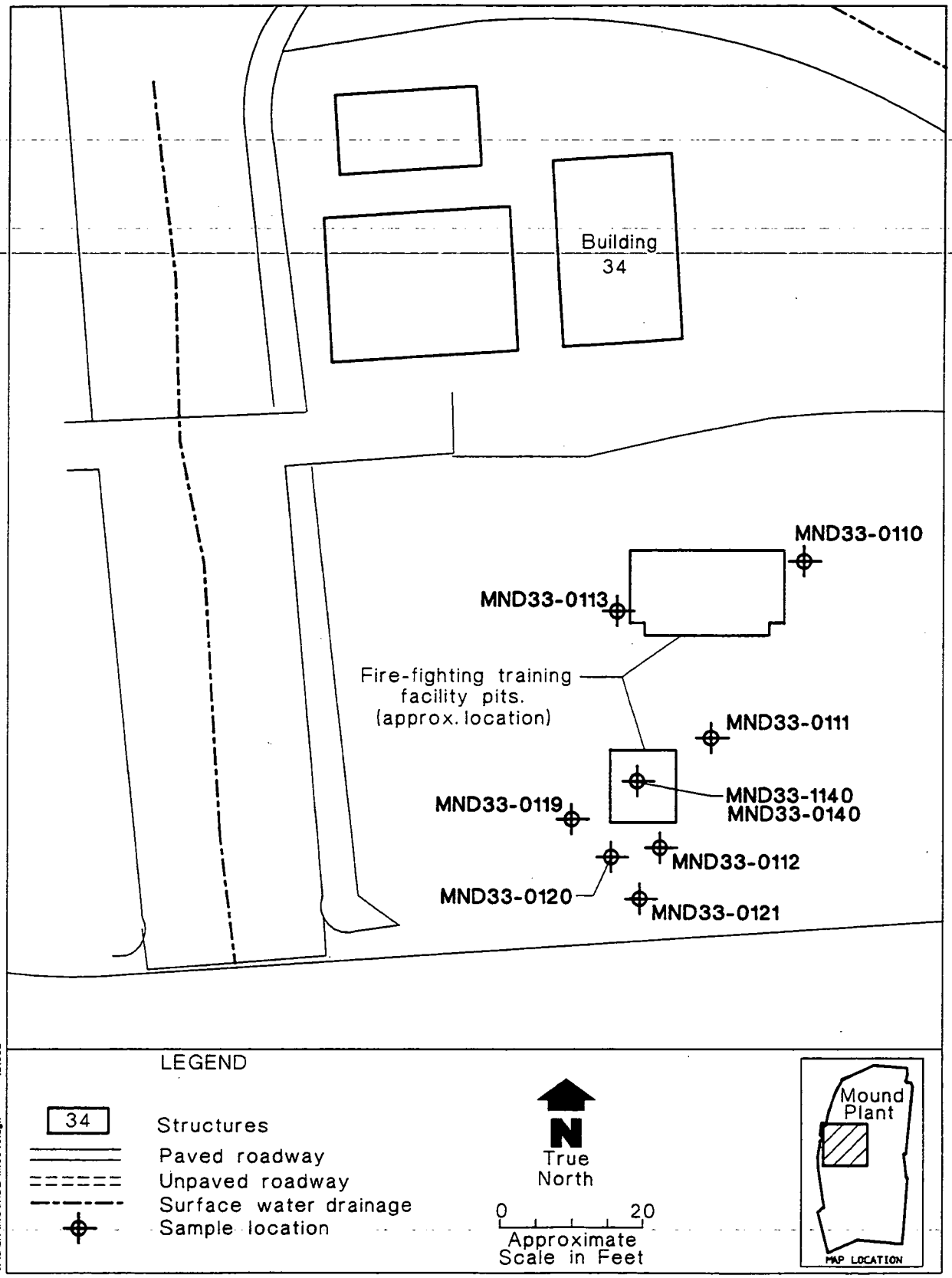


Figure 2.13. Building 34 Fire Fighting Training Pits soil sample locations.

Table II.13. Building 34 Fire-Fighting Training Pits Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0110	MND33-0110-0001	Soil	1/21/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate; gamma spec.
	MND33-0110-0002	Soil	1/21/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate; gamma spec.
	MND33-0110-1002	Soil	1/21/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate.
	MND33-0110-0003	Soil	1/21/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate.
	MND33-0110-5003	Water	1/21/92	Ambient blank	TCL VOCs.
	MND33-0110-0004	Soil	1/22/92	13.0-15.0	TCL VOCs; dioxins/furans; lithium.
	MND33-0110-0005	Soil	1/22/92	17.0-19.0	TCL VOCs; dioxins/furans; lithium.
MND33-0111	MND33-0111-0001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0111-0002	Soil	1/22/92	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0111-0003	Soil	1/22/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
MND33-0112	MND33-0112-0001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-1001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-0002	Soil	1/22/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-0003	Soil	1/22/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0112-4003	Water	1/27/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
MND33-0113	MND33-0113-0001	Soil	1/27/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0113-0002	Soil	1/27/92	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0113-0003	Soil	1/27/92	9.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0113-0004	Soil	1/27/92	13.0-15.0	TCL VOCs; lithium; dioxin/furans.
	MND33-0113-0005	Soil	1/27/92	15.0-17.0	TCL VOCs; lithium; dioxin/furans.
	MND33-0113-0006	Soil	1/27/92	17.0-20.0	TCL VOCs; lithium; dioxin/furans.
MND33-0119	No sample collected				
MND33-0120	No sample collected				
MND33-0121	No sample collected				
MND33-0140	MND33-0140-0001	Sediment	2/15/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
MND33-1140	MND33-1140-0001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-1140-1001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-1140-2001	Water	2/20/92	---	TCL VOCs.
	MND33-1140-5001	Water	2/20/92	---	TCL VOCs.

BGS - Below Ground Surface
EPH - Extractable Petroleum Hydrocarbons
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

- MND33-0111-0001 — Interval 0.0 to 2.0 ft BGS. Two 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain required sample volume.
- MND33-0112-0001 — Interval 0.0 to 2.0 ft BGS. Two 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain required sample volume.
- MND33-0112-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS interval split spoon was necessary to obtain the required sample volume.
- MND33-0112-0003 — An oil-like substance was discovered in the 8.0- to 10.0-ft BGS and the 10.0- to 12.0- ft BGS interval split spoon samples. Because of this observation, the boring was discontinued at 12.0 ft BGS.
- MND33-0113-0001 — Interval 0.0 to 2.0 ft BGS. Three 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain the required sample volume.
- MND33-0113-0006 — Interval 17.0 to 20.0 ft BGS. Split spoon samples from the 17.0- to 19.0-ft and 19.0- to 20.0-ft BGS intervals were necessary to obtain required sample volume.

Surface soil sampling intervals (0.0 to 2.0 ft BGS) were collected for soil analysis at the four borings completed at the Building 34 Fire-Fighting Training Pits because of the occurrence of surface staining in each area sampled.

2.14. BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT

2.14.1. Site History

2.14.1.1. Description of the Building 34 Historical Fire-Fighting Training Pit

While sampling was in progress at the Building 34 Oil Burn Structure, information became available that documented the presence of an additional, historical fire-fighting training pit in the vicinity of Building 34 between the oil burn structure and the Plant drainage ditch (Mauzy 1992a). The Building 34 Historical Fire-Fighting Training Pit is located approximately 25 ft northwest of the oil burn structure (as shown in Figure 2.12(a)) and is approximately 15 ft by 10 ft.

2.14.1.2. Potential Area Contaminants

Diesel fuel was reportedly used in the historical fire-fighting training pit to create demonstration fires. No known materials regulated under RCRA were stored or handled at the historical fire-fighting training pit. The burning of solvents and oils at the historical fire-fighting training pit has not been documented. However,

burning events involving solvents and oils can result in possible contamination involving dioxin/furans, and these compounds have been considered as potential area contaminants.

Recently obtained information has identified the Building 34 Historical Fire-Fighting Training Pit area as a site where a cleanup of depleted uranium may have occurred.

Prior environmental soil gas samples have been collected near Building 34, one at Station 31 near the fire-fighting training facility, and at Station 30, which was near the former aviation fuel tank. The samples were collected as part of the Area B OU 1 Investigation. The samples were analyzed for TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. At Station 30, toluene was found at 0.24 µg/L; and at Station 31, benzene and toluene were found at 0.07 µg/L and 0.14 µg/L, respectively.

2.14.2. Field Investigation Procedures

The objective of sampling at the Building 34 Historical Fire-Fighting Training Pit was to assess whether the site is or has been a source of hazardous contaminant releases to the environment.

The Building 34 Historical Fire-Fighting Training Pit area sampling activities were conducted by hollow stem auger drilling techniques using split spoon samplers. Soil sampling intervals and analytical parameters for the borings at the historical fire-fighting training pit were completed in a manner consistent with the OU 3 Work Plan specifications for the Building 34 Fire-Fighting Training Pits area. The field activities and analytical laboratory procedures were conducted under the approved OU 3 project protocols. Subsurface soil samples were collected from two boreholes in close proximity to the pit (Figure 2.14). The soils in the vicinity of the Building 34 Historical Fire-Fighting Training Pit are generally comprised of plastic, gravelly clay at least to a depth of 12.0 ft BGS.

Soil sampling for dioxin/furan analyses was conducted at the Building 34 Historical Fire-Fighting Training Pit as requested by U.S. EPA during review of Revision 2 of the OU 3 LFI Work Plan. Dioxin/furan analyses were requested at sites where the burning of solvents and oils may have occurred. Dioxin/furan analyses were performed on all soil samples collected at the Building 34 Historical Fire-Fighting Training Pit. All samples collected at the Building 34 Historical Fire-Fighting Training Pit were analyzed for dioxin/furan congener totals (tetra-octa) and for all 2,3,7,8- substituted isomers of dioxin/furans. All detections of 2,3,7,8-substituted isomers on the primary analytical column underwent secondary column confirmation, except for octa isomers of dioxin/furans.

Information obtained in July 1991 indicated that the disposal of lithium was not conducted in Area C as described in the OU 3 Work Plan. Instead, disposal occurred in a swampy area at the present location of

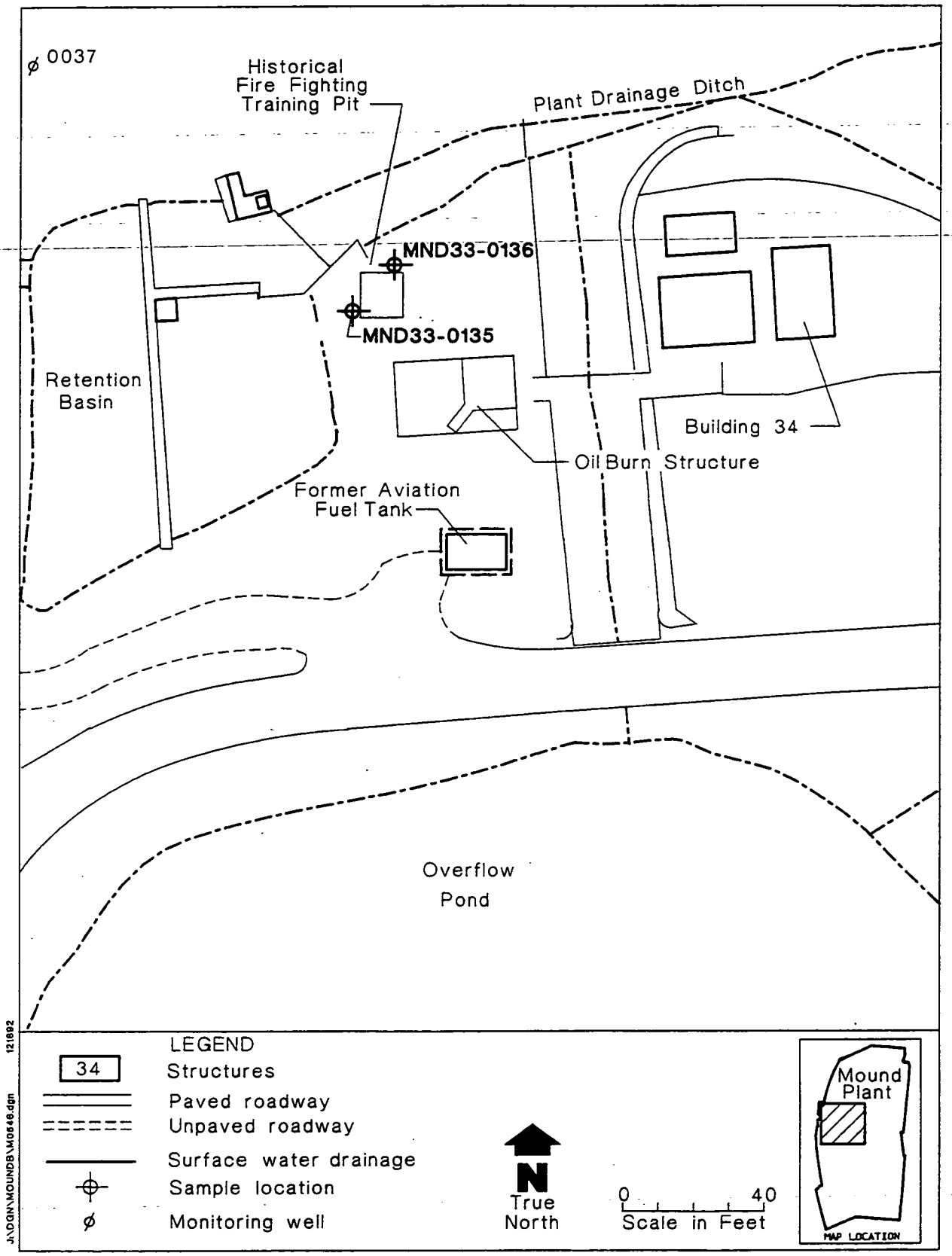


Figure 2.14. Building 34 Historical Fire Fighting Training Pits soil sample locations.

Building 34. Based upon this information, lithium analysis was included for all soil samples collected at the Building 34 Historical Fire-Fighting Training Pit.

Based on recently obtained information concerning a cleanup of depleted uranium at the Building 34 area, surface and near surface soils were analyzed via gamma spectroscopy. The samples, archived at IT Laboratories, were analyzed for cesium-137; potassium-40; radium-224, -226, and -228; and thorium-234, a daughter of uranium-238.

Soil sample collection at the Building 34 Historical Fire-Fighting Training Area was conducted by WESTON representatives on 12 and 13 February 1992. Samples were shipped to IT Laboratories for analysis. Table II.14 summarizes the samples collected including the sample identification number, sample depth interval, date sampled, and the analytical parameters requested. Sampling protocol at the site followed approved OU 3 LFI procedures.

2.15. BUILDING 34 FORMER AVIATION FUEL TANK

2.15.1. Site History

2.15.1.1. Description of Building 34 Former Aviation Fuel Tank

The Building 34 Former Aviation Fuel Tank was located along the western edge of the tributary valley that trends east-west and occupies a lowland at the Mound Plant. The Building 34 Former Aviation Fuel Tank was located southwest of Building 34 and directly north of the overflow pond (Figure 2.12(a)). The 5,000-gallon underground storage tank supplied aviation fuel through an underground pipe to the Building 34 Oil Burn Structure. The aviation fuel tank was placed in service in the early 1970s and was removed from service in 1975.

Approximately 230 gallons were pumped from the tank in 1988 for proper disposal, leaving approximately 20 gallons of aviation fuel and sludge in the tank until the tank's removal on 29 November 1991 (DOE 1992c; Bowser-Morner 1991). A written closure report for the tank closing was provided to OEPA (DOE 1992c). On 29 August 1991, as part of the OU 3 LFI sampling program, the Building 34 Former Aviation Fuel Tank excavation was reopened for additional soil sampling 1 ft below and directly adjacent to the concrete foundation pad (depth of 10.0 ft BGS) and under the former tank piping.

Table II.14. Building 34 Historical Fire–Fighting Training Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33–0135	MND33–0135–0001	Soil	2/12/92	3.0–6.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33–0135–0002	Soil	2/12/92	8.0–10.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33–0135–5001	Water	2/12/92	---	TCL VOCs.
MND33–0136	MND33–0136–0001	Soil	2/13/92	3.0–6.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33–0136–1001	Soil	2/13/92	3.0–6.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.
	MND33–0136–0002	Soil	2/13/92	8.0–12.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33–0136–4001	Water	2/13/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; lithium; dioxin/furans; EPH.

BGS – Below Ground Surface
ft – Feet
EPH – Extractable Petroleum Hydrocarbons
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.15.1.2. Potential Area Contaminants

The former tank that was located at Building 34 contained aviation fuel. No leaks or spills were reported during the tank operation. Based on visual observations during tank removal, the part of the tank that was in contact with the sand fill was in good condition. However, the part of the tank that was in contact with the surrounding gravelly clay was severely corroded (DOE 1992c). Several small holes were observed in the upper third of the tank (Bowser-Morner 1991). One of the conclusions of the Bowser-Morner report was that some leakage may have occurred while the tank was in operation and/or out of service. In addition, PID readings were taken along the exposed tank pipeline before removal of the piping. Elevated PID readings up to 160 units were reported by Bowser-Morner at a location east of the tank near the valves for the test fire units.

Prior environmental soil gas samples have been collected near Building 34, one at Station 31 near the fire-fighting training facility, and at Station 30, which was near the former aviation fuel tank. The samples were collected as part of the Area B OU 1 Investigation. The samples were analyzed for TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. At Station 30, toluene was found at 0.24 µg/L.

2.15.2. Field Investigation Procedures

The objective of sampling at the Building 34 Former Aviation Fuel Tank was to assess whether the site is or has been a source of hazardous contaminant releases to the environment. The Building 34 Former Aviation Fuel Tank sampling activities included the excavation of soil and sampling of the soils at five locations by use of stainless steel scoops. Sampling locations included four samples from the bottom of the excavation at a depth of approximately 1 ft below the top of the concrete tank foundation pad. One soil sample was collected along each side of the rectangular concrete pad. An additional soil sample was collected from the side wall of the excavation, directly below the former location of fuel discharge piping (MND33-0024). Sample locations are presented in Figure 2.15. The soils in the vicinity of the Building 34 Former Aviation Fuel Tank are generally composed of gravelly and sandy clays to a depth of 8.0 ft BGS (DOE 1992c). Groundwater was not encountered in the tank excavation during either of the two sampling rounds.

Soil sample collection at the Building 34 site was conducted by WESTON representatives on 29 August 1991. The samples were shipped to IT Laboratories for analysis. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.15.

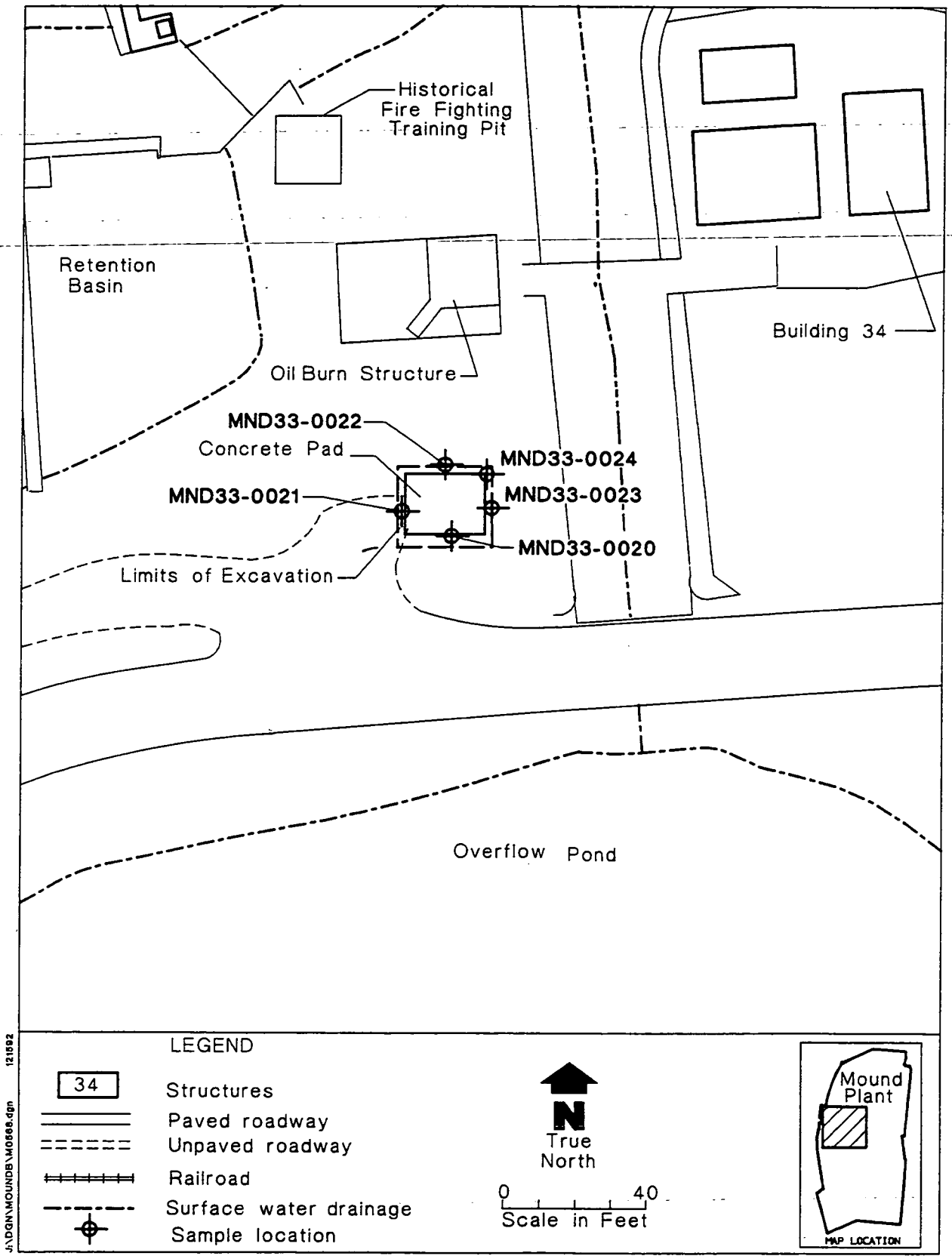


Figure 2.15. Building 34 Former Aviation Fuel Tank soil sample locations.

Table II.15. Building 34 Former Aviation Fuel Tank Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0020	MND33-0020-0001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0021	MND33-0021-0001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0022	MND33-0022-0001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0023	MND33-0023-0001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0023-1001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
MND33-0024	MND33-0024-0001	Soil	8/29/91	1.0-2.0[a]	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH.
	MND33-0024-5001	Water	8/29/91	---	TCL VOCs.

[a]Feet below base of excavation next to cement foundation pad.
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for the Building 34 Former Aviation Fuel Tank sample collection is presented below:

- The sampling depth for all surface soil samples at the Building 34 Former Aviation Fuel Tank sites were extended deeper than 0 to 6 inches as specified in the Work Plan at the request of OEPA because of the possible loss of VOCs following tank excavation.
- The sampling protocol for soil samples was modified to include four locations along the sides of the in-place concrete tank foundation pad and one location below the discharge pipe.

2.16. AREA C FORMER EQUIPMENT STORAGE AREA

2.16.1. Site History

2.16.1.1. Description of the Area C Former Equipment Storage Area

Area C is located in the Mound Plant lower central valley (Figure 2.16(a)). "Area C" is the name given to a site where lithium carbonate containers were treated and disposed of. From its identification by the CEARP Program in 1986 through mid 1991, this area was believed to be in the location described in the OU 3 Work Plan, east of Building 34, as shown in Figure 2.16(a). However, in 1991 it was determined that the disposal area was more nearly centered around the current location of Building 34. In this subsection, the investigation of the erroneously located "Area C" is described. This area was investigated despite new information about its correct location, because geophysical surveys had identified subsurface anomalies in the area.

In the 1980s, Area C was a grassy field that was used as a contractors' equipment yard and staging area for nonhazardous material, such as semi-trailers and rebar. Storage of contractors' equipment was discontinued in the area in the 1990s and the area currently is an undeveloped grassy field. Structures west of Area C include Building 34, a drop tank, a submergence tank, and a test burn facility. The Building 34 Oil Burn Structure, Former Aviation Fuel Tank, Fire-Fighting Training Pits, and retention basins are also located to the west of Area C.

Located within Area C is monitor well 0125. Located to the east of Area C and southwest of the former location of Old Building 72 is monitor well 0151 as shown in Figure 2.16(a).

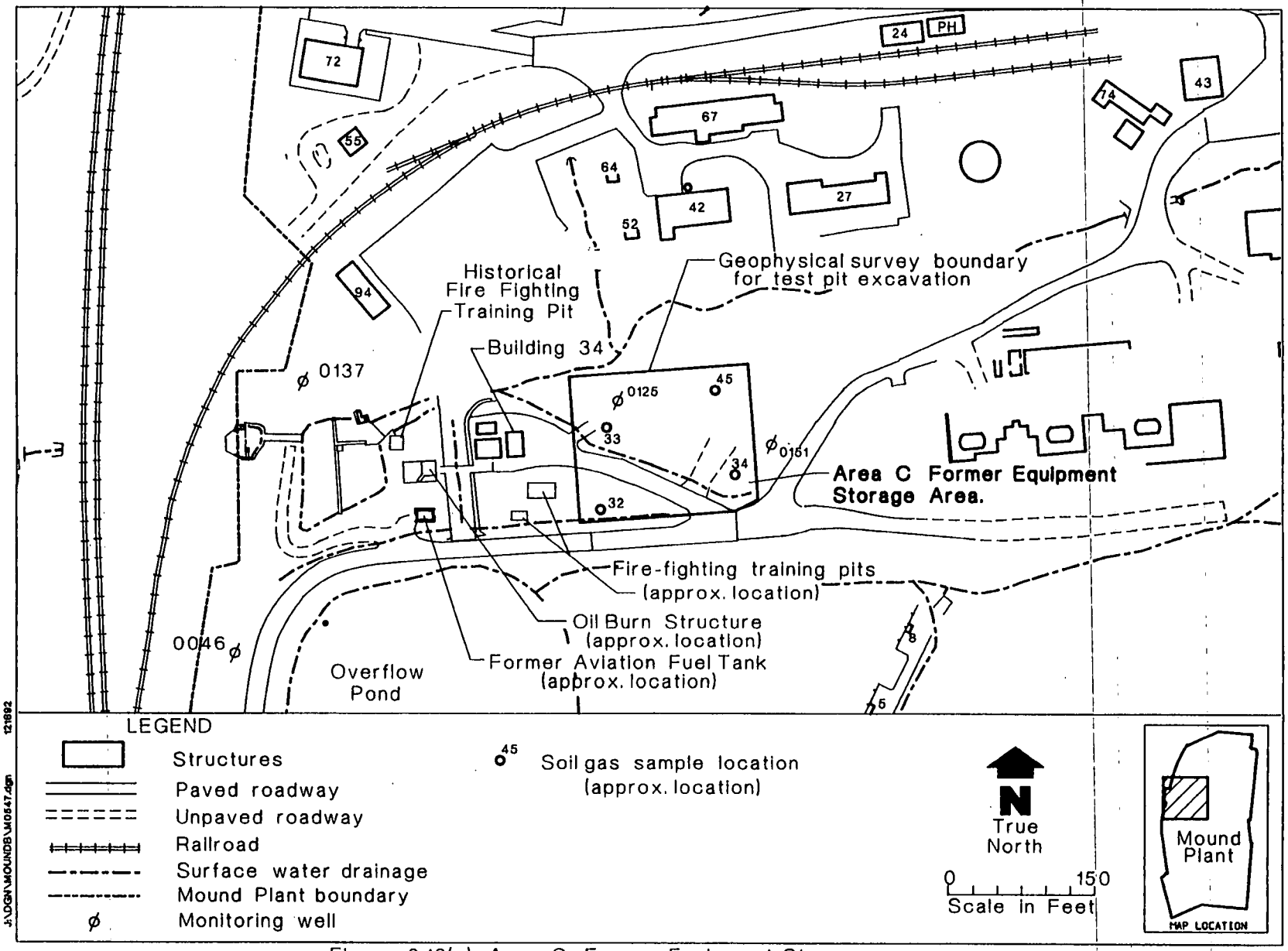


Figure 2.16(a). Area C Former Equipment Storage area.

2.16.1.2. Potential Area Contaminants

Metal debris from Area B was reported to have been moved to Area C in 1950 (DOE 1989c). The metal was originally placed in Area B with polonium-210-contaminated wood. The wood was burned in 1950 and the remaining metal debris may have been moved to Area C (DOE 1989b), or to Area 7 (DOE 1991g).

A geophysical investigation was performed in Area C using two techniques, ground penetrating radar (GPR) and magnetic measurement. The objective of the geophysical investigation was to identify locations in Area C where ferrous metal objects were buried. Magnetic anomalies were detected at eight locations in Area C as shown in Figure 2.16(b). Only three of the anomalies were associated with the objects detected on the GPR records. Five of the magnetic anomalies presented in Figure 2.16(b) were located in close proximity to the four soil gas sample stations.

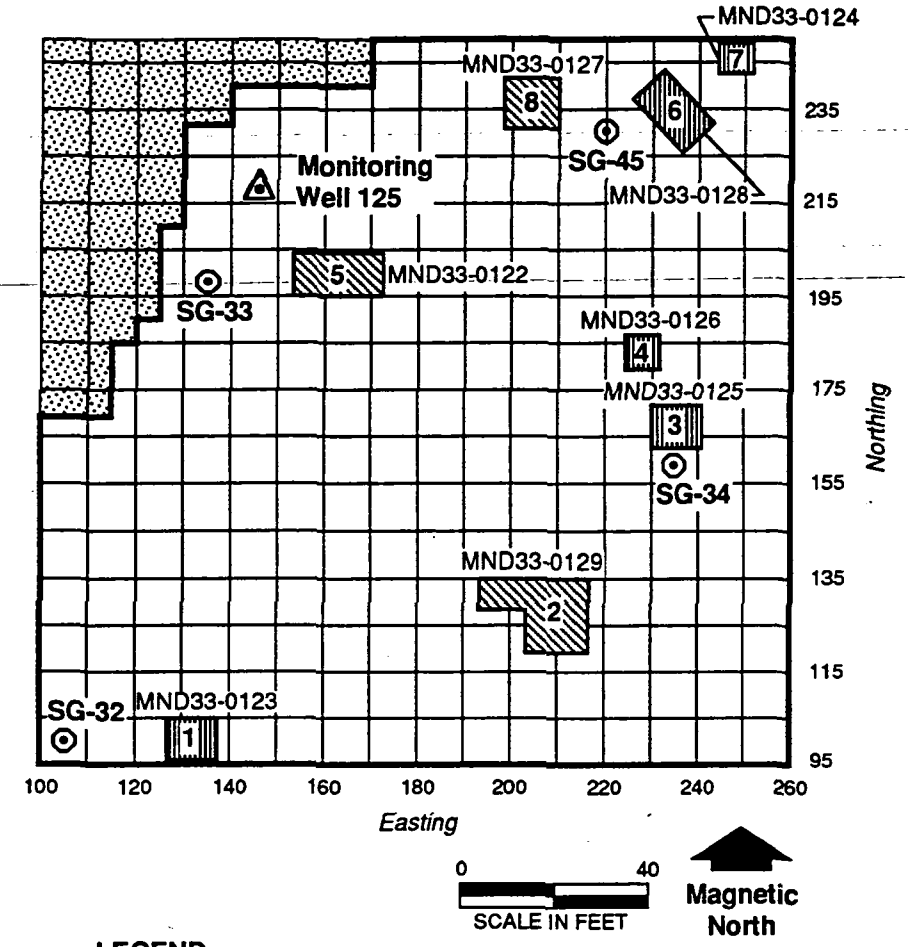
During a site tour William Criswell (WESTON) was informed by Herb Meyer and Joe Garner (formerly with EG&G) that prior to the 1960s there were two farm buildings at the present location of Area C (WESTON letter report 30 July 1991). The buildings were demolished in the early 1960s. Based on this information and the geophysical anomalies identified during the geophysical survey it was assumed that the anomalies were because of the presence of construction debris. The sampling strategy detailed in the OU 3 Work Plan was not modified during the LFI.

Prior environmental soil gas samples were collected in the area of Area C in June 1987. The samples were analyzed for six VOCs: TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. The soil gas survey showed detectable concentrations of all six analytes at the Area C locations.

The groundwater table in Area C is expected to vary between depths of 15.0 and 25.0 ft BGS based on the static water level measurements from monitor well 0125. Analyses for VOCs from the monitor well in the area have shown no detectable contamination.

2.16.2. Field Investigation Procedures

The objective of sampling at the Area C Former Equipment Storage Area was to investigate the presence or non-presence of contamination at the site, which was suspect because of the results of previous geophysical surveys. The field investigation was guided by results of the geophysical investigation and interpretation of eight geophysical anomalies. The Area C investigation activities included eight test pit



LEGEND

- Boundaries of test pits
- 4 Test pit location sample ID
- Test pit defined by magnetic data
- Test pit defined by magnetic and GPR data
- *Area where site culture interferes with interpretation of magnetic data*
- Soil gas location
- Monitoring well location

Note: Coordinates on figure are referenced to magnetic north and to field markers that delineate the perimeter of survey area.

MOUND/TestPit/11-09-92

Figure 2.16(b). Area C Former Equipment Storage Area test pit locations.

excavations using a backhoe. The test pit areas were marked according to coordinates as stipulated in the Work Plan and are shown on Figure 2.16(b). Excavation work was conducted by WESTON representatives from 31 January to 4 February 1992. Test pit excavations were performed according to Work Plan guidelines. Three of the test pits (nos. 2, 5, and 8) were associated with anomalies found using GPR techniques. The remaining test pits (nos. 1, 3, 4, 6, and 7) were associated with the anomalies found during the magnetic survey.

Excavation work was performed while wearing Level C personal protection equipment. Readings with direct-reading instruments were taken at each 2.0-ft-depth interval from soil collected from the backhoe bucket as specified in the OU3 Work Plan and Sampling and Analysis Plan. The soil was collected using stainless steel scoops and bowls. Photoionization detector and flame ionization detector instrument readings were not greater than 1.0 unit above background for all samples and therefore, as specified in the OU3 Work Plan, no samples were retained for laboratory analysis.

Debris and any other objects found during the excavation activities were described and were returned to their original locations. Each test pit was backfilled during the same day of excavation. The following subsections describe the materials encountered in each individual test pit. The only deviation from approved protocol was that plastic sheeting was only used for the first excavation (no. 5) for soil placement. The other test pits had soil directly placed onto the native surface soils. This deviation from standard protocol was implemented when problems arose as a result of the saturated condition of the soil. Each test pit was backfilled with excavated soils immediately following completion of excavation and screening activities.

2.16.2.1 Test Pit No. 1

Test pit no. 1 was excavated to an approximate depth of 7.5 ft BGS on 1 February 1992. Groundwater was encountered during test pit operations at a depth of 7.5 ft BGS. Native soil was encountered at approximately 6.5 ft BGS. Nonmetallic objects were found to a depth of approximately 6.0 ft BGS; metal objects were encountered to a depth of approximately 3.0 BGS. The following objects were found in test pit no. 1:

- Nonmetallic
  - Small pieces of charred wood.
  - Small strips of plastic.
- Metallic
  - Metal pipe, 1.5 ft by 1 inch diameter.
  - Strip of metal, flat, 6 inches long.
  - Metal 55-gallon drum lid.

2.16.2.2. Test Pit No. 2

Test pit no. 2 was excavated to an approximate depth of 2.0 ft BGS on 4 February 1992. The pit contained a concrete stormwater drainage pipe which originated upgradient to the east and was oriented east-west across the pit. A change in scope for excavation was executed as a result of uncovering the storm sewer line. The letter dated 11 February 1992 (Mauzy 1992b) documents the change in scope. The L-shaped test pit was divided into two sections by the storm line, one side being approximately twice as large as the other. Extreme care was taken so as not to disturb the pipe. One 6-inch-long piece of metal rebar was uncovered in the long portion of test pit no. 2.

2.16.2.3. Test Pit No. 3

Test pit no. 3 was excavated to a depth between 1.0 and 2.0 ft BGS on 2 February 1992. Within 1 ft of the ground surface, a concrete foundation and flooring containing metal rebar was uncovered. Where possible the test pit was excavated to a depth of 2.0 ft BGS and the configuration of the foundation and flooring was noted in the test pit log.

2.16.2.4. Test Pit No. 4

Test pit no. 4 was excavated where possible to a depth of 2.0 ft BGS on 2 February 1992. Native soils were observed at a depth of approximately 2.5 ft BGS. The following items were found in test pit no. 4:

- Nonmetallic/metallic
  - A concrete foundation and flooring containing metal rebar was uncovered within 1 ft of the ground surface.
- Metallic
  - Metal fence post, 3 ft long with barbed wire.
  - Metal cap from vehicle gasoline tank.
  - Heavy steel pipe, 3 ft long, 1 inch diameter.

2.16.2.5. Test Pit No. 5

Test pit no. 5 was excavated to an approximate depth of 8.0 ft BGS on 31 January 1992. The test pit was completed in two sections. Native soils were encountered in the test pit below 4.0 ft BGS. Four pieces of metal rebar between 1.0 and 1.5 ft long and 0.5 inches in diameter were found in test pit no. 5 within 1 ft of the ground surface.

2.16.2.6. Test Pit No. 6

Test pit no. 6 was excavated to a depth of 5.0 ft BGS on 3 February 1992. Native soils were encountered at a depth of approximately 4.0 ft (BGS). The following objects were found, all within the upper 3.0 ft of the excavation:

- Nonmetallic/metallic
  - Concrete foundations and flooring containing rebar.
- Metallic
  - Several pieces of sheet metal (up to 2 ft long).
  - Approximately 40 pieces of rebar (up to 15 ft long).
  - Portions of rusted 55-gallon drum.

2.16.2.7. Test Pit No. 7

Test pit no. 7 was excavated to a depth of approximately 8.0 ft BGS on 2 February 1992. Native soils were encountered at a depth of approximately 6.5 to 7.0 ft BGS. The following objects were found in the upper 6.0 ft of soil:

- Nonmetallic
  - Bricks
  - Cinder blocks
  - Wood
- Metallic
  - Metal chains and steel cables (up to 1.5 ft long).
  - Metal posts, and wire and barbed wire.
  - Concrete slab fragments with metal rebar.

2.16.2.8. Test Pit No. 8

Test pit no. 8 was excavated to a depth of approximately 7.0 ft BGS on 3 February 1992. Native soils were encountered in the excavation at a depth of 5.0 to 6.0 ft BGS. The following objects were found in the upper 4.5 ft:

- Nonmetallic
  - Bricks
  - Cinder blocks

- Concrete blocks

- Nonmetallic
  - Metal post
  - Several pieces of metal rebar

2.17. AREA C DRUM STAGING AREA

2.17.1. Site History

2.17.1.1. Description of the Area C Drum Staging Area

Area C is located in the Mound Plant lower central valley (Figure 1.3). Located east of Area C is the former location of Old Building 72, a past hazardous waste staging area. When Old Building 72 was in service, a drum staging area existed to the northwest of the building. This historical drum staging area is adjacent to the northeast corner of Area C. Monitor well 0151 is located southwest of the drum staging area.

2.17.1.2. Potential Area Contaminants

During closure activities, VOC-contaminated soils were identified and removed from the vicinity of Old Building 72. The volume and nature of the wastes stored in the drums held in the staging area are not documented. There are no records that contaminants have been released into soils in the drum staging area. Details concerning closure activities for the historical hazardous waste storage area are found in the Operable Unit 9 Site Scoping Report, Volume 7, Waste Management (DOE 1991g).

2.17.2. Field Investigation Procedures

The objectives of sampling at the Area C Drum Staging Area are to investigate the presence or non-presence of contamination in the soils at the site. The Area C Drum Staging Area sampling activities included soil sampling by hollow stem auger drilling techniques using 3-inch split spoon samplers. Soil sample collection was conducted by WESTON representatives on 22 and 23 November 1991. Samples were sent to IT Laboratories for chemical analysis.

Soil samples were collected at two locations as shown in Figure 2.17. One borehole was on the east end of the historical drum staging area, and the second borehole was located on the southwest corner of the historical drum staging area. The soils and overburden in the historical drum staging area consists of a gray, gravelly, clayey, sandy silt to a depth of 10.0 ft BGS. Groundwater was not encountered during drilling of the boreholes at this location. A summary of samples collected at each borehole location, including

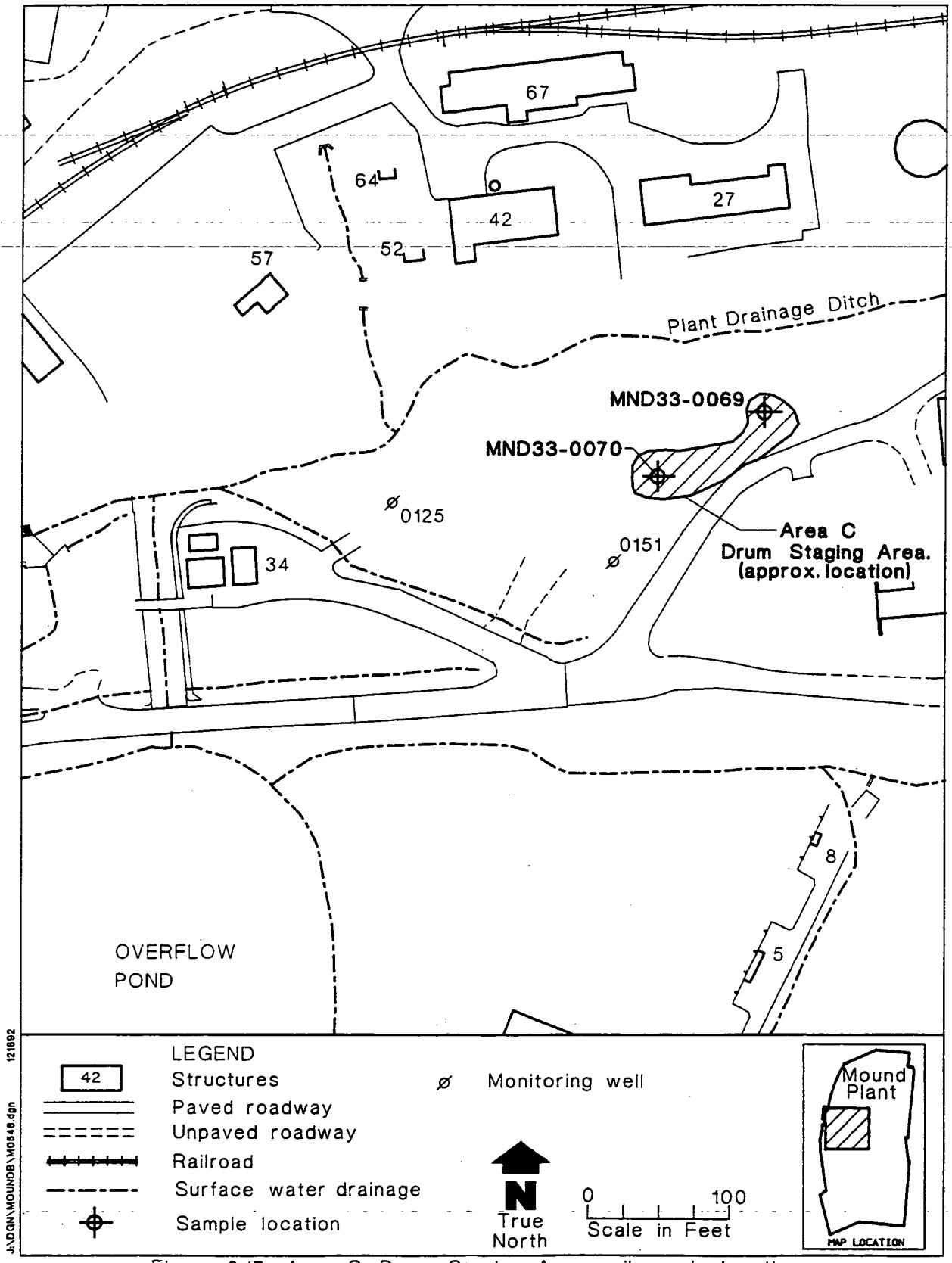


Figure 2.17. Area C Drum Staging Area soil sample locations.

sample identification number, sampling depth interval, date sampled, and requested analytical parameters, is presented in Table II.16.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations from approved sampling protocol is presented below:

- The specific locations of soil borings 0069 and 0070, as documented in the OU 3 Work Plan, were moved based on the findings of the OU 9 Volume 6 Photo History Report (DOE 1991c). Soil boring 0069 was moved approximately 50 ft northeast of the original location and soil boring 0070 was moved approximately 20 ft east of the original location.

- There were no samples collected at the 15.0- or 20.0-ft BGS interval (in compliance with the Work Plan), because the HNu and OVA readings were less than 1.0 unit above background during screening of the 7.5- to 10.0-ft BGS sample interval.

The following is a summary of deviations from approved protocols for each applicable sample collected at Area C Drum Staging Area:

- MND33-0069-0001 — Interval 0.0 to 0.5 ft BGS. Three surface split spoon samples were necessary to obtain the required sample volume.

- MND33-0069-0002 — Interval 3.0 to 7.0 ft BGS. The 5.0- to 7.0-ft BGS split spoon was needed, in addition to the 3.0- to 7.0-ft BGS sample, to obtain the required sample volume.

- MND33-0070-0001 — Interval 0.0 to 0.5 ft BGS. Four surface split spoon samples were necessary to obtain the required sample volume.

- MND33-0070-0002 — Interval 3.0 to 7.0 ft BGS. The 5.0- to 7.0-ft BGS split spoon was needed, in addition to the 3.0- to 7.0-ft BGS sample, to obtain the required sample volume.

2.18. AREA H PYROTECHNIC WASTE DISPOSAL AREA

2.18.1. Site History

2.18.1.1. Description of the Area H Pyrotechnic Waste Disposal Area

Area H encompasses four sites used for disposal processes for pyrotechnic and explosive wastes and is located near Building 53 in the southwestern portion of SM/PP Hill at Mound Plant (Figure 1.3). The Area H Pyrotechnic Waste Disposal Area was formerly used for disposal of pyrotechnic materials in solution (RFA 1988). The area is reported to be adjacent to the southern fence line of Area H, but the exact boundaries

Table II.16. Area C Drum Staging Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0069	MND33-0069-0001	Soil	11/22/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0069-1001	Soil	11/22/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0069-0002	Soil	11/22/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0069-0003	Soil	11/22/91	8.0-8.92	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
MND33-0070	MND33-0070-0001	Soil	11/23/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0070-0002	Soil	11/23/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0070-1002	Soil	11/23/91	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0070-0003	Soil	11/23/91	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

of the disposal area are not known. Interviews conducted by the OEPA indicated that Mound Plant personnel disposed of small quantities of pyrotechnic wastes near the western fence line of Area H behind the retort. Wastewater containing dissolved pyrotechnic materials was last disposed of in this area in 1985 (RFA 1988).

2.18.1.2 Potential Area Contaminants

Throughout an unknown period of time ending in 1984, manufacturing operations produced small quantities of waste solvents (primarily acetone) and reacted pyrotechnic material including potassium perchlorate (DOE 1986). At Area H, these materials were dissolved in water and filtered; the filtrate was poured onto the ground along the southern fence line of Area H. Land treatment was used because it was believed that inorganic salts in the solutions would not be removed by the units in the sanitary wastewater treatment plant. The amount of waste stream materials disposed of ranged from 5 to 20 gallons per year (DOE 1986). For acetone, the amount treated annually was far below the 24-hour reportable quantity of 5,000 pounds. The acetone that was present is listed as spent, nonhalogenated solvent F003. Any residual pyrotechnic materials would be listed because of ignitability (D001) or reactivity (D003).

No prior environmental samples have been collected at the Area H Pyrotechnic Waste Disposal Area. There are no monitor wells or soil gas sampling locations in the vicinity of Area H.

2.18.2. Field Investigation Procedures

The objective of sampling at the Area H Pyrotechnic Waste Disposal Area was to identify hazardous contaminants that may be present. Since the boundaries of the pyrotechnic waste disposal area are not well defined, sampling in areas of visible residue or staining were used to determine the potential for contamination associated with this site. Stained soils were discovered in an area approximately 3 ft by 2 ft. Soil sample MND33-0090 was placed in this location.

Sampling activities were conducted on 19 November 1991 and from 16 December to 18 December 1991 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

Soil sample locations are shown on Figure 2.18. The soils encountered during drilling ranged from a yellow-brown sandy silt with trace amounts of clay and gravel, to a dark brown gravelly silt. Bedrock was encountered between 3.5 and 4.0 ft BGS, determined from cuttings and auger refusal. Groundwater was not encountered during drilling. A summary of soil samples collected at each location listing the sample

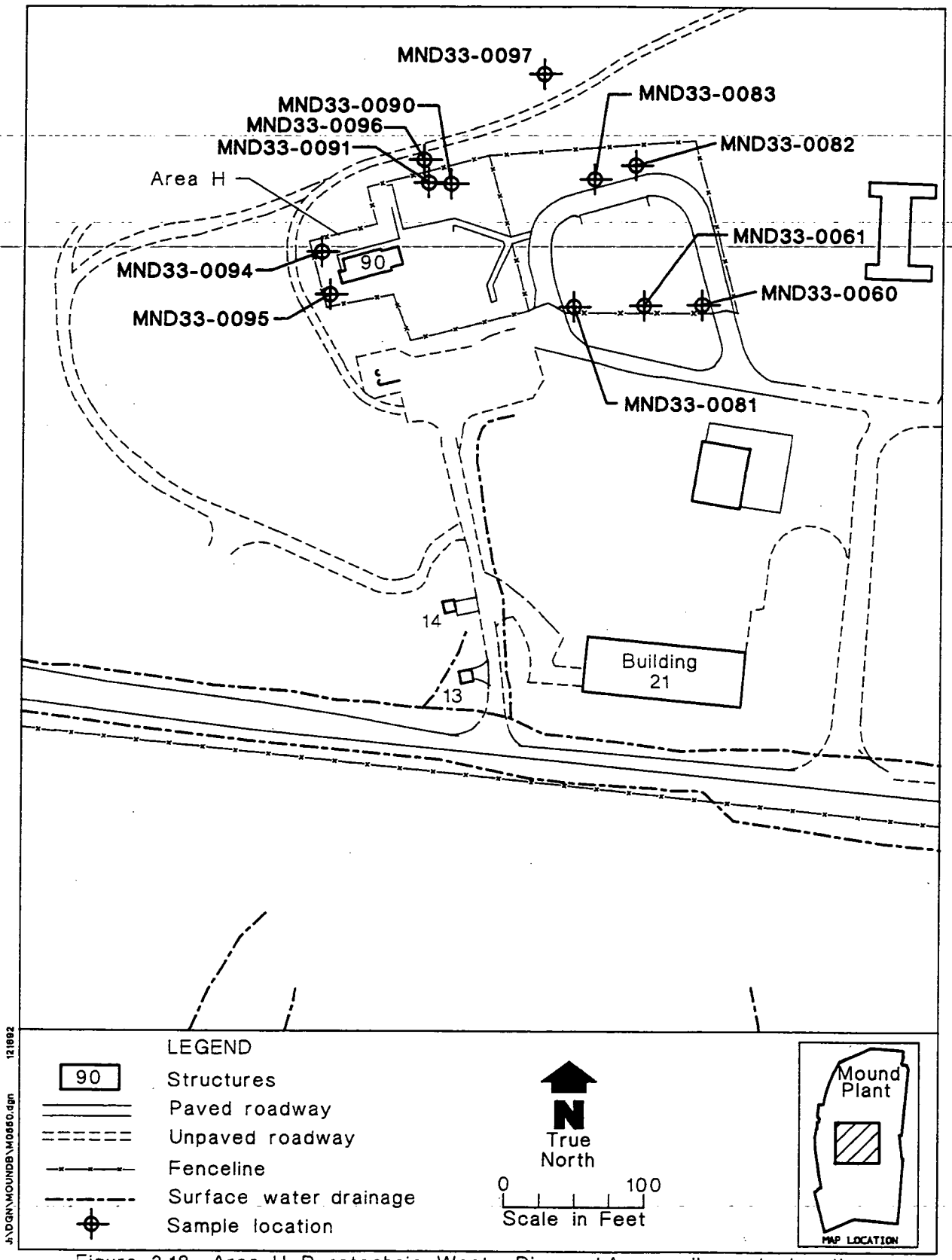


Figure 2.18. Area H Pyrotechnic Waste Disposal Area soil sample locations.

identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.17.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0060-0001 — Interval 0.0 to 2.0 ft BGS. Two surface split spoons were necessary to obtain the required sample volume.
- MND33-0061-0001 — Interval 0.0 to 2.0 ft BGS (19 November 1991). Two surface split spoons were necessary to obtain the required sample volume. In the second split spoon, a white powder chunk (approximately 1 inch in diameter) was encountered with the scoop. The sample was left in the bowl as described in the OU 3 Health and Safety Plan. EG&G retained custody of the sample in order to determine if it was an explosive. EG&G determined that the white powder was not an explosive. Sufficient sample volume did not remain for further analyses and the material was not further identified.
- MND33-0061-0001 — Interval 0.0 to 2.0 ft BGS (16 December 1991). The location was resampled. Two split spoons were necessary to obtain the required sample volume.
- MND33-0081-0001 — Interval 0.0 to 2.0 ft BGS. Two split spoons were necessary to obtain the required sample volume.
- MND33-0082-0001 — Interval 0.0 to 0.5 ft BGS. The sampling interval was 0.0 to 0.5 ft BGS because of split spoon refusal at 0.5 ft BGS. Four split spoons were necessary to obtain the required sample volume.
- MND33-0083-0001 — Interval 0.0 to 2.0 ft BGS. Three split spoons were necessary to obtain the required sample volume. A nitrate/nitrite and chloride sample was collected in addition to the requested analyses.
- MND33-0083-0002 — Interval 2.0 to 2.6 ft BGS. The borehole could only be advanced to 2.6 ft BGS because of split spoon and auger refusal at 2.6 ft BGS. No sample was collected for analyses.
- MND33-0090-0001 — Interval 0.0 to 3.5 ft BGS. The sampling depth went to 3.5 ft BGS to obtain the required sample volume.
- MND33-0094-0001 — Interval 0.0 to 2.0 ft BGS. Three surface split spoons were necessary to obtain the required sample volume. There was no advancement of the borehole to 10.0 ft BGS because split spoon refusal was encountered at approximately 4.5 ft BGS.
- MND33-0096-0001 — Interval 0.0 to 2.0 ft BGS. Two surface split spoons were necessary to obtain the required sample volume.

Table II.17. Area H Pyrotechnic Waste Disposal Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0060	MND33-0060-0001	Soil	11/19/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0061	MND33-0061-0001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0081	MND33-0081-0001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0081-1001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0082	MND33-0082-0001	Soil	12/16/91	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0083	MND33-0083-0001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; nitrate/nitrite; and chloride.
MND33-0090	MND33-0090-0001	Soil	12/17/91	0.0-3.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0090-1001	Soil	12/17/91	0.0-3.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0091	MND33-0091-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0091-0002	Soil	12/17/91	2.0-3.1	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0094	MND33-0094-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0094-1001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0094-5001	Water	12/17/91	---	TCL VOCs.
	MND33-0094-0002	Soil	12/17/92	2.0-4.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0095	MND33-0095-0001	Soil	12/18/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0095-4001	Water	12/18/91	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0095-5001	Water	12/18/91	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0096	MND33-0096-0001	Soil	12/18/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0097	MND33-0097-0001	Soil	12/18/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0097-1001	Soil	12/18/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- MND33-0097-0001 — Interval 0.0 to 2.0 ft BGS. Two surface split spoons were necessary to obtain the required sample volume. There was no advancement of the borehole to 10.0 ft BGS because split spoon refusal was encountered at 3.0 ft BGS and auger refusal was encountered at 3.5 ft BGS. There was no recovery in the 2.0- to 4.0-ft BGS split spoon.

2.19. AREA H TRASH BURNER AREA

2.19.1. Site History

2.19.1.1. Description of the Area H Trash Burner Area

Area H encompasses four sites used for disposal processes for pyrotechnic and explosive wastes and is located near Building 53 in the southwestern portion of SM/PP Hill at Mound Plant (Figure 1.3). The trash burner is an inactive unit located in Area H east of Building 90. It was dismantled in 1988. The trash burner was enclosed in a 64-ft^3 (4-ft by 4-ft by 4-ft) metal box (cubicle) and a 10-ft by 10-ft by 12-ft-high chain-link fence enclosure (DOE 1986), and was used to burn trash contaminated with explosives. A screen gate over the box prevented releases of large particulate matter to the atmosphere. The box was underlain by concrete.

Documentation on the exact procedure used to dismantle the trash burner is not available. Interviews with Mound Plant personnel indicate that concrete and sections of rusty metal were disposed of in a dumpster.

2.19.1.2. Potential Area Contaminants

Waste burned or detonated at the trash burner included mild detonating fuses; pyrotechnic materials; small amounts of explosives; cardboard contaminated with explosives, pentramine cobalt (III) perchlorate, and thermite powder. These materials are RCRA listed under either ignitability (D001) or reactivity (D003). Wastes could also contain organic solvents such as acetone and Freon. Spent acetone is listed as F003.

The trash burner was used to burn up to 40 pounds of high explosives trash per event (DOE 1986). The wastes were destroyed in accordance with U.S. Army Material Command Regulation 385-100 (Army Ordnance Manual), with the concurrence of OEPA and Montgomery County Combined General Health District (MRC 1979). The ash was collected in a 55-gallon drum adjacent to the trash burner.

No prior environmental samples have been collected at the Area H Trash Burner Area. There are no monitor wells or soil gas sampling locations in the vicinity of Area H.

2.19.2. Field Investigation Procedures

The objective of sampling at the Area H Trash Burner Area was to identify hazardous contaminants that may be present. Sampling activities were conducted on 17 December 1991 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

Soil sample locations are shown on Figure 2.19. The soils encountered during drilling consisted of a yellow-brown clayey silt to a sandy silt, with some asphalt. Groundwater was not encountered during drilling. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.18. Sampling protocol at the Area H Trash Burner Area followed approved OU 3 Work Plan procedures.

2.20. AREA H THERMAL TREATMENT UNIT

2.20.1. Site History

2.20.1.1. Description of the Area H Thermal Treatment Unit

Area H encompasses four sites used for disposal processes for pyrotechnic and explosive wastes and is located near Building 53 in the southwestern portion of SM/PP Hill at Mound Plant (Figure 1.3). The thermal treatment unit is located east of Building 90 in Area H. The thermal treatment unit was an active unit operated on a batch basis. The unit consisted of a 55-gallon drum located inside a 10-ft by 10-ft concrete cubicle, covered with a metal screen roof. The concrete walls of the unit are lined with 4-inch-thick steel plate. The floor of the cubicle was covered with sand. Wastes were detonated or burned remotely from an adjacent building. The drum was mounted on fire brick and was cooled by a surrounding base filled with water and antifreeze.

2.20.1.2. Potential Area Contaminants

Explosive wastes were burned in the thermal treatment unit. The wastes include contaminated trash, components and assemblies, bulk high-explosives powder (PETN, RDX, HMX, and tetryl), mild detonating cord and fuses, pyrotechnic powders and trash, hexanitrostilbene wastes, 2-[5-cyanotetrazolato] cobalt (III) perchlorate wastes, thermite powder wastes, and solid primary wastes. These materials are also RCRA listed because of ignitability (D001) or reactivity (D003). Potential contaminants may also include any volatile or semivolatile compound that could be a breakdown product of these materials.

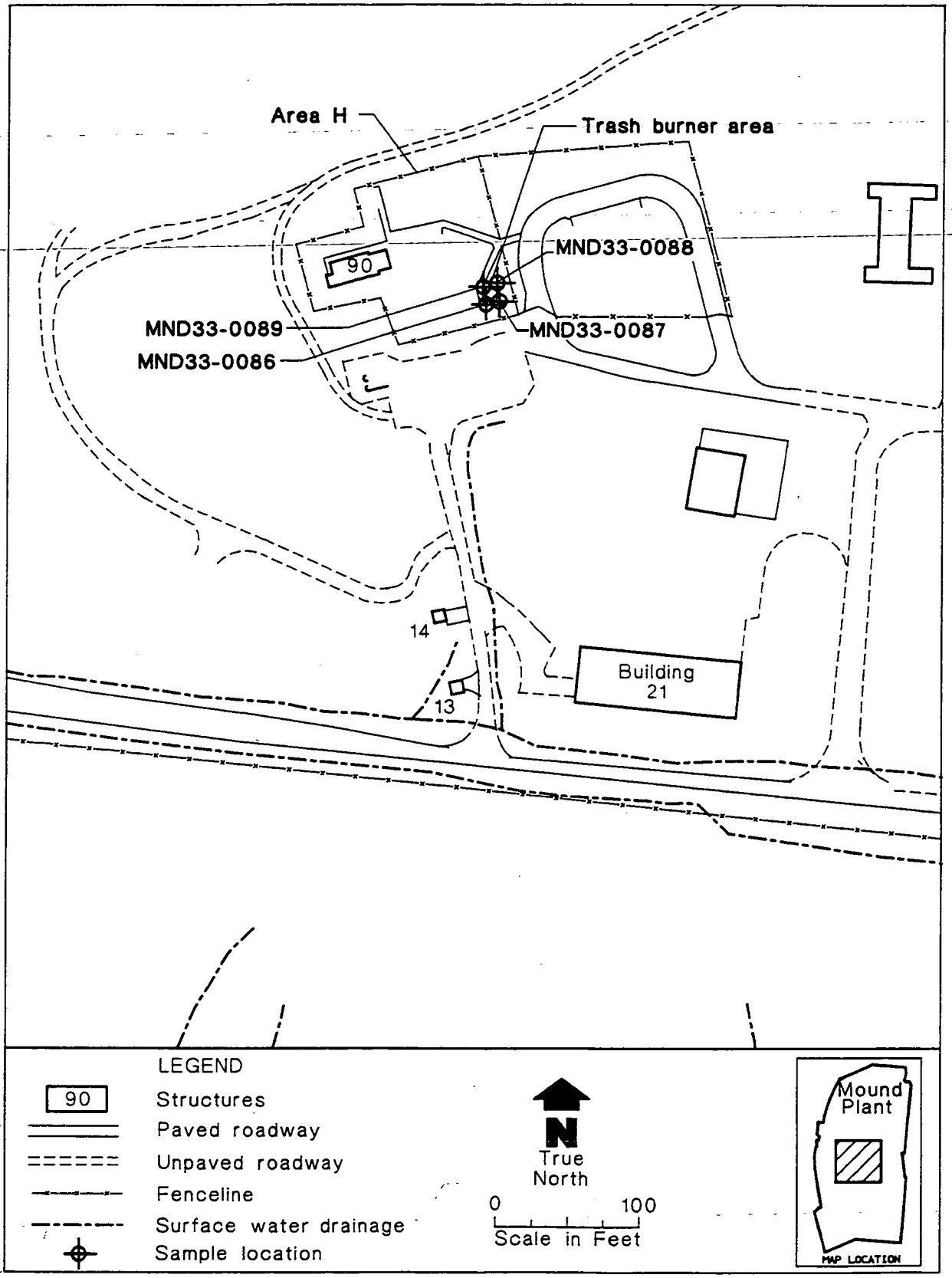


Figure 2.19. Area H Trash Burner Area soil sample locations.

Table II.18. Area H Trash Burner Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0086	MND33-0086-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0086-4001	Water	12/17/91	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
MND33-0087	MND33-0087-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
MND33-0088	MND33-0088-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.
MND33-0089	MND33-0089-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

There are no monitor wells or soil gas sampling locations in the vicinity of Area H.

2.20.2. Field Investigation Procedures

The objective of sampling at the Area H Thermal Treatment Unit was to identify hazardous contaminants that may be present. Sampling activities were conducted on 16 December and 18 December 1991 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

The thermal treatment unit was designated for sampling but was observed during the OU 3 investigation to no longer exist as described in the OU 3 Work Plan. The 55-gallon drum inside the unit was destroyed during the process of burning wastes; therefore, it was not possible to complete the proposed sampling of the drum content inside the unit.

The original rationale for sampling the unit was to describe the waste characteristics of residues that could have remained in the area and possibly migrated into the environment. However, since the completion of the OU 3 Work Plan, a very detailed description of the waste characteristics was provided to OEPA and U.S. EPA in a revised RCRA Part B permit application (DOE 1991f). Thus, the original reason for sampling the thermal treatment unit was no longer valid.

Furthermore, the thermal treatment unit was identified in the revised Part B as being subject to a partial closure under RCRA, while the concrete cubicle where the burns took place will continue to operate and will be subject to future RCRA closure. Because closure requirements will include characterizing any environmental contamination from ongoing operations at the time of closure, sampling and analysis inside the concrete cubicle was not justified under CERCLA and was eliminated from the CERCLA program to prevent a duplication of effort.

The OU 3 Work Plan specified two samples on the outside of the concrete cubicle, which has six ports to the outside. Because a sample was not collected from inside the cubicle for reasons outlined above, an additional sample was collected on the outside of the cubicle, resulting in a total of three samples collected and analyzed.

Soil sample locations are shown on Figure 2.20. The soils encountered during drilling consisted of a brown, coarse to fine, rounded gravel with some fine sand, silt, and clay. Some of the samples also had asphalt and other fill material present. Groundwater was not encountered during drilling. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.19.

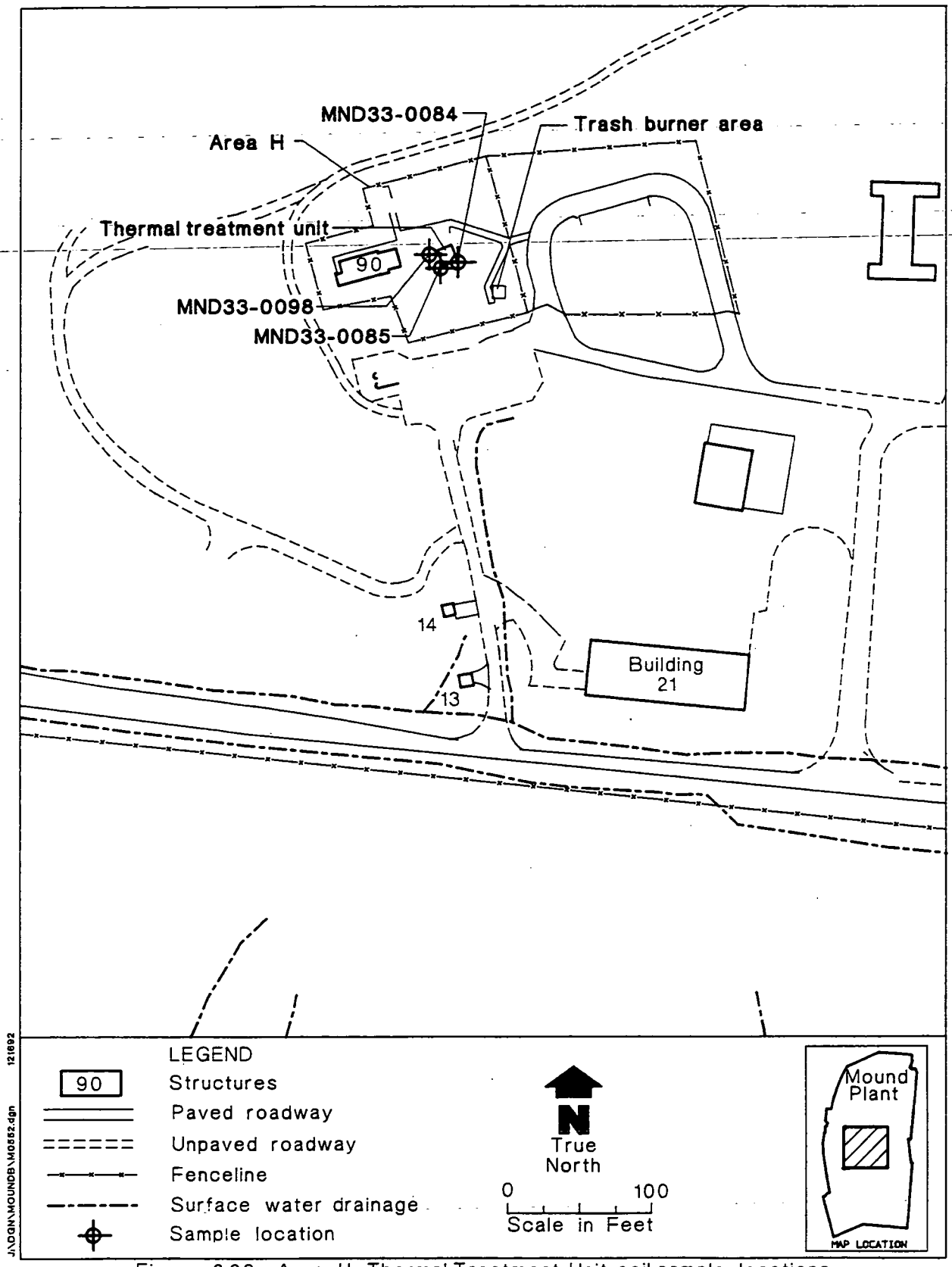


Figure 2.20. Area H Thermal Treatment Unit soil sample locations.

Table II.19. Area H Thermal Treatment Unit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0084	MND33-0084-0001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; nitrate/nitrite; and chloride.
MND33-0085	MND33-0085-0001	Soil	12/16/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0085-0002	Soil	12/16/91	2.0-4.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0085-0003	Soil	12/16/91	7.0-7.5	TCL VOCs.
MND33-0098	MND33-0098-0001	Soil	12/18/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0098-0002	Soil	12/18/91	2.0-5.2	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0084-0001 — Interval 0.0 to 2.0 ft BGS. Two split spoons were necessary to obtain the required sample volume.

2.21. AREA H PYROTECHNIC WASTE SHED

2.21.1. Site History

2.21.1.1. Description of the Area H Pyrotechnic Waste Shed

Area H encompasses four sites used for disposal processes for pyrotechnic and explosive wastes and is located near Building 53 in the southwestern portion of SM/PP Hill at Mound Plant (Figure 1.3). The pyrotechnic waste shed is a temporary storage area for holding pyrotechnic waste prior to thermal destruction in the thermal treatment unit. The shed is constructed on a concrete pad without a curb. The unit is still in service. The dimensions of the shed are 15 ft by 9 ft, with 7-ft-high chain-link fence side walls. The roof is constructed of 18-gauge galvanized corrugated steel. The contaminated trash and pyrotechnic wastes held at the waste shed are saturated with mineral oil, are double-bagged, and are sealed in a metal can.

2.21.1.2 Potential Area Contaminants

Pyrotechnic wastes are packaged and enclosed in metal drums for temporary storage at the site. No releases are documented, and no evidence of releases was observed during a visual site inspection. The pyrotechnic wastes stored at the shed are saturated with mineral oil before they are sealed in metal drums.

No prior environmental samples have been collected at the pyrotechnic waste shed area. There are no monitor wells or soil gas sampling locations in the vicinity of Area H.

2.21.2. Field Investigation Procedures

The objective of sampling at Area H Pyrotechnic Waste Shed was to identify hazardous contaminants that may be present. Sampling activities were conducted on 17 December 1991 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

Soil sample locations are shown on Figure 2.21. The soils encountered during drilling ranged from a dark yellow-brown clayey silt to a dark gray sandy silt with some gravel and asphalt. Groundwater was not encountered during drilling. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.20. There were no deviations to the approved sampling protocol for work performed at the Area H Pyrotechnic Waste Shed.

2.22. WASTE OIL DRUM FIELD

2.22.1. Site History

2.22.1.1. Description of the Waste Oil Drum Field Area

The Waste Oil Drum Field (WODF) is an inactive site located northeast of Building 21 on the SM/PP Hill (Figure 1.3). It was used for temporary drum storage between the decommissioning of the past hazardous waste storage area in 1986 and startup of the hazardous waste storage area (Building 72) (DOE 1991a). It was closed during the last quarter of 1986 and all drums were removed from the area. The area was approximately 50 ft by 100 ft (5,000 ft^2) and the 55-gallon drums were stored on pallets above the soil. In August 1986, an inspector found that soil at the south end of the drum area showed evidence of leakage from waste oil drums and dark stains on the ground throughout the area. At the time of the OU 3 investigation the area was being used as a contractor storage area for storage trailers.

2.22.1.2. Potential Area Contaminants

Drums at the south end of the drum field contained waste oil; drums at the north end contained metal plating shop waste, solvents, explosive/solvent waste, batteries, kitchen grease, herbicides, photographic solutions, epoxy resins, laboratory chemicals, ethylene glycol, scintillation vials (less than 50 μCi/L), and unknown chemical wastes (RFA 1988). Drums stored at the WODF may have contained copper cyanide (DOE 1989c). Prior to disposal at an offsite facility, unknown wastes were sampled and analyzed for proper identification.

A number of RCRA-listed materials were stored at the WODF. Although a specific inventory is not available, a list of RCRA-regulated materials has been identified based on the site description and the Revised RCRA Part A Permit Application (DOE 1991c). These include the following:

- Scintillation vials, RCRA listing F003.
- Explosive/solvent wastes, RCRA listings D001, D003, F003, and K044.

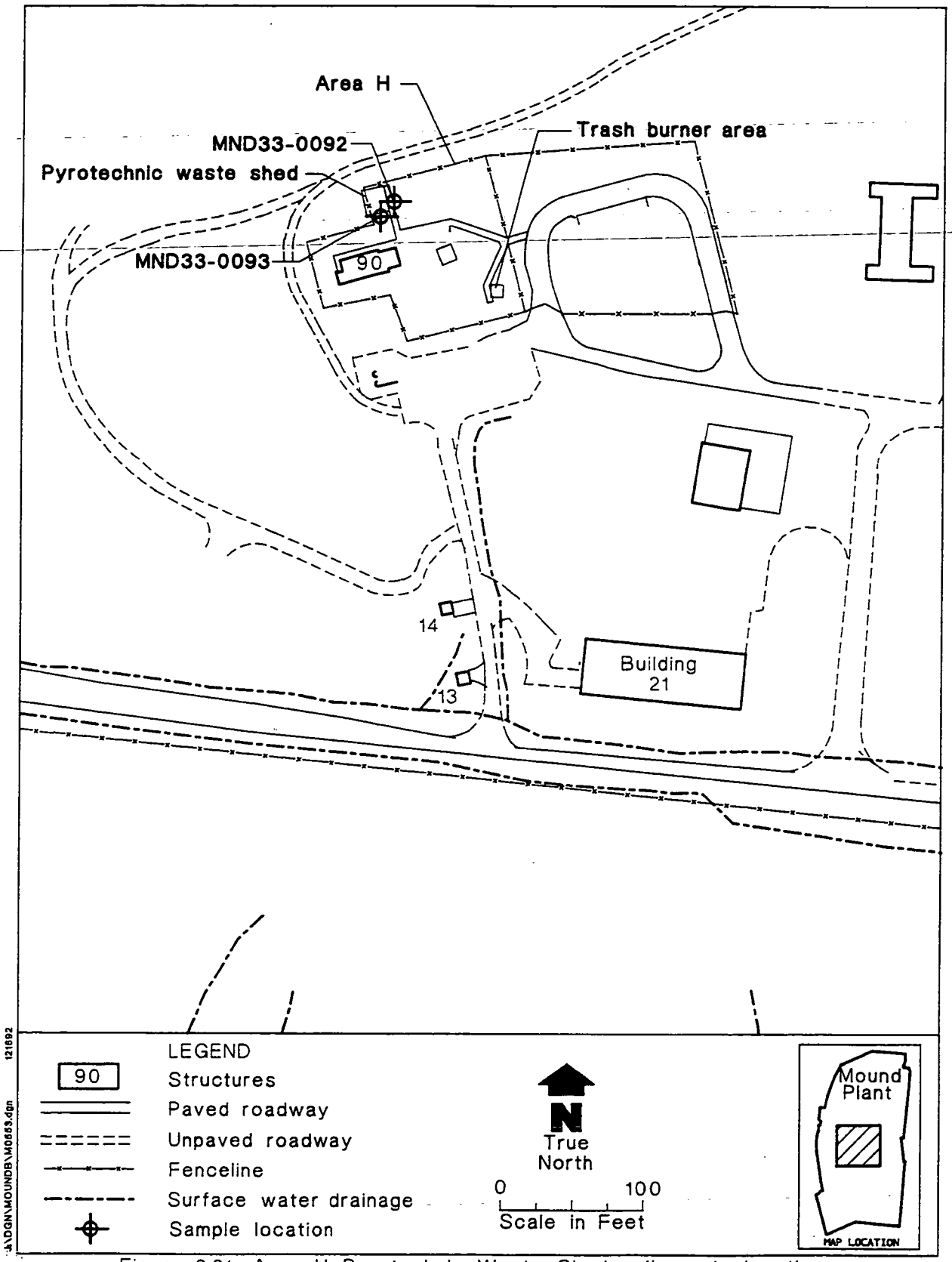


Figure 2.21. Area H Pyrotechnic Waste Shed soil sample locations.

Table II.20. Area H Pyrotechnic Waste Shed Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0092	MND33-0092-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.
MND33-0093	MND33-0093-0001	Soil	12/17/91	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- Spent halogenated solvents, RCRA listing F002.
- Spent nonhalogenated solvents, RCRA listing F004.
- Metal-plating shop wastes that contain cyanide, RCRA listings F007, F008, and F009.
- Other metal wastes (D004 through D010).
- Waste oil (now subject to TCLP and other characteristics).

Stained soils were reportedly observed at one location at the southern end of the area, but no stains were observed during a later 1988 RCRA site inspection or during the OU 3 investigation.

2.22.2. Field Investigation Procedures

The objective of sampling at the WODF was to identify hazardous contaminants that may be present as a result of drum leaks or spills. Sampling activities at WODF were conducted from 30 October to 31 October 1991 and from 10 December to 12 December 1991 and 19 December 1991. The WODF sampling activities included surface soil sampling with a scoop and subsurface soil sampling by hollow stem auger drilling techniques. Soil sample collection was conducted by WESTON representatives, and all samples were sent to IT Laboratories for analysis.

Sampling was conducted at 23 locations as shown on Figure 2.22. The soils encountered during drilling ranged from a gravelly sandy silt, to a gravelly sandy clay with little to no silt. No water was encountered during drilling. Bedrock surface ranged from 3.5 ft to 8.25 ft BGS at this site, based on split spoon and auger refusal and rock fragments. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.21. No samples were collected from the 10.0-ft BGS sampling interval at the WODF because of auger refusal at depths of less than 10.0 ft BGS.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample collected is presented below:

- MND33-0027-0002 — Interval 3.0 to 3.5 ft BGS. There was no OVA reading obtained for this sample because of instrument malfunction.
- MND33-0029-0002 — Interval 3.0 to 4.5 ft BGS. Two boreholes were drilled to obtain the required sample volume.
- MND33-0033-0002 — Interval 3.0 to 5.0 ft BGS. Two boreholes were necessary to obtain the required sample volume. A TPH sample was taken in addition to the required analyses of TCL VOCs in order to duplicate regulatory agency sample.

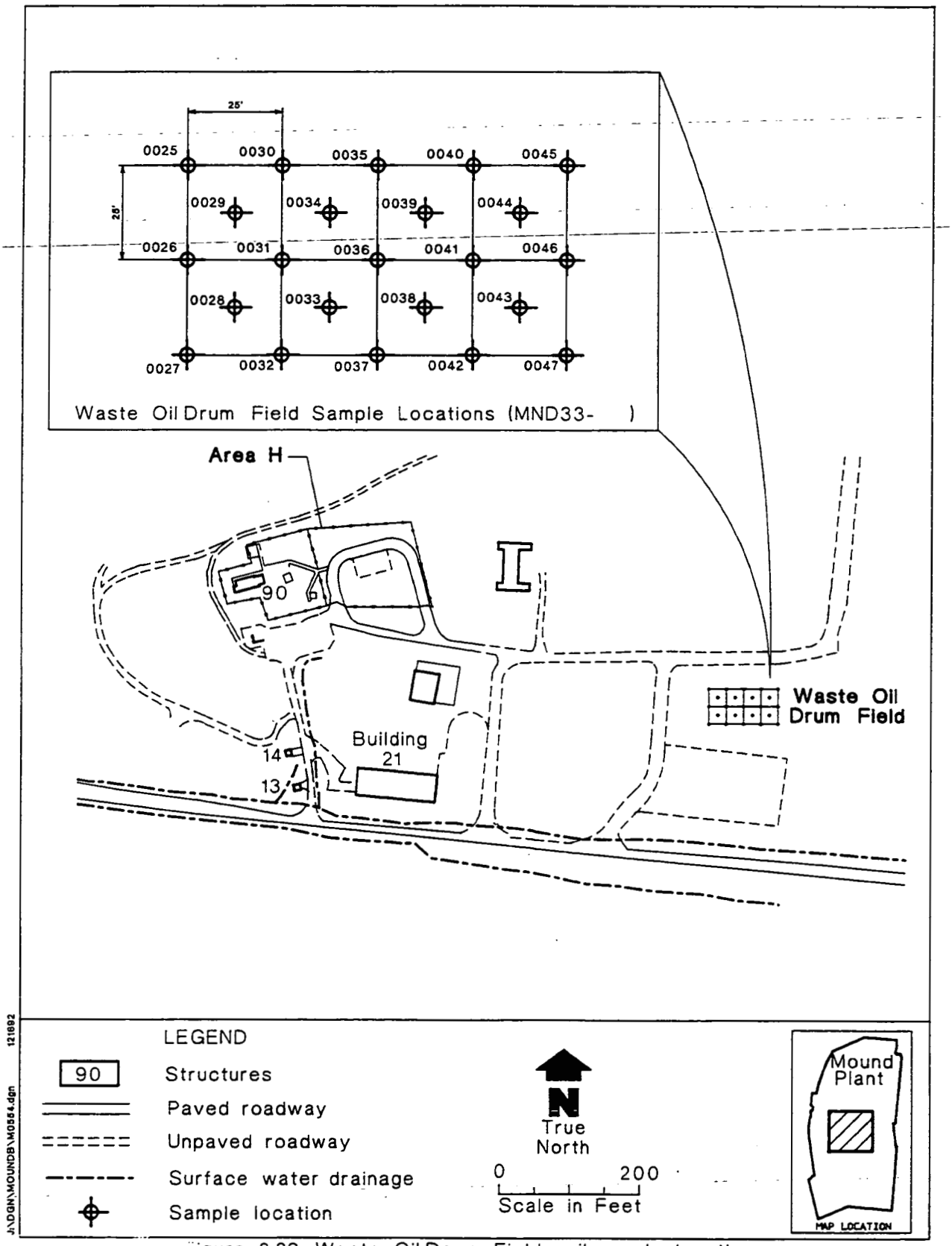


Figure 2.22. Waste Oil Drum Field soil sample locations.

Table II.21. Waste Oil Drum Field Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0025	MND33-0025-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0025-1001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0025-0002	Soil	12/19/91	3.0-5.0	TCL VOCs.
	MND33-0025-4002	Water	12/19/91	---	TCL VOCs.
	MND33-0025-5002	Water	12/19/91	---	TCL VOCs.
MND33-0026	MND33-0026-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0026-0002	Soil	12/19/91	3.0-3.5	TCL VOCs.
	MND33-0026-1002	Soil	12/19/91	3.0-3.5	TCL VOCs.
MND33-0027	MND33-0027-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0027-0002	Soil	12/19/91	3.0-3.5	TCL VOCs.
MND33-0028	MND33-0028-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0028-0002	Soil	12/19/91	3.0-4.0	TCL VOCs.
MND33-0029	MND33-0029-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0029-0002	Soil	12/19/91	3.0-4.5	TCL VOCs.
MND33-0030	MND33-0030-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0030-0002	Soil	12/12/91	3.0-3.75	TCL VOCs.
MND33-0031	MND33-0031-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0031-1001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0031-5001	Water	10/30/91	---	TCL VOCs.
	MND33-0031-0002	Soil	12/12/91	3.0-4.0	TCL VOCs.
MND33-0032	MND33-0032-0001	Soil	10/30/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0032-0002	Soil	12/12/91	3.0-3.67	TCL VOCs.
MND33-0033	MND33-0033-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0033-0002	Soil	12/11/91	3.0-5.0	TCL VOCs, TPH.
MND33-0034	MND33-0034-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0034-0002	Soil	12/11/91	1.0-4.0	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; TPH.
MND33-0035	MND33-0035-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0035-0002	Soil	12/10/91	3.0-4.0	TCL VOCs.
MND33-0036	MND33-0036-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0036-0002	Soil	12/11/91	3.0-5.0	TCL VOCs, TPH.
MND33-0037	MND33-0037-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0037-1001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL inorganics; explosives.
	MND33-0037-0002	Soil	12/12/91	3.0-5.0	TCL VOCs.
	MND33-0037-1002	Soil	12/12/91	3.0-5.0	TCL VOCs.
	MND33-0037-0003	Soil	12/12/91	8.0-8.67	TCL VOCs.

Table II.21. Waste Oil Drum Field Sample Summary (Continued)

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0038	MND33-0038-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0038-0002	Soil	12/11/91	3.0-5.58	TCL VOCs, TPH.
MND33-0039	MND33-0039-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0039-0002	Soil	12/11/91	3.0-7.0	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; TPH.
	MND33-0039-5002	Water	12/11/91	---	TCL VOCs.
MND33-0040	MND33-0040-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0040-0002	Soil	12/10/91	1.0-5.0	TCL VOCs.
	MND33-0040-1002	Soil	12/10/91	1.0-5.0	TCL VOCs.
MND33-0041	MND33-0041-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0041-0002	Soil	12/10/91	3.0-5.0	TCL VOCs.
MND33-0042	MND33-0042-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0042-0002	Soil	12/12/91	1.0-3.0	TCL VOCs.
	MND33-0042-5002	Water	12/12/91	---	TCL VOCs.
MND33-0043	MND33-0043-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0043-1001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0043-0002	Soil	12/10/91	3.0-5.0	TCL VOCs.
	MND33-0043-4002	Water	12/10/91	---	TCL VOCs.
MND33-0044	MND33-0044-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0044-0002	Soil	12/10/91	3.0-4.3	TCL VOCs.
MND33-0045	MND33-0045-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0045-0002	Soil	12/10/91	3.0-5.0	TCL VOCs.
	MND33-0045-5002	Water	12/10/91	---	TCL VOCs.
MND33-0046	MND33-0046-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0046-5001	Water	10/31/91	---	TCL VOCs.
	MND33-0046-0002	Soil	12/10/91	3.0-5.0	TCL VOCs.
	MND33-0046-1002	Soil	12/10/91	3.0-5.0	TCL VOCs.
	MND33-0046-0003	Soil	12/10/91	8.0-8.67	TCL VOCs.
MND33-0047	MND33-0047-0001	Soil	10/31/91	0.0-0.5	TCL VOCS, SVOCs, P/PCBs; TAL Inorganics; explosives.
	MND33-0047-0002	Soil	12/10/91	3.0-5.0	TCL VOCs.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- MND33-0034-0002 — Interval 1.0 to 4.0 ft BGS. Three boreholes were necessary to obtain the required sample volume. TCL SVOCs, TCL P/PCBs, TAL inorganics, and TPH were taken by WESTON in addition to the requested analyses for TCL VOCs in order to duplicate regulatory agency samples.

- MND33-0036-0002 — Interval 3.0 to 5.0 ft BGS. A TPH sample was taken in addition to the requested analyses of TCL VOCs in order to duplicate regulatory agency samples.

- MND33-0038-0002 — Interval 3.0 to 5.58 ft BGS. TPH sample was taken in addition to the requested analyses of TCL VOCs in order to duplicate regulatory agency samples.

- MND33-0039-0002 — Interval 3.0 to 7.0 ft BGS. Two boreholes were necessary to obtain the required sample volume due to regulatory agency split samples. TCL SVOCs, TCL P/PCBs, TAL inorganics, and TPH were taken in addition to the requested analyses of TCL VOCs.

Field screening of soil samples using an OVA was not conducted on surface samples from locations MND33-0027, MND33-0029, MND33-0030, MND33-0032, and MND33-0033 because of instrument malfunction.

2.23. OLD FIRING RANGE DRUM STORAGE SITE

2.23.1. Site History

2.23.1.1 Description of the Old Firing Range Drum Storage Site

The Old Firing Range Drum Storage Site (OFRDSS) is located northwest of Building 105 on SM/PP Hill (Figures 1.3 and 2.23(a)). The area was in operation from about 1970 to 1974. It was used for the collection and staging of liquid chemical wastes until they could be transported offsite for disposal. It was the first staging and storage area used for such purposes when the Historical Landfill (Area B) was closed to open burning. Its operation was concurrent with the limited operation of the Building 51 waste incinerator. Most hazardous wastes generated during this time were collected weekly and were consolidated at the OFRDSS, although some wastes were incinerated (Vaughters 1991). In 1974, the hazardous chemical staging activities were moved back to the area of the historical landfill and the OFRDSS was abandoned.

The OFRDSS may have included an area approximately 300 ft by 100 ft and photographs indicate that 100 to 500 drums were stored in the open on bare ground. The area has since been regraded, and is sparsely vegetated and partially covered by the intersection of two paved roads.

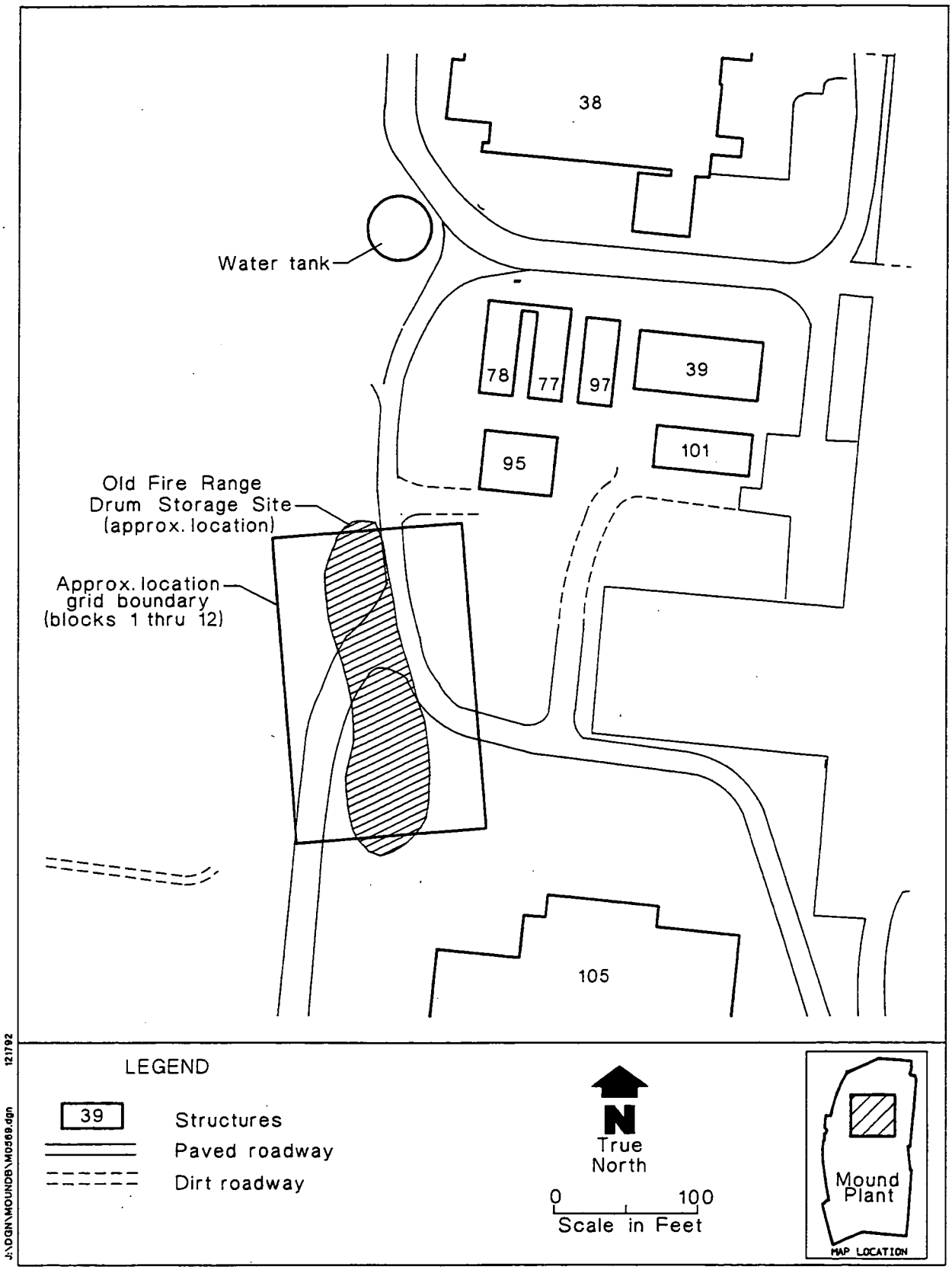


Figure 2.23.(a). Old Firing Range Drum Storage Site.

2.23.1.2. Potential Area Contaminants

Drums containing chemical wastes such as spent solvents were stored on bare ground. No radiological contamination was detected during a 1988 Mound Site Survey (DOE 1991a). Because this area was operational in the 1970s, RCRA was not yet promulgated, and records of RCRA-listed wastes were not maintained. Based on photographs showing markings on drums, it is possible that wastes may have included substances that are currently RCRA regulated, including:

- Spent solvents, RCRA listing F004.
- Spent nonhalogenated solvents, RCRA listing F002.

Recently obtained information indicates that a cleanup of cesium-137-contaminated soils may have occurred at a location near the OFRDSS. Based on this information, sample analyses via gamma spectroscopy for soils from each sample location at the OFRDSS was performed. The gamma spectroscopy analyses were performed to yield results for cesium-137 and also included additional radioisotopes radium-224, -226, and -228, potassium-40, and thorium-234, a daughter of uranium-238.

A soil gas survey was performed in August 1992 in the vicinity of the OFRDSS as documented in a December 1992 report (DOE 1992e). Soil gas sample locations were located along the western edge of the OU3 LFI sampling grid. Analytical results reported sporadic low-level concentrations (<50 ppb) of several VOC analytes, including Freon II, 1,1,1-TCA, PCE, TCE, and toluene.

There are no monitor wells near the area. No drums or evidence of releases in the area were observed during an RCRA visual site inspection, or during the OU 3 investigation. The drums were removed in 1974, and the area was regraded at that time.

2.23.2. Field Investigation Procedures

The objective of sampling at OFRDSS is to identify hazardous contaminants that may be present. Sampling at OFRDSS included surface and subsurface soil sampling by hollow stem auger drilling techniques. Sampling at OFRDSS was conducted from 12 November to 18 November 1991 and from 3 December to 8 December 1991. Soil sample collection was conducted by WESTON representatives, and samples were sent to IT Laboratories for analysis.

Soil samples were composited from 12 grid blocks, as shown on Figure 2.23(b). Twenty-eight soil samples were collected from the OFRDSS. The soils encountered during drilling ranged from a silty sandy gravel to a silty clay. Groundwater was not encountered during drilling. The bedrock surface ranged from 1.67

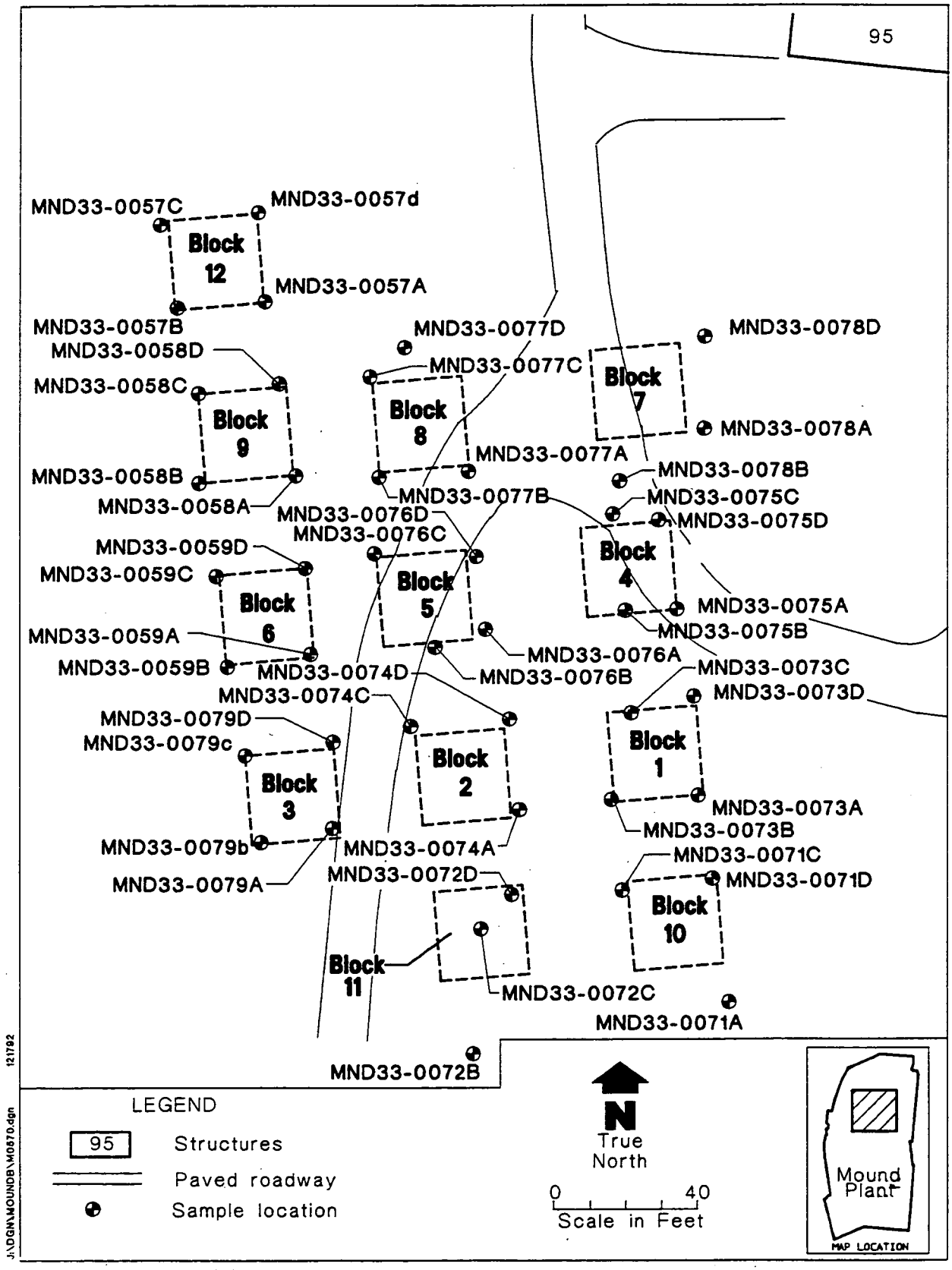


Figure 2.23.(b). Old Firing Range Drum Storage Site soil sample locations.

ft to more than 10.0 ft BGS at this site, based on split spoon and auger refusal and rock fragments. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.22.

Every effort was made to comply with the approved sampling protocol; however, some deviations were necessary to obtain the required samples. These deviations are explained below:

- Shortly after the sampling locations were initially marked with stakes by WESTON in concurrence with EPA and OEPA (June 1991), it was determined that the grid for the OFRDSS was incorrectly placed. This is documented in the 2 August 1991 letter (Mauzy 1991a).
- In September 1991, it was determined that the second OFRDSS grid was also incorrectly placed. A photo interpretation map was completed to more precisely locate the OFRDSS (DOE 1991b), and a new grid was staked onsite (Mauzy 1991b).
- Sampling grid blocks 10 and 11 were moved south of the grid at the request of OEPA.

Deviations during the OFRDSS sampling included:

Block 1:

- Location C was moved approximately 5 ft east because of the presence of underground utilities.
- The 5.0- and 10.0-ft BGS intervals were not sampled because of auger and split spoon refusal.

Block 2:

- Location B was not sampled because of the presence of utilities.
- While attempting to get the sampling interval of 5.0 ft BGS at location C, the boring was offset approximately 3 ft to the west because the auger encountered "soft earth" at a depth of 3.0 ft BGS. This "soft earth" was an indication that the auger was in a sewer line trench and could be near a sewer line. The offset boring had auger and split spoon refusal at 3.8 ft BGS.
- The 5.0- and 10.0-ft BGS intervals were not sampled because of auger and split spoon refusal.

Block 3:

- The 10.0-ft BGS intervals were not sampled because of auger and split spoon refusal.
- The 5.0-ft BGS interval was not sampled at location A because of auger and split spoon refusal.

Table II.22. Old Firing Range Drum Storage Site Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
Block 1 A, B, C, D	MND33-0073-0001	Soil	12/4/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
Block 2 A, C, D	MND33-0074-0001	Soil	12/4/91 12/5/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
Block 3 A, B, C, D	MND33-0079-0001	Soil	12/8/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0079-0002	Soil	12/8/91	3.0-5.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
Block 4 A, B, C, D	MND33-0075-0001	Soil	12/6/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0075-5001	Water	12/6/91	---	TCL VOCs.
Block 5 A, B, C, D	MND33-0076-0001	Soil	12/6/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0076-0002	Soil	12/6/91	3.0-5.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
Block 6 A, B, C, D	MND33-0059-0001	Soil	11/13/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0059-0002	Soil	11/18/91	3.0-7.0	TCL VOCs (from B), SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0059-0003	Soil	11/18/91	8.0-12.0	TCL VOCs (from B), SVOCs, P/PCBs; TAL inorganics; gamma spec.
Block 7 A, B, D	MND33-0078-0001	Soil	12/7/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0078-0002	Soil	12/7/91	3.0-4.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; gamma spec.
Block 8 A, B, C, D	MND33-0077-0001	Soil	12/7/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0077-0002	Soil	12/7/91	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0077-1002	Soil	12/7/91	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
	MND33-0077-0003	Soil	12/7/91	8.0-9.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
Block 9 A, B, C, D	MND33-0058-0001	Soil	11/13/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0058-1001	Soil	11/13/91	0.0-2.0	TCL SVOCs; P/PCBs; TAL inorganics; gamma spec.
	MND33-0058-0002	Soil	11/14/91	3.0-5.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0058-0003	Soil	11/14/91	8.0-10.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
Block 10 A, C, D	MND33-0071-0001	Soil	12/3/91	0.0-2.0	TCL SVOCs, P/PCBs; TAL inorganics; gross alpha-beta; gamma spec.
	MND33-0071-0002	Soil	12/3/91	3.0-5.1	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.

Table II.22. Old Firing Range Drum Storage Site Sample Summary (Continued)

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
Block 11 B, C, D	MND33-0072-0001	Soil	12/3/91	0.0-2.0	TCL SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0072-0002	Soil	12/3/91	3.0-6.5	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0072-1002	Soil	12/3/91	3.0-6.5	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics.
	MND33-0072-4002	Water	12/3/91		TCL VOCs, SVOCs, P/PCBs; TAL inorganics.
Block 12 A, B, C, D	MND33-0057-0001	Soil	11/12/91	0.0-2.0	TCL SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0057-0002	Soil	11/13/91	3.0-5.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.
	MND33-0057-5002	Water	11/13/91	---	TCL VOCs.
	MND33-0057-0003	Soil	11/13/91	8.0-12.0	TCL VOCs (from C), SVOCs, P/PCBs; TAL inorganics; gamma spec.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

Block 4:

- The 5.0- and 10.0-ft BGS intervals were not sampled because of auger and split spoon refusal.
- Locations B and C were moved from the original locations approximately 6 ft east and 10 ft east, respectively, because of underground utilities.

Block 5:

- The 5.0-ft BGS interval at location A was not sampled because of split spoon and auger refusal.
- The 10.0-ft BGS intervals were not sampled at any of the locations because of split spoon and auger refusal.
- Location A was moved approximately 2 ft northwest because it was too close to the barbed wire fence.
- Location B was moved approximately 5 ft southeast because of access problems.
- Location C was moved approximately 4 ft northwest because of access problems.
- Location D was moved approximately 1 ft east because of the presence of underground utilities.

Block 6:

- There was no OVA reading obtained for MND33-0059-0003C because of instrument malfunction.
- The 8.0- to 10.0-ft BGS interval was not sampled at location A because of auger and split spoon refusal at approximately 7.0 ft BGS.

Block 7:

- Location C was eliminated as a sampling location because of the presence of underground utilities.
- Locations A and D were moved approximately 5 ft east of their original locations because they were on a slope and were inaccessible to the drilling rig.
- Location B was moved approximately 7 ft southeast because of the presence of underground utilities.
- The 5.0-ft BGS interval was not sampled at locations A or D because of auger and split spoon refusal.

- The 10.0-ft BGS interval was not sampled at any location because of auger and split spoon refusal.

Block 8:

- Location A was moved approximately 3 ft southwest of its original location because of the presence of underground utilities.
- Location B was moved approximately 2 ft southwest of its original location because of the presence of underground utilities.
- Location D was moved approximately 12 ft west of its original location because of the presence of underground utilities.
- The 10.0-ft BGS interval was not sampled at location A because of the presence of fill cuttings and "easy" drilling. This indicated the presence of water line, which resulted in abandoning the hole.
- The 10.0-ft BGS interval was not sampled at locations B or D because of auger and split spoon refusal.

Block 10:

- Location A was moved approximately 10 ft south of its original location because of the presence of underground utilities.
- Location B was not sampled and could not be moved because of the presence of underground utilities.
- The 5.0-ft BGS interval was not sampled at location D because of auger and split spoon refusal.
- The 10.0-ft BGS interval was not sampled at any of the locations because of auger and split spoon refusal.

Block 11:

- Location A was not sampled and could not be moved because of the presence of underground utilities.
- Location B was moved approximately 18 ft south of its original location because of the presence of underground utilities.
- Location C was moved approximately 8 ft southeast of its original location because of the presence of overhead and underground utilities.
- Location D was moved approximately 4 ft west of its original location because of the presence of underground utilities.

- The 10.0-ft BGS interval was not sampled at any of the locations because of auger and split spoon refusal.

Block 12:

- The 10.0- to 12.0-ft BGS split spoon was used for the composite sample of the 10.0-ft BGS interval to obtain sufficient sample volume.

2.24. FARM TRASH AREA

2.24.1. Site History

2.24.1.1. Description of the Farm Trash Area

The Farm Trash Area is located near the southwest corner of the undeveloped Mound Plant property (Figure 1.3). It is the location of a former residence that was razed when the DOE purchased the property in 1981. The site is about 500 ft north of Benner Road and approximately 500 ft east of the western edge of Mound Plant property (RFA 1988).

2.24.1.2 Potential Area Contaminants

The Farm Trash Area is estimated to cover less than ¼ acre. It was used to receive trash, tires, and household debris when the farm was in use. Mound Plant has never used this area for waste or trash disposal, and no RCRA-regulated materials have been stored or handled at the area (RFA 1988). It was characterized by a lack of vegetation and dark stains on soil near the assumed eastern edge of the area. The source of the stains is not known, but the stains are probably related to farm vehicle maintenance. Evidence of soil staining was not found during the OU 3 LFI.

2.24.2. Field Investigation Procedures

The objective of sampling at the Farm Trash Area was to identify hazardous contaminants that may be present because of substances released to the soils by the previous property owner. WESTON representatives conducted sampling activities at the Farm Trash Area on 16 January 1992. Sampling activities consisted of surface soil sampling with a scoop and subsurface sampling with a hand auger. Samples were collected from two depth intervals at three locations at the Farm Trash Area. All samples were shipped to IT Laboratories for analysis.

The sample locations are shown in Figure 2.24. The soils encountered during sampling ranged from a brown gravelly sandy to clayey silt, to a coarse angular gravel. Groundwater was not encountered during sampling activities. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.23.

No known deviations from the approved project protocol occurred during soil sampling activities at the Farm Trash Area.

2.25. UNDERGROUND SEWER LINES GRID G5

Mound Plant engineering drawings of sewer lines are organized by grid blocks. Therefore, the sampling of soils adjacent to lines at multiple locations was differentiated by the grid designations of the lines.

A TV-screening survey was performed by Mound Plant personnel in 1987 on all of the underground sewer lines to identify sections of sewer lines needing repair or replacement. If a sewer line was found to be damaged or broken and it was decided that the line would be repaired instead of replaced, a fiberglass-like material (insitu form) was used to repair the line. For each repair, a sleeve of the fiberglass-like material was driven into the pipe by adding pressurized water to the line. This forced the material to conform and adhere to the pipe side wall. Sampling locations were chosen adjacent to previously identified breaks, even if they have since been repaired.

2.25.1. Site History

2.25.1.1. Description of the Underground Sewer Lines Grid G5

The underground sewer lines in Grid G5 are used to convey sanitary wastewater from the Plant sites to the sewage disposal building area (Building 57). The sewer lines in this grid area are constructed of 8-inch vitrified clay pipe and 8-inch ductile iron pipe.

2.25.1.2 Potential Area Contaminants

Sanitary wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines may include one or more of the following; restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents,

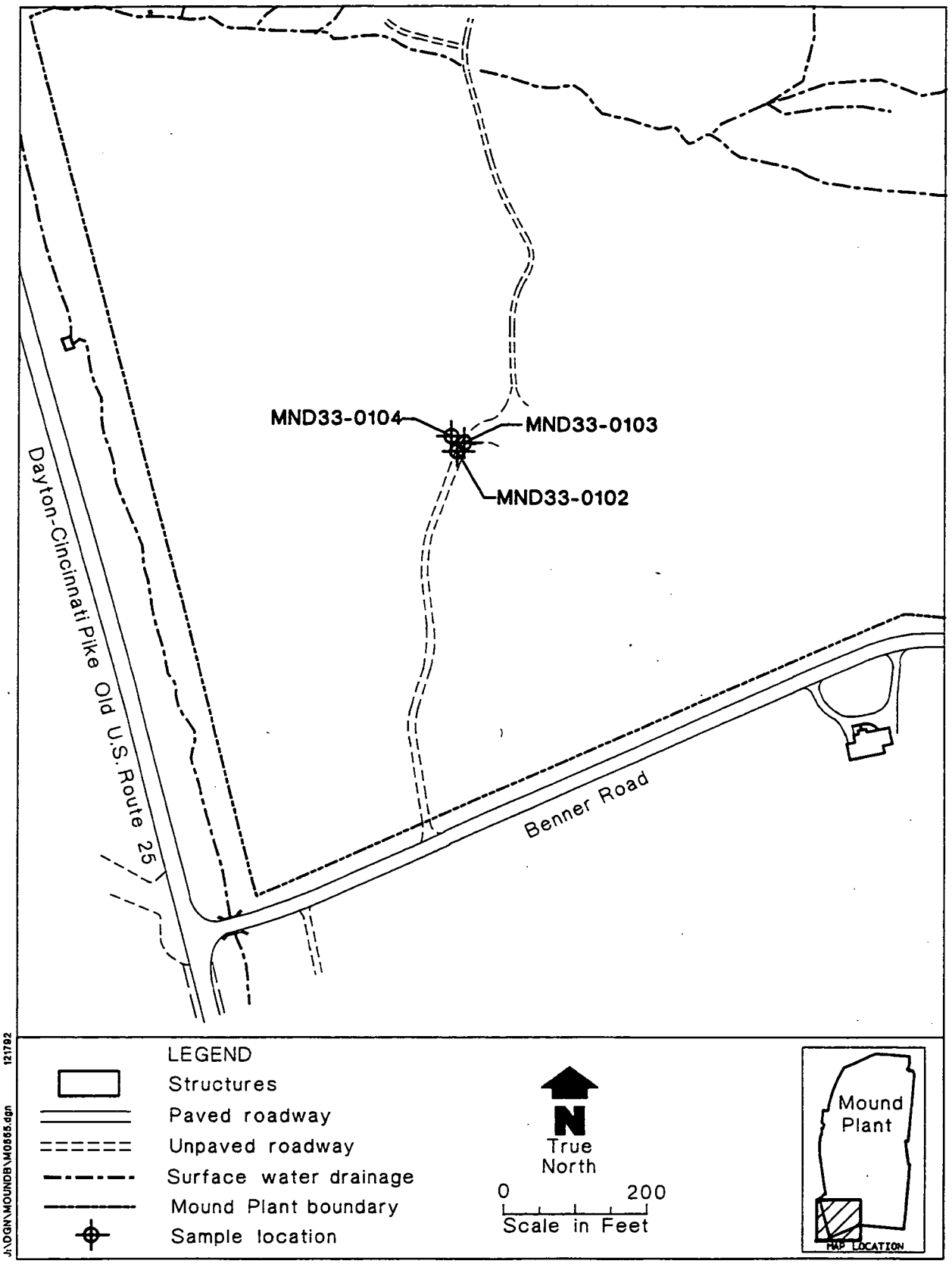


Figure 2.24. Farm Trash Area soil sample locations.

Table II.23. Farm Trash Area Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0102	MND33-0102-0001	Soil	01/16/92	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0102-1001	Soil	01/16/92	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0102-0002	Soil	01/16/92	1.5-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0102-5002	Water	01/16/92	---	TCL VOCs.
MND33-0103	MND33-0103-0001	Soil	01/16/92	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0103-0002	Soil	01/16/92	1.5-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
MND33-0104	MND33-0104-0001	Soil	01/16/92	0.0-0.5	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0104-0002	Soil	01/16/92	1.5-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.
	MND33-0104-1002	Soil	01/16/92	1.5-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

photographic solutions, acids, and bases. Based on the site history, it is not possible to determine if the system has received RCRA-regulated materials or to determine which listings are applicable.

Past releases from the underground sewer lines caused by leakage from broken pipes have been documented. In previous investigations of the sewer system, pipe and joint breaks, misalignments, cracks, sags, and obstructions were found.

2.25.2. Field Investigation Procedures

The objective of sampling adjacent to the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. WESTON representatives conducted sampling activities at the Underground Sewer Lines Grid G5 area on 9 December 1991 and 14 February 1992. Soil samples were collected by hollow stem auger drilling techniques from one interval near two manhole locations. Power auger/hand auger borings were attempted at two locations but were unsuccessful at reaching the desired sampling interval and a laboratory sample was not collected. All samples were shipped to IT Laboratories for analysis.

Sample locations are shown on Figure 2.25. The soils encountered during drilling ranged from a dark gray-brown, coarse to fine sandy silt to a pale olive clayey silt with little to no sand. Groundwater was not encountered during drilling. A summary of soil samples collected at this location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.24.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations is presented below:

- MND33-0080-0001 — Interval 1.5 to 3.5 ft BGS. Sample from two boreholes was necessary to obtain the required sample volume. One split spoon was obtained at the required interval from each borehole.
- MND33-0081-0001 — Interval 5.5 to 7.5 ft BGS. Sample from two boreholes was necessary to obtain the required sample. One split spoon was obtained at the required interval from each borehole.
- MND33-0137-0001 — Interval 5.5 to 7.5 ft BGS. No sample was taken because of the inability to reach the required sample depth.
- MND33-0138-0001 — Interval 5.5 to 7.5 ft BGS. No sample was taken because of the inability to reach the required sample depth.

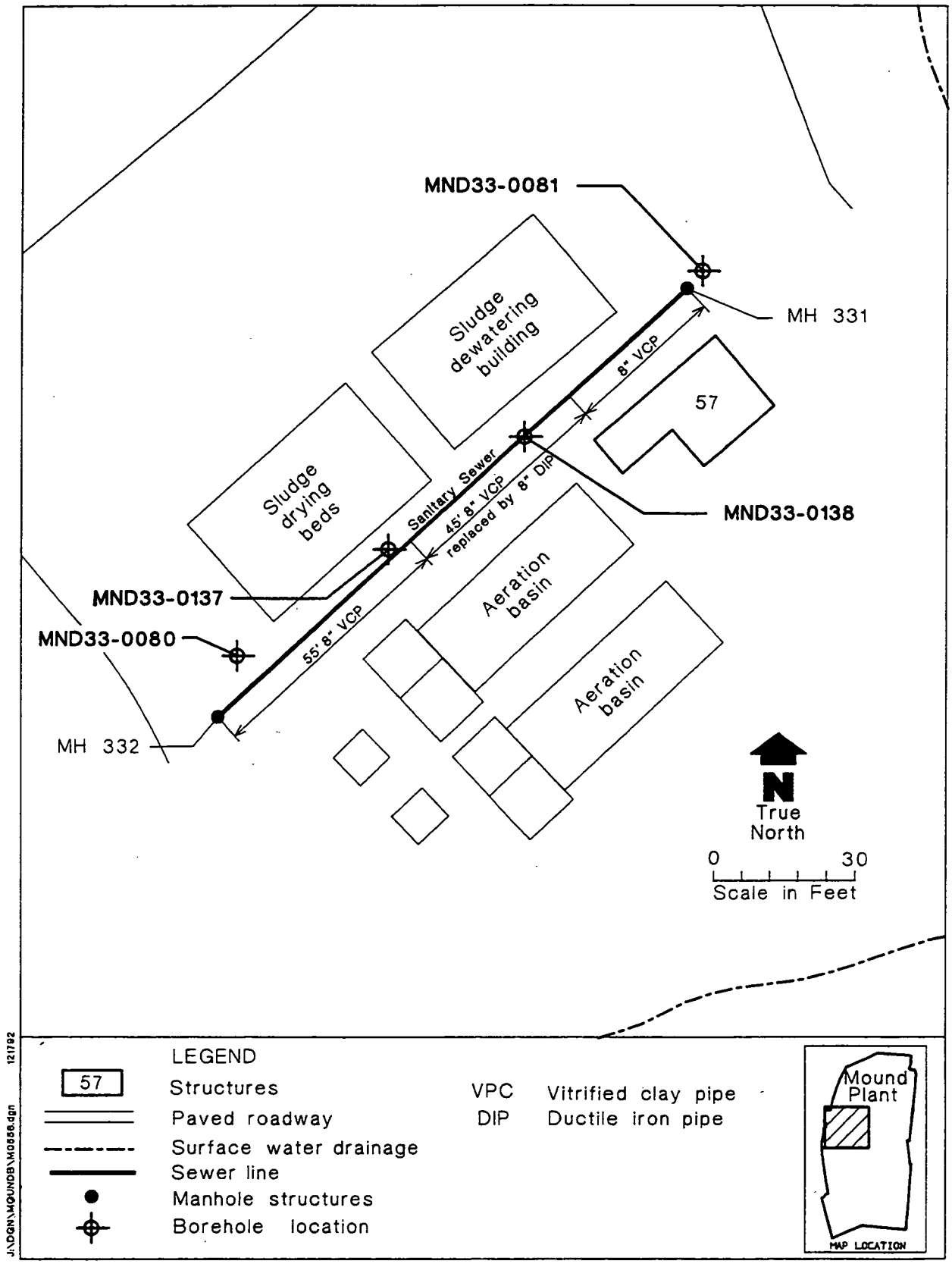


Figure 2.25. Underground Sewer Lines Grid G5 soil sample locations.

Table II.24. Underground Sewer Lines Grid G5 Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0080	MND33-0080-0001	Soil	12/09/91	1.5-3.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates.
MND33-0081	MND33-0081-0001	Soil	12/09/91	5.5-7.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates.
MND33-0137	No samples were collected				
MND33-0138	No samples were collected				

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.26. UNDERGROUND SEWER LINES GRIDS G6 AND G7

2.26.1. Site History

2.26.1.1. Description of the Underground Sewer Lines Grids G6 and G7

The underground sewer lines in Grids G6 and G7 are used to convey sanitary wastewater from the Plant sites to the sewage disposal building area (Building 57). The sewer lines in these grids are constructed of either 6- or 8-inch vitrified clay pipe, as well as some sections of 8-inch PVC pipe.

2.26.1.2. Potential Area Contaminants

Sanitary wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines may include one or more of the following; restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on the site history, it is not possible to determine if the system has received RCRA-regulated materials or to determine which listings are applicable.

Past releases from the underground sewer lines caused by leakage from broken pipes have been documented. In previous investigations of the sewer system, pipe and joint breaks, misalignments, cracks, sags, and obstructions were found.

2.26.2. Field Investigation Procedures

The objective of sampling adjacent to the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. WESTON representatives conducted sampling activities at the Underground Sewer Lines Grids G6 and G7 area on 21 and 22 November 1991 and 5 February 1992. Soil samples were collected by hollow stem auger drilling techniques from one interval at four locations. A sediment sample was collected from inside the sewer line at manhole no. 1008 at Grid G7 using a stainless steel scoop. All samples were shipped to IT Laboratories for analysis.

The sample locations for Grids G6 and G7 are shown on Figure 2.26. The soils encountered during drilling consisted of a pale brown, coarse to fine gravelly sandy silt. Bedrock was encountered in some of the boreholes at depths ranging from 4.0 to 6.0 ft BGS, as determined by auger and split spoon refusal. Groundwater was not encountered during drilling. A summary of soil samples collected at this location

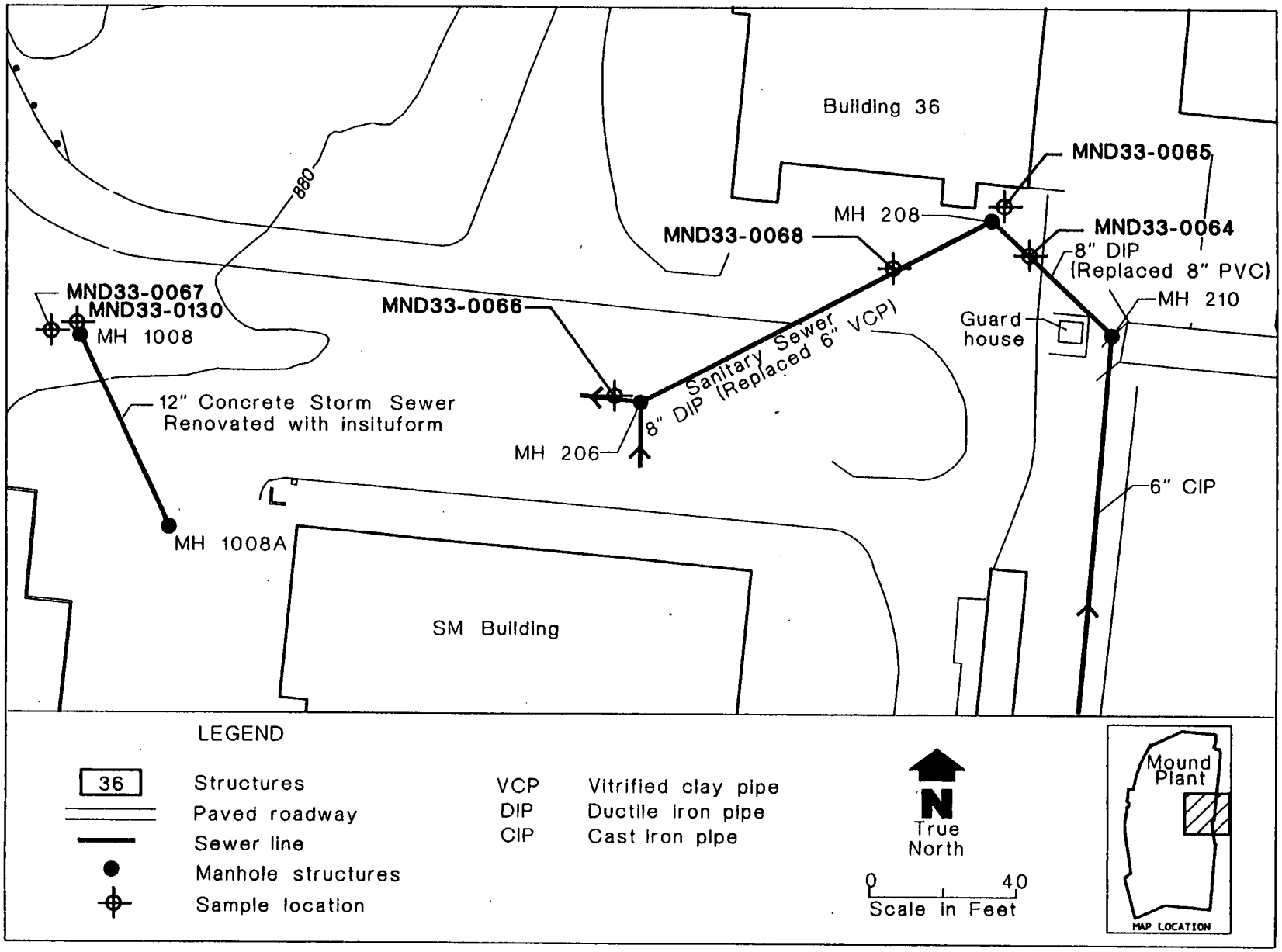


Figure 2.26. Underground sewer lines Grid G6 and Grid G7 soil sample locations.

listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.25.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations is presented below:

- MND33-0064-0001 — Interval 4.0 to 8.0 ft BGS. Additional sample material from the 6.0- to 8.0-ft split spoon was necessary to obtain the required sample volume.
- MND33-0065-0001 — Interval 4.5 to 8.0 ft BGS. Additional sample material from the 6.0- to 8.0-ft split spoon was necessary to obtain the required sample volume for TCL VOCs only. Insufficient soil was recovered to collect soil for the remainder of the requested analytical parameters and insufficient area was available to place an additional borehole for additional recovery.
- MND33-0066-0001 — Interval 4.0 to 6.0 ft BGS. Two boreholes were attempted. No sample was collected because of insufficient recovery.
- MND33-0067-0001 — Interval 8.0 to 10.0 ft BGS. Two 8.0- to 10.0-ft split spoon samples, from two boreholes, were necessary to obtain the required volume for TCL VOCs only. There was insufficient recovery to collect remainder of sample.
- MND33-0068-0001 — Interval 4.5 to 8.5 ft BGS. Two 4.5- to 8.5-ft split spoon samples, from two boreholes, were necessary to obtain the required sample volume.

2.27. UNDERGROUND SEWER LINES GRID G12

2.27.1. Site History

2.27.1.1. Description of the Underground Sewer Lines Grid G12

The underground sewer line in Grid G12 is used to convey sanitary wastewater from the Plant sites to the sewage disposal building area (Building 57). The sewer lines in this grid are constructed of 8-inch-diameter vitrified clay pipe and 8-inch-diameter PVC pipe.

2.27.1.2. Potential Area Contaminants

Sanitary wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines may include one or more of the following; restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-

Table II.25. Underground Sewer Lines Grids G6 and G7 Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0064	MND33-0064-0001	Soil	11/21/91	4.0-8.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
MND33-0065	MND33-0065-0001	Soil	11/21/91	4.5-8.0	TCL VOCs.
MND33-0066	MND33-0066-0001	Soil	11/21/91	4.0-6.0	Insufficient recovery, no sample collected.
MND33-0067	MND33-0067-0001	Soil	11/22/91	8.0-10.0	TCL VOCs.
MND33-0068	MND33-0068-0001	Soil	11/22/91	4.5-8.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0068-5001	Water	11/22/91	---	TCL VOCs.
MND33-0130	MND33-0130-0001	Sediment	02/05/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0130-1001	Sediment	02/05/92	---	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.

BGS - Below Ground Surface
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on the site history, it is not possible to determine if the system has received RCRA-regulated materials or to determine which listings are applicable.

Past releases from the underground sewer lines caused by leakage from broken pipes have been documented. In previous investigations of the sewer system, pipe and joint breaks, misalignments, cracks, sags, and obstructions were found.

2.27.2. Field Investigation Procedures

The objective of sampling adjacent to the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. WESTON representatives conducted sampling activities at the Underground Sewer Lines Grid G12 area on 15 February 1992. Soil samples were collected using hollow stem auger drilling techniques from one interval at a single location near monitor well 0111. All samples collected by WESTON were shipped to IT Laboratories for analysis.

The sample location is shown on Figure 2.27. A summary of soil samples collected at this location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.26.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations is presented below:

- MND33-0139-0001 — Interval 20.0 to 24.0 ft BGS. Additional sample material from the 22.0- to 24.0-ft BGS split spoon was necessary to obtain the required sample volume for the sample and duplicate.

2.28. UNDERGROUND SEWER LINES GRID G14 WEST

2.28.1. Site History

2.28.1.1. Description of the Underground Sewer Lines Grid G14 West

The underground sewer lines in Grid G14 West are used to convey sanitary wastewater from the Plant sites to the sewage disposal building area (Building 57). The sewer lines in this grid are constructed of 6-inch and 8-inch-diameter vitrified clay pipe.

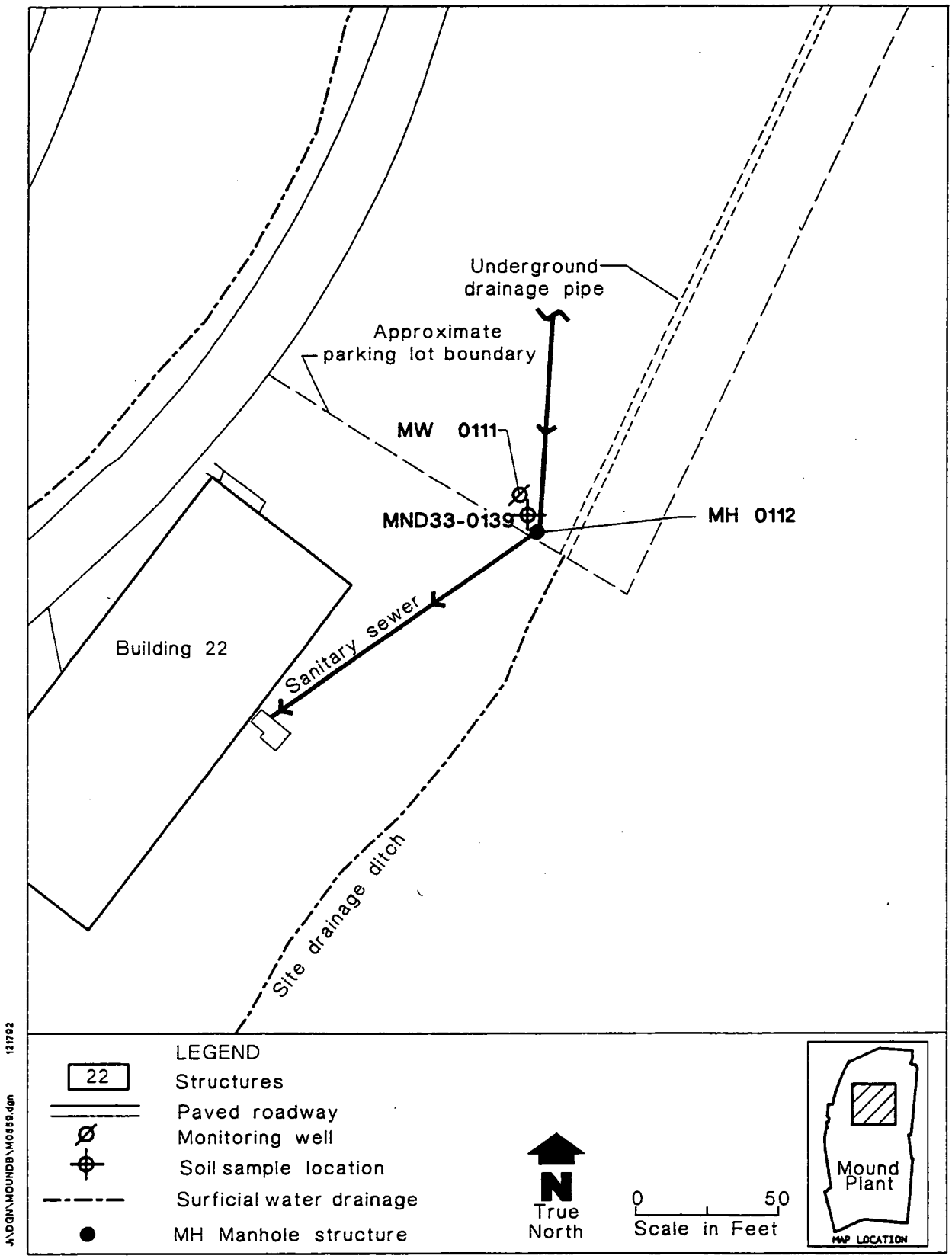


Figure 2.27. Underground sewer lines Grid G12 soil sample locations.

Table II.26. Underground Sewer Lines Grid G12 Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0139	MND33-0139-0001	Soil	02/15/92	20.0-24.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0139-1001	Soil	02/15/92	20.0-24.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.28.1.2. Potential Area Contaminants

Sanitary wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines may include one or more of the following; restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on the site history, it is not possible to determine if the system has received RCRA-regulated materials or to determine which listings are applicable.

Past releases from the underground sewer lines caused by leakage from broken pipes have been documented. In previous investigations of the sewer system, pipe and joint breaks, misalignments, cracks, sags, and obstructions were found.

2.28.2. Field Investigation Procedures

The objective of sampling adjacent to the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. WESTON representatives conducted sampling activities at the Underground Sewer Lines Grid G14 West area on 1 July 1991. Soil samples were collected by hollow stem auger drilling techniques from one interval at one location. All samples were shipped to IT Laboratories for analysis.

The Grid G14 West sample location is shown on Figure 2.28. The soils encountered during drilling consisted of a silty clay, with some sand and gravel. Groundwater was not encountered during drilling. A summary of soil samples collected at this location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.27.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations is presented below:

- The boring location was moved from its original location approximately 2.0 ft southeast because of auger refusal at 7.0 ft BGS. Additional split spoons were collected from 12.0 to 15.0 ft BGS in order to obtain sufficient sample volume.

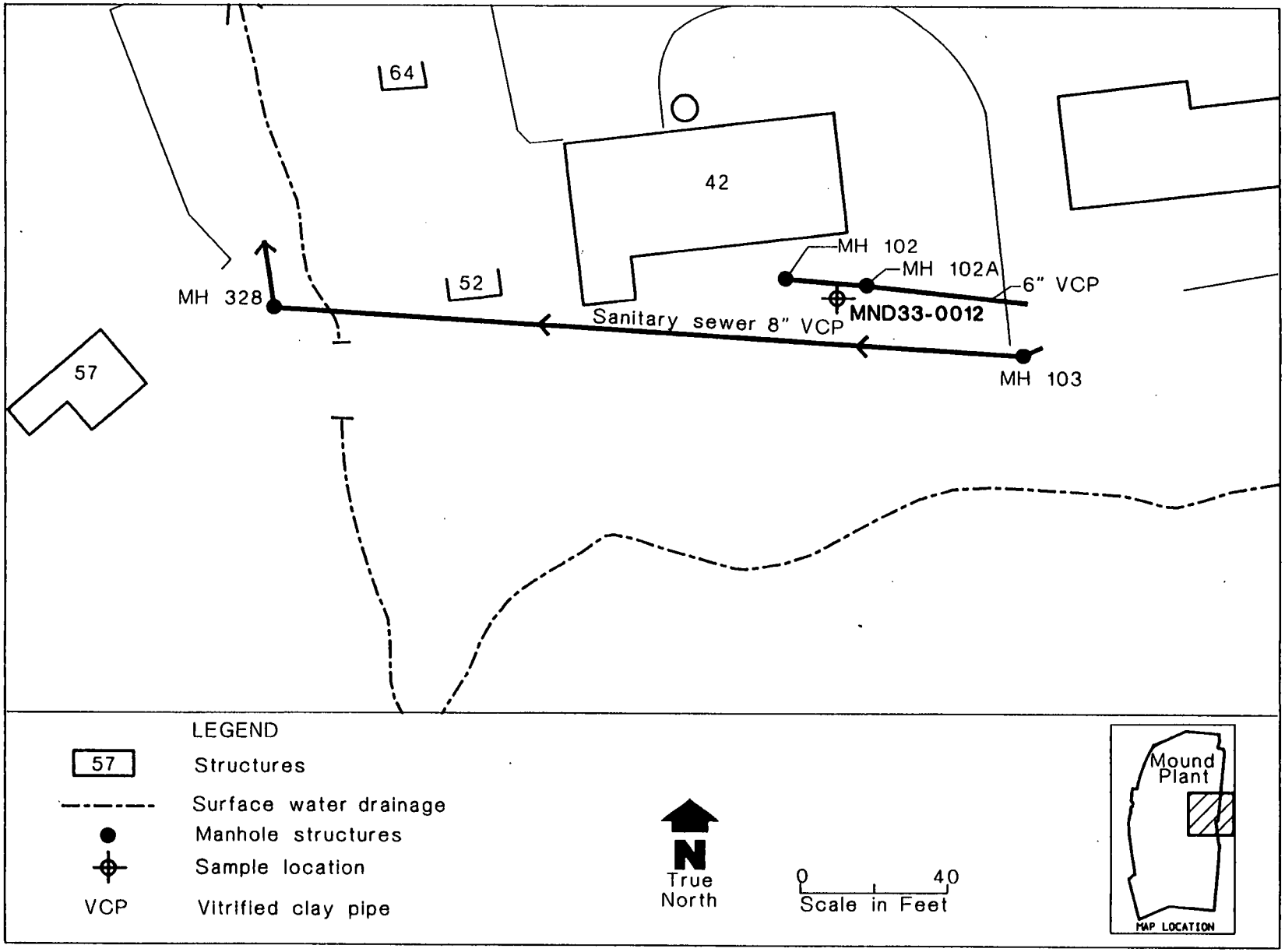


Figure 2.28. Underground sewer lines Grid G14 West soil sample locations.

Table II.27. Underground Sewer Lines Grid G14 West Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0012	MND33-0012-0001	Soil	07/01/91	10.0-15.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; explosives; chloride; nitrites/nitrates; tritium.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.29. UNDERGROUND SEWER LINES GRID G14 EAST

2.29.1. Site History

2.29.1.1. Description of the Underground Sewer Lines Grid G14 East

The underground sewer lines in Grid G14 East are used to convey sanitary wastewater from the Plant sites to the sewage disposal building area (Building 57). The sewer lines in this grid area are constructed of 6-inch and 8-inch diameter vitrified clay pipe.

2.29.1.2. Potential Area Contaminants

Sanitary wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines may include one or more of the following; restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on the site history, it is not possible to determine if the system has received RCRA-regulated materials or which listings are applicable. Past releases from the underground sewer lines caused by leakage from broken pipes have been documented. In previous investigations of the sewer system, pipe and joint breaks, misalignments, cracks, sags, and obstructions were found.

2.29.2. Field Investigation Procedures

The objective of sampling adjacent to the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. WESTON representatives conducted sampling activities at the Underground Sewer lines Grid G14 East area on 1 July 1991. Soil samples were collected by hollow-stem auger drilling techniques from one interval at one location. All samples were shipped to IT Laboratories for analysis.

The sample location is shown on Figure 2.29. The soils encountered during drilling consisted of a silty clay. Groundwater was not encountered during drilling. A summary of soil samples collected at this location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.28.

Every effort was made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations is presented below:

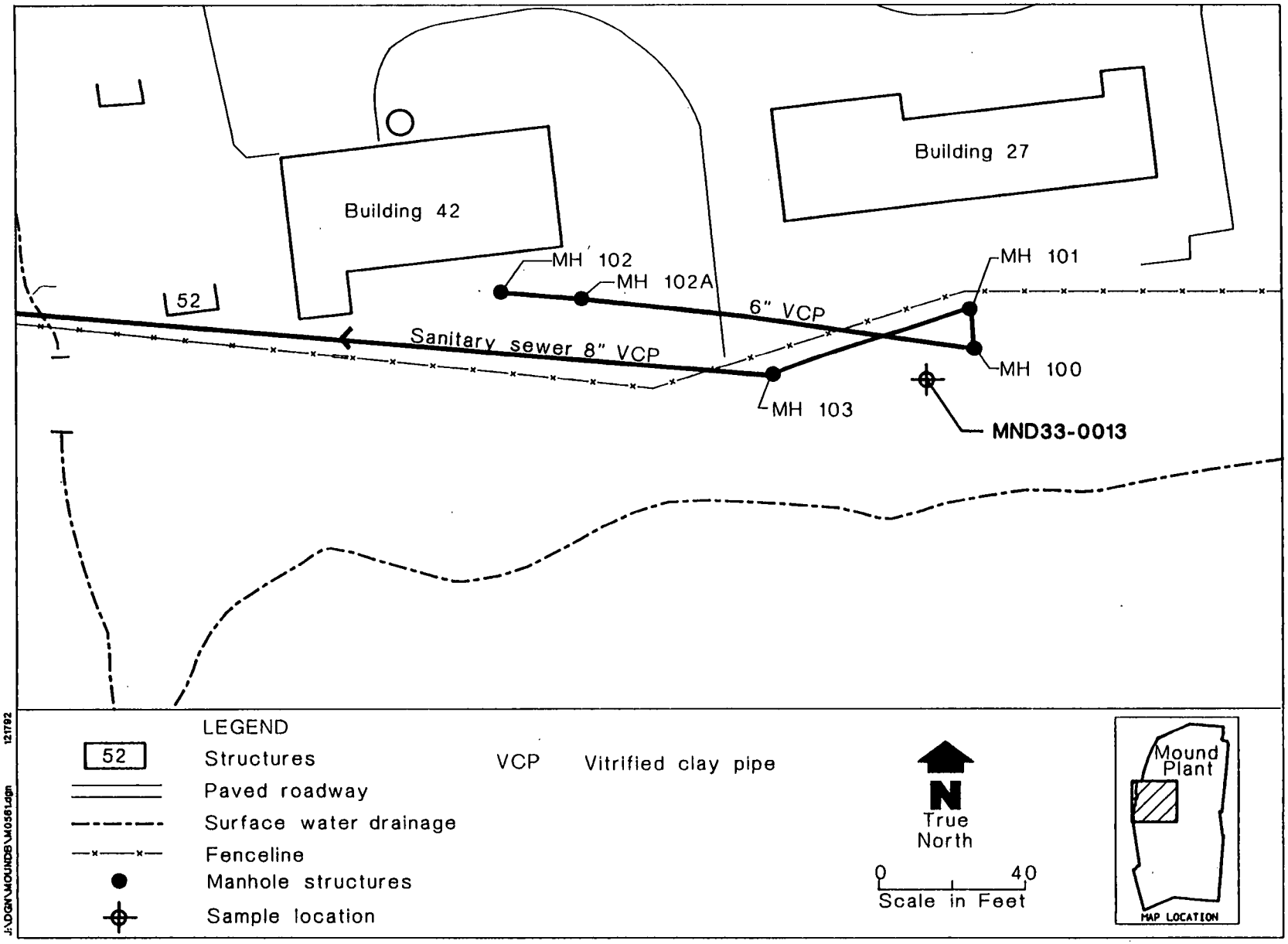


Figure 2.29. Underground sewer lines Grid G14 East soil sample locations.

Table II.28. Underground Sewer Lines Grid G14 East Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0013	MND33-0013-0001	Soil	07/01/91	7.0-12.5	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

- Sample boring location was moved from its original location to a location approximately 5 ft southeast because of the presence of underground utilities. Additional split spoons were collected from 8.0 to 12.5 ft BGS in order to collect sufficient sample volume.

2.30. UNDERGROUND SEWER LINES GRID G15

2.30.1. Site History

2.30.1.1. Description of the Underground Sewer Lines Grid G15 Area

The underground sewer lines located throughout Mound Plant are used to convey sanitary and industrial wastewater and storm runoff from Plant sites to the sewage disposal building area (Building 57). The Grid G15 site contains 8-inch sanitary sewer pipes.

2.30.1.2. Potential Area Contaminants

Sanitary and industrial wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines include restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on this site history, it is not possible to determine if the system has received RCRA-regulated materials or which listings are applicable.

2.30.2. Field Investigation Procedures

The objective of sampling adjacent to some of the underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. Figure 2.30 shows the sampling locations in relation to the vitrified clay sewer line in areas of known or suspected leaks at Grid G15. Two sampling locations were next to the sanitary sewer line southwest of manhole no. 122 at distances of 40 and 160 ft and the third location was adjacent to manhole no. 0122.

A summary of the soil samples collected at Grid G15 listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.29. A summary of deviations from the approved sampling protocol is presented below:

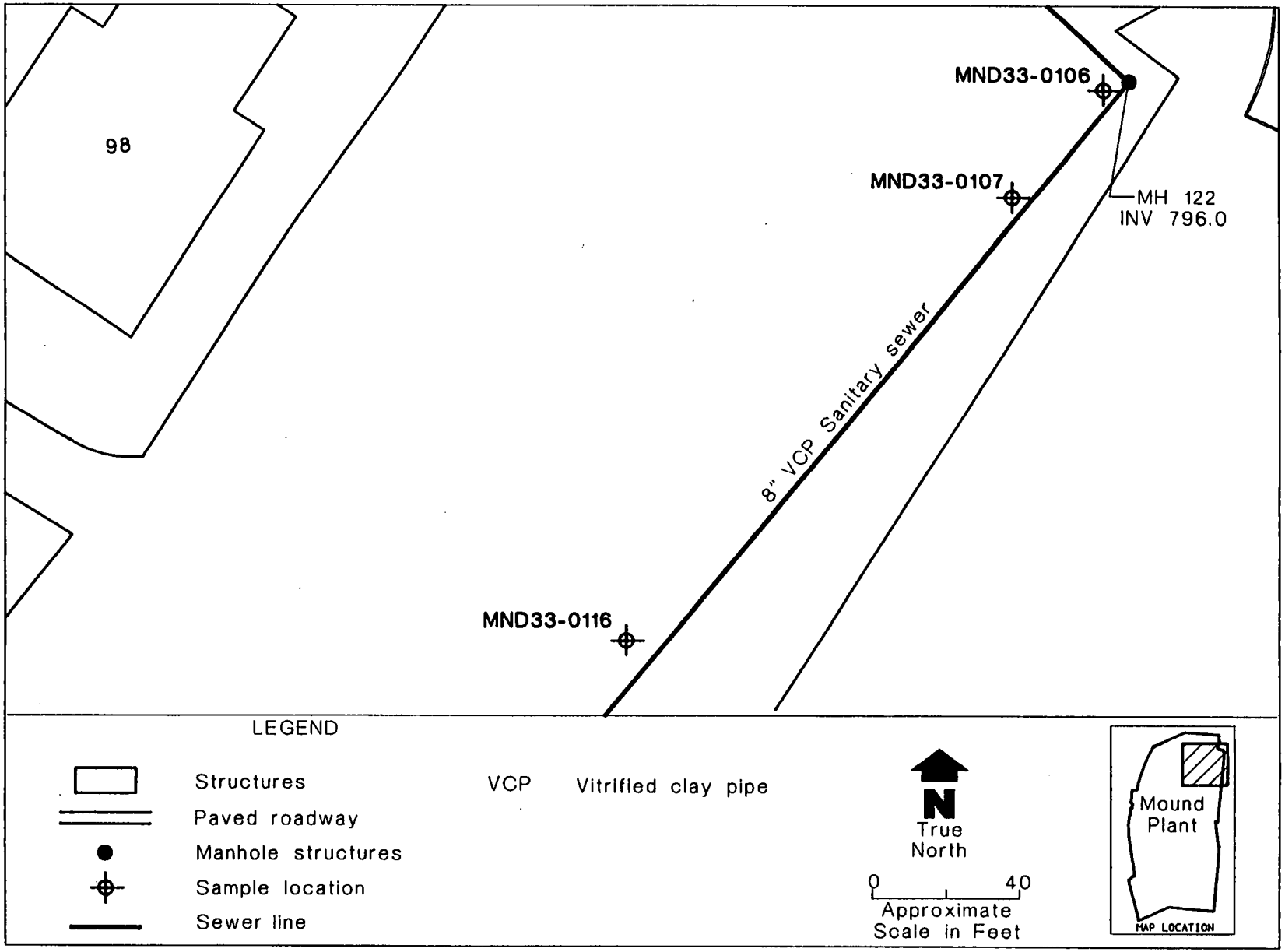


Figure 2.30. Underground sewer lines Grid G15 soil sample locations.

Table II.29. Underground Sewer Lines Grid G15 Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0106	MND33-0106-0001	Soil	1/18/92	13.5-15.5	TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; explosives; tritium; chloride; nitrites/nitrates.
	MND33-0106-1001	Soil	1/18/92	13.5-15.5	TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; explosives; tritium; chloride; nitrites/nitrates.
	MND33-0106-0002	Soil	1/18/92	17.5-19.5	TCL VOCs.
MND33-0107	MND33-0107-0001	Soil	1/18/92	12.5-14.5	TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; explosives; tritium; chloride; nitrites/nitrates.
	MND33-0107-4001	Water	1/19/92	---	TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; explosives; tritium; chloride; nitrites/nitrates.
MND33-0116	MND33-0116-0001	Soil	1/29/92	12.5-14.2	TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; explosives; tritium; chloride; nitrites/nitrates.
	MND33-0116-5001	Water	1/29/92	---	TCL VOCs.

BGS - Below Ground Surface
ft - Feet
P/PCBs - Pesticides/Polychlorinated Biphenyls
SVOCs - Semivolatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile Organic Compounds

- Figure 16.7 Grid G15 in the OU 3 Work Plan indicates an abandoned 8-inch vitrified clay pipe sewer line and an 8-inch PVC sewer line. EG&G Mound representatives indicate that the vitrified clay pipe line is still in use and has not been abandoned and the 8-inch PVC line was not installed. Soil samples were collected from the locations specified in the OU 3 Work Plan.

- MND33-0106-0002 — An additional sample was collected at a depth interval of 17.5 to 19.5 ft BGS, because of the elevated OVA field screening instrument readings at the previous depth interval at location A.

- MND33-0116-0001 — The first attempt to collect a sample at this location was on 19 January 1992 (borehole 0108). Auger refusal met at 12.0 ft. Borehole was offset, where auger refusal was met at 2.5 ft. No samples were collected at this time. Sample collected on 29 January 1992 from offset borehole 0116.

2.31. UNDERGROUND SEWER LINES GRID G19/14

2.31.1. Site History

2.31.1.1. Description of the Underground Sewer Lines Grid G19/14 Area

The underground sewer lines located throughout Mound Plant are used to convey sanitary and industrial wastewater and storm runoff from Plant sites to the sewage disposal building area (Building 57). The Grid G19/14 area contains 8-inch vitrified clay pipe used to convey sanitary wastewater.

According to the Work Plan Figure for Grid G19/14, certain construction work was conducted which resulted in an abandoned line and a newly constructed line to take its place. According to EG&G Mound representatives, the construction work was never conducted and the abandoned lines are still in use. In some instances, insitu form work was accomplished instead of new construction.

2.31.1.2. Potential Area Contaminants

Sanitary and industrial wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines include restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on this site history, it is not possible to determine if the system has received RCRA-regulated materials or which listings are applicable.

2.31.2. Field Investigation Procedures

The objective of sampling adjacent to the grid G19/14 underground sewer lines was to identify releases of hazardous contaminants that may have resulted from leakage. Sampling activities were conducted on 29 January 1992 and 12 February 1992 by WESTON representatives. Activities included subsurface soil sampling by hollow stem auger drilling techniques. All samples were shipped to IT Laboratories for analysis.

Soil sample locations for grid G19/14 are shown on Figure 2.31 and are positioned along the vitrified clay pipe sanitary sewer line. A summary of soil samples collected at each location listing the sample identification number, sampling depth interval, date sampled, and requested analytical parameters is presented in Table II.30.

Every effort has been made to comply with approved sampling protocol; however, some deviations were necessary in order to obtain the required sample. A summary of deviations for each applicable sample is presented below:

- MND33-0117-0001 — Interval 9.0 to 13.0 ft BGS. Additional sample from the 11.0- to 13.0-ft BGS split spoon was necessary to obtain the required sample volume for the sample and duplicate. Groundwater was encountered at 13.0 ft BGS.
- MND33-0134-0001 — Interval 7.0 to 11.0 ft BGS. Additional sample from the 9.0- to 11.0-ft BGS split spoon was necessary to obtain the required sample volume.
- MND33-0134-0002 — Interval 11.0 to 15.0 ft BGS. Additional sample from the 13.0- to 15.0-ft BGS split spoon was necessary to obtain the required sample volume. Groundwater was encountered at 14.5 ft BGS.

2.32. UNDERGROUND SEWER LINES GRID G24

2.32.1. Site History

2.32.1.1. Description of the Underground Sewer Lines Grid G24 Area

The underground sewer lines located throughout Mound Plant are used to convey sanitary and industrial wastewater and storm runoff from Plant sites to the wastewater treatment sewage disposal building. The Grid G24 area contains abandoned 8-inch vitrified clay pipe and active 8-inch PVC pipe to transport sanitary sewage.

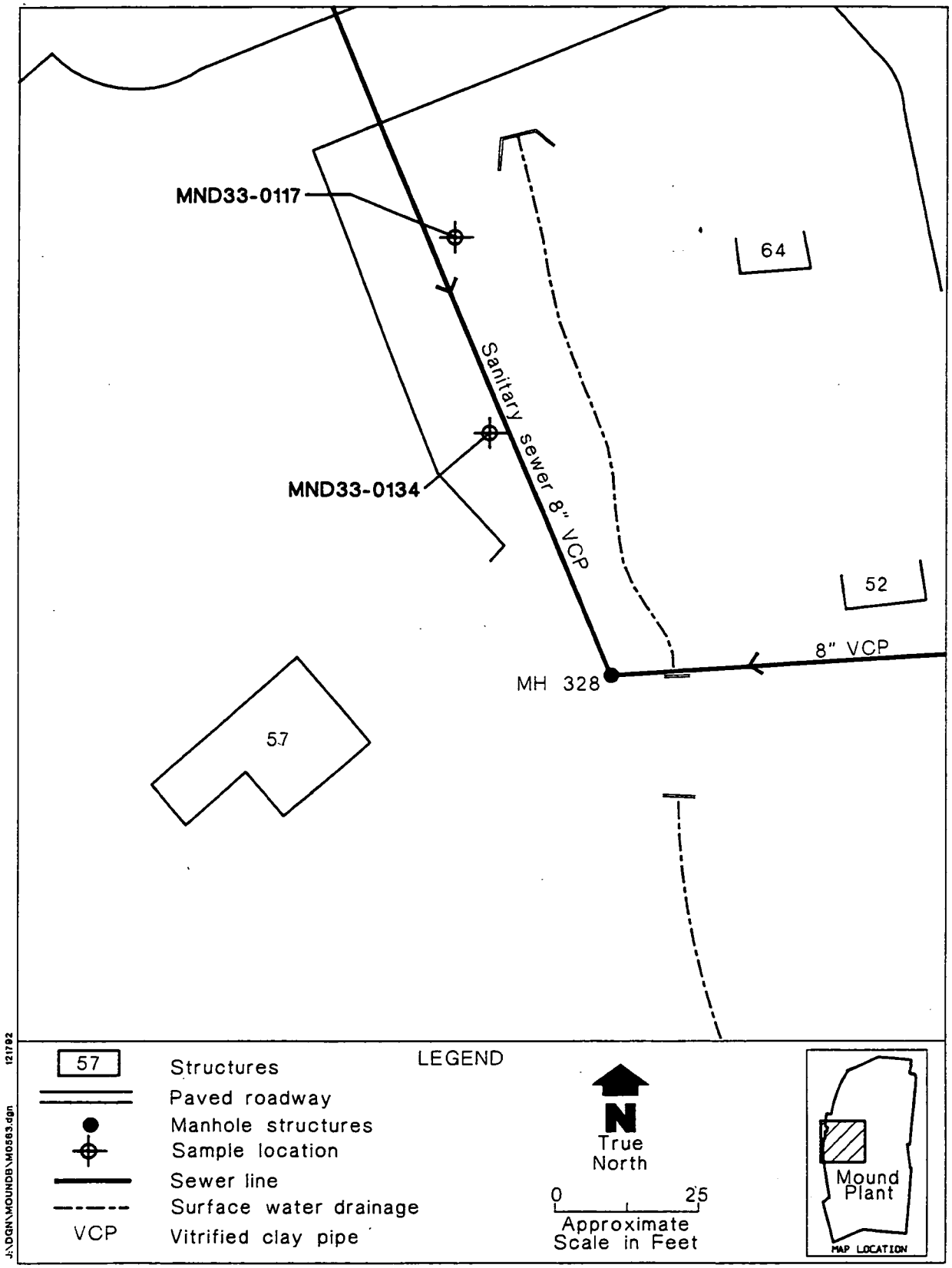


Figure 2.31. Underground sewer lines Grid G19/14 soil sample locations.

Table II.30. Underground Sewer Lines Grid G19/14 Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0117	MND33-0117-0001	Soil	1/29/92	9.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0117-1001	Soil	1/29/92	9.0-13.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
MND33-0134	MND33-0134-0001	Soil	2/12/92	7.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0134-0002	Soil	2/12/92	11.0-15.0	TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; tritium.
	MND33-0134-5001	Water	2/12/92	---	TCL VOCs.

BGS – Below Ground Surface
ft – Feet
P/PCBs – Pesticides/Polychlorinated Biphenyls
SVOCs – Semivolatile Organic Compounds
TAL – Target Analyte List
TCL – Target Compound List
VOCs – Volatile Organic Compounds

2.32.1.2. Potential Area Contaminants

Sanitary and industrial wastewater is transported to the sanitary wastewater treatment plant through the underground sewer lines. Sources of wastewater conveyed through the underground sewer lines include restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal-refinishing operation. Some of the laboratory sinks have reportedly received small amounts of solvents, photographic solutions, acids, and bases. Based on this site history, it is not possible to determine if the system has received RCRA-regulated materials or to determine which listings are applicable.

2.32.2. Field Investigation Procedures

The objective of sampling at the Grid G24 Underground Sewer Lines was to identify potential hazardous contaminants that may be present because of leaks in the sewer lines. WESTON representatives conducted sampling activities at the Grid G24 area on 19 December 1991 and 30 January 1992. Sampling was attempted near manhole no. 0002 (as indicated in the Work Plan) using hollow stem auger drilling techniques. No samples were collected at the location near manhole no. 0002 because of auger and split spoon refusal (Lawlor 1992). The sample locations are indicated on Figure 2.32.

Samples were not obtained in the area of manhole no. 0002 because of the shallow bedrock geology. Two boreholes were drilled; the first was closest to the sewer line, approximately 3 ft away, and the second was 5 ft from the line. Drill rig auger refusal was encountered at approximately 8.0 ft BGS at the first borehole and at 6.5 ft BGS at the second borehole. A soil sample could not be collected at the required depth interval of 9.5 to 11.5 ft BGS. In addition, auger rig drilling could not be conducted at the remaining three sample locations because of the steep slope.

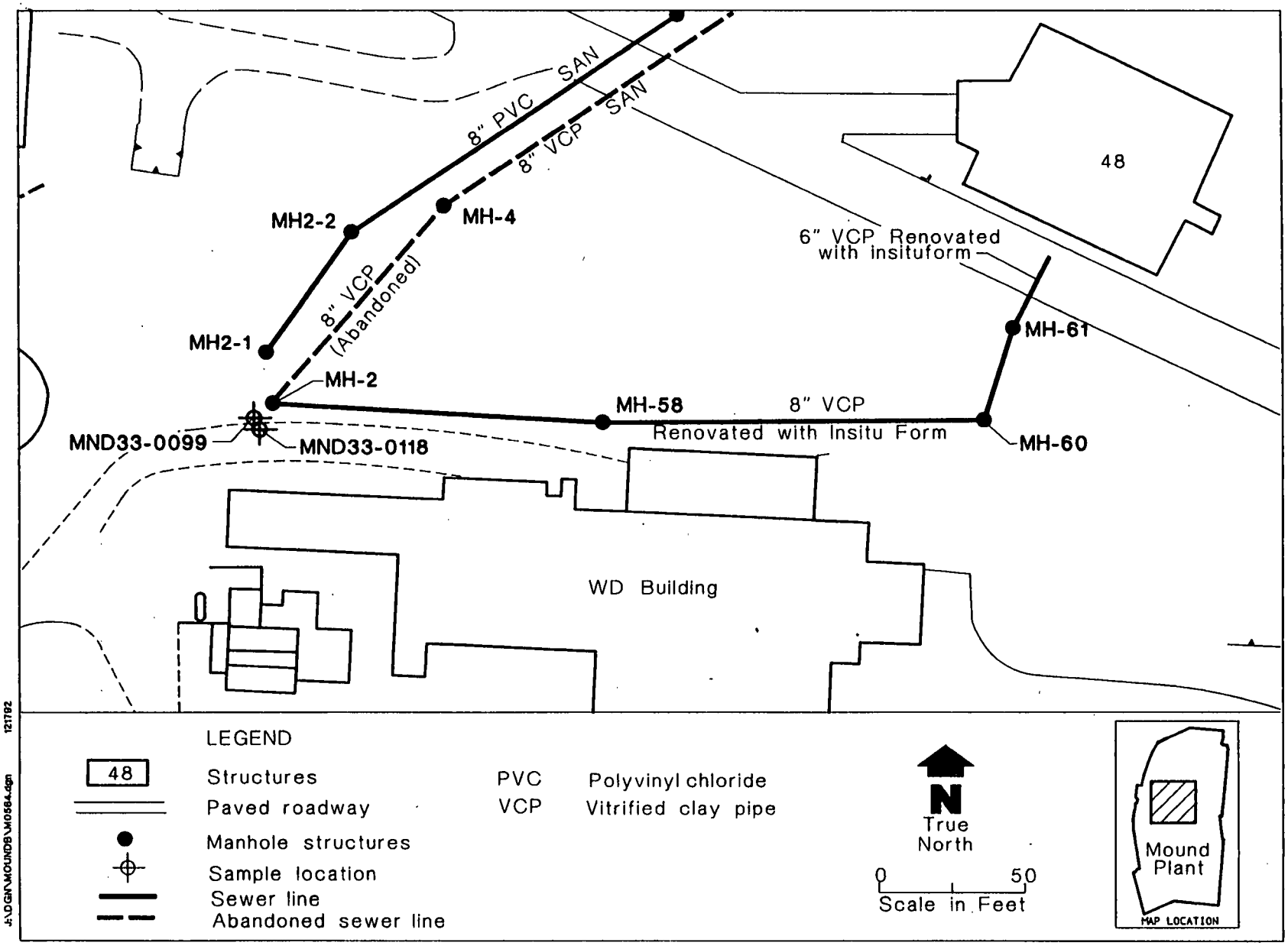


Figure 2.32. Underground sewer lines Grid G24 soil sample locations.

3. NATURE OF CONTAMINATION

Section 3 discusses the nature of contamination for each of the 32 investigation areas. Analytical results for samples collected at each investigation area are summarized and tabulated in each subsection. The analytical results summary tables in this section tabulate only the analytes detected at concentrations above laboratory reporting limits. A complete summary of analytical results for all parameters analyzed at all sites, organized in sequential order, is presented in Appendix A.

Laboratory analytical results are evaluated with respect to risk-based preliminary remediation goals (PRGs) and proposed action levels. Risk-based PRGs were developed for OU 3 in accordance with guidance provided in the EPA's Human Health Evaluation Manual, Part B: "Development of Risk-Based Preliminary Remediation Goals" (HHEM Part B), (EPA 1991b). A PRG was calculated for each chemical that has a risk estimator in the EPA Integrated Risk Information System (IRIS 1992) or the EPA "Health Effects Assessment Summary Tables" (HEAST) (EPA 1992b) if the chemical was detected at concentrations above laboratory reporting limits. PRG calculations for soils were made using the standard default parameters in HHEM Part B, equations 4′ and 5′ (EPA 1991b). The equation used for residential soils-carcinogenic effects (4′) (risk level of 10^{-6}) was Risk-Based PRG (mG/Kg) = 0.64 divided by oral slope factor (mG/Kg/day), and for residential soil-noncarcinogenic effects (5′) (hazard index = 1) was Risk-Based PRG (mG/Kg) = 2.7E + 05 x oral chronic reference dose (mG/Kg/day). These equations are based on incidental soil ingestion, which is likely to be the dominant soil exposure route.

The risk-based PRGs developed for OU 3 do not address potential ecological receptors, comparison to site-specific background concentrations, comparison to chemical-specific applicable or relevant and appropriate requirements (ARARs), and technical feasibility and cost considerations. The PRGs are calculated using standard default parameter equations and are based on screening-level assumptions. As such, the risk-based PRGs developed for comparison with OU 3 data are not intended as a sole criterion in developing levels of removal or remedial action, but rather provide a basis for determining if additional evaluation is required. The risk-based PRGs for OU 3 compounds detected at levels above the laboratory reporting limits are presented in Table III.1.

Risk-based PRGs for soils were also determined for radionuclides cesium-137 and thorium-234 by using Equation 11′ of HHEM Part B (EPA 1991b). This equation includes exposure from soil ingestion and external radiation. Equation 11′ was modified to account for the revised 1992 HEAST approach to estimating risk from external radiation (EPA 1992b). The 1992 HEAST values are risks associated with 1 pCi/g of soil, whereas the previous values represented in the risk associated with 1 pCi/m^2. A proposed action level for radium-224, -226, and -228 was determined by using the regulatory value from EPA 40 CFR

192. The PRGs and proposed action levels for radionuclides detected in OU 3 soils at levels above the laboratory reporting limits are presented in Table III.2.

Proposed action levels were determined for PCBs and petroleum hydrocarbons based upon available regulatory guidance. The proposed action levels for PCBs detected at levels above laboratory reporting limits were based upon EPA CFR 761.125. Proposed action levels for petroleum hydrocarbons were based upon OEPA guidance on petroleum-contaminated soils (EPA 1991a). The PCB and petroleum hydrocarbon proposed action levels for the OU 3 investigation are presented in Table III.3.

Proposed action levels were also determined for some inorganic compounds that did not have toxicity values in IRIS or HEAST. Proposed action levels for cobalt and lead were based upon published background inorganic compound concentrations for soils in the eastern United States (Shacklette and Boerngen 1984). Reported proposed action levels derived from Shacklette and Boerngen were statistically derived for lognormally distributed concentrations. The action levels are set at the upper 98% limit instead of the observed upper end of the background range. The upper 98% limit was selected because it is less sensitive to outliers than the observed upper end of the background range. In addition, the upper 98% limit provides an estimate of the range where the observed range of concentrations is right censored. Toxicity values and published literature background values for silicon, thallium, and chloride were not available. Therefore, proposed action levels and PRGs could not be determined for these compounds.

The PRG for beryllium has been determined based on risk-based assumptions which are not site-specific. Site-specific background concentrations for beryllium have not yet been established at Mound Plant. A review of published literature concerning beryllium concentrations in soils and sediment suggests that background concentrations are significantly greater than the risk-based PRG. Recent research by the USGS concerning beryllium concentrations in sediments of the Kentucky river basin established a geometric mean concentration of 2.0 mG/Kg for beryllium. This information was obtained through personal communication with Mr. Stephen Porter of the USGS and concerns as yet unpublished data collected for NAWQA (National Water Quality Assessment). Published background information concerning beryllium concentration in soils of the eastern United States was also available (Shacklette and Boerngen 1984). A concentration of 3.5 mG/Kg was statistically derived for lognormally distributed concentrations by using the upper 98% limit of the observed range. A background soil concentration for beryllium was also established through a study performed at nearby Wright-Patterson AFB which set the background concentration for beryllium at 1.0 mG/Kg. (U.S. Air Force 1989).

Concentrations of beryllium in soils analyzed as part of the OU 3 LFI were detected above laboratory detection limits at the majority of soil and sediment sampling locations. Concentrations ranged from

between 0.3 mG/Kg to 2.3 mG/Kg with the majority of samples reporting a concentration between 0.3 mG/Kg and 1.0 mG/Kg.

The comparison of regional background concentrations for beryllium in soils and sediments to OU 3 LFI data show that the OU 3 LFI beryllium concentrations fall within the range of regional background concentrations. The concentrations of beryllium in OU 3 soil and sediment samples are considered to be within acceptable ranges and do not constitute a need for further characterization or remediation at any OU 3 LFI site. Based upon this assessment, a discussion concerning beryllium concentrations at each individual LFI site will not be conducted.

Inorganic compounds calcium, iron, magnesium, potassium, and sodium were detected in the majority of the OU 3 LFI sampling sites. These compounds are considered to be natural constituents of soils and to be present at levels in the percent range. As such, these compounds are not considered to be analytes of concern in soils at the OU 3 LFI sites, and no PRGs were derived. However, an evaluation of these results against site-specific background will be performed when background information is collected.

Polycyclic aromatic hydrocarbon (PAH) compounds were detected at several OU 3 LFI sites at concentrations slightly above their respective PRGs. PAH compounds were detected in some soil samples from the Paint Shop Area, Area I Building 1 Leach Pit, Area C Drum Staging Area, and the Old Firing Range Drum Storage Site. PAH compounds were also detected at the Underground Sewer Line Grid G7 sediment sample collected from inside the storm sewer pipe. Each of the abovementioned investigation sites is located in close proximity to asphalt surfaces and can receive surface runoff from the asphalt surfaces. A review of available published literature concerning sources of PAH compounds in soils and sediments suggests that asphalt particles in street dusts are an important contributor to PAH concentrations in soils and sediments. The occurrence of PAH compounds in soils and sediment at only these particular OU 3 investigation sites and the physical location of soil samples where PAH compounds were detected at each site suggests a relationship between PAH concentrations and surface runoff from nearby asphalt surfaces. Based upon these conditions, the occurrence of PAH compounds in selected site soils and sediment at concentrations slightly above respective PRGs is not considered to represent a significant impact to site soil quality as a result of previous site activities. A reference to published literature concerning PAH compounds has been included as Attachment A in Section 6.

Preliminary remediation goals were calculated for the surface water samples analyzed for the OU 3 LFI. Surface water samples from the Building 34 Fire-Fighting Training Pit, the Building 34 Oil Burn Structure, and the WD Building Glass Melter Room Sump were collected for analysis. The nature of these structures makes it difficult to characterize available water at each site as surface water, and the commonly used exposure route for surface water (fish ingestion) is not applicable to these sites. The PRGs developed for OU 3

surface water samples were developed from HHEM Part B criteria for residential water and are used for comparison purposes only for the OU 3 analytical results. PRGs (shown in Table III.4) were calculated for OU 3 surface water samples by using the standard default parameters assumptions in HHEM Part B equation 2' (EPA 1991b). This equation, shown in Table III.4, was used for all nonradioactive analytes detected above laboratory reporting limits in analyzed surface water samples. PRGs for surface water analytes represent a target hazard index of 1 (residential water-noncarcinogenic effects) based on exposure to surface water through ingestion and inhalation. Carcinogenic slope factors were not available for analytes detected at levels above laboratory reporting limits.

The radionuclide PRG for tritium in surface water was calculated by using the standard default parameters for residential water-carcinogenic effects in HHEM Part B Equation 10' (EPA 1991b). Equation 10' is presented along with the PRG for tritium in Table III.4. The PRG represents a target excess individual lifetime cancer risk of 10^{-6} based upon exposure to surface water through ingestion and inhalation.

The development of preliminary remediation goals and proposed action levels for the OU 3 LFI Report was conducted for comparison purposes only and are not site-specific. As the RI/FS process at Mound Plant proceeds, action levels will evolve from site-specific PRGs to become parts of the final remedial action objectives, which will include consideration of ARARs, site risk assessments (including ecological risk assessment), and background concentrations.

In addition to presenting the results of laboratory analyses and a discussion of the nature of contamination for each investigation area, a recommendation for the disposition of each site including no further action, additional site characterization, or soil remediation is also presented in Section 3.

Table III.1. Risk Based Preliminary Remediation Goals for Chemicals in Soils and Sediment

Analyte	Slope Factor Oral (mG/Kg/day)	RfD Chronic Oral (mG/Kg/day)	PRG Residential Soil Carcinogenic[a] (mG/Kg)	PRG Residential Soil Noncarcinogenic[b] (mG/Kg)
VOLATILE ORGANIC COMPOUNDS				
Acetone	NA	1.0E−01 [i]	NA	2.7E+04
Benzene	2.9E−02 [i]	NA	2.2E+01	NA
2−butanone	NA	5.0E−02 [h]	NA	1.4E+04
Carbon disulfide	NA	1.0E−01 [i]	NA	2.7E+04
1,2−dichloroethene	NA	1.0E−02 [h]	NA	2.7E+03
Ethylbenzene	NA	1.0E−01 [i]	NA	2.7E+04
2−hexanone	NA	NA	NA	NA
Methylene chloride	7.5E−03 [i]	6.0E−02 [i]	8.5E+01	1.6E+04
4−methyl−2−pentanone	NA	5.0E−02 [i]	NA	1.4E+04
Tetrachloroethene	5.1E−02 [e]	NA	1.3E+01	NA
Toluene	NA	2.0E−01 [i]	NA	5.4E+04
1,1,1−trichloroethane	NA	9.0E−02 [h]	NA	2.4E+04
1,1,2−trichloroethane	5.7E−02 [i]	4.0E−03 [i]	1.1E+01	1.1E+03
Trichloroethene	1.1E−02 [h]	NA	5.8E+01	NA
Xylenes (total)	NA	2.0E+00 [i]	NA	5.4E+05
SEMIVOLATILE ORGANIC COMPOUNDS				
Acenaphthene	NA	6.0E−02 [i]	NA	1.6E+04
Anthracene	NA	3.0E−01 [i]	NA	8.1E+04
Benzo(a)anthracene	1.1E+00 [e]	NA	6.0E−01	NA
Benzo(a)pyrene	7.3E+00 [i]	NA	8.8E−02	NA
Benzo(b)fluoranthene	1.0E+00 [e]	NA	6.4E−01	NA
Benzo(g,h,i)perylene	1.6E−01 [e]	NA	4.0E+00	NA
Benzo(k)fluoranthene	4.8E−01 [e]	NA	1.3E+00	NA
Benzoic acid	NA	4.0E+00 [i]	NA	1.1E+06
Benzyl alcohol	NA	3.0E−01 [h]	NA	8.1E+04
Bis(2−ethylhexyl)phthalate	1.4E−02 [i]	2.0E−02 [i]	4.6E+01	5.4E+03
Chrysene	3.2E−02 [e]	NA	2.0E+01	NA
Dibenzo(a,h)anthracene	8.1E+00 [e]	NA	7.9E−02	NA
Dibenzofuran	NA	NA	NA	NA
2,4−dimethylphenol	NA	2.0E−02 [i]	NA	5.4E+03
Fluoranthene	NA	4.0E−02 [i]	NA	1.1E+04
Fluorene	NA	4.0E−02 [i]	NA	1.1E+04
Indeno(1,2,3−cd)pyrene	1.7E+00 [e]	NA	3.8E−01	NA
2−methylnapthalene	NA	NA	NA	NA
2−methylphenol	NA	5.0E−02 [i]	NA	1.4E+04
4−methylphenol	NA	5.0E−02 [i]	NA	1.4E+04
Naphthalene	NA	4.0E−02 [h]	NA	1.1E+04
Phenanthrene	NA	2.9E−02 [e]	NA	7.8E+03
Phenol	NA	6.0E−01 [i]	NA	1.6E+05
Pyrene	5.9E−01 [e]	3.0E−02 [i]	1.1E+00	8.1E+03
PESTICIDES				
Chlordane	1.3E+00 [i]	6.0E−05 [i]	4.9E−01	1.6E+01
Gamma−chlordane	NA	NA	NA	NA
Alpha−BHC	6.3E+00 [i]	NA	1.0E−01	NA
Delta−BHC	NA	NA	NA	NA

Table III.1. Risk Based Preliminary Remediation Goals for Chemicals in Soils and Sediment

Analyte	Slope Factor Oral (mG/Kg/day)	RfD Chronic Oral (mG/Kg/day)	PRG Residential Soil Carcinogenic[a] (mG/Kg)	PRG Residential Soil Noncarcinogenic[b] (mG/Kg)
Dieldrin	1.6E+01 [i]	5.0E−05 [i]	4.0E−02	1.4E+01
Endrin	NA	3.0E−04 [i]	NA	8.1E+01
DIOXINS/FURANS				
Heptachlorodibenzofuran	NA	NA	NA	NA
Hexachlorodibenzofuran	NA	NA	NA	NA
1,2,3,4,6,7,8−HpCDD	NA	NA	NA	NA
Heptachlorodibenzo−p−dioxin(HpCDD)	6.2E+03 [e]	NA	1.0E−04	NA
Octachlorodibenzofuran	NA	NA	NA	NA
Octachlorodibenzo−p−dioxin	NA	NA	NA	NA
INORGANICS				
Aluminum	NA	2.9E+00 [e]	NA	7.8E+05
Antimony	NA	4.0E−04 [i]	NA	1.1E+02
Arsenic	NA	3.0E−04 [i]	NA	8.1E+01
Barium	NA	7.0E−02 [i]	NA	1.9E+04
Beryllium	4.3E+00 [i]	5.0E−03	1.5E−01	1.4E+03
Cadmium	NA	5.0E−04 [i]	NA	1.4E+02
Chromium	NA	5.0E−03 [i]	NA	1.4E+03
Copper	NA	3.7E−02 [h]	NA	1.0E+04
Cyanide	NA	2.0E−02 [i]	NA	5.4E+03
Manganese	NA	1.0E−01 [i]	NA	2.7E+04
Mercury	NA	3.0E−04 [h]	NA	8.1E+01
Molybdenum	NA	5.0E−03 [h]	NA	1.4E+03
Nickel	NA	2.0E−02 [i]	NA	5.4E+03
Selenium	NA	5.0E−03 [i]	NA	1.4E+03
Silicon	NA	NA	NA	NA
Silver	NA	5.0E−03 [i]	NA	1.4E+03
Thallium	NA	NA	NA	NA
Vanadium	NA	7.0E−03 [h]	NA	1.9E+03
Zinc	NA	2.0E−01 [h]	NA	5.4E+04
OTHER COMPOUNDS				
Chloride	NA	NA	NA	NA
Nitrite	NA	1.0E−01 [i]	NA	2.7E+04
Nitrate	NA	1.6E+00 [i]	NA	4.3E+05
Lithium	NA	2.0E−02 [e]	NA	5.4E+03

[a]Prespecified Cancer Risk Level of 1.0E−06 (EPA 1991b)
[b]Prespecified Hazard Index of 1 (EPA 1991b)
PRG − Preliminary Remediation Goal
NA − Not Available
Data Sources: [e] EPA Region III (EPA 1992c)
[h] HEAST
[i] IRIS

Table III.2. Proposed Action Levels for Radionuclides in Soil and Sediment

Analyte	Proposed Action Level (pCi/g)	Source
Cesium–137	.02	PRG[a]
Potassium–40	NA	NA
Radium–224, –226, –228	5.0	EPA 40 CFR 192
Thorium–234	1.1	PRG[a]

[a]Equation 11' in HHEM Part B (EPA 1991b) was modified to account for the revised 1992 HEAST approach to estimating risk from external radiation; the constant 3.4E–06 was changed to 24 to reflect the risk per gram rather than the risk per square meter of soil (EPA assumed the exposure from $1m^2$ of soil was contributed by 1.43×10^5g of soil).

PRG – Soil = $1E-6/[(1.3E3 \times SF_o) + (24 \times SF_e)]$
Prespecified cancer risk level of 1E–06
HEAST – Health Effects Assessment Summary Tables (EPA 1992)
HHEM – Human Health Evaluation Manual (EPA 1991b)

Table III.3. Proposed Action Levels for Chemicals Detected in Soils and Sediment

Analyte	Proposed Action Level	Source
Polychlorinated Biphenyls (mG/Kg)		
Aroclor 1232	50 (total)	EPA 40 CFR 761.125
Aroclor 1242	50 (total)	EPA 40 CFR 761.125
Aroclor 1248	50 (total)	EPA 40 CFR 761.125
Aroclor 1254	50 (total)	EPA 40 CFR 761.125
Petroleum Hydrocarbons (mG/Kg)		
Extractable Petroleum Hydrocarbons	105 (total)	OEPA Guidance
Total Petroleum Hydrocarbons	105 (total)	OEPA Guidance
Inorganics (mG/Kg)		
Cobalt	39	Shacklette and Boerngen, 1984
Lead	53	Shacklette and Boerngen, 1984

Table III.4. Risk-Based Preliminary Remediation Goals for Chemicals in Surface Water

Analyte	RfD Chronic Oral (mG/Kg/day)	RfD Inhalation (mG/Kg/day)	PRG Residential Water Noncarcinogenic (mg/L)
Acetone	1.0E-01 [i]	NA	3.7 E + 00
Aluminum	2.9E + 00 [i]	NA	1.1E + 02
Barium	7.0E - 02 [i]	1.0E - 04 [i]	2.6E + 00
Benzoic Acid	4.0E + 00 [i]	NA	1.5E + 02
Bis (2-ethylhexyl)phthalate	2.0E - 02 [i]	NA	7.3E - 01
Cadmium	5.0E - 04 [i]	NA	1.8E - 02
Calcium	NA	NA	NA
Copper	3.7E - 02 [h]	NA	1.4E + 00
2-4 Dimethylphenol	2.0E - 02 [i]	NA	7.3E - 01
Iron	NA	NA	1.0*
Lead	NA	NA	NA
Magnesium	NA	NA	NA
Manganese	1.0E - 01 [i]	NA	3.7E + 00
2-Methylphenol	5.0E - 02 [i]	NA	1.8E + 00
4-Methylphenol	5.0E - 02 [i]	NA	1.8E + 00
Phenol	6.0E - 01 [i]	NA	2.2E + 01
Potassium	NA	NA	NA
Sodium	NA	NA	NA
Thallium	NA	NA	0.016*
Zinc	2.0E - 01 [h]	NA	7.3E + 00
Analyte	Slope Factor Oral	Inhalation Slope Factor (Risk/pCi)	PRG Residential Water Carcinogenic (pCi/g)
Tritium	5.4E - 14 [i]	7.8E - 14 [i]	1.4E + 02

Data sources: [i]IRIS
[h]HEAST
*Ohio water quality standards Revised code 3745-1-07

Table III.4. Risk-Based Preliminary Remediation Goals for Chemicals in Surface Water (Continued)

Reduced Equation for Residential Water - Noncarcinogenic:

$$\frac{Risk\text{-}based\ PRG}{(mg/L;THI\ =\ 1)} = \frac{73}{(7.5/RfD_i\ +\ 2/RfD_o)}$$

RfD_o = oral chronic reference dose in mG/Kg/day
RfD_i = inhalation chronic reference dose in mG/Kg/day

THI = target hazard index (unitless)

Reduced Equation for Radionuclide PRGs: (Tritium)
Residential Water - Carcinogenic Effects:

$$\frac{HHEM\ Part\ B}{Equation\ 10'} = \frac{Risk\text{-}based\ PRG}{(pCi/L;TR\ =\ 10^{-6})} = \frac{9.5\ x\ 10^{-11})}{2(SF_o)\ +\ 7.5(SF_i)}$$

SF_o = oral (ingestion) slope factor (risk/pCi)
SF_i = inhalation slope factor (risk/pCi)

TR = target excess individual lifetime cancer risk (unitless)

3.1 PAINT SHOP AREA

The paint shop, located on the Mound Plant Main Hill, is used to store unused commercial paints, thinners, and lacquers as well as operation wastes. Paint shop wastes include excess paints and thinners and outdated paint and cleaning solutions. Wastes are contained in 55-gallon drums pending offsite disposal. A summary of the paint shop history, potential site contaminants, and field investigation procedures is presented in subsection 2.1. Soil sampling was conducted at the Paint Shop Area to assess whether the site is or has been a source of hazardous constituents released to the environment through spills or drum leakage.

Four soil samples and two duplicate samples collected at two locations (MND33-0062 and -0063) outside the paint shop building were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and tritium. The validated analytical results for all analytes detected at concentrations above the laboratory reporting limits for each sample are presented in Table III.5.

3.1.1. Volatile Organic Compounds

VOCs were not detected in soil samples from the Paint Shop Area at concentrations above laboratory reporting limits.

3.1.2. Semivolatile Organic Compounds

Three SVOCs, benzo(a)pyrene, benzo(b)fluoranthene, and pyrene, were detected in surface soil sample MND33-0063-0001 at concentrations above their respective PRGs. These polycyclic aromatic hydrocarbon (PAH) compounds, detected at concentrations above PRGs in surface soils, may be a result of surface runoff from nearby asphalt surfaces (bitumen). No other SVOC was detected in the Paint Shop soil samples at levels above PRGs.

3.1.3. Pesticides and Polychlorinated Biphenyls

Pesticides and PCBs were not detected in any samples from the Paint Shop Area at concentrations above laboratory reporting limits.

3.1.4. TAL Inorganics

Lead was detected at surface soil sample MND33-0062-0001 at a concentration above the proposed action level. The duplicate sample from this location showed a lead concentration below the proposed action level. Concentrations of lead were not detected at levels above the proposed action level in subsurface soil samples or from surface soils from sample location MND33-0062. The occurrence of lead at a concentration above the proposed action level in one surface soil sample appears to be an isolated occurrence. However, further characterization of soils in the area should be conducted to determine lead concentrations. No other inorganic compounds were detected in Paint Shop Area soils at concentrations above PRGs or proposed action levels.

3.1.5. Tritium

Tritium was not detected at concentrations above the laboratory reporting limit in any of the samples analyzed.

3.1.6. Summary

The analytical results of the soils investigation at the Paint Shop Area indicate that site activities involving the use and storage of paints, thinners, and cleaning solutions may have impacted soil quality in the vicinity of the site. As a result of these findings, further action involving site characterization at the Paint Shop Area is recommended.

TABLE III.5
PAINT SHOP AREA
Location: MND33-0062
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3560.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	4930.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	4590.	J	7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	2920.	J	7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	6.	3300.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	32.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	12.6	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	17.5	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	38.	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	3.	12.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	.79	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	.83	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	2.	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.2	.76	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	32.9		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	30.5		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	19.		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	26.9		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.2	18.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.69		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.74		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.66		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.67		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.2	.66		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.4	1.4	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.39	1.7	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.37	0.84	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.39	1.5	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1002	S	mG/Kg	0.37	1.6	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	7.2	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	2.7	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	18.	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	175000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	246000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	202000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	174000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	2.	279000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	29.8		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	29.		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	26.9		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	35.8		1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	1.	27.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	7.9	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	8.2	J	3.9E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.5
PAINT SHOP AREA
Location: MND33-0062
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
COBALT, TOTAL	1001	S	mG/Kg	1.	7.2	J	3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	1.	5.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.6		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	15.3	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	13.9	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	21.9		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	1.	13.7	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	9080.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	13400.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	13600.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	7410.	J	NA	I
IRON, TOTAL	1002	S	mG/Kg	1.	8510.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	148.	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.4	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	5.3	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	48.3	J	5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.2	6.2	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	50000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	5040.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.5	16400.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	63500.		NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	5.	4600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	361.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	327.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	390.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	310.		2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.2	302.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.7		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	13.3	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	14.3	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	18.2		5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	2.	9.6	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	395.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	679.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	833.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	284.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	10.	582.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	18.9	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	20.6	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	18.5	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	19.1	J	1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	1.	21.1	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	319.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	264.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	219.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	326.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.5
PAINT SHOP AREA
Location: MND33-0062
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	1002	S	mG/Kg	10.	210.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.7	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	19.4	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	18.5	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	23.3	J	1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	1.	17.2	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	60.4	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	26.6	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	30.7	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	51.8	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.5	18.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.5
PAINT SHOP AREA
Location: MND33-0063
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	6560.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	67.1	J	1.9E+04	I
BENZO(A)ANTHRACENE	0001	S	mG/Kg	0.33	0.51	J	6.0E-01	I
BENZO(A)PYRENE	0001	S	mG/Kg	0.33	0.35	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0001	S	mG/Kg	0.33	0.75	J	6.4E-01	I
BERYLLIUM	0001	S	mG/Kg	.2	.63		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.33	0.51	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.1		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	9540.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	17.7		1.4E+03	I
CHRYSENE	0001	S	mG/Kg	0.33	0.73	J	2.0E+01	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	22.9		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	.16	J	5.4E+03	I
FLUORANTHENE	0001	S	mG/Kg	0.33	1.3	J	1.1E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	11900.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	33.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	4660.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	521.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	15.8		5.4E+03	I
PHENANTHRENE	0001	S	mG/Kg	0.33	0.83	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1130.		NA	I
PYRENE	0001	S	mG/Kg	0.33	1.3	J	1.1E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	3.		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	39.4		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	104.	J	5.4E+04	I

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J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.2. POWERHOUSE AREA FUEL TANKS

Facility operations at the Powerhouse Area Fuel Tanks primarily involved tank filling operations where spills or overflows of No. 2 fuel oil may have occurred in close vicinity to the fuel tanks. A discussion of the setting, history, potential contaminants, and field investigation procedures at the Powerhouse Area Fuel Tanks is presented in subsection 2.2. Validated analytical results for analytes detected at concentrations above the laboratory reporting limit for all samples collected at the powerhouse area are presented in Table III.6.

Six soil samples and two duplicate samples collected from two locations (MND33-0001 and -0002) at the fuel tank area were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and EPH. A fuel oil sample (MND33-0003-0001) was collected for laboratory analysis from one of the Powerhouse Area Fuel Tanks; however, this laboratory analysis was not performed.

3.2.1. Volatile Organic Compounds

VOCs were not detected in soil samples from the Powerhouse Area Fuel Tanks at concentrations above laboratory reporting limits.

3.2.2. Semivolatile Organic Compounds

SVOCs were not detected in soil samples from the Powerhouse Area Fuel Tanks at concentrations above laboratory reporting limits.

3.2.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in soil samples from the Powerhouse Area Fuel Tanks at concentrations above laboratory reporting limits.

3.2.4. TAL Inorganics

Inorganic compounds were not detected in Powerhouse Area Fuel Tanks soil samples at concentrations above the proposed action levels or PRGs.

3.2.5. Extractable Petroleum Hydrocarbons

Elevated concentrations of EPHs were detected in surface and subsurface soil samples collected at the two soil boring locations at the Powerhouse Area Fuel Tanks. EPH concentrations for surface soil samples from the two sample locations ranged from 6,000 mG/Kg to 48,000 mG/Kg. Subsurface soil EPH concentrations from the two sample locations ranged from 230 mG/Kg to 4,000 mG/Kg. These concentrations exceed the proposed action level (based on OEPA guidelines) of 105 mG/Kg.

3.2.6. Summary

Analytical results for soil samples collected at the Powerhouse Area Fuel Tanks indicate that site activities involving fuel tank operations have had an impact on soil quality in the vicinity of the site. Surface and subsurface soils in the vicinity of the fuel tanks show elevated concentrations of EPHs. Based upon these findings, additional site characterization to determine the extent of contamination and a non-critical removal action of contaminated soils is recommended.

TABLE III.6
POWERHOUSE AREA FUEL TANKS
Location: MND33-0001
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	7210.	J	7.8E+05	I
ALUMINUM, TOTAL	0011	S	mG/Kg	6.	6880.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	1340.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	1910.	J	7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	.06	1720.	J	7.8E+05	I
ANTIMONY, TOTAL	0011	S	mG/Kg	3.	15.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	28.4	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	25.6	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	.03	22.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.	J	2.1E+03	I
ARSENIC, TOTAL	0011	S	mG/Kg	.2	3.9	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	2.0	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	1.7	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.002	1.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	71.1		1.9E+04	I
BARIUM, TOTAL	0011	S	mG/Kg	.2	14.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	10.1		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	13.3		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.002	12.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.61		1.5E-01	I
BERYLLIUM	0011	S	mG/Kg	.2	.7		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	0.46		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	0.45		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.002	0.44		1.5E-01	I
CADMIUM, TOTAL	0011	S	mG/Kg	.2	2.5	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	5.6	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	6.1	J	1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.002	4.3	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	44600.		NA	I
CALCIUM, TOTAL	0011	S	mG/Kg	2.	153000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	119000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	105000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	.02	97100.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.3		1.4E+03	I
CHROMIUM, TOTAL	0011	S	mG/Kg	1.	28.3		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	21.8		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	21.1		1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	.01	19.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.9		3.9E+01	I
COBALT, TOTAL	0011	S	mG/Kg	1.	10.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	4.3		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	4.4		3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	.01	3.9		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	21.6		1.0E+04	I
COPPER, TOTAL	0011	S	mG/Kg	1.	17.5		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	11.6		1.0E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.6
POWERHOUSE AREA FUEL TANKS
Location: MWD33-0001
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
COPPER, TOTAL	0003	S	mG/Kg	.01	10.7		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	.01	10.5		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0003	S	mG/Kg	0.005	0.024	J	8.5E+01	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	-	290	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	-	230	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	1002	S	mG/Kg	-	760	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.	6000.	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0011	S	mG/Kg	5.	7500.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	15100.		NA	I
IRON, TOTAL	0011	S	mG/Kg	1.	15200.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	3830.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	4500.	J	NA	I
IRON, TOTAL	1002	S	mG/Kg	.01	4270.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	19.	J	5.3E+01	I
LEAD, TOTAL	0011	S	mG/Kg	.2	15.1	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	2.2	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	2.9	J	5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.002	2.5	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	13800.	J	NA	I
MAGNESIUM, TOTAL	0011	S	mG/Kg	5.	15900.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	42200.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	38900.		NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	.05	32200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	477.	J	2.7E+04	I
MANGANESE, TOTAL	0011	S	mG/Kg	.2	464.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	183.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	178.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.002	196.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.4		5.4E+03	I
NICKEL, TOTAL	0011	S	mG/Kg	2.	20.3		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	15.6		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	16.6		5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	.02	14.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	859.		NA	I
POTASSIUM, TOTAL	0011	S	mG/Kg	10.	1550.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	344.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	378.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	.1	232.		NA	I
SILVER, TOTAL	0011	S	mG/Kg	1.	17.1	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	15.3	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	15.4	J	1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	.01	15.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	106.		NA	I
SODIUM, TOTAL	0011	S	mG/Kg	10.	356.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.6
POWERHOUSE AREA FUEL TANKS
Location: MND33-0001
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0002	S	mG/Kg	.1	148.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	148.		NA	I
SODIUM, TOTAL	1002	S	mG/Kg	.1	127.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.2		1.9E+03	I
VANADIUM, TOTAL	0011	S	mG/Kg	1.	20.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	16.5		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	16.9		1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	.01	15.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	47.9		5.4E+04	I
ZINC, TOTAL	0011	S	mG/Kg	.5	32.5		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	15.8	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	46.8	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.005	17.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.6
POWERHOUSE AREA FUEL TANKS
Location: MND33-0002
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8010.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	1600.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	3630.	J	7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	33.4	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	21.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.3	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	2.4	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	2.0	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	60.2		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	13.3		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	27.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.62		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	0.56		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	0.58		1.5E-01	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	6.3	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	4.3	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	47100.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	136000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	98100.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	24.		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	24.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	5.2		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	5.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.9		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	12.9		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	14.7		1.0E+04	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	-	4000	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	-	3200	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.	48000.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	15900.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	4340.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	7490.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	17.9	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	9.2	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	7.7	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	10100.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	47000.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	30900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	486.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.6
POWERHOUSE AREA FUEL TANKS
Location: MND33-0002
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0002	S	mG/Kg	.002	236.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	274.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.2		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	17.7		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	17.9		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1020.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	288.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	528.		NA	I
SILVER, TOTAL	0002	S	mG/Kg	.01	15.5	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	14.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	92.2		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	158.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	128.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.6		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	19.4		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	21.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	47.8		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	20.7	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	32.4	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.3. WD BUILDING DRUM STAGING AREA

The WD Building Drum Staging Area is used to temporarily stage drums containing tritiated wastewater from building maintenance. Soil sampling was conducted to determine if spills or releases may have occurred at the staging area. A summary description of the WD Building Drum Staging Area, including field investigation procedures, is provided in subsection 2.3. Analytical results for analytes detected at concentrations above the laboratory reporting limit for all samples collected at the WD Building Drum Staging Area are presented in Table III.7.

Five soil samples were collected for laboratory analyses at the WD Building Drum Staging Area from three sampling locations (MND33-0048, -0049, and-0050), including one duplicate soil sample. Soil samples were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and tritium.

3.3.1. Volatile Organic Compounds

VOCs were not detected in soil samples analyzed from the drum staging area at concentrations above laboratory reporting limits.

3.3.2. Semivolatile Organic Compounds

SVOCs were not detected in soils analyzed from the drum staging area at concentrations above laboratory reporting limits.

3.3.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in the drum staging area soil samples at concentrations above laboratory reporting limits.

3.3.4 Inorganics

Inorganic compounds were not detected in soils from the drum staging area at concentrations above the PRGs or the proposed action levels, except for lead concentrations in two soil samples. A lead concentration in the duplicate soil sample from sample location MND33-0049 was reported at 123 mG/Kg (original sample lead concentration was 32.8 mG/Kg). A lead concentration of 53.1 mG/Kg was reported at soil sample location MND33-0050. The isolated occurrence of lead concentrations above the proposed action level of 53.0 mG/Kg in drum staging area soils does not warrant further site characterization.

3.3.5. Tritium

Tritium was not detected in any soil sample collected at the drum staging area at concentrations above the laboratory reporting limit.

3.3.6. Summary

The results of laboratory analyses for samples collected at the WD Building Drum Staging Area indicate that previous site activities have not adversely impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation at the WD Building Drum Staging Area is recommended.

TABLE III.7
WD BUILDING DRUM STAGING AREA
Location: MND33-0048
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3120.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	2160.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	17.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	26.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.3		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.3		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	35.4		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	18.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.67		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.55		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.0	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.7	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	113000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	98800.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.0	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	19.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	6.2	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	5.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.7	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	12.1	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	6180.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	5660.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.1	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	3.8	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	19000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	40300.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	409.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	285.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	16.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	640.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	356.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	14.8	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	13.8	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	126.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	130.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.2	0.51	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.7
WD BUILDING DRUM STAGING AREA
Location: MND33-0048
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	0001	S	mG/Kg	1.	17.4	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	18.3	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	38.8	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	21.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.7
WD BUILDING DRUM STAGING AREA
Location: MND33-0049
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5030	J	7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	5070.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	12.5	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	11.9	J	1.1E+02	I
AROCLOR-1254	0001	S	mG/Kg	3.582	3.9	J	50. total	R
AROCLOR-1254	1001	S	mG/Kg	3.582	3.8	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.2		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	3.1		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	127.		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	121.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.67		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.65		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.72	1.3	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.72	2.3	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.6	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	3.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	40200.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	28800.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	163.		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	140.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.8	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.6	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	36.2	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	29.6	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	.37		5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	10800.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	11100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	32.8	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	123.	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	14900.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	12200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	594.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	639.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.42		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	.32		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	71.6		5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
R - Reanalysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.7
WD BUILDING DRUM STAGING AREA
Location: MND33-0049
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	1001	S	mG/Kg	2.	53.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1430.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	1270.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	9.4	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	7.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	244.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	216.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	19.5	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	18.2	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	117.	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	126.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.7
WD BUILDING DRUM STAGING AREA
Location: MWD33-0050
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3060.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	11.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.5		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	97.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.56		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.73	0.8	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.3	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	47000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	6.3	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	23.5	J	1.0E+04	I
FLUORANTHENE	0001	S	mG/Kg	0.73	0.91	J	1.1E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	5780.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	53.1	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	14900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	474.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	1.8		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	748.		NA	I
PYRENE	0001	S	mG/Kg	0.73	0.77	J	1.1E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	13.0	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	95.5		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	13.6	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	80.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.4. WD BUILDING GLASS MELTER ROOM SUMP

The WD Building Glass Melter Room Sump is a concrete unit approximately 4 ft in diameter and 8 ft deep and is covered with a metal lid. The sump is fed by floor drains that discharge wash water from the floor beneath the glass melter room furnace. The sump was also used to collect wash water from several drains originating from the glass melter's off-gas treatment system room. The sump may have also received floor wash water containing tritium from the WD Building treatment facilities (DOE 1989b). A description of the WD Building Glass Melter Room Sump, including potential contaminants and field investigation procedures, is presented in subsection 2.4. Sump water was sampled to determine whether hazardous constituents are present.

The OU 3 Work Plan stipulated that sampling of sediment at the bottom of the sump be conducted along with subsequent laboratory analyses. A sediment sample was retained and analyzed by the EG&G low-level radiation screening facility. Radiation screening confirmed field measurements that elevated levels of plutonium-238 were present in the sediment. Due to the elevated plutonium-238 level (257, 391 pCi/g), sediment sampling was suspended at the sump (EPA 1993).

A water sample and a duplicate sample collected from the sump (MND33-1142-0001, -1001) were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; EPH; acetonitrile; acrylonitrile; and tritium. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.8.

3.4.1. Volatile Organic Compounds

Acetone was detected at a concentration above the laboratory reporting limit in the sump water sample. However, the detected concentration (.065 mg/L) was well below the PRG for acetone (3.7 mg/L). No other VOCs were detected at concentrations above the laboratory reporting limit.

3.4.2. Semivolatile Organic Compounds

SVOCs were not detected in the sump water samples at concentrations above laboratory reporting limits.

3.4.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in the sump water samples at concentrations above laboratory reporting limits.

3.4.4. TAL Inorganics

Eight metals were detected in the water sample from the WD Building Glass Melter Room Sump. Barium, copper, manganese, and zinc were detected at concentrations above the laboratory reporting limits but the detected concentrations were below their respective PRGs. Iron, magnesium, potassium, and sodium were also detected at concentrations above the laboratory reporting limits. However, there are no PRGs or proposed action levels for these metals.

3.4.5. Extractable Petroleum Hydrocarbons

EPHs were not detected in sump water samples at concentrations above laboratory reporting limits.

3.4.6. Acetonitrile and Acrylonitrile

Acetonitrile and acrylonitrile were not detected in water samples from the Glass Melter Room Sump at concentrations above laboratory reporting limits.

3.4.7. Tritium

Tritium was detected in the sump water at the Glass Melter Room Sump at concentrations above the laboratory reporting limit and the PRG.

3.4.8. Summary

The analytical results for water samples collected at the WD Building Glass Melter Room Sump indicate elevated concentrations of tritium in the sump water and, due to the elevated concentrations of plutonium-238 in the sump sediment as analyzed by EG&G, it is recommended that the sump be included in decontamination and decommissioning (D&D) of the still-active WD Building. The D&D Program is an ongoing effort to decontaminate inactive DOE facilities for reuse. In order to undergo D&D, a facility must be declared surplus and then be accepted for D&D. The WD Building Glass Melter Room Sump is still active and cannot be accepted for D&D. Therefore, D&D of the WD Building has not been scheduled. It will be scheduled at an unspecified later date.

TABLE III.8
GLASS MELTER ROOM SUMP
Location: MND33-1142
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0001	W	mg/L	0.005	0.065	J	3.7E+00	I
BARIUM, TOTAL	0001	W	mg/L	0.002	0.0062		2.6E+00	I
BARIUM, TOTAL	1001	W	mg/L	0.002	0.0057		2.6E+00	I
COPPER, TOTAL	0001	W	mg/L	0.01	0.0157		1.4E+00	I
COPPER, TOTAL	1001	W	mg/L	0.01	0.0142		1.4E+00	I
IRON, TOTAL	0001	W	mg/L	0.01	0.243		NA	I
IRON, TOTAL	1001	W	mg/L	0.01	0.217		NA	I
MAGNESIUM, TOTAL	0001	W	mg/L	0.05	0.221		NA	I
MAGNESIUM, TOTAL	1001	W	mg/L	0.05	0.183		NA	I
MANGANESE, TOTAL	0001	W	mg/L	0.002	0.0079		3.7E+00	I
MANGANESE, TOTAL	1001	W	mg/L	0.002	0.0072		3.7E+00	I
POTASSIUM, TOTAL	0001	W	mg/L	0.1	0.392		NA	I
POTASSIUM, TOTAL	1001	W	mg/L	0.1	0.377		NA	I
SODIUM, TOTAL	0001	W	mg/L	0.1	28.1		NA	I
SODIUM, TOTAL	1001	W	mg/L	0.1	26.4		NA	I
TRITIUM	0001	W	pCi/L	500.	1286.		1.4E+02	I
TRITIUM	1001	W	pCi/L	500.	1302.		1.4E+02	I
ZINC, TOTAL	0001	W	mg/L	0.005	0.0757		7.3E+00	I
ZINC, TOTAL	1001	W	mg/L	0.005	0.0756		7.3E+00	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
mg/L - Micrograms per Liter
pCi/L - Picocuries per Liter
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.5. BUILDING 51 WASTE SOLVENT TANK

The Building 51 Waste Solvent Tank, formerly located in the northeast portion of Mound Plant, contained nonradioactive solid and liquid wastes generated as part of Mound Plant operations. These wastes were burned in an incinerator at the location in 1972. The system was nonoperational after that time, and the tank was removed as part of the Mound underground storage tank program in December 1990. Soil samples were collected for laboratory analyses from beneath the tank during removal activities. The results of analyses are documented in a Bowser-Morner report (Bowser-Morner 1991). The results of the OU 3 investigation have been previously reported (DOE 1992d). A description of the Building 51 Waste Solvent Tank activities, including the field investigative procedures, is presented in subsection 2.5.

A soil gas survey was performed in an area southwest of Building 51 in August 1992. A report documenting the soil gas survey that includes analytical results has been completed (DOE 1992e).

During the OU 3 field investigations, four soil samples and one duplicate sample were collected from four soil boring locations. Samples were analyzed for TCL VOCs, SVOCs, P/PCBs; and TAL inorganics to determine if site operations have impacted soil quality in the vicinity of the site. The validated analytical results for all analytes detected at concentrations above laboratory reporting limits for each sample collected are presented in Table III.9.

3.5.1. Volatile Organic Compounds

Two VOCs were detected in site samples. 2-butanone was present in all four samples at concentrations below the PRG. Acetone was also detected at concentrations below the PRG in three samples (MND33-0017-0001, MND33-0018-0001, and MND33-0019-0001). No other VOCs were detected in area soils at concentrations above laboratory reporting limits. The results of the soil gas survey conducted in August 1992 do show low levels of several VOCs in an area southwest of Building 51 (DOE 1992e). Analytical results show concentrations of VOCs Freon 11, Freon 113, Trans-12 DCE, Cis-12 DCE, 1,1,1-TCA, PCE, TCE, and toluene from sample locations southwest of Building 51. The highest recorded soil gas concentration was for toluene at 207 ppb.

3.5.2. Semivolatile Organic Compounds

SVOCs were not detected in any Building 51 Waste Solvent Tank soil samples at concentrations above laboratory reporting limits.

3.5.3. Pesticides and Polychlorinated Biphenyls

Delta-BHC was detected at a concentration above the laboratory reporting limit in sample MND33-0016-0001, but the concentration was less than the PRG. No other pesticides were detected at the Building 51 Waste Solvent Tank.

The detection of delta-BHC in only one sample indicates that soils in the vicinity of the Building 51 Waste Storage Tank have not been significantly impacted. PCBs were not detected in site samples.

3.5.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 51 Waste Solvent Tank at concentrations above PRGs or proposed action levels.

3.5.5. Summary

The analytical results for soil samples collected at the Building 51 Waste Solvent Tank area, as part of the OU 3 LFI, indicate that site activities have not adversely impacted soil quality in the area. However, the soil gas survey conducted in August 1992 (DOE 1992e) does indicate the presence of several VOCs in the soil gas immediately down-valley (southwest) of the Building 51 site. Based upon these findings, further characterization of the site is recommended to determine the possible relationship between the VOCs found in soil gas samples and previous activities conducted at Building 51.

TABLE III.9
BUILDING 51 WASTE SOLVENT TANK
Location: MND33-0016
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0001	S	mG/Kg	0.01	0.018		1.4E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	18100.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	10.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	72.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.9		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	53700.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	18.5		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	10.6		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	20.4	J	1.0E+04	I
DELTA-BHC	0001	S	mG/Kg	0.0077	0.014	J	3.6E-01	I
IRON, TOTAL	0001	S	mG/Kg	.01	25100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	23.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	16000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	519.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	22.1	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	4210.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.002	1.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.02	310.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.26		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	28.5		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	74.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.9
BUILDING 51 WASTE SOLVENT TANK
Location: MND33-0017
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0001	S	mG/Kg	0.01	0.07		1.4E+04	I
ACETONE	0001	S	mG/Kg	0.01	0.24		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	19900.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	13.2		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	70.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.94		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	15300.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	21.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	12.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	26.0	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	34100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	20.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	8600.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	681.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	28.2	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	4260.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.002	1.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	161.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.42		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	33.4		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	91.4		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.9
BUILDING 51 WASTE SOLVENT TANK
Location: MND33-0018
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0001	S	mG/Kg	0.01	0.059		1.4E+04	I
ACETONE	0001	S	mG/Kg	0.01	0.25		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	22200.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	11.3		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	89.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.9		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	11300.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	23.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	13.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	20.2	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	33200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	20.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	5560.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	1030.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	22.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	4640.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.002	1.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	237.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.24		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	38.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	73.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.9
BUILDING 51 WASTE SOLVENT TANK
Location: MND33-0019
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0001	S	mG/Kg	0.01	0.053		1.4E+04	I
2-BUTANONE	1001	S	mG/Kg	0.01	0.031		1.4E+04	I
ACETONE	0001	S	mG/Kg	0.01	0.2		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	19300.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	.06	18800.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	7.53		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.002	7.97		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	82.2		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.002	86.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.87		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.002	.92		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	26200.	J	NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	.02	56300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	19.9		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	.01	20.4		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	12.8		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	.01	11.2		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	28.0	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	.01	38.2	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	30000.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	.01	26500.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	19.6		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.002	21.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	8940.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	.05	18000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	867.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.002	482.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.06	.28		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.06	.38		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	20.3	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	.02	23.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	4080.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	.1	4660.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.002	1.4	J	1.4E+03	I
SELENIUM, TOTAL	1001	S	mG/Kg	.002	1.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	232.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	.1	261.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.9
BUILDING 51 WASTE SOLVENT TANK
Location: MND33-0019
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.21		NA	I
THALLIUM, TOTAL	1001	S	mG/Kg	.002	.27		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	27.9		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	.01	27.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	94.1		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.005	112.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.6. BUILDING 61 FORMER HEAVY EQUIPMENT AREA

The Building 61 Former Heavy Equipment Area was used to stage heavy equipment during the 1940s and 1950s prior to construction of Building 61. Building 61 presently serves as the shipping and receiving center for Mound Plant. Soil sampling was conducted in the Building 61 area to assess whether this site has been a source of hazardous constituents released to the environment. The potential site contaminants include waste oil associated with equipment maintenance. A summary description of the Building 61 Former Heavy Equipment Area, including the field investigative procedures, is presented in subsection 2.6.

Twenty-two soil samples and three duplicate samples were collected from six locations (MND33-0051 through MND33-0056) and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and EPH. The validated analytical results for all analytes detected above laboratory reporting limits in each sample are presented in Table III.10.

3.6.1. Volatile Organic Compounds

Acetone was detected in samples from five of the six soil boring locations at concentrations above laboratory reporting limits but below the PRG. Methylene chloride was also detected in two soil samples at concentrations above laboratory reporting limits but below the PRG. No other VOCs were detected in Building 61 Former Heavy Equipment Area soil samples at concentrations above laboratory reporting limits or PRGs.

3.6.2. Semivolatile Organic Compounds

Semivolatile compounds acenaphthene, bis(2-ethyl hexyl)phthalate, fluoranthene, and phenanthrene were detected in some of the Building 61 Former Heavy Equipment Area soil samples at concentrations above laboratory reporting limits, but below respective PRG values. The occurrence of these compounds at concentrations above laboratory reporting limits and below PRGs is not considered a significant impact to soil quality in the vicinity.

The SVOC pyrene was detected in one soil sample (MND33-0051-0004) at a concentration of 2.0 mG/Kg which is above the PRG of 1.1 in mG/Kg. The isolated occurrence of this compound at a concentration above the PRG is not considered a significant impact to soils in the vicinity. No other SVOCs were detected in site soils at concentrations above PRG values.

3.6.3. Pesticides and Polychlorinated Biphenyls

Pesticide compounds chlordane, alpha-BHC, and dieldrin were detected at concentrations above laboratory reporting limits in some soil samples from the Building 61 Former Heavy Equipment Area. Chlordane was detected in soil samples -0001 and -0002 from location 0051, -0001 from location 0052, and -0002 and -0003 from location 0055 at concentrations above laboratory reporting limits but below the PRG. Chlordane was also detected in soil sample -0001 at location 0055 at a concentration of 0.53 mG/Kg, which is above the PRG of 0.49 mG/Kg. The pesticide alpha-BHC was detected at soil sample -0002 at location 0052 at a concentration above the laboratory reporting limit but below the PRG. The compound dieldrin was also detected in one soil sample (-0001) from location 0055 at a concentration above the laboratory reporting limit but below the PRG. The isolated occurrences of these pesticide compounds at the reported concentrations are not considered a significant impact to site soil quality.

PCBs were not present above PRGs at the site. The only detection of PCBs was in sample MND33-0056-0001, where Aroclor 1254 was present at a concentration of 0.13 mG/Kg, which is below the PRG.

3.6.4. TAL Inorganics

Inorganic compounds were not detected in soils from the Building 61 Former Heavy Equipment Area at concentrations above PRGs or proposed action levels.

3.6.5. Extractable Petroleum Hydrocarbons

Petroleum hydrocarbons were detected at concentrations above the PRG of 105 mG/Kg at 4 of the 22 soil sample locations at the Building 61 Former Heavy Equipment Area and included both surface and subsurface soil samples.

3.6.6. Summary

The analytical results for soils collected at the Building 61 Former Heavy Equipment Area indicate that previous activities at the site may have impacted soil quality in the area. Elevated concentrations of EPH, which may be associated with waste oil from equipment maintenance, have been detected in site soils. As a result of these findings, additional site characterization is recommended.

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0051
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACENAPHTHENE	0004	S	mG/Kg	0.83	1.	J	1.6E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.08	J	2.7E+04	I
ACETONE	0003	S	mG/Kg	0.012	0.061	J	2.7E+04	I
ACETONE	0004	S	mG/Kg	0.013	0.052	J	2.7E+04	I
ACETONE	1003	S	mG/Kg	0.012	0.057	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	8230.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	5140.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	11900.		7.8E+05	I
ALUMINUM, TOTAL	0004	S	mG/Kg	4.	20000.		7.8E+05	I
ALUMINUM, TOTAL	1003	S	mG/Kg	4.	8920.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.1		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.7		2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.		2.1E+03	I
ARSENIC, TOTAL	0004	S	mG/Kg	.2	7.8		2.1E+03	I
ARSENIC, TOTAL	1003	S	mG/Kg	.2	3.7		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	34.5		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	34.1		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	44.3	J	1.9E+04	I
BARIUM, TOTAL	0004	S	mG/Kg	.2	101.		1.9E+04	I
BARIUM, TOTAL	1003	S	mG/Kg	.2	29.4	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.47		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.23		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.59		1.5E-01	I
BERYLLIUM	0004	S	mG/Kg	.1	.97		1.5E-01	I
BERYLLIUM	1003	S	mG/Kg	.1	.58		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	89200.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	129000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	128000.	J	NA	I
CALCIUM, TOTAL	0004	S	mG/Kg	3.	34100.		NA	I
CALCIUM, TOTAL	1003	S	mG/Kg	3.	222000.	J	NA	I
CHLORDANE	0001	S	mG/Kg	0.009	0.031	J	4.9E-01	I
CHLORDANE	0002	S	mG/Kg	0.009	0.04	J	4.9E-01	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	10.4		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	7.4		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	15.3		1.4E+03	I
CHROMIUM, TOTAL	0004	S	mG/Kg	1.	20.7		1.4E+03	I
CHROMIUM, TOTAL	1003	S	mG/Kg	1.	10.9		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	5.6		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	11.7		3.9E+01	I
COBALT, TOTAL	0004	S	mG/Kg	2.	10.8		3.9E+01	I
COBALT, TOTAL	1003	S	mG/Kg	2.	8.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.4		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	12.8		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	17.1		1.0E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0051
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
COPPER, TOTAL	0004	S	mG/Kg	1.	16.		1.0E+04	I
COPPER, TOTAL	1003	S	mG/Kg	1.	9.8		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	8.2	J	5.4E+03	I
CYANIDE	0002	S	mG/Kg	1.	2.0	J	5.4E+03	I
CYANIDE	0003	S	mG/Kg	1.	1.7	J	5.4E+03	I
CYANIDE	0004	S	mG/Kg	1.	2.1	J	5.4E+03	I
CYANIDE	1003	S	mG/Kg	1.	2.1	J	5.4E+03	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20.	51.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20.	20.	UJ	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	49.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0004	S	mG/Kg	20.	81.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	1003	S	mG/Kg	20.	27.	J	105. total	I
FLUORANTHENE	0004	S	mG/Kg	0.83	2.1	J	1.1E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	15400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	13700.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	25100.		NA	I
IRON, TOTAL	0004	S	mG/Kg	1.	27900.		NA	I
IRON, TOTAL	1003	S	mG/Kg	1.	18700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.1		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.4	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	8.2	J	5.3E+01	I
LEAD, TOTAL	0004	S	mG/Kg	.2	15.4	J	5.3E+01	I
LEAD, TOTAL	1003	S	mG/Kg	.2	8.6	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	32100.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	39500.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	11700.		NA	I
MAGNESIUM, TOTAL	0004	S	mG/Kg	3.	7920.		NA	I
MAGNESIUM, TOTAL	1003	S	mG/Kg	3.	9000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	334.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	305.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	723.		2.7E+04	I
MANGANESE, TOTAL	0004	S	mG/Kg	.2	316.		2.7E+04	I
MANGANESE, TOTAL	1003	S	mG/Kg	.2	711.		2.7E+04	I
MERCURY, TOTAL	0003	S	mG/Kg	.02	.03		8.1E+01	I
MERCURY, TOTAL	0004	S	mG/Kg	.02	.03		8.1E+01	I
MERCURY, TOTAL	1003	S	mG/Kg	.02	.07		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	13.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	11.2		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	21.6	J	5.4E+03	I
NICKEL, TOTAL	0004	S	mG/Kg	2.	22.6		5.4E+03	I
NICKEL, TOTAL	1003	S	mG/Kg	2.	14.9	J	5.4E+03	I
PHENANTHRENE	0004	S	mG/Kg	0.83	1.7	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1450.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
UJ - The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0051
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	676.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	1990.		NA	I
POTASSIUM, TOTAL	0004	S	mG/Kg	100.	1770.		NA	I
POTASSIUM, TOTAL	1003	S	mG/Kg	100.	1670.		NA	I
PYRENE	0004	S	mG/Kg	0.83	2.	J	1.1E+00	I
SILVER, TOTAL	0002	S	mG/Kg	.5	.56		1.4E+03	I
SILVER, TOTAL	0004	S	mG/Kg	.5	.73		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	303.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	195.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	237.		NA	I
SODIUM, TOTAL	0004	S	mG/Kg	20.	177.		NA	I
SODIUM, TOTAL	1003	S	mG/Kg	20.	224.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	12.9		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	11.1		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	15.5		1.9E+03	I
VANADIUM, TOTAL	0004	S	mG/Kg	1.	31.1		1.9E+03	I
VANADIUM, TOTAL	1003	S	mG/Kg	1.	10.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	37.9		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	31.8		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	56.8	J	5.4E+04	I
ZINC, TOTAL	0004	S	mG/Kg	.5	66.6		5.4E+04	I
ZINC, TOTAL	1003	S	mG/Kg	.5	39.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0052
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0002	S	mG/Kg	0.012	0.032		2.7E+04	I
ALPHA-BHC	0002	S	mG/Kg	0.002	0.003		1.0E-01	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	9930.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	6250.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	13800.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	12300.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.9		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	5.5		2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	2.5		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	41.1	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	36.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	59.8	J	1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	31.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.55		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.44		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.81		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.56		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	136000.	J	NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	149000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	65400.	J	NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	115000.		NA	I
CHLORDANE	0001	S	mG/Kg	0.009	0.012	J	4.9E-01	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.2		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	7.8		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	16.		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	15.5		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	8.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	5.7		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	12.2		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	12.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.3	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	11.5		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	17.7	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	20.3		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0001	S	mG/Kg	0.006	0.009	J	8.5E+01	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20.	64.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20.	2600.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	1001	S	mG/Kg	20.	40.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	39	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	25	J	105. total	R
IRON, TOTAL	0001	S	mG/Kg	1.	171000.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
R - Reanalysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0052
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0002	S	mG/Kg	1.	14400		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	269000.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	27700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	24.5	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	16.7		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	11.9	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	12.0	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	18000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	42800		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	14800.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	7430.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	852.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	395.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	579.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	879.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	0.06	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.3	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	9.8		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	21.7	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	23.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1700.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	888.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	2080.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	1700.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.5	.57		1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	.5	.58		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	460		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	260		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	519		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	177.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	14.5	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	12.8		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	21.4	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	13.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	41.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	32.5		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	58.8		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	58.5		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0053
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	9010.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	8690.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	11000.		7.8E+05	I
ALUMINUM, TOTAL	0004	S	mG/Kg	4.	4940.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	8.3	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	6.1	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	9.5	J	2.1E+03	I
ARSENIC, TOTAL	0004	S	mG/Kg	.2	4.5		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	57.2		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	46.8		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	80.1		1.9E+04	I
BARIUM, TOTAL	0004	S	mG/Kg	.2	47.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.51		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.52		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.59		1.5E-01	I
BERYLLIUM	0004	S	mG/Kg	.1	.15		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.73	3.4	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0004	S	mG/Kg	0.73	0.88	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	116000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	106000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	44100.		NA	I
CALCIUM, TOTAL	0004	S	mG/Kg	3.	127000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.5		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	11.1		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	14.2		1.4E+03	I
CHROMIUM, TOTAL	0004	S	mG/Kg	1.	7.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.8		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	8.		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	7.7		3.9E+01	I
COBALT, TOTAL	0004	S	mG/Kg	2.	5.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.5		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	14.1		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	16.7		1.0E+04	I
COPPER, TOTAL	0004	S	mG/Kg	1.	14.3		1.0E+04	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20.	121	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20.	78.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	25.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0004	S	mG/Kg	20.	38.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	16400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	17500.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	22100.		NA	I
IRON, TOTAL	0004	S	mG/Kg	1.	14200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	19.6		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	10.9		5.3E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0053
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
LEAD, TOTAL	0003	S	mG/Kg	.2	8.6		5.3E+01	I
LEAD, TOTAL	0004	S	mG/Kg	.2	6.5	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	36100.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	30000.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	17500.		NA	I
MAGNESIUM, TOTAL	0004	S	mG/Kg	3.	54100.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	472.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	389.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	464.		2.7E+04	I
MANGANESE, TOTAL	0004	S	mG/Kg	.2	260.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.04		8.1E+01	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	.03		8.1E+01	I
MERCURY, TOTAL	0003	S	mG/Kg	.02	.04		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	13.6		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	14.2		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	18.8		5.4E+03	I
NICKEL, TOTAL	0004	S	mG/Kg	2.	12.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1390.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	1220.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	655.		NA	I
POTASSIUM, TOTAL	0004	S	mG/Kg	100.	1060.		NA	I
SILVER, TOTAL	0003	S	mG/Kg	.5	.74		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	145.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	192.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	334.		NA	I
SODIUM, TOTAL	0004	S	mG/Kg	20.	191.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	18.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	15.1		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.5		1.9E+03	I
VANADIUM, TOTAL	0004	S	mG/Kg	1.	11.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	61.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	54.1		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	46.2		5.4E+04	I
ZINC, TOTAL	0004	S	mG/Kg	.5	48.5		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0054
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0001	S	mG/Kg	0.012	0.03	J	2.7E+04	I
ACETONE	0004	S	mG/Kg	0.011	0.031		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	4620.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	3160.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	3800.		7.8E+05	I
ALUMINUM, TOTAL	0004	S	mG/Kg	12.	4090.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.8		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	5.1	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	7.3	J	2.1E+03	I
ARSENIC, TOTAL	0004	S	mG/Kg	.4	3.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	43.4		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	34.7		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	28.1		1.9E+04	I
BARIUM, TOTAL	0004	S	mG/Kg	.4	52.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.27		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.23		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.24		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.8	6.4	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.72	7.1	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.73	9.5	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	76300.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	129000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	101000.		NA	I
CALCIUM, TOTAL	0004	S	mG/Kg	4.	105000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	7.3		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	6.		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	4.6		1.4E+03	I
CHROMIUM, TOTAL	0004	S	mG/Kg	2.	6.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	3.6		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	3.9		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	4.6		3.9E+01	I
COBALT, TOTAL	0004	S	mG/Kg	2.	5.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	10.9		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	13.1		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	8.8		1.0E+04	I
COPPER, TOTAL	0004	S	mG/Kg	2.	13.9		1.0E+04	I
CYANIDE	0002	S	mG/Kg	1.	26.5	J	5.4E+03	I
CYANIDE	0003	S	mG/Kg	1.	31.4	J	5.4E+03	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20.	53	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20.	98	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	45	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0004	S	mG/Kg	20	108	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	11200.		NA	I

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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MWD33-0054
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0002	S	mG/Kg	1.	11000.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	7870.		NA	I
IRON, TOTAL	0004	S	mG/Kg	2.	12200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.7		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	4.8	J	5.3E+01	I
LEAD, TOTAL	0004	S	mG/Kg	.4	5.6	J	5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	1.	6.1		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	1.	6.		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	1.	9.3		5.4E+03	I
LITHIUM, TOTAL	0004	S	mG/Kg	.2	9.8		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	31700.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	48300.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	36800.		NA	I
MAGNESIUM, TOTAL	0004	S	mG/Kg	10.	39700.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	270.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	215.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	203.		2.7E+04	I
MANGANESE, TOTAL	0004	S	mG/Kg	.4	183.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	9.8		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	9.		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	11.		5.4E+03	I
NICKEL, TOTAL	0004	S	mG/Kg	4.	11.2		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	440.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	451.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	955.		NA	I
POTASSIUM, TOTAL	0004	S	mG/Kg	20.	739.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	406.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	385.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	582.		NA	I
SODIUM, TOTAL	0004	S	mG/Kg	20.	420.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	13.5		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	8.7		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	6.8		1.9E+03	I
VANADIUM, TOTAL	0004	S	mG/Kg	2.	8.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	41.2		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	30.5		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	31.3		5.4E+04	I
ZINC, TOTAL	0004	S	mG/Kg	1.	46.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0055
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0003	S	mG/Kg	0.011	0.012		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	12.	8750.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	7910.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	12.	7220.		7.8E+05	I
ALUMINUM, TOTAL	0004	S	mG/Kg	12.	2650.		7.8E+05	I
ALUMINUM, TOTAL	1004	S	mG/Kg	12.	3350.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.4	8.7	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	9.4	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.4	4.1	J	2.1E+03	I
ARSENIC, TOTAL	0004	S	mG/Kg	.4	7.6	J	2.1E+03	I
ARSENIC, TOTAL	1004	S	mG/Kg	.4	2.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.4	61.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	46.5		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.4	41.7		1.9E+04	I
BARIUM, TOTAL	0004	S	mG/Kg	.4	19.9		1.9E+04	I
BARIUM, TOTAL	1004	S	mG/Kg	.4	27.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.4	.52		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.4	.45		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.4	.41		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	4.	51000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	76300.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	4.	99100.		NA	I
CALCIUM, TOTAL	0004	S	mG/Kg	4.	166000.		NA	I
CALCIUM, TOTAL	1004	S	mG/Kg	4.	63700.		NA	I
CHLORDANE	0001	S	mG/Kg	0.009	0.53	J	4.9E-01	I
CHLORDANE	0002	S	mG/Kg	0.009	0.029	J	4.9E-01	I
CHLORDANE	0003	S	mG/Kg	0.009	0.018	J	4.9E-01	I
CHROMIUM, TOTAL	0001	S	mG/Kg	2.	11.8		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	10.4		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	2.	8.9		1.4E+03	I
CHROMIUM, TOTAL	0004	S	mG/Kg	2.	3.8		1.4E+03	I
CHROMIUM, TOTAL	1004	S	mG/Kg	2.	5.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.8		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	7.7		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	6.9		3.9E+01	I
COBALT, TOTAL	0004	S	mG/Kg	2.	3.5		3.9E+01	I
COBALT, TOTAL	1004	S	mG/Kg	2.	3.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	2.	14.2		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	2.	17.3		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	2.	13.1		1.0E+04	I
COPPER, TOTAL	0004	S	mG/Kg	2.	9.7		1.0E+04	I
COPPER, TOTAL	1004	S	mG/Kg	2.	7.2		1.0E+04	I
DIELDRIN	0001	S	mG/Kg	0.0014	0.0069		4.0E-02	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20	90	J	105. total	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0055
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20	35	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20	86	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0004	S	mG/Kg	20	78	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	1004	S	mG/Kg	20	47	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	2.	17000.		NA	I
IRON, TOTAL	0002	S	mG/Kg	2.	18300.		NA	I
IRON, TOTAL	0003	S	mG/Kg	2.	14900.		NA	I
IRON, TOTAL	0004	S	mG/Kg	2.	7690.		NA	I
IRON, TOTAL	1004	S	mG/Kg	2.	8280.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.4	11.6		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.4	12.		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.4	8.6	J	5.3E+01	I
LEAD, TOTAL	0004	S	mG/Kg	.4	8.4	J	5.3E+01	I
LEAD, TOTAL	1004	S	mG/Kg	.4	7.2	J	5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	.2	9.8		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	.2	12.4		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	.2	11.4		5.4E+03	I
LITHIUM, TOTAL	0004	S	mG/Kg	.2	6.8		5.4E+03	I
LITHIUM, TOTAL	1004	S	mG/Kg	.2	7.2		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	10.	19200.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	30500.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	10.	29900.		NA	I
MAGNESIUM, TOTAL	0004	S	mG/Kg	10.	81500.		NA	I
MAGNESIUM, TOTAL	1004	S	mG/Kg	10.	22200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.4	503.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	376.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.4	546.		2.7E+04	I
MANGANESE, TOTAL	0004	S	mG/Kg	.4	158.		2.7E+04	I
MANGANESE, TOTAL	1004	S	mG/Kg	.4	150.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.04	.1		8.1E+01	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	.03		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	4.	12.8		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	16.2		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	4.	16.8		5.4E+03	I
NICKEL, TOTAL	0004	S	mG/Kg	4.	7.4		5.4E+03	I
NICKEL, TOTAL	1004	S	mG/Kg	4.	7.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	20.	868.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	711.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	20.	1060.		NA	I
POTASSIUM, TOTAL	0004	S	mG/Kg	20.	359.		NA	I
POTASSIUM, TOTAL	1004	S	mG/Kg	20.	725.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	205.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	272.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	177.		NA	I
SODIUM, TOTAL	0004	S	mG/Kg	20.	185.		NA	I
SODIUM, TOTAL	1004	S	mG/Kg	20.	104.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0055
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	0001	S	mG/Kg	2.	17.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	15.6		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	2.	12.8		1.9E+03	I
VANADIUM, TOTAL	0004	S	mG/Kg	2.	5.7		1.9E+03	I
VANADIUM, TOTAL	1004	S	mG/Kg	2.	6.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	1.	45.3		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	1.	51.9		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	1.	34.5		5.4E+04	I
ZINC, TOTAL	0004	S	mG/Kg	1.	21.9		5.4E+04	I
ZINC, TOTAL	1004	S	mG/Kg	1.	25.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0056
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0003	S	mG/Kg	0.011	0.053	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	9050.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	12700.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	8930.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	4.3	J	1.1E+02	I
AROCLOR-1254	0001	S	mG/Kg	0.09	0.13	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.9	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	7.		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	50.5		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	17.4		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	41.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.51		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.62		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.43		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.75	6.5	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.75	5.	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.73	12.	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	65800.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	59400.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	85000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.7		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	15.5		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	12.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.2		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	12.1		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	11.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	26.1		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	20.9		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	19.		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0003	S	mG/Kg	0.006	0.01		8.5E+01	I
EXTRACTABLE HB HYD AS MOTOR OIL	0001	S	mG/Kg	20.	60.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0002	S	mG/Kg	20.	35.	J	105. total	I
EXTRACTABLE HB HYD AS MOTOR OIL	0003	S	mG/Kg	20.	458.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	22700.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	24200.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	21200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	6.		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	7.5	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	15300.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.10
BUILDING 61 FORMER HEAVY EQUIPMENT AREA
Location: MND33-0056
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	12400.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	12200.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	566.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	512.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	610.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.04		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.1		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	21.8		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	19.1		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1100.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	2840.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	1340.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	111.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	126.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	149.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	14.4		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	14.2		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	11.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	60.3		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	46.5	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	41.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.7. BUILDING 27 SOLVENT STORAGE AREA

The Building 27 Solvent Storage Area is an approximate 50-ft by 200-ft asphalt-covered area that serves as a temporary storage location for 55-gallon drums containing wastewater from the Building 27 process waste stream. The waste stream is reported to contain trace quantities of volatile compounds and explosives. Soil sampling was conducted in the solvent storage area to assess whether the site is or has been a source of hazardous constituents released to the environment through spills of wastewater or drum leakage. A description of the solvent storage area, including a more detailed summary of the waste stream and the field investigative procedures, is presented in subsection 2.7.

Nine soil samples and one duplicate sample collected from three locations (MND33-0010, -0011, and -0014) at the perimeter of the solvent storage area were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. Because of low sample volume, one sample (MND33-0010-0004) was analyzed only for TCL VOCs. The validated analytical results for all analytes detected at concentrations above the laboratory reporting limits in each sample are presented in Table III.11.

3.7.1. Volatile Organic Compounds

Of the 11 soil samples analyzed, three contained detectable concentrations of VOCs. Carbon disulfide, 2-butanone, and dichloromethane were detected in samples MND33-0010-0001, MND33-0010-0005, and MND33-0014-0001, respectively. However, the concentrations of these three compounds in the soils were less than 10 times the laboratory reporting limit and did not exceed the PRGs established for each compound. The low concentrations of these compounds in the soils sampled indicate that the soils in the vicinity of the solvent storage area have not been significantly impacted by VOCs from storage of the Building 27 wastewater.

3.7.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.7.3. Pesticides

Pesticides were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.7.4. Polychlorinated Biphenyls

Of the 10 soil samples analyzed, one sample (MND33-0011-0001), and the associated duplicate sample (MND33-0011-1001), contained detectable concentrations of PCBs. Aroclor 1248 was detected in concentrations of 0.147 mG/Kg and 0.182 mG/Kg in these samples, considerably below the PRG of 50.0 mG/Kg for total PCB concentrations. Because of the relatively low concentration of PCBs in only one sample, it is concluded that soils in the vicinity of the solvent storage area have not been significantly impacted by PCBs.

3.7.5. TAL Inorganics

Inorganic compounds were not detected in soil samples from the solvent storage area at concentrations above the PRGs or proposed action levels.

3.7.6. Explosives

Explosives were not detected in any soil samples collected in the solvent storage area at concentrations above the laboratory reporting limits.

3.7.7. Summary

The analytical results for samples collected a the Building 27 Solvent Storage Area indicate that site activities involving the storage of solvents in this area have not adversely impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation is recommended.

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MND33-0010
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0005	S	mG/Kg	0.012	0.063	J	1.4E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	1590.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	8550.	J	7.8E+05	I
ALUMINUM, TOTAL	0005	S	mG/Kg	6.	14000.	J	7.8E+05	I
ALUMINUM, TOTAL	0006	S	mG/Kg	6.	4950.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	40.9	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	3.3	J	1.1E+02	I
ANTIMONY, TOTAL	0006	S	mG/Kg	3.	29.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.1	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.3		2.1E+03	I
ARSENIC, TOTAL	0005	S	mG/Kg	.2	7.6	J	2.1E+03	I
ARSENIC, TOTAL	0006	S	mG/Kg	.2	5.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	16.		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	72.3		1.9E+04	I
BARIUM, TOTAL	0005	S	mG/Kg	.2	85.6		1.9E+04	I
BARIUM, TOTAL	0006	S	mG/Kg	.2	40.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.59		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.65		1.5E-01	I
BERYLLIUM	0005	S	mG/Kg	.2	.87		1.5E-01	I
BERYLLIUM	0006	S	mG/Kg	.2	.64		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	8.7	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	1.2	J	1.4E+02	I
CADMIUM, TOTAL	0005	S	mG/Kg	.2	0.75	J	1.4E+02	I
CADMIUM, TOTAL	0006	S	mG/Kg	.2	5.9	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	167000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	52200.		NA	I
CALCIUM, TOTAL	0005	S	mG/Kg	2.	14500.		NA	I
CALCIUM, TOTAL	0006	S	mG/Kg	2.	117000.		NA	I
CARBON DISULFIDE	0001	S	mG/Kg	0.006	0.009	J	2.7E+04	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.5		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	24.7		1.4E+03	I
CHROMIUM, TOTAL	0005	S	mG/Kg	1.	23.6		1.4E+03	I
CHROMIUM, TOTAL	0006	S	mG/Kg	1.	27.6		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	6.1		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	10.2		3.9E+01	I
COBALT, TOTAL	0005	S	mG/Kg	1.	17.1		3.9E+01	I
COBALT, TOTAL	0006	S	mG/Kg	1.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.1		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	22.1		1.0E+04	I
COPPER, TOTAL	0005	S	mG/Kg	1.	20.		1.0E+04	I
COPPER, TOTAL	0006	S	mG/Kg	1.	17.7		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	4630.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	15900.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MND33-0010
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0005	S	mG/Kg	1.	27600.		NA	I
IRON, TOTAL	0006	S	mG/Kg	1.	11500.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.4	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	6.2	J	5.3E+01	I
LEAD, TOTAL	0005	S	mG/Kg	.2	14.9	J	5.3E+01	I
LEAD, TOTAL	0006	S	mG/Kg	.2	6.4	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	82300.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	9700.	J	NA	I
MAGNESIUM, TOTAL	0005	S	mG/Kg	5.	7180.	J	NA	I
MAGNESIUM, TOTAL	0006	S	mG/Kg	5.	47100.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	145.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	537.	J	2.7E+04	I
MANGANESE, TOTAL	0005	S	mG/Kg	.2	1320.	J	2.7E+04	I
MANGANESE, TOTAL	0006	S	mG/Kg	.2	343.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	15.8		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	19.1		5.4E+03	I
NICKEL, TOTAL	0005	S	mG/Kg	2.	29.		5.4E+03	I
NICKEL, TOTAL	0006	S	mG/Kg	2.	26.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	783.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	1120.		NA	I
POTASSIUM, TOTAL	0005	S	mG/Kg	10.	2080.		NA	I
POTASSIUM, TOTAL	0006	S	mG/Kg	10.	1020.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	18.3		1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	10.8		1.4E+03	I
SILVER, TOTAL	0005	S	mG/Kg	1.	4.4		1.4E+03	I
SILVER, TOTAL	0006	S	mG/Kg	1.	16.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	213.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	118.		NA	I
SODIUM, TOTAL	0005	S	mG/Kg	10.	369.		NA	I
SODIUM, TOTAL	0006	S	mG/Kg	10.	294.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.3		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	27.6		1.9E+03	I
VANADIUM, TOTAL	0005	S	mG/Kg	1.	29.2		1.9E+03	I
VANADIUM, TOTAL	0006	S	mG/Kg	1.	23.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	26.1		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	47.4		5.4E+04	I
ZINC, TOTAL	0005	S	mG/Kg	.5	60.4		5.4E+04	I
ZINC, TOTAL	0006	S	mG/Kg	.5	37.1		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MND33-0011
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	3050.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	5180.	J	7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	.06	1490.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	48.5	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	24.4	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	.03	53.3	J	1.1E+02	I
AROCLOR-1248	0001	S	mG/Kg	0.08	0.147	J	50. total	I
AROCLOR-1248	1001	S	mG/Kg	0.08	0.182	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	2.7	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	3.4	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.002	2.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	22.2		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	35.4		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.002	18.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.66		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.65		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.002	.63		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	9.5	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	6.0	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.002	12.7	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	149000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	129000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	.02	188000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	26.7		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	24.5		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	.01	22.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	10.6		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	7.2		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	.01	8.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	17.6		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	14.8		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	.01	11.8		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	15400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	9470.		NA	I
IRON, TOTAL	1001	S	mG/Kg	.01	4250.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	5.3	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	6.6	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.002	5.7	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	60700.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	37300.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	.05	93000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	329.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MND33-0011
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0002	S	mG/Kg	.002	383.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.002	345.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	22.3		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	20.3		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	.02	16.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	501.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	503.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	.1	242.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	18.1	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	15.8	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	.01	19.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	215.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	152.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	.1	217.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	24.3		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	23.9		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	.01	22.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	24.5		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	30.7		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.005	14.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MND33-0014
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	8600.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	8220.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	21.2	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	21.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	3.6	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	2.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	29.3		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	28.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.71		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.71		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	3.4	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	3.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	80800.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	92100.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	27.4		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	27.6		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	13.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	12.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	21.5		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	19.9		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0001	S	mG/Kg	0.005	0.013		8.5E+01	I
IRON, TOTAL	0001	S	mG/Kg	.01	20100.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	19700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	8.5	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	7.0	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	22200.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	24700.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	457.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	413.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	27.9		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	28.2		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	1510.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	1530.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	14.0	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	14.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	194.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	210.		NA	I

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J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.11
BUILDING 27 SOLVENT STORAGE AREA
Location: MWD33-0014
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	0001	S	mG/Kg	.01	24.1		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	24.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	57.8		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	52.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.8. BUILDING 27 CONCRETE FLUME

The Building 27 Concrete Flume area, which is adjacent to the solvent storage area, consists of a 100-gallon-capacity concrete flume with a metal cover. The flume was used as a reservoir for wastewater from Building 27 prior to pumping of the wastewater into 55-gallon drums, but is not longer active. Historically, the flume was used to convey the wastewater into the Building 27 sump, which is no longer active. Wastewater from Building 27 processes is reported to contain trace quantities of VOCs and explosives. Soil sampling was conducted in this area to assess whether the site is or has been a source of hazardous constituents released to the environment through spills of wastewater or leakage of the flume. A summary description of the Building 27 Concrete Flume area, including waste stream characteristics and the field investigative procedures, is presented in subsection 2.8.

Six soil samples collected from two locations (MND33-0006 and MND33-0009) adjacent to the flume were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.12.

3.8.1. Volatile Organic Compounds

Of the six soil samples analyzed, two contained detectable concentrations of VOCs. Acetone was detected in samples MND33-0006-0001 and -0002 in concentrations of 0.027 mG/Kg and 0.056 mG/Kg, respectively. PCE was also detected in sample MND33-0006-0001 at a concentration of 0.012 mG/Kg. The concentrations of these constituents in the soil samples are at a minimum 1,000 times less than the respective PRGs for these compounds. Because of the low concentrations of these compounds, they are not considered to represent a significant impact to the site soils.

3.8.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.8.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.8.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 27 Concrete Flume at concentrations above the PRGs or proposed action levels.

3.8.5. Explosives

Explosives were not detected in any soil samples collected in the Building 27 Concrete Flume at concentrations above laboratory reporting limits.

3.8.6. Summary

The analytical results for samples collected at the Building 27 Concrete Flume area indicate that site activities involving the conveyance of wastewater in this area have not significantly impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation at the Building 27 Concrete Flume area is recommended.

TABLE III.12
BUILDING 27 CONCRETE FLUME
Location: MND33-0006
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0001	S	mG/Kg	0.011	0.027	J	2.7E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.056	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	4990.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	13000.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	11000.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	27.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	13.6	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	14.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	4.2	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	2.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	1.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	34.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	40.4		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	37.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.67		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.99		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	.82		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	4.8	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	1.4	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	1.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	113000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	97700.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	85500.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	25.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	33.1		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	29.2		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	9.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	17.3		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	14.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	17.9		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	24.8		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	19.5		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	12300.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	27900.		NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	23000.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	10.0	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	10.0	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	34400.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	8650.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	12000	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	337.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.12
BUILDING 27 CONCRETE FLUME
Location: MND33-0006
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0002	S	mG/Kg	.002	766.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.006	432.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	23.		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	29.9		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	26.6		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	1010.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	2340.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	2030.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	15.7	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	14.7	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	13.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	180.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	372.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	228.		NA	I
TETRACHLOROETHENE	0001	S	mG/Kg	0.005	0.012		1.3E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	21.4		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	27.6		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	22.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	34.7		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	61.7		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	46.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.12
BUILDING 27 CONCRETE FLUME
Location: MWD33-0009
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	6700.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	9480.	J	7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	7980.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	25.5	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	18.5	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	17.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	4.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	3.0	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	2.4	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	25.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	32.		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	29.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.71		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.77		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	.77		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	4.3	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	2.5	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	2.2	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	87800.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	84400.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	114000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	24.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	28.1		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	27.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	9.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	13.4		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	11.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	25.3		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	23.		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	18.3		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	16000.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	21200.		NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	18900.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	7.4	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	6.7	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	7.1	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	31800.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	17400.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	13900.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	262.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	458.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	385.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.12
BUILDING 27 CONCRETE FLUME
Location: MND33-0009
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	0001	S	mG/Kg	.02	24.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	26.8		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	21.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	1020.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	1720.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	1410.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	13.8	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	13.5	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	15.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	170.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	202.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	166.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	23.6		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	23.1		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	20.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	39.7		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	43.5		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	39.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.9. BUILDING 27 SUMP

The Building 27 Sump, which is adjacent to the Building 27 Concrete Flume, is a 6-ft by 3-ft by 4-ft-deep concrete-lined pit with a metal cover. Historically, the sump was used to collect and filter suspended constituents in wastewater received via the concrete flume from Building 27 processes. Both the Building 27 flume and sump are inactive and process wastewater is now pumped directly into drums. Wastewater from the Building 27 processes is reported to contain trace quantities of VOCs and explosives.

Soil sampling was conducted near the sump to assess whether the site is or has been a source of hazardous constituents released to the environment through overflow or leakage of the sump. A summary description of the Building 27 Sump, including the field investigative procedures, is presented in subsection 2.9.

Three soil samples collected from one location (MND33-0015) adjacent to the sump were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. The validated analytical results for all analytes detected above laboratory reporting limits in each sample are presented in Table III.13.

3.9.1. Volatile Organic Compounds

VOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.9.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.9.3. Pesticides/Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.9.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 27 Sump area at concentrations above the PRGs or proposed action levels.

3.9.5. Explosives

Explosives were not detected in concentrations above the laboratory reporting limit in the Building 27 Sump area.

3.9.6. Summary

The analytical results for samples collected at the Building 27 Sump area indicate that site activities involving the collection of wastewater in this area have not significantly impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation at the Building 27 Sump area is recommended.

TABLE III.13
BUILDING 27 SUMP
Location: MWD33-0015
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	6140.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	10400.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	8490.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	20.8	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	16.	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	17.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	3.9	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	3.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	2.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	36.4		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	65.5		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	10.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.7		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.92		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	.77		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	71200.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	63000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	94600.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	28.4	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	26.9	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	27.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	11.2	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	12.9	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	13.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	25.3	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	20.0	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	18.8	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	16300.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	23500.		NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	21700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	21.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	7.		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	4.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	22000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	14100.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	12700.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	401.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	543.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	437.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.0002	.13		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	25.3		5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.13
BUILDING 27 SUMP
Location: MND33-0015
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	0002	S	mG/Kg	.02	26.1		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	25.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	1000.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	1290.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	1540.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	13.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	12.1	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	14.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	128.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	119.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	198.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	21.6		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	27.6		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	22.5		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	62.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	47.0	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	37.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.10. AREA I BUILDING 27 LEACH PIT

The Area I Building 27 Leach Pit is an approximate 100-ft^2, 3-ft-deep, unlined pit which historically received filtered wastewater from the Building 27 Sump. The leach pit allowed for seepage and biodegradation of the wastewater. Wastewater overflow was discharged into the Plant drainage ditch through an outlet pipe located in the leach pit. Wastewater from the Building 27 processes is reported to contain trace quantities of VOCs and explosives. Soil sampling was conducted in the leach pit area to assess whether the site is or has been a source of hazardous constituents released to the environment. A description of the leach pit, including the field investigative procedures, is presented in subsection 2.10.

Nine soil samples and one duplicate sample collected from three locations (MND33-0131, -0132, and -0133) inside of the leach pit were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. The validated analytical results for all analytes detected above laboratory reporting limits in each sample are presented in Table III.14.

3.10.1. Volatile Organic Compounds

VOCs were not detected at concentrations above laboratory reporting limits in any of the samples analyzed at the leach pit.

3.10.2. Semivolatile Organic Compounds

Of the 10 soil samples analyzed, seven contained concentrations of bis(2-ethylhexyl)phthalate in concentrations just above the laboratory reporting limit but well below the PRG. No other SVOCs were detected in the samples. Because of the low concentration of this compound the presence of bis(2-ethylhexyl)phthalate in the soils is not considered a significant impact to soil quality.

3.10.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above the laboratory reporting limits in any of the samples analyzed.

3.10.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 27 leach pit at concentrations above the PRGs or proposed action levels.

3.10.5. Explosives

Explosives were not detected above the laboratory reporting limits in any soil samples collected in the leach pit.

3.10.6. Summary

Analytical results for soil samples collected at the Building 27 Area I Leach Pit indicate that previous site activities have not impacted soil quality at the site. As a result of these findings, no further action involving site characterization or soil remediation at the Building 27 Leach Pit is recommended.

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MND33-0131
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5240.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	7520.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	14300.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	14.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	20.0	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	18.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.2	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	2.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	23.3		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	20.7		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	20.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.56		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.87	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.97		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.85	0.92	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.87	1.	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.9		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	5.5		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	45100.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	176000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	57300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	20.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	33.8	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	112.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	11.7	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	20.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	223.	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	20.1	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	29.9	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	10700.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	16400.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	28200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	15.1		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	5.9		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	5.1		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	16500.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	13100.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	17100.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	243.		2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MND33-0131
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0002	S	mG/Kg	.2	493.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	691.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	0.13	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	25.6		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	30.0	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	50.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	822.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	1490.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	2840.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	11.1	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	20.5	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	12.8	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	93.4		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	203.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	295.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	17.3		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	24.4	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	29.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	60.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	37.3	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	75.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MWD33-0132
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8410.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	10900.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	8880.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	18.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	19.4	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	21.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.4	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	1.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	22.5		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	18.5		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	25.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.64		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.78		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	0.78	J	1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.81	3.7	J	4.6E+01	R
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.84	1.2		4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.9		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	3.9		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	4.6	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	56300.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	73800.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	101000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	35.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	31.3		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	42.1	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	17.9		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	12.9	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	446.	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	37.8	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	17.8	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.14	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	20900.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	30200.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	20600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.3		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.1		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	3.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	18800.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
R - Reanalysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MWD33-0132
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	15500.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	24400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	307.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	449.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	449.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	0.48	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	31.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	35.3		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	27.2	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1590.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	2290.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	1730.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	13.2		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	13.6		1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	16.8	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	141.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	190.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	261.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	25.4		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	23.6	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	125.		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	50.8		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	45.3	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MWD33-0133
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4210.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	11900.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	14500.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	11500.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	44.6	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	19.0	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	13.7	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	16.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.6	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	2.5	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.5	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	3.4	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	17.7		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	18.9		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	21.7		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	43.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	0.75	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.84		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.87		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.84		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.81	0.94	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.42	0.72	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.78	0.81	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	9.3	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.4		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	3.7		1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	3.9	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	160000.	J	NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	65900.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	30200.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	56200.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	31.4	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	32.5		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	59.1		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	30.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.7	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	16.7		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	20.3		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	14.9		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	270.	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	54.9	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	31.4	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	124.	J	1.0E+04	I
CYANIDE	1001	S	mG/Kg	.1	.12	J	5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.14
AREA I BUILDING 27 LEACH PIT
Location: MWD33-0133
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0001	S	mG/Kg	1.	9910.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	25300.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	27500.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	23100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	4.6		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	6.		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	7.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	70700.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	19400.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	14100.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	17300.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	209.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	530.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	511.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	374.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	0.53	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	25.	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	32.3		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	37.7		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	28.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	833.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	2450.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	3050.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	2040.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	20.4	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	13.4		1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	8.4		1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	11.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	223.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	169.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	190.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	126.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	28.4	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	26.2		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	27.1		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	27.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	62.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	60.6		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	74.1		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	64.5		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.11. AREA I BUILDING 1 LEACH PIT

The Area I Building 1 Leach Pit is an unlined triangular-shaped collection basin located immediately southwest of Building 1 near the Mound Plant drainage ditch in the north central portion of the Site. The sides of the leach pit are approximately 75 ft by 75 ft by 50 ft in length. The pit is approximately 5 ft deep.

The leach pit, first used in the 1960s, was designed to allow seepage and natural biodegradation of wastewaters bearing trace quantities of VOCs and explosives. The leach pit received wastewaters from three drainage pipes, which are still in place. One drainage pipe carried routine discharge from Building 43. A second carried overflow from the same building. The third carried intermittent effluent from the Building 1 sump and storm drain. In 1985, discharge of wastewater from Building 1 was discontinued.

Eight samples and one duplicate were collected from three soil borings (MND33-0101, -0105, and -0109) from within the leach pit. Samples were analyzed for VOCs, SVOCs, P/PCBS, and TAL inorganics. Analytical results for all analytes detected above the laboratory reporting limits in each sample collected at the Building 1 leach pit are presented in Table III.15.

3.11.1. Volatile Organic Compounds

The VOCs 1,2-dichloroethane, 2-butanone, and acetone were detected in at least one sample collected from the Building 1 leach pit. 1,2-dichloroethane was detected slightly above laboratory reporting limits at 0.036 mG/Kg at MND33-0101-0004. No PRG presently exists for this compound. 2-butanone was detected in the same sample and in MND33-0105-0003, -1003, and -0003 at concentrations below PRGs. Acetone was detected in four samples (MND33-0101-0001; and MND33-0105-0001, -1001, and -0003) at concentrations below PRGs. Because of the low concentrations of these compounds, VOCs do not appear to represent an impact to site soils.

3.11.2. Semivolatile Organic Compounds

Thirteen SVOCs were detected at concentrations above laboratory reporting limits at the site. Of the 13 SVOCs, six were detected at concentrations above their respective PRGs. The polycyclic aromatic hydrocarbon (PAH) compounds benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-CD)pyrene, and pyrene were detected in surface soil sample MND33-0105-0001 and 0101-0001 at concentrations above their respective PRGs.

SVOCs were not detected in surface soil sample MND33-0109-0001 or in any of the Building 1 Leach Pit subsurface soil samples at concentrations above PRGs.

The isolated occurrence of PAH compounds in surface soil samples at concentrations above PRGs does not indicate a significant impact to site soil quality. The occurrence of low levels of PAH compounds in surface soils at the site may be a result of surface runoff from nearby asphalt roads and parking areas, and do not appear to be associated with previous site activities.

3.11.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in soils from the Area I Building 1 Leach Pit at concentrations above laboratory reporting limits.

3.11.4. TAL Inorganics

Inorganic compounds were not detected in soils from the Area I Building 1 Leach Pit at concentrations above the PRGs or proposed action levels.

3.11.5. Summary

The analytical results for samples collected at the Area I Building 1 Leach Pit indicate that soil quality in the pit has not been impacted by site activities. As a result of these findings, no further site characterization or soil remediation at the site is recommended.

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MWD33-0101
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2-DICHLOROETHENE	0004	S	mG/Kg	0.006	0.036		2.7E+03	I
2-BUTANONE	0003	S	mG/Kg	0.014	0.034		1.4E+04	I
ACENAPHTHENE	0001	S	mG/Kg	0.87	1.3	J	1.6E+04	I
ACETONE	0003	S	mG/Kg	0.014	0.23	J	2.7E+04	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	9170.		7.8E+05	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	2830.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	6850.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.5	J	1.1E+02	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	42.8	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	12.0	J	1.1E+02	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.7	J	2.1E+03	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	2.4	J	2.1E+03	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	18.7		1.9E+04	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	20.5		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	54.6		1.9E+04	I
BERYLLIUM	0002	S	mG/Kg	.2	.75	J	1.5E-01	I
BERYLLIUM	0001	S	mG/Kg	.2	0.71	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.75		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.87	1.3	J	4.6E+01	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	1.9	J	1.4E+02	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	8.3	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	1.5	J	1.4E+02	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	91900.		NA	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	153000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	76800.		NA	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	30.7	J	1.4E+03	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	32.2	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	26.3		1.4E+03	I
CHRYSENE	0002	S	mG/Kg	0.84	0.99	J	2.0E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	12.6	J	3.9E+01	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.7	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	10.6		3.9E+01	I
COPPER, TOTAL	0002	S	mG/Kg	1.	31.3	J	1.0E+04	I
COPPER, TOTAL	0001	S	mG/Kg	1.	31.0	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	18.8		1.0E+04	I
CYANIDE	0002	S	mG/Kg	.1	.19	J	5.4E+03	I
CYANIDE	0001	S	mG/Kg	.2	0.31	J	5.4E+03	I
CYANIDE	0003	S	mG/Kg	.2	0.28	J	5.4E+03	I

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J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MND33-0101
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0002	S	mG/Kg	1.	19300.	J	NA	I
IRON, TOTAL	0001	S	mG/Kg	1.	8400.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	16200.	J	NA	I
LEAD, TOTAL	0002	S	mG/Kg	.2	4.5	J	5.3E+01	I
LEAD, TOTAL	0001	S	mG/Kg	.2	18.5	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	17.2	J	5.3E+01	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	12800.		NA	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	62900.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	10500.		NA	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	443.	J	2.7E+04	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	276.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	776.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	1.2		8.1E+01	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	24.4	J	5.4E+03	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.0	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	19.		5.4E+03	I
PHENANTHRENE	0002	S	mG/Kg	0.84	1.2	J	7.8E+03	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	1650.		NA	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	523.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	850.		NA	I
PYRENE	0002	S	mG/Kg	0.84	1.5	J	1.1E+00	I
PYRENE	0001	S	mG/Kg	0.87	6.1	J	1.1E+00	I
SILVER, TOTAL	0002	S	mG/Kg	1.	16.	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	21.5	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	14.8		1.4E+03	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	707.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	877.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	282.		NA	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	23.4	J	1.9E+03	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.1	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	24.2		1.9E+03	I
ZINC, TOTAL	0002	S	mG/Kg	.5	58.3	J	5.4E+04	I
ZINC, TOTAL	0001	S	mG/Kg	.5	150.	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	38.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MND33-0105
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	1003	S	mG/Kg	0.011	0.04		1.4E+04	D
2-BUTANONE	0003	S	mG/Kg	0.012	0.046		1.4E+04	I
2-BUTANONE	1003	S	mG/Kg	0.011	0.079		1.4E+04	I
ACETONE	1003	S	mG/Kg	0.021	0.14		2.7E+04	D
ACETONE	0003	S	mG/Kg	0.012	0.22		2.7E+04	I
ACETONE	1003	S	mG/Kg	0.021	0.27		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	12.	4730.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	9600.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	12.	7060.		7.8E+05	I
ALUMINUM, TOTAL	1003	S	mG/Kg	12.	7820.		7.8E+05	I
ANTHRACENE	0001	S	mG/Kg	0.78	0.8	J	8.1E+04	I
ANTIMONY, TOTAL	0001	S	mG/Kg	6.	21.0	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	6.	10.7	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	6.	10.7	J	1.1E+02	I
ANTIMONY, TOTAL	1003	S	mG/Kg	6.	15.4	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.4	2.2	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	1.8	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.4	3.6	J	2.1E+03	I
ARSENIC, TOTAL	1003	S	mG/Kg	.4	2.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.4	23.1	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	21.6	J	1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.4	103.	J	1.9E+04	I
BARIUM, TOTAL	1003	S	mG/Kg	.4	79.4	J	1.9E+04	I
BENZO(A)ANTHRACENE	0001	S	mG/Kg	0.78	2.3	J	6.0E-01	I
BENZO(A)PYRENE	0001	S	mG/Kg	0.78	2.3	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0001	S	mG/Kg	0.78	3.9	J	6.4E-01	I
BENZO(G,H,I)PERYLENE	0001	S	mG/Kg	0.78	1.1	J	4.0E+00	I
BERYLLIUM	0001	S	mG/Kg	.4	0.67	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.4	0.66	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.4	0.71	J	1.5E-01	I
BERYLLIUM	1003	S	mG/Kg	.4	1.	J	1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.78	1.5	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.81	0.87	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1003	S	mG/Kg	0.85	3.	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.4	4.9	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.4	3.1		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.4	3.2		1.4E+02	I
CADMIUM, TOTAL	1003	S	mG/Kg	.4	3.3		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	4.	127000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	54900.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
D - Dilution
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MND33-0105
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
CALCIUM, TOTAL	0003	S	mG/Kg	4.	44000.		NA	I
CALCIUM, TOTAL	1003	S	mG/Kg	4.	33900.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	2.	33.4	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	27.6		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	2.	21.3		1.4E+03	I
CHROMIUM, TOTAL	1003	S	mG/Kg	2.	25.3		1.4E+03	I
CHRYSENE	0001	S	mG/Kg	0.78	4.	J	2.0E+01	I
COBALT, TOTAL	0001	S	mG/Kg	2.	8.9	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	14.2		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	11.7		3.9E+01	I
COBALT, TOTAL	1003	S	mG/Kg	2.	16.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	2.	41.4	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	2.	22.9		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	2.	17.4		1.0E+04	I
COPPER, TOTAL	1003	S	mG/Kg	2.	24.2		1.0E+04	I
DIBENZO(A,H)ANTHRACENE	0001	S	mG/Kg	0.78	1.	J	7.9E-02	I
FLUORANTHENE	0001	S	mG/Kg	0.78	5.6	J	1.1E+04	I
INDENO(1,2,3-CD)PYRENE	0001	S	mG/Kg	0.78	1.3	J	3.8E-01	I
IRON, TOTAL	0001	S	mG/Kg	2.	11500.		NA	I
IRON, TOTAL	0002	S	mG/Kg	2.	22600.	J	NA	I
IRON, TOTAL	0003	S	mG/Kg	2.	16100.	J	NA	I
IRON, TOTAL	1003	S	mG/Kg	2.	29700.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.4	14.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.4	7.3		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.4	8.2		5.3E+01	I
LEAD, TOTAL	1003	S	mG/Kg	.4	11.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	10.	27800.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	12700.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	10.	14100.		NA	I
MAGNESIUM, TOTAL	1003	S	mG/Kg	10.	10600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.4	323.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	412.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.4	718.	J	2.7E+04	I
MANGANESE, TOTAL	1003	S	mG/Kg	.4	862.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.04	.49		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	4.	21.7	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	27.1		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	4.	22.9		5.4E+03	I
NICKEL, TOTAL	1003	S	mG/Kg	4.	25.6		5.4E+03	I
PHENANTHRENE	0001	S	mG/Kg	0.78	3.9	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	20.	749.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MND33-0105
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	1350.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	20.	831.		NA	I
POTASSIUM, TOTAL	1003	S	mG/Kg	20.	865.		NA	I
PYRENE	0001	S	mG/Kg	0.78	3.3	J	1.1E+00	I
SILVER, TOTAL	0001	S	mG/Kg	2.	17.4	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	2.	11.4		1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	2.	10.		1.4E+03	I
SILVER, TOTAL	1003	S	mG/Kg	2.	8.6		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	276.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	218.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	269.		NA	I
SODIUM, TOTAL	1003	S	mG/Kg	20.	282.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	2.	22.4	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	22.		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	2.	23.7		1.9E+03	I
VANADIUM, TOTAL	1003	S	mG/Kg	2.	24.8	J	1.9E+03	I
VANADIUM, TOTAL	1003	S	mG/Kg	2.	35.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	1.	110.	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	1.	49.9	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	1.	36.5	J	5.4E+04	I
ZINC, TOTAL	1003	S	mG/Kg	1.	54.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.15
AREA I BUILDING 1 LEACH PIT
Location: MND33-0109
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	8780.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	6.	13.0	J	1.1E+02	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	1.9	J	2.1E+03	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	24.9	J	1.9E+04	I
BERYLLIUM	0002	S	mG/Kg	.4	0.80	J	1.5E-01	I
CADMIUM, TOTAL	0002	S	mG/Kg	.4	3.7	J	1.4E+02	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	116000.		NA	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	33.5	J	1.4E+03	I
COBALT, TOTAL	0002	S	mG/Kg	2.	13.2		3.9E+01	I
COPPER, TOTAL	0002	S	mG/Kg	2.	19.2	J	1.0E+04	I
IRON, TOTAL	0002	S	mG/Kg	2.	18900.	J	NA	I
LEAD, TOTAL	0002	S	mG/Kg	.4	6.9		5.3E+01	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	16300.		NA	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	454.	J	2.7E+04	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	24.3	J	5.4E+03	I
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	1440.		NA	I
SILVER, TOTAL	0002	S	mG/Kg	2.	17.2	J	1.4E+03	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	278.		NA	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	24.8	J	1.9E+03	I
ZINC, TOTAL	0002	S	mG/Kg	1.	42.0	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.12. BUILDING 34 OIL BURN STRUCTURE

The Building 34 Oil Burn Structure is located west of Building 34 in the lower valley area in the west central portion of Mound Plant. The oil burn structure is an open pit approximately 10 ft on each side, with 8-ft-high walls. The structure is composed of concrete block lined with brick. The thickness of bottom construction materials is not known.

The oil burn structure was used to test barrels against shipping requirements by burning a fuel fire for 15 minutes. Fuel for burning was transported from the former aviation fuel tank through underground piping. Aviation fuel was used in the test burning operations at the oil burn structure. The oil burn structure was removed from service in 1979. A description of the Building 34 Oil Burn Structure, including the field investigative procedures, is presented in subsection 2.12.

Two soil borings (five samples, one duplicate), one sediment sample, and one surface water sample was collected at the oil burn structure to assess potential environmental releases of contaminants during previous site activities. All soil samples from the oil burn structure were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; and EPH. In addition, soil samples MND33-0114-0001 and -0002; and MND33-0115-0001 and 0002 were analyzed for radionuclides using gamma spectroscopy, and soil sample MND33-0115-0002 was analyzed for nitrite/nitrate. The sediment sample collected from within the oil burn structure was analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; EPH; and gamma spectroscopy. The surface water sample collected from within the oil burn structure was analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; and EPH. The validated analytical results for all analytes detected above laboratory reporting limits for each sample analyzed are presented in Table III.16.

3.12.1. Volatile Organic Compounds

VOC analyses for soil samples at the oil burn structure indicates that three VOCs, 4-methyl-2-pentanone, acetone, and carbon disulfide, were detected in sample MND33-0115-0002 at concentrations above laboratory reporting limits but well below PRGs. No other VOCs were detected in soils collected at the oil burn structure at concentrations above laboratory reporting limits. The detection of these compounds at concentrations below respective PRGs does not represent a significant impact to site soils.

VOCs were not detected at concentrations above the laboratory reporting limits in the sediment sample collected at the oil burn structure. Laboratory analysis for the oil burn structure surface water sample indicated that no VOCs were detected at concentrations above laboratory reporting limits.

3.12.2. Semivolatile Organic Compounds

Analytical results for soil samples from the oil burn structure indicate that only one SVOC, bis(2-ethylhexyl)phthalate, was detected at concentrations above laboratory reporting limits but well below the PRG from one sample location MND33-0114-0002 and duplicate -1002. SVOCs were not detected at concentrations above laboratory reporting limits in any other soil sample from the oil burn structure. The presence of bis(2-ethylhexyl)phthalate in only one soil sample from the oil burn structure at a concentration well below the PRG does not represent a significant impact to soil quality at this site.

Analytical results for the oil burn structure sediment sample indicated a detected concentration of SVOC benzo(g,h,i)perylene at a concentration above the laboratory reporting limit but below the PRG. No other SVOCs were detected in the sediment sample at concentrations above the laboratory reporting limits. The presence of benzo(g,h,i)perylene at a concentration above the laboratory reporting limit and below the PRG does not represent a significant impact to sediment quality at the oil burn structure.

Laboratory analyses for the oil burn structure surface water sample indicate that SVOCs were not detected at concentrations above laboratory reporting limits.

3.12.3. Pesticides and Polychlorinated Biphenyls

Analytical results for P/PCB analyses indicate that P/PCBs were not detected in oil burn structure soil, sediment, or surface water samples at concentrations above the laboratory reporting limits.

3.12.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the oil burn structure at concentrations above the PRGs or proposed action levels.

Inorganic analytical results for the sediment sample collected at the oil burn structure show a concentration of lead detected at levels above the PRG. No other inorganic compounds were detected at concentrations above PRGs or proposed action levels. The elevated concentration of lead may represent an impact to sediment quality from previous site activities.

Inorganic analytical results for the surface water sample collected at the oil burn structure indicate that of the 11 metals detected at levels above the laboratory reporting limits, none of the detected metals were present at concentrations above PRGs. Six of the 11 metals: calcium, iron, lead, magnesium, potassium, and sodium, for which PRGs and toxicity values have not been established, were detected above the

laboratory reporting limits. However, these metals are not considered to reflect an impact to surface water quality because they are naturally occurring constituents and are present in soil and sediment samples in the area. The remaining five metals, aluminum, barium, cadmium, manganese, and thallium, were detected at concentrations well below the respective PRGs.

3.12.5. Dioxin/Furans

Dioxin/furans were not detected above laboratory reporting limits in any of the soil samples analyzed from the oil burn structure. Dioxin compounds were detected in the oil burn structure sediment sample. The compounds 1,2,3,4,6,7,8 heptachlorodibenzo-p-dioxin and octachlorodibenzo-p-dioxin were detected at concentrations above the laboratory reporting limits. Heptachlorodibenzo-p-dioxin was detected in the oil burn structure sediment sample at a concentration of 4.1 mG/Kg, which exceeds the PRG of 0.0001 mG/Kg.

The confirmation and quantification of all 2,3,7,8-substituted isomers of dioxin/furans was conducted by secondary column confirmation as verbally agreed with U.S. EPA on 13 February 1992. However, due to a combination of instrumental and extract regeneration problems, the IT Laboratory was unable to confirm the initial results. The presence of concentrations of dioxins in the oil burn structure sediment indicates that additional site characterization should be considered.

Dioxin/furans were not detected in the surface water sample collected for analyses from the oil burn structure.

3.12.6. Lithium

Analytical results for lithium analyses for soil samples collected at the oil burn structure indicate concentrations of lithium present in each soil sample at levels above the laboratory reporting limits but well below the PRG.

Concentrations of lithium were not detected in the oil burn structure sediment sample at levels above the laboratory reporting limit. Lithium was not detected in the oil burn structure surface water sample at concentrations above the laboratory reporting limit.

The detected concentrations of lithium does not represent an impact to soil quality as a result of previous site activities involving the disposal of lithium carbonate.

3.12.7. Extractable Petroleum Hydrocarbons

EPH compounds were not detected in soil samples from the oil burn structure at concentrations above the laboratory reporting limits. EPH compounds were detected in the oil burn structure sediment sample at a concentration above the laboratory reporting limit but below the PRG. EPH compounds were not detected at concentrations above the laboratory reporting limit in the oil burn structure surface water sample.

3.12.8. Nitrite/Nitrates

A single soil sample (MND33-0115-0002) was analyzed for nitrite/nitrates. Concentrations of nitrite/nitrates were not detected in this sample at levels above the laboratory reporting limits.

3.12.9. Gamma Spectroscopy

Recently obtained information reported that a cleanup of depleted uranium was conducted at Building 34. As a result of this information, surface and near surface soil samples from the oil burn structure area and the sediment sample from inside the structure were analyzed using gamma spectroscopy. Laboratory analyses via gamma spectroscopy detects the radionuclide thorium-234 which is the decay product and daughter of uranium-238. Thorium-234 was detected at soil sample MND33-0114-0001 at a concentration of 1.38 pCi/g, which is slightly above the PRG of 1.1 pCi/g. No other radionuclides were detected in soil samples from the site at concentrations above the PRGs. Thorium-234 was detected in one of the two sediment samples analyzed from sediment inside the structure at a concentration of 1.38 pCi/g and cesium-137 was detected at a concentration of .163 pCi/g, which is slightly above the PRG. Detected concentrations of potassium-40 in soil and sediment samples are within background concentration levels. (Eisenbud, 1987). Radionuclides were not detected in the surface water sample collected from the oil burn structure at concentrations above laboratory reporting limits.

The detection of radionuclides at the oil burn structure, particularly thorium-234, indicates the need for further characterization at the site to determine possible impact to site soil and sediment from previous site activities.

3.12.10. Summary

The analytical results for soil, sediment, and surface water samples collected at the Building 34 Oil Burn Structure indicate that previous site activities may have impacted site conditions. Sediment from the Building 34 Oil Burn Structure contains detectable concentrations of dioxins, radionuclides, and lead. Further characterization of soil and sediment quality at the site is recommended.

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0114
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	7900.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3370.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	4210.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	12.6	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	31.9	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	31.2	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	9.0	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.3	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	7.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	55.6	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	29.1	J	1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	29.1	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.69		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.65	J	1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	0.73	J	1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.74	1.9	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.77	1.1	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.6	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	6.7	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	7.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	41900.	J	NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	118000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	128000.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.3		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	24.3	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	27.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.3		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.6	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	8.9	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.3		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.9	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	17.4	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	18000.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	8590.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	10000.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	9.8		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	5.6		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	7.5		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	29.		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	18.5		5.4E+03	I
LITHIUM, TOTAL	1001	S	mG/Kg	5.	23.5		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	16900.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0114
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	50500.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	52600.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	458.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	204.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	214.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	28.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	21.8	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	23.4	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	907.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	633.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	775.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	16.9		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	11.3		NA	I
RADIUM-224	0001	S	pCi/g	.1	.742		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.543		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.845		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.738		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.801		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.476		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	9.5	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	16.8	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	17.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	98.4		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	175.	J	NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	177.	J	NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.2	0.53	J	NA	I
THALLIUM, TOTAL	0002	S	mG/Kg	.2	0.52	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	1.38		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.07		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	26.1		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	22.3	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	25.3	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	50.7	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	31.	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	31.4	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0115
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
4-METHYL-2-PENTANONE	0002	S	mG/Kg	0.011	0.013		1.4E+04	I
ACETONE	0002	S	mG/Kg	0.011	0.054		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	12600.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	4540.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	25.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.3	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	8.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	131.	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	36.4	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.96		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.66	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.2	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	6.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	4300.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	100000.		NA	I
CARBON DISULFIDE	0002	S	mG/Kg	0.006	0.007		2.7E+04	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	18.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	24.6	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	16.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	9.2	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.3		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	18.4	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	21700.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	11800.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.5		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	29.1		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	15.1		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	2950.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	42600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	709.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	237.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.7		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	24.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1460.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	892.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0115
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM-40	0001	S	pCi/g	.5	19.3		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	11.5		NA	I
RADIUM-224	0001	S	pCi/g	.1	1.0		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.575		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.879		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.686		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.13		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.483		5.0E+00	I
SILVER, TOTAL	0002	S	mG/Kg	1.	15.4	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	79.4		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	151.	J	NA	I
THALLIUM, TOTAL	0002	S	mG/Kg	.2	0.50	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	.973		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.548		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	27.7		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	23.6	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	59.		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	38.7		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0141
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2,3,4,6,7,8-HpCDD	0001	SE	NG/G	0.	2.3		NA	I
ALUMINUM, TOTAL	0001	SE	mG/Kg	6.	7140.		7.8E+05	I
ANTIMONY, TOTAL	0001	SE	mG/Kg	3.	69.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	SE	mG/Kg	.2	3.3	J	2.1E+03	I
BARIUM, TOTAL	0001	SE	mG/Kg	.2	90.7		1.9E+04	I
BENZO(G,H,I)PERYLENE	0001	SE	mG/Kg	1.2	2.2	J	4.0E+00	I
BERYLLIUM	0001	SE	mG/Kg	.2	.68		1.5E-01	I
CADMIUM, TOTAL	0001	SE	mG/Kg	.2	24.2		1.4E+02	I
CALCIUM, TOTAL	0001	SE	mG/Kg	2.	49400.		NA	I
CESIUM-137	0001	SE	pCi/g	.1	.163		2.1E-02	I
CHROMIUM, TOTAL	0001	SE	mG/Kg	1.	92.1		1.4E+03	I
COBALT, TOTAL	0001	SE	mG/Kg	1.	28.		3.9E+01	I
COPPER, TOTAL	0001	SE	mG/Kg	1.	92.8		1.0E+04	I
CYANIDE	0001	SE	mG/Kg	.2	.75		5.4E+03	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	SE	mG/Kg	5.	23.		105. total	I
HEPTACHLORODIBENZO-P-DIOXIN	0001	SE	NG/G	0.	4.1		1.0E-04	I
IRON, TOTAL	0001	SE	mG/Kg	1.	100000.		NA	I
LEAD, TOTAL	0001	SE	mG/Kg	.2	3100.		5.3E+01	I
MAGNESIUM, TOTAL	0001	SE	mG/Kg	5.	17200.		NA	I
MANGANESE, TOTAL	0001	SE	mG/Kg	.2	829.		2.7E+04	I
NICKEL, TOTAL	0001	SE	mG/Kg	2.	107.		5.4E+03	I
OCTACHLORODIBENZO-P-DIOXIN	0001	SE	NG/G	0.	16.6		NA	I
POTASSIUM, TOTAL	0001	SE	mG/Kg	10.	1270.		NA	I
POTASSIUM-40	0001	SE	pCi/g	.5	10.8		NA	I
RADIUM-224	0001	SE	pCi/g	.1	.922		5.0E+00	I
RADIUM-226	0001	SE	pCi/g	.1	.830		5.0E+00	I
RADIUM-228	0001	SE	pCi/g	.2	.944		5.0E+00	I
SILVER, TOTAL	0001	SE	mG/Kg	1.	13.5	J	1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-0141
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0001	SE	mG/Kg	10.	560.		NA	I
THORIUM-234	0001	SE	pCi/g	.5	1.26		1.1E+00	I
VANADIUM, TOTAL	0001	SE	mG/Kg	1.	41.8		1.9E+03	I
ZINC, TOTAL	0001	SE	mG/Kg	.5	791.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.16
BUILDING 34 OIL BURN STRUCTURE
Location: MND33-1141
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	W	mg/L	0.06	0.296		1.1E+02	I
BARIUM, TOTAL	0001	W	mg/L	0.002	0.0257		2.6E+00	I
CADMIUM, TOTAL	0001	W	mg/L	0.002	0.0021		1.8E-02	I
CALCIUM, TOTAL	0001	W	mg/L	0.02	30.6		NA	I
CALCIUM, TOTAL	4001	W	mg/L	0.02	0.0373		NA	I
IRON, TOTAL	0001	W	mg/L	0.01	2.61		NA	I
IRON, TOTAL	4001	W	mg/L	0.01	0.0218		NA	I
LEAD, TOTAL	0001	W	mg/L	0.002	0.036		NA	I
MAGNESIUM, TOTAL	0001	W	mg/L	0.05	4.88		NA	I
MANGANESE, TOTAL	0001	W	mg/L	0.002	0.0437		3.7E+00	I
POTASSIUM, TOTAL	0001	W	mg/L	0.1	5.82		NA	I
SODIUM, TOTAL	0001	W	mg/L	0.1	10.5		NA	I
THALLIUM, TOTAL	4001	W	mg/L	0.002	0.0021		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
mg/L - Micrograms per Liter
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.13. BUILDING 34 FIRE-FIGHTING TRAINING PITS

The Building 34 Fire-Fighting Training Pits, located south of Building 34, consists of two pits, one approximately 10 ft by 10 ft by 1 ft deep, the other approximately 20 ft by 10 ft by 1 ft deep. These pits were used to conduct fire-fighting training operations for Mound Plant personnel. Approximately 3 to 5 gallons of diesel fuel were reportedly used to start a fire, which was extinguished using water from a nearby hydrant. A summary description of the site history, including the field investigative procedures, is presented in subsection 2.13.

Fourteen soil samples were collected from four soil borings at the fire-fighting training pits and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; and EPH. An additional five soil samples were analyzed only for TCL VOCs, dioxin/furans and lithium, for a total of 19 soil samples, including two duplicate samples. In addition to the above-mentioned analyses, nine surface and near surface soil samples were analyzed via gamma spectroscopy for cesium-137; potassium-40; radium-224, -226, -228; and thorium-234.

A sediment sample was also collected as a composite sample from sediments from both of the pits and was analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; EPH; and gamma spectroscopy.

A surface water sample was collected from one of the pits and was analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; dioxin/furans; lithium; and EPH.

Soil, sediment, and surface water sampling and analyses were conducted at the Building 34 Fire-Fighting Training Pits to assess whether the site is or has been a source of hazardous constituents released to the environment. The validated analytical results for all analytes detected at concentrations above the laboratory reporting limits in each sample analyzed are presented in Table III.17.

3.13.1. Volatile Organic Compounds

VOCs were detected at concentrations above laboratory reporting limits in two soil samples, MND33-0110-0003 and MND33-0112-0003. TCE was detected in sample MND33-0110-0003 at concentrations above laboratory reporting limits but below the PRG. BTEX were detected in sample MND33-0112-0003 at concentrations above laboratory reporting limits but below the PRGs. VOCs were not detected in any other soil samples analyzed from the fire-fighting training pits at concentrations above the laboratory reporting limits. The detected concentrations of VOCs in soils at the fire-fighting training pits do not represent an impact to soil quality.

VOCs were detected in the fire-fighting training pits sediment sample. Acetone, 2-hexanone, toluene, ethylbenzene, and total xylenes were detected in the sediment sample at concentrations above the laboratory reporting limits but below the PRGs for these compounds. The detection of these VOCs at the stated concentrations does not reflect an impact to sediment quality at the fire-fighting training pits.

VOCs were not detected in the surface water sample from the fire-fighting training pits at concentrations above the laboratory reporting limits.

3.13.2. Semivolatile Organic Compounds

SVOCs were not detected in any soil samples from the fire-fighting training pits at concentrations above the laboratory reporting limits.

A total of 12 SVOCs were detected at concentrations above the laboratory reporting limits from the fire-fighting training pits sediment sample. The SVOC pyrene was detected at a concentration above the PRG. 2-methylnaphthalene was detected above the laboratory reporting limit, however, a PRG is not established for this compound. The remaining 10 SVOCs detected in the sediment sample were detected at concentrations below respective PRGs. The presence of these SVOCs in the sediment sample may indicate influence from previous site activities involving the burning of fuels at the pits.

Six SVOCs were detected in the surface water sample from the fire-fighting training pits at concentrations above the laboratory reporting limits but below the PRGs. No other SVOCs were detected in the surface water sample at concentrations above the laboratory reporting limits.

3.13.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in soil, sediment, or surface water samples from the fire-fighting training pits at concentrations above the laboratory reporting limits.

3.13.4. TAL Inorganics

Inorganic compounds were not detected in soil, sediment, or surface water samples collected from the fire-fighting training pits area at concentrations above respective PRGs or proposed action levels.

3.13.5. Dioxin/Furans

Analytical results for dioxin/furan analyses of soil samples from the fire-fighting training pits indicate a detected concentration of octachlorodibenzo-p-dioxin at surface soil sample MND33-0111-0001 at a concentration of 0.31 ng/g. No other dioxin/furans were detected in soil samples from the fire-fighting training pits. The occurrence of dioxin in surface soil at the fire-fighting training pits indicate that site activities involving the burning of flammable liquids at the site may have impacted the soil quality in the area.

Dioxin/furans were not detected in the sediment or surface water samples collected at the Building 34 Fire-Fighting Training Pits.

3.13.6. Lithium

Lithium was detected in all 15 soil samples collected from soil boring locations MND33-0110, -0111, and -0113 at the fire-fighting training pits. Concentrations of lithium exceeded the laboratory reporting limit in all of the above-mentioned samples but were below the PRG. Lithium was not detected above laboratory reporting limits in soil samples from soil boring location MND33-0112. The occurrence of lithium at concentrations above the laboratory reporting limit but below the PRG in the majority of soil samples from the fire-fighting training pits does not indicate impact to soil quality from previous site activities involving the disposal of lithium carbonate.

Concentrations of lithium at levels above the laboratory reporting limit were not detected in sediment or surface water samples collected at the fire-fighting training pits.

3.13.7. Extractable Petroleum Hydrocarbons

Analytical results for EPH analyses indicate concentrations of EPH above laboratory reporting limits in six soil samples collected from three soil boring locations at the fire-fighting training pits. EPH concentrations above laboratory reporting limits but below the PRG were detected at soil samples MND33-0111-0001 and -0003; and MND33-0113-0001. EPH concentrations which were above the PRG were detected in a soil sample and a duplicate sample, from soil boring location MND33-0112 (-0001 and -1001). The occurrence of EPH in site soils at concentrations above the PRG indicates that previous site activities may have impacted soil quality at the site.

Analytical results for EPH analyses of the Building 34 Fire-Fighting Training Pits sediment sample indicate an EPH concentration exceeding the PRG. This elevated concentration of EPH compounds may indicate an impact to sediment quality from previous site activities.

EPHs were not detected at concentrations above laboratory reporting limits in the surface water sample collected at the fire-fighting training pits.

3.13.8. Nitrite/Nitrates

Analyses of nitrite/nitrates was conducted on only one sample, MND33-0110-0001. Analytical results indicate no detectable levels of nitrite/nitrates at concentrations above the laboratory reporting limits.

3.13.9. Gamma Spectroscopy

Nine soil samples were analyzed for radioactive constituents using gamma spectroscopy. As previously discussed, a cleanup of depleted uranium was reported to have occurred in the Building 34 area. Analytical results of gamma spectroscopy indicate that thorium-234, a daughter product of uranium-238, was detected at concentrations above the PRG in surface soil samples MND33-0110-0001 and 0111-0001. The sediment sample collected from the fire-fighting training pits was also analyzed via gamma spectroscopy. Analytical results indicate a concentration of thorium-234 in the sediment sample at 5.41 pCi/g, which is above the 1.1 pCi/g PRG. Potassium-40 concentrations in the soil and sediment samples at the Building 34 Fire-Fighting Training Pits is naturally occurring and is not considered to be a result of previous site activities. Detected concentrations of potassium-40 in soil and sediment samples are within background concentration levels (Eisenbud, 1987). The detection of thorium-234 at concentrations above PRGs may reflect an impact to soil and sediment quality in the area and could be associated with previous site activities. Additional site characterization concerning radionuclide concentrations in soil at the site is recommended.

3.13.10. Summary

Analytical results for soil samples collected at the Building 34 Fire-Fighting Training Pits suggest an impact to soil quality at the site from concentrations of dioxin, EPH, and radionuclides. In addition, an oily product was observed in site soils in close proximity to the southernmost test pit at a depth of approximately 10.0 to 12.0 ft BGS. Analytical results for sediment sample analyses from the fire-fighting training pits indicate a significant impact to sediment quality from elevated concentrations of SVOCs, EPH, and thorium-234. As a result of these findings, further site characterization is recommended for the Building 34 Fire-Fighting Training Pits in order to determine the full extent of site contamination. In addition, remedial activities may be warranted for sediments contained in the training pits and for soils in proximity to the pits.

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0110
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8790.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3950.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	4410.		7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	6.	4020.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	16.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	26.3	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	28.4	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	3.	29.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	10.0	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.1	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.7	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.2	5.0	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	74.8	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	33.5	J	1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	26.1	J	1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.2	31.3	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	0.77	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.60	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	0.61	J	1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.2	0.62	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.2		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	5.7	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	6.1	J	1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.2	6.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	52500.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	118000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	105000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	2.	104000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.5		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	25.3	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	25.2	J	1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	1.	24.6	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	12.3		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.9	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	7.8	J	3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	1.	9.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.9		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	17.7	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	17.2	J	1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	1.	17.8	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	19800.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	9800.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	9910.		NA	I
IRON, TOTAL	1002	S	mG/Kg	1.	11600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	12.8		5.3E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0110
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
LEAD, TOTAL	0002	S	mG/Kg	.2	5.4		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	4.9		5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.2	5.1		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	7.		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	6.		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	5.	6.6		5.4E+03	I
LITHIUM, TOTAL	1002	S	mG/Kg	5.	6.6		5.4E+03	I
LITHIUM, TOTAL	0004	S	mG/Kg	5.	21.4		5.4E+03	I
LITHIUM, TOTAL	0005	S	mG/Kg	5.	23.7		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	21800.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	39000.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	43400.		NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	5.	43600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	481.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	278.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	182.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.2	236.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	29.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	25.3	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	23.4	J	5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	2.	25.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1170.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	774.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	867.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	10.	773.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	15.7		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	10.9		NA	I
RADIUM-224	0001	S	pCi/g	.1	.849		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.529		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.901		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.663		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.685		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.513		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	11.5		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	16.5	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	16.0	J	1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	1.	15.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	143.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	146.	J	NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	149.	J	NA	I
SODIUM, TOTAL	1002	S	mG/Kg	10.	151.	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	1.23		1.1E+00	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0110
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
THORIUM-234	0002	S	pCi/g	.5	.739		1.1E+00	I
TRICHLOROETHENE	0003	S	mG/Kg	0.006	0.012		5.8E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	30.8		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	22.3	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	23.5	J	1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	1.	22.7	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	56.9	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	33.3	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	34.3	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.5	36.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0111
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	2260.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3680.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	3650.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	36.2	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	26.8	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	28.4	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	3.9	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	24.5		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	29.8		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	39.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.60	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.62	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.6	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	7.5	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	5.9	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	6.0	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	131000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	101000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	104000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	24.9	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	24.3	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	24.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.1	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	7.6	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	8.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.8	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	15.7	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	16.6	J	1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.	38.1		105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0003	S	mG/Kg	5.	9.2		105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	6290.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	9480.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	9390.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.6	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	5.8	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	5.9	J	5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	12.2		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	16.8		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	5.	14.6		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	59300.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0111
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	43000.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	42500.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	208.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	206.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	204.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.5	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	22.1	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	21.8	J	5.4E+03	I
OCTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	0.	.31		NA	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	359.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	651.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	740.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	8.25		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	10.2		NA	I
RADIUM-224	0001	S	pCi/g	.1	.421		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.596		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.613		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.715		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.405		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.522		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.5	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	15.4	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	15.8	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	194.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	142.	J	NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	137.	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	1.03		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.827		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.2	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	21.7	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.3	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	47.4		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	34.1		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	30.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0112
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	1430.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3690.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	3730.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	2160.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	36.6	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	26.5	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	27.8	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	28.4	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.7	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.3	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	3.8	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	16.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	27.		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	18.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	19.7		1.9E+04	I
BENZENE	0003	S	mG/Kg	0.006	0.008		2.2E+01	I
BERYLLIUM	0001	S	mG/Kg	.2	0.54	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.59	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	0.63	J	1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	0.53	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	7.5	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	6.0	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	6.0	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	6.5	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	141000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	102000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	112000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	117000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	24.4	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	24.7	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	25.0	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	24.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	5.9	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.2	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	7.6	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	6.0	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	23.4	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	15.7	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	15.8	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	14.3	J	1.0E+04	I
ETHYLBENZENE	0003	S	mG/Kg	0.006	0.018		2.7E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.	498.		105. total	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0112
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
EXTRACTABLE HYD AS DIESEL FUEL	0002	S	mG/Kg	5.	8.7		105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0003	S	mG/Kg	5.	66.5		105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	1001	S	mG/Kg	5.	208.		105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	5070.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	9790.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	8320.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	6310.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.6	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.0	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	6.1	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	5.2	J	5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	10.8		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	15.3		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	5.	20.2		5.4E+03	I
LITHIUM, TOTAL	1001	S	mG/Kg	5.	10.7		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	61100.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	41400.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	43100.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	45200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	210.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	206.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	203.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	187.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.2	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	21.4	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	22.0	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	17.6	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	311.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	709.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	839.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	429.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	6.07		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	9.23		NA	I
POTASSIUM-40	1001	S	pCi/g	.5	7.51		NA	I
RADIUM-224	0001	S	pCi/g	.1	.313		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.439		5.0E+00	I
RADIUM-224	1001	S	pCi/g	.1	.375		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.449		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.630		5.0E+00	I
RADIUM-226	1001	S	pCi/g	.1	.456		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.299		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.424		5.0E+00	I
RADIUM-228	1001	S	pCi/g	.2	.391		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.7	J	1.4E+03	I

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J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0112
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SILVER, TOTAL	0002	S	mG/Kg	1.	15.4	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	16.3	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	16.1	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	180.	J	NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	189.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	197.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	155.	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	.626		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.853		1.1E+00	I
THORIUM-234	1001	S	pCi/g	.5	.535		1.1E+00	I
TOLUENE	0003	S	mG/Kg	0.006	0.02		5.4E+04	I
TOTAL XYLENES	0003	S	mG/Kg	0.006	0.12		5.4E+05	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	19.8	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	21.7	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.5	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	20.1	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	32.		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	31.4	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	27.0	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	35.6		5.4E+04	I

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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0113
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4300.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3680.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	2670.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	26.8	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	25.5	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	26.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.0	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	6.3	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	2.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	28.2	J	1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	25.3	J	1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	30.7	J	1.9E+04	I
BENZOIC ACID	0003	S	mG/Kg	3.6	5.8	J	1.1E+06	I
BERYLLIUM	0001	S	mG/Kg	.2	.66	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.66	J	1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	0.64	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	5.9	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	6.8	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	6.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	120000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	156000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	117000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	24.5	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	26.8	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	24.8	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.1	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	7.9	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	7.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.6	J	1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	16.6	J	1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0003	S	mG/Kg	5.	9.7		105. total	I
IRON, TOTAL	0001	S	mG/Kg	1.	9730.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	9550.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	8820.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.2		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	5.6		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	5.	17.5		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	5.	17.8		5.4E+03	I
LITHIUM, TOTAL	0003	S	mG/Kg	5.	21.		5.4E+03	I

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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0113
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
LITHIUM, TOTAL	0004	S	mG/Kg	5.	21.8		5.4E+03	I
LITHIUM, TOTAL	0005	S	mG/Kg	5.	22.2		5.4E+03	I
LITHIUM, TOTAL	0006	S	mG/Kg	5.	25.1		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	41800.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	37800.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	43600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	216.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	247.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	218.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	19.8	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	22.4	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	767.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	703.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	856.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	8.61		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	10.5		NA	I
RADIUM-224	0001	S	pCi/g	.1	.445		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.616		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.530		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.657		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.376		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.433		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	16.3	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	18.	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	16.3	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	173.	J	NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	168.	J	NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	158.	J	NA	I
THORIUM-234	0001	S	pCi/g	.5	.738		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.617		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.5	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	23.9	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.4	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	31.2	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	29.4	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	29.2	J	5.4E+04	I

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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0140
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2,4-DIMETHYLPHENOL	0001	SE	mG/Kg	5.4	31.	J	5.4E+03	I
2-HEXANONE	0001	SE	mG/Kg	0.016	0.061	J	NA	I
2-METHYLNAPHTHALENE	0001	SE	mG/Kg	5.4	23.	J	NA	I
2-METHYLPHENOL	0001	SE	mG/Kg	5.4	13.	J	1.4E+04	I
4-METHYL-2-PENTANONE	0001	SE	mG/Kg	0.016	0.02		1.4E+04	I
4-METHYLPHENOL	0001	SE	mG/Kg	5.4	25.	J	1.4E+04	I
ACETONE	0001	SE	mG/Kg	0.016	0.063	J	2.7E+04	I
ALUMINUM, TOTAL	0001	SE	mG/Kg	6.	450.		7.8E+05	I
ANTHRACENE	0001	SE	mG/Kg	5.4	38.	J	8.1E+04	I
ARSENIC, TOTAL	0001	SE	mG/Kg	.2	0.81	J	2.1E+03	I
BARIUM, TOTAL	0001	SE	mG/Kg	.2	15.1		1.9E+04	I
BENZYL ALCOHOL	0001	SE	mG/Kg	5.4	17.	J	8.1E+04	I
CADMIUM, TOTAL	0001	SE	mG/Kg	.2	1.3		1.4E+02	I
CALCIUM, TOTAL	0001	SE	mG/Kg	2.	12200.		NA	I
CHROMIUM, TOTAL	0001	SE	mG/Kg	1.	15.5		1.4E+03	I
COPPER, TOTAL	0001	SE	mG/Kg	1.	14.		1.0E+04	I
CYANIDE	0001	SE	mG/Kg	.2	.26		5.4E+03	I
ETHYLBENZENE	0001	SE	mG/Kg	0.008	0.017		2.7E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	SE	mG/Kg	5.	116700.		105. total	I
FLUORANTHENE	0001	SE	mG/Kg	5.4	7.3	J	1.1E+04	I
FLUORENE	0001	SE	mG/Kg	5.4	21.	J	1.1E+04	I
IRON, TOTAL	0001	SE	mG/Kg	1.	4650.		NA	I
LEAD, TOTAL	0001	SE	mG/Kg	.2	11.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	SE	mG/Kg	5.	3500.		NA	I
MANGANESE, TOTAL	0001	SE	mG/Kg	.2	45.1		2.7E+04	I
NICKEL, TOTAL	0001	SE	mG/Kg	2.	17.		5.4E+03	I
PHENANTHRENE	0001	SE	mG/Kg	5.4	38.	J	7.8E+03	I
PHENOL	0001	SE	mG/Kg	5.4	22.	J	1.6E+05	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE-FIGHTING TRAINING PIT
Location: MND33-0140
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	0001	SE	mG/Kg	10.	190.		NA	I
POTASSIUM-40	0001	SE	pCi/g	.5	3.31		NA	I
PYRENE	0001	SE	mG/Kg	5.4	46.	J	1.1E+00	I
RADIUM-224	0001	SE	pCi/g	.1	.236		5.0E+00	I
SILVER, TOTAL	0001	SE	mG/Kg	1.	3.4	J	1.4E+03	I
SODIUM, TOTAL	0001	SE	mG/Kg	10.	184.		NA	I
THORIUM-234	0001	SE	pCi/g	.5	5.41		1.1E+00	I
TOLUENE	0001	SE	mG/Kg	0.008	0.028		5.4E+04	I
TOTAL XYLENES	0001	SE	mG/Kg	0.008	0.15		5.4E+05	I
VANADIUM, TOTAL	0001	SE	mG/Kg	1.	48.8		1.9E+03	I
ZINC, TOTAL	0001	SE	mG/Kg	.5	71.8		5.4E+04	I

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J - The associated value is an estimated quantity
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.17
BUILDING 34 FIRE FIGHTING TRAINING PITS
Location: MND33-1140
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2,4-DIMETHYLPHENOL	0001	W	mg/L	0.01	0.041		7.3E-01	I
2,4-DIMETHYLPHENOL	1001	W	mg/L	0.01	0.047		7.3E-01	I
2-METHYLPHENOL	0001	W	mg/L	0.01	0.039		1.8E+00	I
2-METHYLPHENOL	1001	W	mg/L	0.01	0.046		1.8E+00	I
4-METHYLPHENOL	0001	W	mg/L	0.01	0.04		1.8E+00	I
4-METHYLPHENOL	1001	W	mg/L	0.01	0.044		1.8E+00	I
ALUMINUM, TOTAL	0001	W	mg/L	0.06	0.123		1.1E+02	I
ALUMINUM, TOTAL	1001	W	mg/L	0.06	0.129		1.1E+02	I
BARIUM, TOTAL	0001	W	mg/L	0.002	0.0071		2.6E+00	I
BARIUM, TOTAL	1001	W	mg/L	0.002	0.0071		2.6E+00	I
BENZOIC ACID	0001	W	mg/L	0.05	0.15	J	1.5E+02	I
BENZOIC ACID	1001	W	mg/L	0.05	0.16	J	1.5E+02	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	W	mg/L	0.01	0.025		7.3E-01	I
CALCIUM, TOTAL	0001	W	mg/L	0.02	26.8		NA	I
CALCIUM, TOTAL	1001	W	mg/L	0.02	28.		NA	I
IRON, TOTAL	0001	W	mg/L	0.01	1.98		NA	I
IRON, TOTAL	1001	W	mg/L	0.01	2.13		NA	I
LEAD, TOTAL	0001	W	mg/L	0.002	0.0129		NA	I
LEAD, TOTAL	1001	W	mg/L	0.002	0.0124		NA	I
MAGNESIUM, TOTAL	0001	W	mg/L	0.05	3.75		NA	I
MAGNESIUM, TOTAL	1001	W	mg/L	0.05	3.9		NA	I
MANGANESE, TOTAL	0001	W	mg/L	0.002	0.0659		3.7E+00	I
MANGANESE, TOTAL	1001	W	mg/L	0.002	0.0682		3.7E+00	I
PHENOL	0001	W	mg/L	0.01	0.052		2.2E+01	I
PHENOL	1001	W	mg/L	0.01	0.055		2.2E+01	I
POTASSIUM, TOTAL	0001	W	mg/L	0.1	5.11		NA	I
POTASSIUM, TOTAL	1001	W	mg/L	0.1	5.4		NA	I
SODIUM, TOTAL	0001	W	mg/L	0.1	23.3		NA	I
SODIUM, TOTAL	1001	W	mg/L	0.1	24.3		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
mg/L - Micrograms per Liter
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.14. BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT

The Building 34 Historical Fire-Fighting Training Pit is located 25 ft northwest of the oil burn structure between the oil burn structure and Plant drainage ditch, and east of the retention basin in the west central portion of Mound Plant. Dimensions of the pit are approximately 15 ft by 10 ft. Diesel fuel was reportedly used in the historical fire-fighting training pit to create demonstration fires.

No known RCRA-regulated materials were stored or handled at the site. A summary description of the Building 34 Historical Fire-Fighting Training Pit history and field investigation procedures is presented in subsection 2.14.

Four soil samples and one duplicate soil sample were collected from two soil borings located adjacent to the pit and were analyzed for TCL VOCs, SVOCs; TAL inorganics; dioxin/furans; EPH; and lithium. Four of the soil samples were also analyzed for radioactive constituents using gamma spectroscopy. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.18.

3.14.1. Volatile Organic Compounds

VOCs were detected in two soil samples collected at the historical fire-fighting training pit. Acetone and 2-butanone were detected in samples MND33-0135-0001 and MND33-0136-0001 at concentrations above detection limits but below the PRGs. The occurrence of these compounds at concentrations substantially below the PRGs does not reflect an impact to soil quality in the area. No other VOCs were detected at concentrations above laboratory reporting limits in soils from the historical fire-fighting training pit.

3.14.2. Semivolatile Organic Compounds

The SVOC fluoranthene was detected in soils from location MND33-0135-0001 at a concentration above the laboratory reporting limit but below the PRG. No other SVOCs were detected in soil samples from the site at concentrations above laboratory reporting limits. The detection of fluoranthene in one soil sample at a concentration below the PRG level is not considered an impact to soil quality in the area.

3.14.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in soil samples analyzed from the Building 34 Historical Fire-Fighting Training Pit at concentrations above laboratory reporting limits.

3.14.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 34 Historical Fire-Fighting Training Pit at concentrations above PRGs or proposed action levels, except for concentrations of lead in surface soil sample MND33-0135-0001 at levels above the PRG. The occurrence of lead at the reported concentration may indicate an impact to soil quality from previous site activities involving the burning of fuels.

3.14.5. Dioxin/Furans

Six dioxin/furan compounds were detected in soil samples from the Building 34 Historical Fire- Fighting Pit. The compounds heptachlorodibenzo-p-dioxin and 1,2,3,6,7,8-heptachlorodibenzo-p-dioxin were detected in samples MND33-0135-0001 and MND33-0136-0001 at concentrations above laboratory reporting limits. Heptachlorodibenzo-p-dioxin concentrations in these two samples were also above the PRG. Additional dioxin/furan compounds (octachlorodibenzo-p-dioxin, octachlorodibenzofuran, heptachlorodibenzofuran, and hexachlorodibenzofuran), were detected in soil sample MND33-0135-0001 at concentrations at least two times greater than the laboratory reporting limits.

The presence of dioxin/furan compounds in soils adjacent to the historical fire-fighting training pit indicates that site activities involving burning activities may have impacted soil quality in the area.

3.14.6. Lithium

Lithium was detected in both soil samples from sample location MND33-0135 at concentrations above the laboratory reporting limit, but below the PRG. Lithium was not detected in soils from location MND33-0136. The detected concentrations of lithium in site soils is not considered an impact to site soils from previous site activities involving disposal of lithium carbonate.

3.14.7. Extractable Petroleum Hydrocarbons

EPHs were detected in soil samples MND33-0135-0001 and -0002 at concentrations above laboratory reporting limits but below the PRG. EPH compounds were not detected in soils from sample location MND33-0136 at concentrations above laboratory reporting limits. The detected concentrations (below the PRG) of EPH do not represent an impact on area soil quality.

3.14.8. Gamma Spectroscopy

Four soil samples were analyzed for radionuclides via gama spectroscopy. As previously discussed, a cleanup of depleted uranium was reported to have occurred in the Building 34 area. Analytical results for the samples analyzed from the Building 34 Historical Fire-Fighting Training Pit reported concentrations of thorium-234 in all four samples at levels above the laboratory reporting limit. Thorium-234 concentrations at sample MND33-0136-0001, -0002 were slightly above the PRG of 1.1 pCi/g. Detected concentrations of potassium-40 in soil and sediment samples are within background concentration levels (Eisenbud, 1987).

The detection of thorium-234 at concentrations above PRGs may reflect an impact to soil and sediment quality in the area and could be associated with previous site activities. Additional site characterization concerning radionuclide concentrations in soils at the site is recommended.

3.14.9. Summary

Analytical results for soil samples collected at the Building 34 Historical Fire-Fighting Training Pit indicate that site soil quality may have been impacted from previous site activities. Elevated levels of dioxin/furan compounds, lead, and thorium-234 were reported in site soils. Based upon these results, further site characterization to determine the extent of soil contamination is recommended.

TABLE III.18
BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
Location: MND33-0135
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2,3,4,6,7,8-HpCDD	0001	S	NG/G	.11	1.1		NA	I
2-BUTANONE	0001	S	mG/Kg	0.012	0.023	J	1.4E+04	I
ACETONE	0001	S	mG/Kg	0.012	0.094	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	12.	9090.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	3360.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	6.	12.0	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	6.	37.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.4	7.2		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	4.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.4	77.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	28.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.4	.81		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.4	.68		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.4	4.		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.4	8.2		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	4.	29000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	122000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	2.	29.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	27.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	12.3		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	8.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	2.	22.4		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	2.	16.2		1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	10.	39.3	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0002	S	mG/Kg	10.	21	J	105. total	I
FLUORANTHENE	0001	S	mG/Kg	0.83	0.91	J	1.1E+04	I
HEPTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.11	2.9		1.0E-04	I
HEPTACHLORODIBENZOFURAN	0001	S	NG/G	.11	.73		NA	I
HEXACHLORODIBENZOFURAN	0001	S	NG/G	.14	.36	J	NA	I
IRON, TOTAL	0001	S	mG/Kg	2.	17100.		NA	I
IRON, TOTAL	0002	S	mG/Kg	2.	8420.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.4	86.4		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.4	8.4		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	.2	12.3		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	.2	9.2		5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.18
BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
Location: MND33-0135
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0001	S	mG/Kg	10.	12000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	55800.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.4	676.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	200.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	4.	32.4		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	28.5		5.4E+03	I
OCTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.16	11.		NA	I
OCTACHLORODIBENZOFURAN	0001	S	NG/G	.14	.54		NA	I
POTASSIUM, TOTAL	0001	S	mG/Kg	20.	1150.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	692.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	16.7		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	11.6		NA	I
RADIUM-224	0001	S	pCi/g	.1	.991		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.484		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.782		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.646		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.12		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.465		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	2.	8.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	2.	17.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	157.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	276.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.909		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.948		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	2.	28.3		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	24.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	1.	66.2		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	1.	29.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.18
BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
Location: MWD33-0136
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2,3,4,6,7,8-HpCDD	0001	S	NG/G	.11	.21		NA	I
2-BUTANONE	0001	S	mG/Kg	0.013	0.046		1.4E+04	I
ACETONE	0001	S	mG/Kg	0.013	0.17	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	14700.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	5500.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	9.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	30.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.2		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	5.3		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	119.		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	41.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.96		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.68	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.9		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	5.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	11900.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	106000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	25.1		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	28.2	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	15.8		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	11.3	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.7		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	17.9	J	1.0E+04	I
HEPTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.11	.5		1.0E-04	I
IRON, TOTAL	0001	S	mG/Kg	1.	23800.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	14900.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	15.2		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	5330.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	32600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	914.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	444.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.3		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	28.5	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1740.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	866.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.18
BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
Location: MND33-0136
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM-40	0001	S	pCi/g	.5	16.8		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	13.4		NA	I
RADIUM-224	0001	S	pCi/g	.1	1.01		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.696		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.736		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.872		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.996		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.621		5.0E+00	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	0.83	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	4.9	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	17.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	363.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	363.		NA	I
THORIUM-234	0001	S	pCi/g	.5	1.25		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.44		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	35.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	27.7	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	65.5		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	43.1		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.15. BUILDING 34 FORMER AVIATION FUEL TANK

The Building 34 Former Aviation Fuel Tank is located southwest of Building 34 and north of the overflow pond in the lower valley in the west central portion of Mound Plant.

The former aviation fuel tank was a 5,000-gallon underground tank that supplied aviation fuel through an underground pipe to the oil burn structure. The tank was put in service in the early 1970s; service was discontinued in 1975. The former aviation fuel tank was removed on 29 November 1990 as part of Mound Plant tank removal activities. At that time, initial sampling was conducted. A summary description of the Building 34 Aviation Fuel Tank history and the field investigation procedures is presented in subsection 2.15.

Additional soil sampling took place at the former aviation fuel tank as part of the OU 3 LFI on 29 August 1991. The original excavation was not completely backfilled; some side wall collapse had occurred since tank removal. Soils were excavated to expose the 10-ft by 17-ft concrete pad on which the tank was located. Five samples and one duplicate sample were collected for analyses. Samples were analyzed for TCL VOCs, SVOCs, and P/PCBs; TAL inorganics; and EPH to assess whether the site is or has been a source of environmental contamination through spillage or leakage. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.19.

3.15.1. Volatile Organic Compounds

VOCs were not detected in soil samples from the former aviation fuel tank at concentrations above laboratory reporting limits.

3.15.2. Semivolatile Organic Compounds

SVOCs were not detected in site soil samples at concentrations above laboratory reporting limits.

3.15.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in site soil samples at concentrations above laboratory reporting limits.

3.15.4. Extractable Petroleum Hydrocarbons

EPH compounds were not detected in site soils at concentrations above laboratory reporting limits.

3.15.5. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 34 Former Aviation Fuel Tank at concentrations above PRGs or proposed action levels.

3.15.6. Summary

Analytical results for soil samples collected at the Building 34 Former Aviation Fuel Tank indicate that previous site activities involving the former aviation fuel tank have not impacted soil quality in the area, and therefore, no further action involving site characterization or soil remediation is recommended.

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0020
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	7010.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	5.57		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	31.3	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.24		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	161000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	7.6		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	4.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	11.9	J	1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.00	6.		105. total	I
IRON, TOTAL	0001	S	mG/Kg	.01	11500.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	8.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	62400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	237.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	11.7	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2230.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	225.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.37		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	14.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	35.6		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0021
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	7250.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	4.4		1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	4.7		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	66.3	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.29		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	162000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	7.6		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	3.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	11.2	J	1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.00	17.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	.01	11900.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	7.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	58400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	226.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	9.7	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2270.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	195.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.32		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	14.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	36.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0022
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	8550.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	8.67		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	69.6	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.43		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	132000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	8.9		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	4.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	15.1	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	14600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	8.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	44300.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	255.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	12.1	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2620.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.002	0.12	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	185.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.35		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	16.4		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	43.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0023
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	6220.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	.06	5950.		7.8E+05	I
ANTIMONY, TOTAL	1001	S	mG/Kg	.03	4.8		1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	4.14		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.002	5.74		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	101.	J	1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.002	51.1	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.18		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.002	.21		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	149000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	.02	138000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	6.1		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	.01	6.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	3.7		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	.01	4.6		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	11.6	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	.01	10.6	J	1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	5.00	8.	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	1001	S	mG/Kg	5.00	7.	J	105. total	I
IRON, TOTAL	0001	S	mG/Kg	.01	10400.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	.01	10700.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	7.7		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.002	8.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	61600.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	.05	53500.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	234.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.002	249.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	12.3	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	.01	13.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2010.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	.1	1710.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	273.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	.1	223.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.35		NA	I
THALLIUM, TOTAL	1001	S	mG/Kg	.002	.24		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	11.7		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	.01	12.4		1.9E+03	I

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J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0023
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ZINC, TOTAL	0001	S	mG/Kg	.005	33.		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.005	35.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.19
BUILDING 34 FORMER AVIATION FUEL TANK
Location: MND33-0024
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	9030.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	4.6		1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	7.62		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	40.7	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.34		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	129000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	9.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	5.3		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	13.4	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	14600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	9.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	48000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.01	264.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.01	12.7	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.01	2380.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	182.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.002	.22		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	16.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	42.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.16. AREA C FORMER EQUIPMENT STORAGE AREA

The Area C Former Equipment Storage Area is located east of Building 34 in the Mound Plant lower central valley. The area was originally identified in the OU 3 Work Plan as the site where lithium carbonate containers were treated and disposed of. However, in 1991 it was determined that the disposal area was more nearly centered around the current location of Building 34. Geophysical surveys were conducted at Area C prior to the OU 3 investigation. The results of the geophysical surveys identified subsurface anomalies in the area and based on this information the area was investigated as part of the OU 3 LFI.

The Area C Former Equipment Storage Area investigation activities included the excavation of soils in eight previously identified areas to determine the source of geophysical anomalies. Soils at each excavation area were removed in 2-ft lifts and field screened for VOC contaminants and radioactivity. Soils, debris, and any other objects found during excavation at each test pit were described and then returned to the original location. Test pit excavations extended in depth to the depth of natural soils or saturated soil conditions.

The results of the excavation activities are described in detail in subsection 2.16. Hazardous materials were not identified in soils at the eight test pit areas. The field screening of soils and excavated materials indicated no levels above background and therefore, as detailed in the OU 3 LFI Work Plan, no samples were subjected to laboratory analyses. The majority of the debris unearthed during excavation activities consisted of construction material and building foundations.

As a result of these findings, no further action involving site characterization or soil remediation is recommended at the Area C Former Equipment Storage Area.

3.17. AREA C DRUM STAGING AREA

The Area C Drum Staging Area was located northwest of Old Building 72. The volume and nature of the wastes stored in the staging area is not documented. Soil sampling was conducted in this area to assess whether hazardous materials have been released through spills or leaks from drums. A summary of the site history and the field investigation procedures is presented in subsection 2.17.

Eight soil samples were collected from two locations (MND33-0069 and MND33-0070) within the historical drum staging area and were analyzed for TCL VOCs, SVOCs, P/PCBs; and TAL inorganics. The validated analytical results for all analytes detected above laboratory reporting limits for each sample are presented in Table III.20.

3.17.1. Volatile Organic Compounds

Two of the eight soil samples analyzed contained detectable concentrations of VOCs. TCE was detected in samples MND33-0070-0002 and -0003 at a maximum concentration of 0.01 mG/Kg. 1,1,2-TCA was detected in sample MND33-0070-0002 at a concentration of 0.01 mG/Kg. The concentrations of both of these VOCs are below their respective PRGs. Because of the low concentrations of these compounds, they are not considered to reflect an impact to site soil quality.

3.17.2. Semivolatile Organic Compounds

SVOCs were detected above laboratory reporting limits in four of eight samples from the Area C Drum Staging Area. Bis(2-ethylhexyl)phthalate was detected in three of the four samples from location MND33-0069 at concentrations up to 1.1 mG/Kg. Since the detected concentrations of this compound were below the PRG, the presence of bis(2-ethylhexyl)phthalate is not considered to reflect an impact to site soils.

Ten PAH compounds were detected at surface soil sample MND33-0070-0001. Concentrations of anthracene, fluoranthene, benzo(g,h,i)perylene, chrysene, and phenanthrene were detected at levels below their respective PRGs. Five of the 10 PAH compounds; benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, indeno(1,2,3-CD)pyrene, and pyrene, were detected in surface soil sample MND33-0070-0001 at concentrations slightly above their respective PRGs. No other SVOC compounds were detected in other surface or subsurface soil samples analyzed from the Area C Drum Staging Area.

The isolated occurrence of PAH compounds at concentrations slightly above PRGs in one surface soil sample at the site may be a result of runoff from nearby asphalt surfaces, and does not reflect an impact to site soil quality.

3.17.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Area C Drum Staging Area.

3.17.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Area C Drum Staging Area at concentrations above PRGs or proposed action levels.

3.17.5. Summary

The analytical results for samples collected from the Area C Drum Staging Area indicate that drum staging activities have not adversely impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation at the Area C Drum Staging Area is recommended.

TABLE III.20
AREA C DRUM STAGING AREA
Location: MND33-0069
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5710.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	4260.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	4160.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	5400.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	18.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	23.9	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	31.3	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	18.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	3.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	3.9	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	6.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	50.3		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	34.1		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	29.4		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	46.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.79		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.71		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.69		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.73		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.41	0.82	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.35	0.56	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.41	1.1	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.3		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	3.9		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	5.3		1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	2.8		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	132000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	84600.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	103000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	101000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.1		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	22.6		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	23.3		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	24.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	6.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.8		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	9.		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	7.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	15.6		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.4		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	16.9		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	16.5		1.0E+04	I
CYANIDE	1001	S	mG/Kg	.1	0.12	J	5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.20
AREA C DRUM STAGING AREA
Location: MND33-0069
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0001	S	mG/Kg	1.	8870.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	13300.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	12000.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	10000.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	12.6	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.9	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	6.5	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	13.2	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	24600.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	32600.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	46000.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	23400.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	356.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	304.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	254.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	336.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	15.8		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	20.2		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	22.5		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	17.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	619.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	487.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	587.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	703.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	16.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	13.0	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	14.3	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	14.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	255.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	212.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	222.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	272.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.9		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	22.5		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.3		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	21.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	35.2	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	34.4	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	36.1	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	40.1	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.20
AREA C DRUM STAGING AREA
Location: MND33-0070
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,1,2-TRICHLOROETHANE	0002	S	mG/Kg	0.006	0.01	J	1.1E+01	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	4430.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	3880.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	3220.		7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	.06	4730.		7.8E+05	I
ANTHRACENE	0001	S	mG/Kg	0.38	0.46	J	8.1E+04	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	21.6	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	30.7	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	27.3	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	.03	26.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	3.1	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	5.8	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	4.6	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.002	4.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	66.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	29.7		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	41.4		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.002	31.6		1.9E+04	I
BENZO(A)ANTHRACENE	0001	S	mG/Kg	0.38	1.5	J	6.0E-01	I
BENZO(A)PYRENE	0001	S	mG/Kg	0.38	1.2	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0001	S	mG/Kg	0.38	2.	J	6.4E-01	I
BENZO(G,H,I)PERYLENE	0001	S	mG/Kg	0.38	1.1	J	4.0E+00	I
BERYLLIUM	0001	S	mG/Kg	.002	.61		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.63		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	.56		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.002	.69		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	3.7		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	5.8		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	4.8		1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.002	5.2		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	109000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	107000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	106000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	.02	139000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	23.6		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	24.5		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	22.7		1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	.01	26.2		1.4E+03	I
CHRYSENE	0001	S	mG/Kg	0.38	1.9	J	2.0E+01	I
COBALT, TOTAL	0001	S	mG/Kg	.01	7.5		3.9E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.20
AREA C DRUM STAGING AREA
Location: MND33-0070
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
COBALT, TOTAL	0002	S	mG/Kg	.01	10.4		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	8.		3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	.01	10.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	16.		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	20.8		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	16.4		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	.01	20.6		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.14	J	5.4E+03	I
CYANIDE	0002	S	mG/Kg	.1	.12	J	5.4E+03	I
CYANIDE	1002	S	mG/Kg	.1	0.11	J	5.4E+03	I
FLUORANTHENE	0001	S	mG/Kg	0.38	3.4	J	1.1E+04	I
INDENO(1,2,3-CD)PYRENE	0001	S	mG/Kg	0.38	0.9	J	3.8E-01	I
IRON, TOTAL	0001	S	mG/Kg	.01	10400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	10700.		NA	I
IRON, TOTAL	0003	S	mG/Kg	.01	9270.		NA	I
IRON, TOTAL	1002	S	mG/Kg	.01	12300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	12.8	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	6.0	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	5.9	J	5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.002	6.9	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	28300.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	44100.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	36900.	J	NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	.05	33000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	259.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	290.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	224.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.002	359.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	17.8		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	23.9		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	19.4		5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	.02	24.6		5.4E+03	I
PHENANTHRENE	0001	S	mG/Kg	0.38	2.5	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	836.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	562.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	556.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	.1	800.		NA	I
PYRENE	0001	S	mG/Kg	0.38	3.1	J	1.1E+00	I
SILVER, TOTAL	0001	S	mG/Kg	.01	15.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	16.0	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	15.3	J	1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	.01	17.0	J	1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.20
AREA C DRUM STAGING AREA
Location: MND33-0070
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0001	S	mG/Kg	.1	205.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	219.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	.1	160.		NA	I
SODIUM, TOTAL	1002	S	mG/Kg	.1	215.		NA	I
TRICHLOROETHENE	0002	S	mG/Kg	0.006	0.01	J	5.8E+01	I
TRICHLOROETHENE	0003	S	mG/Kg	0.006	0.009		5.8E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	19.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	22.1		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	19.5		1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	.01	23.4		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	62.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	32.9	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	29.0	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.005	33.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.18. AREA H PYROTECHNIC WASTE DISPOSAL AREA

The Area H Pyrotechnic Waste Disposal Area is one of four sites in Area H where pyrotechnic and explosive wastes were handled. In this area, filtrate from pyrotechnic wastewater was disposed of directly to the ground. Hazardous constituents in the wastewater included small quantities of waste solvent (primarily acetone) and reacted pyrotechnic material, including potassium perchlorate. Soil sampling was conducted in the pyrotechnic waste disposal area to assess whether the site is or has been a source of hazardous constituents released to the environment. A summary description of the Area H Pyrotechnic Waste Disposal Area, including the field investigative procedures, is presented in subsection 2.18.

Thirteen soil samples and four duplicate samples collected from 11 locations (Figure 2.18) within the approximate disposal area were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. One sample, MND33-0083-0001, was also analyzed for nitrate/nitrite and chloride. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.21.

3.18.1. Volatile Organic Compounds

Of the 17 soil samples analyzed, three contained detectable concentrations of VOCs. Toluene and xylenes were detected in sample MND33-0094-0001 and its duplicate sample -1001. 1,1,1-TCA was detected in sample MND33-0060-0001. The concentrations of these three compounds in the soils were less than 10 times the laboratory reporting limit and were below PRGs established for each compound. Because of the low concentrations of these compounds in the soils sampled, these constituents do not represent an impact to the soils in the Area H Pyrotechnic Waste Disposal Area.

3.18.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above the laboratory reporting limits in any of the samples analyzed from the Area H Pyrotechnic Waste Disposal Area.

3.18.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above the laboratory reporting limit in any of the samples analyzed.

3.18.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Area H Pyrotechnic Waste Disposal Area at concentrations above PRGs or proposed action levels.

3.18.5. Explosives

Explosives were not detected in concentrations above laboratory reporting limits in any soil samples collected in the Area H Pyrotechnic Waste Disposal Area.

3.18.6. Nitrate/Nitrites and Chloride

Nitrite and chlorides were not detected above laboratory reporting limits in sample MND33-0083-0001. Nitrate was detected at a concentration of 54.8 mG/Kg, which is below the PRG.

3.18.7. Summary

The analytical results for soil samples collected in the Area H Pyrotechnic Waste Disposal Area indicate that site activities involving the disposal of pyrotechnic wastewater filtrate in this area have not impacted soil quality at the site. As a result of these findings, no further action involving site characterization or soil remediation is recommended.

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0060
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,1,1-TRICHLOROETHANE	0001	S	mG/Kg	0.006	0.008		2.4E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	6780.	J	7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.8	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	82.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.6		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	10300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	13.4		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.2		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	13100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	14.	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	4350.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	982.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	546.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	3.1	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	46.6		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	39.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MWD33-0061
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	10100.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.5		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	82.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.8		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	7850.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	15.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	12.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	15.8	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.15	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	19000.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.7	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	3180.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	661.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	759.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	44.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	45.7		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MWD33-0081
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	9320.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	7790.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.8		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	1.4		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	78.2		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	77.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.85		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.75		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	.55		1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	.74		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	12400.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	15400.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	18.3		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	15.4		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	13.		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	11.3		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.2	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	15.8	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.15	J	5.4E+03	I
CYANIDE	1001	S	mG/Kg	.2	0.21	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	20600.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	16400.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.7	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	12.6	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	5800.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	5960.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	567.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	592.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.5		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	22.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	763.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	588.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	3.1		1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	3.5		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	67.5		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	59.1		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	27.5		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0081
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	1001	S	mG/Kg	1.	24.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	51.4		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	41.7		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0082
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8560.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	8.5	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.8		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	89.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	0.95	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	0.89	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	116000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	27.8	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	10.1	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.9	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.18	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	17200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	9.4	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	4920.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	331.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.1	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	897.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.1	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	118.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.5	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	57.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0083
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5590.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	11.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.4		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	59.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	0.83	J	1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	196000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.0	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.4	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.15	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	12400.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.1	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	8750.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	292.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.1	J	5.4E+03	I
NITRATE	0001	S	mG/Kg	2.	54.8	J	4.3E+05	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	479.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.3	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	120.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	18.9	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	26.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0090
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5330.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	6790.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	17.7	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	29.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.4	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	9.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	52.3		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	73.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.1	J	1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	1.2	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.7	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	5.2	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	168000	J	NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	114000.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	29.2	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	31.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.9	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	27.2	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	38.7	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	12600.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	14600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	23.7		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	19.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	13800.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	32900.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	306.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	321.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	1.1		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	1.4		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	39.1	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	44.1	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	689.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	711.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	18.7	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	18.3	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	132.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0090
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	1001	S	mG/Kg	10.	142.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.0	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	28.2	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	48.6	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	58.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0091
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4010.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3770.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	13.9	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.6	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	0.80	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	55.7		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	28.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.8	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.81	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	108000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	233000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.1	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	28.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	5.7	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.6	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	24.0	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	12.9	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	9180.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	8730.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	4.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	9870.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	3530.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	195.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	274.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.65		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.9	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	12.2	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	466.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	639.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	0.80	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.3	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	20.4	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	110.	J	NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0091
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0002	S	mG/Kg	10.	112.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.3	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	17.8	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	27.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	27.0	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0094
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	2760.	J	7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	8080.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	14900.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	44.5	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.9	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	12.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	2.3	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	4.8	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	47.9		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	58.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	139.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	0.85	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.88		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	1.4	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	11.7	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	.86		1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	1.3	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	191000.	J	NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	114000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	39300.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	29.7	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	29.1	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	30.2	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.6	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	11.		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	15.2	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.5	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	23.2	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	5500.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	19600.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	28500.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	4.4	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.9		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	11.7	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	64500.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	5100.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	8720.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	295.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	373.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	784.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0094
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.2	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	21.2		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	33.3	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	305.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	888.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	875.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	20.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	15.5	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	9.2	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	180.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	110.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	98.6	J	NA	I
TOLUENE	0001	S	mG/Kg	0.006	0.051		5.4E+04	I
TOLUENE	1001	S	mG/Kg	0.007	0.027	J	5.4E+04	I
TOTAL XYLENES	0001	S	mG/Kg	0.006	0.039	J	5.4E+05	I
TOTAL XYLENES	1001	S	mG/Kg	0.007	0.023	J	5.4E+05	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.2	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	23.0	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	35.7	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	20.1	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	37.4	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	91.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0095
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	10000.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	13.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	81.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.1		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	86500.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	30.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	21.2		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.13	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	18800.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	9.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	19300.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	367.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.1		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	740.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	14.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	102.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	32.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	46.4	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MWD33-0096
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8050.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	60.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.84		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	.69		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	103000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	27.0	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.7		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16000.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	3990.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	462.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	689.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.0	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	97.8		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	67.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0097
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	9350.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	8500.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.0	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	5.0	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	81.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	72.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.84		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.89		1.5E-01	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	61400.	J	NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	105000.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	24.4	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	27.6	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	10.4		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.7		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	17.9		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.16	J	5.4E+03	I
CYANIDE	1001	S	mG/Kg	.2	0.32	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	19300.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	16800.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.9		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	13.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	2820.	J	NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	2800.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	635.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	592.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.8		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	15.9		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1100.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	1090.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	11.4	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	15.4	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	87.9		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	100.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.3		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	25.2		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.21
AREA H PYROTECHNIC WASTE DISPOSAL AREA
Location: MND33-0097
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ZINC, TOTAL	0001	S	mG/Kg	.5	54.8	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	60.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.19. AREA H TRASH BURNER AREA

The Area H Trash Burner Area was the site of a metal box used to burn trash contaminated with explosives. The waste burned included detonating fuses, pyrotechnic materials, explosives, and cardboard contaminated with explosives, pentramine cobalt (III) perchlorate, and thermite powder. Wastes could have also contained organic solvents such as acetone and Freon. Soil sampling was conducted in this area to assess whether the site is or has been a source of hazardous constituents released to the environment. A summary description of the Area H Trash Burner Area, including the field investigative procedures, is presented in subsection 2.19.

Four soil samples collected from four locations (MND33-0086, -0087, -0088, and 0089) in the trash burner area were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.22.

3.19.1. Volatile Organic Compounds

VOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Area H Trash Burner Area.

3.19.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Area H Trash Burner Area.

3.19.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Area H Trash Burner Area.

3.19.4. TAL Inorganics

Inorganic compounds were not detected in concentrations above PRGs or proposed action levels in any of the samples analyzed from the Area H Trash Burner Area.

3.19.5. Explosives

Explosives were not detected above laboratory reporting limits in any soil sample collected in the Area H Trash Burner Area.

3.19.6. Summary

The analytical results for samples collected at the Area H Trash Burner Area indicate that soil quality in the area has not been impacted and that further CERCLA site characterization is not recommended.

TABLE III.22
AREA H TRASH BURNER AREA
Location: MND33-0086
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8900.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	5.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	9.1		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	82.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	2.		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	.72		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	4230.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	15.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	1100.	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	0.22	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	18500.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	15.4	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	2290.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	290.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	517.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	1.2	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	2.8		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	71.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	31.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	463.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.22
AREA H TRASH BURNER AREA
Location: MND33-0087
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5970.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	19.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	54.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	2.2		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	.68		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	7650.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	13.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	21.2		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	15600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	3500.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	235	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	10.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	466.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	.9		1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	2.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	78.1		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	28.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	291.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.22
AREA H TRASH BURNER AREA
Location: MND33-0088
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3290.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	15.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	66.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	2.		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.1		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	14700.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	9.6	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	4.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.3		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	6930.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	8.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	6760.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	65.2	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	11.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	310.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	2.3		1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	3.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	71.3		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	26.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.22
AREA H TRASH BURNER AREA
Location: MND33-0089
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5400.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	13.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	43.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.2		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.1		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	11500.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.5		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	9560.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	6050.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	238.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	10.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	439.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	.94		1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	3.3	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	48.3		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	23.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.20. AREA H THERMAL TREATMENT UNIT

The Area H Thermal Treatment Unit consisted of a 55-gallon drum located inside a 10-ft by 10-ft concrete cubicle with a metal roof. The drum used to burn wastes no longer exists, as discussed in subsection 2.20. Explosive wastes burned in the thermal treatment unit included contaminated trash, components and assemblies, bulk high-explosive powders (PETN, RDX, HMX, and tetryl), mild detonating cord and fuses, pyrotechnic powders and trash, hexanitrostilbene wastes, 2-[5-cyanotetrazolato] cobalt (III) perchlorate wastes, thermite powder wastes, and solid primary wastes. Potential contaminants may also include volatile and semivolatile compounds that are breakdown products of these materials. Soil sampling was conducted around the thermal treatment unit perimeter to assess whether the site is or has been a source of hazardous constituents released to the environment. A description of the thermal treatment unit, including the field investigative procedures, is presented in subsection 2.20.

Five soil samples collected from three locations (MND33-0084, -0085, and -0098) around the thermal treatment unit were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. Sample MND33-0084-0001 was also analyzed for nitrate/nitrite and chloride. An additional sample, MND33-0085-0003, was only analyzed for TCL VOCs. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.23.

3.20.1. Volatile Organic Compounds

Of the six soil samples analyzed, four samples contained one or more of six VOCs in concentrations below the respective PRGs listed for these compounds. 1,2-Dichloroethene, toluene, PCE, and TCE were detected in soil samples 0085-0003, 0098-0001, and 0098-0002. Ethylbenzene was detected in samples 0085-0003 and 0098-0002. Xylene was detected in sample 0098-0002. TCE was also detected in soil sample 0085-0001. The variety of VOCs encountered in soils from this area indicates that previous activities may have had an impact on area soils. However, because the VOC concentrations are at levels below the PRGs, the impact to soil quality is not considered significant.

3.20.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Area H Thermal Treatment Unit.

3.20.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above the laboratory reporting limits in any of the samples analyzed from the Area H Thermal Treatment Unit.

3.20.4. TAL Inorganics

Lead was detected in two soil samples (MND33-0084-0001 at 220 mG/Kg and MND33-0098-0001 at 98.1 mG/Kg), at concentrations above the PRG of 53.0 mG/Kg. No other inorganic compounds were detected in soils from the Area H Thermal Treatment Unit at concentrations above PRGs or proposed action levels.

Nominally, the detection of inorganic concentrations in site soils at levels above the PRG could indicate that additional characterization may be needed. However, the Area H Thermal Treatment Unit has been identified in the RCRA Part B application (DOE 1991f). Because periodic sampling is planned as part of the permit requirements and because of the relative levels of inorganics reported, further CERCLA characterization at this site is not recommended.

3.20.5. Explosives

Explosives were not detected in any soil samples collected in the vicinity of the Area H Thermal Treatment Unit at concentrations above laboratory reporting limits.

3.20.6. Summary

The analytical results for soil samples collected at the Area H Thermal Treatment Unit indicate that soil quality at the site has not been impacted by previous site activities. As a result of these findings, additional CERCLA site characterization is not recommended.

TABLE III.23
AREA H THERMAL TREATMENT UNIT
Location: MND33-0084
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5990.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	16.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	11.4		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	65.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	2.3		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.3		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	49400.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	18.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	6.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	45.3	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.18	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	13400.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	220.	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	24400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	144.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	16.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	570.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	1.7		1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	10.1		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	134.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	29.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	53.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.23
AREA H THERMAL TREATMENT UNIT
Location: MND33-0085
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2-DICHLOROETHENE	0003	S	mG/Kg	0.005	0.21		2.7E+03	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	6940.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3540.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	29.7	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	19.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.1		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	3.5		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	58.2		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	30.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.3	J	1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	1.0	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	5.7	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	2.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	155000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	198000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	29.2	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	26.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.5	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	25.9	J	1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	127.	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	0.17	J	5.4E+03	I
CYANIDE	0002	S	mG/Kg	.1	0.15	J	5.4E+03	I
ETHYLBENZENE	0003	S	mG/Kg	0.005	0.011		2.7E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	14800.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	10200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	49.5	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	10.0	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	43200.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	19000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	328.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	256.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	23.8	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	30.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	741.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	662.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.7	J	1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.23
AREA H THERMAL TREATMENT UNIT
Location: MND33-0085
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SILVER, TOTAL	0002	S	mG/Kg	1.	17.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	227.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	151.	J	NA	I
TETRACHLOROETHENE	0003	S	mG/Kg	0.005	0.041		1.3E+01	I
TOLUENE	0003	S	mG/Kg	0.005	0.008		5.4E+04	I
TRICHLOROETHENE	0001	S	mG/Kg	0.006	0.018		5.8E+01	I
TRICHLOROETHENE	0003	S	mG/Kg	0.005	0.074		5.8E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	29.1	J	1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	19.4	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	51.		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	30.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.23
AREA H THERMAL TREATMENT UNIT
Location: MWD33-0098
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2-DICHLOROETHENE	0002	S	mG/Kg	0.005	0.012		2.7E+03	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	14400.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	7440.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	14.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	9.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	9.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	3.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	117.		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	43.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.7		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.91	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.2		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	47100.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	145000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	32.2	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	27.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	14.		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.2	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	240.		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	55.5		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	0.45	J	5.4E+03	I
CYANIDE	0002	S	mG/Kg	.2	0.23	J	5.4E+03	I
ETHYLBENZENE	0002	S	mG/Kg	0.005	0.01		2.7E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	26500.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	14200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	98.1		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	21.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	21300.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	8190.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	339.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	8190.	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.31		8.1E+01	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	.14		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	154.		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	16.0	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1080.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.23
AREA H THERMAL TREATMENT UNIT
Location: MND33-0098
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	1120.		NA	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	.59		1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	11.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	16.2	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	128.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	121.	J	NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.2	.65		NA	I
TOLUENE	0002	S	mG/Kg	0.005	0.04		5.4E+04	I
TOTAL XYLENES	0002	S	mG/Kg	0.005	0.033		5.4E+05	I
TRICHLOROETHENE	0001	S	mG/Kg	0.007	0.02		5.8E+01	I
TRICHLOROETHENE	0002	S	mG/Kg	0.005	0.026		5.8E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	40.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	21.5	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	80.9	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	57.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.21. AREA H PYROTECHNIC WASTE SHED

The Area H Pyrotechnic Waste Shed consists of chain-link side walls, a corrugated steel roof, and a concrete pad base. The shed is used as a temporary storage area for pyrotechnic waste prior to disposal in the thermal treatment unit. The contaminated trash and pyrotechnic wastes (see subsection 3.20) associated with the thermal treatment unit are also potential site contaminants in the vicinity of the shed. Soil sampling was conducted in the vicinity of the Area H Pyrotechnic Waste Shed to assess whether the site is or has been a source of hazardous constituents released to the environment. A description of the Area H Pyrotechnic Waste Shed, including the field investigative procedures, is presented in subsection 2.21.

Two soil samples collected from two locations (MND33-0092 and -0093) in the vicinity of the Area H Pyrotechnic Waste Shed were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; and explosives. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.24.

3.21.1. Volatile Organic Compounds

VOCs were not detected in concentrations above the laboratory reporting limit in any of the samples analyzed from the Area H Pyrotechnic Waste Shed.

3.21.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above the laboratory reporting limit in any of the samples analyzed from the Area H Pyrotechnic Waste Shed.

3.21.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above the laboratory reporting limit in any of the samples analyzed from the Area H Pyrotechnic Waste Shed.

3.21.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Area H Pyrotechnic Waste Shed at concentrations above PRGs or proposed action levels.

3.21.5. Explosives

Explosives were not detected in concentrations above laboratory reporting limits in either soil sample collected in the Area H Pyrotechnic Waste Shed vicinity.

3.21.6. Summary

The analytical results for soil samples collected in the vicinity of the Area H Pyrotechnic Waste Shed indicate that site activities involving the storage of pyrotechnic wastes in this area have not impacted soil quality at the site. As a result of these findings, no further action involving site characterization or soil remediation is recommended.

TABLE III.24
AREA H PYROTECHNIC WASTE SHED
Location: MWD33-0092
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	9070.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	25.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	8.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	84.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.7	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.0	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	168000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	37.0	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	10.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	27.5	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	1.7	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	17100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	15.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	25900.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	377	J	2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.32		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	27.9	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	706.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	20.8	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	175.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	33.1	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	53.1	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.24
AREA H PYROTECHNIC WASTE SHED
Location: MND33-0093
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8880.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	17.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	89.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	1.2	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.1	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	135000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	32.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.6	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.3	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	18600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	11700.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	538.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	25.5	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	581.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	141.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	29.9	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	72.1	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.22. WASTE OIL DRUM FIELD

The Waste Oil Drum Field (WODF) was used to temporarily store 55-gallon drums on pallets above soil during the period between the dismantling of the previous hazardous waste storage facility and the completion of the new facility. Drums stored at the south end of the site contained waste oil. Other drums contained metal plating shop waste, solvents, explosive/solvent waste, batteries, kitchen grease, herbicides, photographic solutions, epoxy resins, laboratory chemicals, ethyleneglycol, scintillation vials (less than 50μCi/L), and unknown chemical wastes. In addition, some drums may have contained copper cyanide. Soil sampling was conducted in this area to assess whether hazardous constituents were released to the environment due to drum leaks or spills. A more detailed description of the WODF site history and field investigation procedures may be found in subsection 2.22.

Fifty-six soil samples were collected from 23 locations. Surface samples from each location and samples MND33-0034-0002 and MND33-0039-0002 were analyzed for TCL VOCs, SVOCs, P/PCBs; and TAL inorganics. All surface samples were also analyzed for explosives. All other soil samples were analyzed for TCL VOCs. Samples MND33-0033-0002; MND33-0034-0002; MND33-0036-0002; MND33-0038-0002; and MND33-0039-0002 were also analyzed for TPH. The validated analytical results for all analytes detected above laboratory reporting limits for each sample analyzed are presented in Table III.25.

3.22.1. Volatile Organic Compounds

Nine of the 56 samples analyzed contained concentrations of VOCs above the laboratory reporting limits. Acetone was detected in samples MND33-0025-0002; MND33-0040-0002 and -1002; MND33-0043-0002; MND33-0045-0002; MND33-0046-0002; and MND33-0047-0002 at concentrations ranging from 0.053 mG/Kg to 0.15 mG/Kg. 2-butanone was detected in samples MND33-0043-0002; MND33-0045-0002; MND33-0046-0002; and MND33-0047-0002 at concentrations ranging from 0.016 mG/Kg to 0.029 mG/Kg. PCE was detected in sample MND33-0037-0001 and duplicate -1001 at concentrations of 0.018 mG/Kg and 0.046 mG/Kg. The concentrations of these constituents are at a minimum 200 times less than the respective PRGs, but because these sampling points were located along the edges of the sampling grid (Figure 2.22), the horizontal and vertical extent of VOC contamination may not be completely understood.

3.22.2. Semivolatile Organic Compounds

SVOCs were present above laboratory reporting limits in 10 of the 29 soil samples analyzed. Bis(2-ethylhexyl)phthalate was detected in eight surface samples from seven locations (MND33-0028; MND33-0031; MND33-0035; MND33-0037; MND33-0040; MND33-0041; and MND33-0043) at concentrations ranging from 0.83 mG/Kg to 6.5 mG/Kg. These concentrations are well below the PRG of 46 mG/Kg.

PAHs were detected in the surface samples from locations MND33-0045 and MND33-0046. Ten PAHs were detected at concentrations above laboratory reporting limits in sample MND33-0045-0001 and six of these, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene, were detected at concentrations above respective PRGs. PAHS are typically found in fuel and motor oil and asphalt, and the detected concentrations may be a result of waste oil leaks or spills. Soil sample locations MND33-0045 and MND33-0046 are along the east edge of the WODF grid. Because of their location, the full extent of SVOC contamination in the area may not be completely understood.

3.22.3. Pesticides and Polychlorinated Biphenyls

Pesticides were detected in three of the 29 samples analyzed. Chlordane was detected in samples MND33-0026-0001 and MND33-0045-0001 at concentrations of 0.019 mG/Kg and 0.098 mG/Kg, respectively. The concentrations of these compounds are below the PRG and are not considered to represent an impact to site soils. Endrin was detected in sample MND33-0046-0001 at a concentration below the PRG and is not considered to represent an impact to site soils.

PCBs were detected in two of 29 samples analyzed. Aroclors 1232, 1242, and 1248 were detected in sample MND33-0032-0001 at a total concentration of 1.15 mG/Kg. Aroclor 1248 was detected in samples MND33-0043-0001 and -1001 at concentrations up to 0.14 mG/Kg. The detected concentrations of PCBs are below the proposed action level and are not considered to represent an impact to soil quality.

3.22.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the WODF at concentrations above the respective PRGs or proposed action levels.

3.22.5. Total Petroleum Hydrocarbons

TPH as motor oil was detected at concentrations above the PRG of 105 mG/Kg, in each of the five samples analyzed for this parameter, except for sample MND33-0034-0001, where the TPH concentration was 41 mG/Kg. The observed contamination may be attributable to the storage of waste oil at the WODF. The analyzed samples were from the center of the grid and the extent of possible contamination is unknown.

3.22.6. Explosives

No explosive compounds were detected in soil samples from the WODF at concentrations above the laboratory reporting limits.

3.22.7. Summary

The results of laboratory analyses for samples collected from the WODF indicate that drum storage activities on this site may have had an impact on soil quality in the vicinity of the site. Soil samples with concentrations of VOCs, SVOCs, and P/PCBs at levels above laboratory reporting limits were detected along the edges of the sampling grid, which may suggest that the full extent of potential soil contamination has not been delineated. In addition, TPH soil concentrations were elevated in the six soil samples analyzed for TPH from sample locations near the center of the grid. In order to completely define the extent of soil contamination at the WODF, additional site characterization is recommended.

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0025
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0002	S	mG/Kg	0.012	0.053		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	9170.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	9680.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	10.1	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	8.9		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	71.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	58.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.59		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.46		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	27200.	J	NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	45400.	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	19.3		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	17.4		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.6		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	7.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.4		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	13.3		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	4.8	J	5.4E+03	I
CYANIDE	1001	S	mG/Kg	1.	4.4	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	17700.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	14600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	14.5		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	16.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	11700.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	21100.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	431.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	392.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	.03		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	17.4		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	12.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	675.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	998.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	207.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	203.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	19.9		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	18.9		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity.
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0025
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ZINC, TOTAL	0001	S	mG/Kg	.5	38.9		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	37.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0026
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12000.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.1		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	51.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.6		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	85500.		NA	I
CHLORDANE	0001	S	mG/Kg	0.009	0.019	J	4.9E-01	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	15.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	10.2		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	7.2	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	26200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	14.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	21800.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	549.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1890.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	228.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	19.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	57.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0027
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	14400.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	12.8		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	111.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.9		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.5	.98		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	15900.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	17.4		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	13.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.4		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	28300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	23.1		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	5930.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	688.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.04		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1080.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	233.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	30.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	63.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0028
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	17000.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	12.9		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	116.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.91		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.77	0.83	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	13800.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	20.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.6		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.4		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	31300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	22.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	5080.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	571.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.05		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	21.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1230.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	274.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	35.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	66.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0029
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12600.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	4.4	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	11.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	94.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.76		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	22400.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	16.		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.3		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	1.9	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	25600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	19.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	7940.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	499.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1030.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	195.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	26.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	58.4		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0030
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	11100.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	12.6		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	95.6		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.78		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	21200.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	1.4	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	24600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	21.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	6750.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	480.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.08		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.6		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	726.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	532.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	73.4		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0031
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	14000.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	14200.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	12.9		2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	13.3		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	96.7		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	97.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.85		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.84		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.76	1.	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	29600.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	31300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	20.3		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	16.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.2		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	10.3		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	29.7		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	18.6		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	2.4	J	5.4E+03	I
CYANIDE	1001	S	mG/Kg	1.	2.7	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	27800.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	26700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	20.		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	18.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	12400.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	13900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	519.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	513.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.04		8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	.03		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	33.7		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	21.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1370.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	1220.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	460.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	506.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	28.8		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	28.		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0031
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ZINC, TOTAL	0001	S	mG/Kg	.5	67.2		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	61.1		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0032
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12100.		7.8E+05	I
AROCLOR-1232	0001	S	mG/Kg	0.04	0.12	J	50. total	I
AROCLOR-1242	0001	S	mG/Kg	0.04	0.12	J	50. total	I
AROCLOR-1248	0001	S	mG/Kg	0.04	0.91	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	9.9		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	89.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.75		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	43400.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	10.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	2.1	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	23600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	35.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	18700.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	516.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1060.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	327.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.4		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	60.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0033
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	14600.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	13.4	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	89.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.89		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	31900.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	17.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	22.6		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	27400.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	16.1		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	15900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	542.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.6		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1080.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	539.		NA	I
TOTAL HB HYD AS MOTOR OIL	0002	S	mG/Kg	4.4	160.	J	105(total)	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	65.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0034
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12500.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	6080.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	19.2	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	7.4	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	91.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	32.6		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.68		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.73	J	1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	23000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	165000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.4		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	26.2	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	10.2		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	9.0	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.5		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.8	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	2.7	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	24100.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	13000.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	14.2		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	12.9	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	8550.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	12200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	558.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	404.		2.7E+04	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	.98		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	17.6		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	17.6	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	891.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	946.		NA	I
SILVER, TOTAL	0002	S	mG/Kg	1.	17.	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	439.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	306.		NA	I
TOTAL HB HYD AS MOTOR OIL	0002	S	mG/Kg	4.6	41.	J	105(total)	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.2		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0034
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	0002	S	mG/Kg	1.	20.8	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	54.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	30.1	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0035
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	11200.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	14.	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	80.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.62		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.79	3.5	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	62200.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.9		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.4		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	3.6	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	28500.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	18.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	19100.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	490.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	17.7		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1000.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	502.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	52.3		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0036
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	11500.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.1		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	79.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.73		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.5	.9		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	47300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	13.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	8.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.9		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	22500.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	12.1		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	17400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	425.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	17.2		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	963.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	322.		NA	I
TOTAL HB HYD AS MOTOR OIL	0002	S	mG/Kg	8.5	540.	J	105(total)	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	56.3		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0037
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12400.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	10700.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	18.5	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	13.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	89.5		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	92.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.84		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.85		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.78	3.	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.79	2.9	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	26000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	21500.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.9		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	14.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	10.		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	9.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.5		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	20.6		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	23800.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	26900.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	21.5		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	19.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	8700.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	8060.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	437.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	662.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	20.		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	19.9		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	922.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	604.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	300.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	292.		NA	I
TETRACHLOROETHENE	0001	S	mG/Kg	0.006	0.018	J	1.3E+01	I
TETRACHLOROETHENE	1001	S	mG/Kg	0.006	0.046	J	1.3E+01	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.4		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	21.5		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	54.2	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MWD33-0037
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ZINC, TOTAL	1001	S	mG/Kg	.5	79.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0038
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12900.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	14.9		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	98.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.86		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	17400.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	16.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.3		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.6		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	27700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	23.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	6870.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	514.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1140.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	431.		NA	I
TOTAL HB HYD AS MOTOR OIL	0002	S	mG/Kg	45	1500.	J	105(total)	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	58.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0039
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	13200.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	9480.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	11.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.1		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	87.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	43.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.77		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.88	J	1.5E-01	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	1.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	37500.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	126000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	15.6		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	29.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	10.2		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	12.2	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	20.4	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	24800.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	19200.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	16.8		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.2	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	15200.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	12000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	500.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	467.		2.7E+04	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	1.		8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.9		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	25.9	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1180.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	931.		NA	I
SILVER, TOTAL	0002	S	mG/Kg	1.	16.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	296.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	377.		NA	I
TOTAL HB HYD AS MOTOR OIL	0002	S	mG/Kg	4.7	210.	J	105(total)	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.		1.9E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0039
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
VANADIUM, TOTAL	0002	S	mG/Kg	1.	25.2	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	58.1		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	54.4	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0040
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0002	S	mG/Kg	0.012	0.066		2.7E+04	I
ACETONE	1002	S	mG/Kg	0.012	0.064		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	5770.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	.49	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	54.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.31		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.69	6.5	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	133000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	8.3		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	4.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	11800.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.7		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	41800.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	327.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	9.5		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	556.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	286.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	11.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	29.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0041
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	11200.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	10.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	88.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.7		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.83	1.6	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	21700.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.7	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	1.6	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	24300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	16.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	8930.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	448.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.04	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	859.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	138.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	51.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0042
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	7220.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	9.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	104.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.58		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.5	1.4	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	33600.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	8.6		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	1.8	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	19500.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	14.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	13300.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	437.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	15.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	567.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	105.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	18.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	56.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0043
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0002	S	mG/Kg	0.011	0.029		1.4E+04	I
ACETONE	0002	S	mG/Kg	0.011	0.15		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	10900.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	8570.		7.8E+05	I
AROCLOR-1248	0001	S	mG/Kg	0.04	0.095	J	50. total	I
AROCLOR-1248	1001	S	mG/Kg	0.04	0.14	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.5	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	5.8	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	88.8		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	83.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.76		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.66		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.75	1.5	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.5	1.4	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	25400.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	22000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.7	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	12.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.9		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	9.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.1		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	15.9		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	1.6	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	24400.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	21700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.9		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	13.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	9890.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	8560.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	471.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	485.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03	J	8.1E+01	I
MERCURY, TOTAL	1001	S	mG/Kg	.02	.04	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.9		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	16.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	850.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0043
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	618.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	103.	J	NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	102.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.4		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	21.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	61.4	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	53.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0044
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12000.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	8.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	77.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.6		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	54000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.5	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	9.1		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	13.		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	18200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	12.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	14600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	501.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.6		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1550.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.5	.55	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	178.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	11.4		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	54.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0045
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0002	S	mG/Kg	0.012	0.016		1.4E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.12		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	5700.		7.8E+05	I
ANTHRACENE	0001	S	mG/Kg	1.7	2.8	J	8.1E+04	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	52.5		1.9E+04	I
BENZO(A)ANTHRACENE	0001	S	mG/Kg	1.7	4.2	J	6.0E-01	I
BENZO(A)PYRENE	0001	S	mG/Kg	1.7	3.6	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0001	S	mG/Kg	1.7	2.8	J	6.4E-01	I
BENZO(G,H,I)PERYLENE	0001	S	mG/Kg	1.7	2.1	J	4.0E+00	I
BENZO(K)FLUORANTHENE	0001	S	mG/Kg	1.7	3.4	J	1.3E+00	I
BERYLLIUM	0001	S	mG/Kg	.1	.4		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	86800.		NA	I
CHLORDANE	0001	S	mG/Kg	0.009	0.098	J	4.9E-01	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	8.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	5.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	12.5		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	7.8	J	5.4E+03	I
FLUORANTHENE	0001	S	mG/Kg	1.7	11.	J	1.1E+04	I
INDENO(1,2,3-CD)PYRENE	0001	S	mG/Kg	1.7	1.9	J	3.8E-01	I
IRON, TOTAL	0001	S	mG/Kg	1.	14200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	13.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	25700.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	379.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	12.2		5.4E+03	I
PHENANTHRENE	0001	S	mG/Kg	1.7	11.	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	475.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0045
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
PYRENE	0001	S	mG/Kg	1.7	9.7	J	1.1E+00	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	160.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	13.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	37.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0046
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0002	S	mG/Kg	0.012	0.023		1.4E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.11		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	8570.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	8.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	63.		1.9E+04	I
BENZO(A)ANTHRACENE	0001	S	mG/Kg	1.7	1.8	J	6.0E-01	I
BERYLLIUM	0001	S	mG/Kg	.1	.49		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	64600.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	1.1	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.4		1.0E+04	I
CYANIDE	0001	S	mG/Kg	1.	8.9	J	5.4E+03	I
ENDRIN	0001	S	mG/Kg	0.004	0.023	J	8.1E+01	I
FLUORANTHENE	0001	S	mG/Kg	1.7	4.7	J	1.1E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	18200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	12.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	20600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	372.		2.7E+04	I
MERCURY, TOTAL	0001	S	mG/Kg	.02	.03	J	8.1E+01	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	13.6		5.4E+03	I
PHENANTHRENE	0001	S	mG/Kg	1.7	4.2	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	732.		NA	I
PYRENE	0001	S	mG/Kg	1.7	4.	J	1.1E+00	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	168.	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	17.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	44.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.25
WASTE OIL DRUM FIELD
Location: MND33-0047
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0002	S	mG/Kg	0.012	0.029		1.4E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.15		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	3670.		7.8E+05	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	24.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.14		1.5E-01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	138000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	6.3	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	3.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	9.8		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	8580.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	8.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	41600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	217.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	6.9		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	467.		NA	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	168.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	9.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	27.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.23. OLD FIRING RANGE DRUM STORAGE SITE

The Old Firing Range Drum Storage Site (OFRDSS) is located northwest of Building 105 on SM/PP Hill. The area was used over an approximate 4-year period for the storage of liquid chemical wastes until they could be transported offsite for disposal. Based on photographs showing markings on drums, it is possible that drums stored in the area contained halogenated and nonhalogenated spent solvents. Soil sampling was conducted in the area to assess whether the site is or has been a source of hazardous constituents released to the environment. A summary description at the OFRDSS, including the site history and field investigation procedures, is presented in subsection 2.23.

Twenty-five samples and three duplicates were collected from 12 sampling locations, or blocks (see Figure 2.23(b)). Each sample collected represents a composite of soils collected at the target depth from two to four borings within each block. VOC samples were collected from only one location at each depth interval within each block based on field screening results. Samples were analyzed for VOCs, SVOCs, P/PCBs, TAL inorganics, and radionuclides via gamma spectroscopy. The validated analytical results for all analytes detected above laboratory reporting limits for each sample analyzed are presented in Table III.26.

3.23.1 Volatile Organic Compounds

Five VOCs (acetone, 2-butanone, toluene, xylenes (total), and dichloromethane) were detected in concentrations above laboratory reporting limits. Acetone was detected in samples MND33-0057-0002 and -0003; MND33-0058-0002 and -0003; and MND33-0059-0003. 2-butanone was detected in samples MND33-0058-0002 and -0003; toluene and xylenes (total) were detected in sample MND33-0076-0002; and dichloromethane was detected in samples MND33-0058-0002 and -0003. Concentrations of each of these compounds are all below respective PRGs. The occurrence of low levels of VOCs in soils and soil gas at the edge of the sampling grid may represent a potential impact to site soil quality and indicates that the extent of VOC contamination may not be completely understood.

A soil gas survey was performed in the vicinity of the OFRDSS in August 1992 (DOE 1992e). Soil gas samples were collected from four locations within or near the OU 3 LFI sampling grid at the OFRDSS. Results of the soil gas survey indicate sporadic, low-level concentrations of Freon 11 (43 and 46 ppb), 1,1,1-TCA (7 ppb), TCE (13 ppb), and toluene (11 and 5 ppb) detected in the soil gas in this area. A complete discussion of the survey results is presented in the referenced document (DOE 1992e).

3.23.2. Semivolatile Organic Compounds

Eighteen SVOCs were detected at concentrations above laboratory reporting limits in soil samples analyzed from the OFRDSS. Bis(2-ethylhexyl)phthalate was detected at four OFRDSS sample locations at concentrations above laboratory reporting limits but below the PRG. PAH compounds benzo(a)ánthracene, benzo(a)pyrene,benzo(b)fluoranthene,benzo(g,h,i)perylene,chrysene,dibenzo(a,h)anthracene,indeno(1,2,3-CD)pyrene, and pyrene were detected in sample MND33-0079-0002 at concentrations above the respective PRGs. Nine additional SVOCs were detected in samples from locations MND33-0058 and -0079 at concentrations above laboratory reporting limits but below PRGs. The detection of SVOCs in some OFRDSS soil samples at concentrations above laboratory reporting limits could be a result of runoff from nearby asphalt surfaces (bitumen), and does not present an impact to soil quality at the site.

3.23.3. Pesticides and Polychlorinated Biphenyls

Pesticides were not detected in soil samples from the OFRDSS at concentrations above the laboratory reporting limits.

The PCB Aroclor 1254 was detected at soil sample MND33-0058-0001 at a concentration above the laboratory reporting limit but below the proposed action level. No other PCBs were detected in OFRDSS soil samples at concentrations above laboratory reporting limits. The detected concentration of Aroclor 1254 does not reflect an impact to site soil quality.

3.23.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the OFRDSS at concentrations above PRGs, or proposed action levels.

3.23.5. Gamma Spectroscopy

A cleanup of cesium-137 contaminated soils was reported to have occurred near the OFRDSS. Soil analyses were conducted via gamma spectroscopy to determine if soil quality has been impacted by previous activities near the OFRDSS.

Concentrations of thorium-234 were reported at levels above the PRG of 1.1 pCi/g at five soil sample locations. Radium-224 was detected at one sample location (MND33-0074-0001) at a concentration of 12.2 pCi/g, which is above the PRG of 5.0 pCi/g. Detectable concentrations of cesium-137 were found at soil

sample locations MND33-0058-0001 and -1001; and MND33-0059-0001 at concentrations above the laboratory reporting limits and PRG. The reported concentration of cesium-137 includes a calculated numerical variance equal to plus or minus approximately 0.034 pci/g. The variances for samples MND33-0058-0001, -1001, and MND33-0059-0001 are 0.036, 0.038, and 0.034 pci/g, respectively. When this variance is added to the laboratory reporting limit or subtracted from the reported result, the concentrations of all three soil samples fall below the laboratory reporting limit for cesium-137. Detected concentrations of potassium-40 in soil samples are within background concentration levels (Eisenbud, 1987).

The detected concentrations of radioactive isotopes found at levels above respective PRGs in soils from the OFRDSS may reflect an impact to soil quality from previous site activities.

3.23.6. Summary

Analytical results for soils analyzed from the OFRDSS indicate that low levels of VOCs and SVOCs are present in some of the soil samples from the OFRDSS. A recent soil gas survey for VOCs detected only sporadic, low levels of VOCs in the OFRDSS area. Some of the SVOCs, present at concentrations above laboratory reporting limits, could be a result of runoff from the asphalt (bitumen) surfaces, which bisect the OFRDSS grid. The low concentrations of VOCs and radionuclides detected at the OFRDSS may reflect an impact to soil quality in the area. Therefore, further site characterization at the OFRDSS is recommended.

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0057
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0002	S	mG/Kg	0.011	0.11	J	2.7E+04	I
ACETONE	0003	S	mG/Kg	0.011	0.036	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	6390.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	10500.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	7920.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	4.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.5		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	4.8		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	39.		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	48.1		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	39.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.32		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.61		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.43		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	3.6	4.2	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	131000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	101000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	94300.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	7.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	12.7		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	9.8		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	5.9		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	8.		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	7.3		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	11.8		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	17.4		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	12.9		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	12900.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	20000.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	15900.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.6		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	10.9		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	8.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	46500.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	26300.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	26700.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	373.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	392.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	338.	J	2.7E+04	I
MERCURY, TOTAL	0002	S	mG/Kg	.02	.04		8.1E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0057
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	0001	S	mG/Kg	2.	11.		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	16.5		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	13.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	602.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	1770.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	965.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	20.		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	15.9		NA	I
POTASSIUM-40	0003	S	pCi/g	.5	14.6		NA	I
RADIUM-224	0001	S	pCi/g	.1	1.11		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.878		5.0E+00	I
RADIUM-224	0003	S	pCi/g	.1	.886		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.756		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.651		5.0E+00	I
RADIUM-226	0003	S	pCi/g	.1	.595		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.03		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.821		5.0E+00	I
RADIUM-228	0003	S	pCi/g	.2	.829		5.0E+00	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	241.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	217.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	190.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.934		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.11		1.1E+00	I
THORIUM-234	0003	S	pCi/g	.5	.710		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	12.1		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	16.6		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	13.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	31.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	64.		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	40.1		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0058
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0002	S	mG/Kg	0.012	0.028	J	1.4E+04	I
2-BUTANONE	0003	S	mG/Kg	0.01	0.022	J	1.4E+04	I
ACETONE	0002	S	mG/Kg	0.012	0.21	J	2.7E+04	I
ACETONE	0003	S	mG/Kg	0.01	0.23	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	12500.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	4.	9700.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	4.	1240.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	4.	12800.		7.8E+05	I
AROCLOR-1254	0001	S	mG/Kg	0.09	0.56	J	50. total	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.2	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	5.4	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.7	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	6.6	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	61.3		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	48.3		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	5.		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	78.8		1.9E+04	I
BENZO(A)ANTHRACENE	0002	S	mG/Kg	0.77	1.8	J	6.0E-01	I
BENZO(A)PYRENE	0002	S	mG/Kg	0.77	1.7	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0002	S	mG/Kg	0.77	1.5	J	6.4E-01	I
BENZO(G,H,I)PERYLENE	0002	S	mG/Kg	0.77	0.78	J	4.0E+00	I
BENZO(K)FLUORANTHENE	0002	S	mG/Kg	0.77	1.3	J	1.3E+00	I
BERYLLIUM	0001	S	mG/Kg	.1	.76		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.1	.57		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.1	.14		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.1	.75		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.38	4.1	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	1001	S	mG/Kg	0.39	3.2	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.77	3.6	J	4.6E+01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.84	3.7	J	4.6E+01	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	71800.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	3.	87700.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	3.	15500.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	3.	105000.		NA	I
CESIUM-137	0001	S	pCi/g	.1	.106		2.1E-02	I
CESIUM-137	1001	S	pCi/g	.1	.116		2.1E-02	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	14.4		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	11.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	2.8		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	14.6		1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0058
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
CHRYSENE	0002	S	mG/Kg	0.77	1.7	J	2.0E+01	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.1		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	2.	8.5		3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	2.	9.5		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.4		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	12.9		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	4.8		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	16.5		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0002	S	mG/Kg	0.006	0.01		8.5E+01	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0003	S	mG/Kg	0.005	0.009		8.5E+01	I
FLUORANTHENE	0002	S	mG/Kg	0.77	2.	J	1.1E+04	I
INDENO(1,2,3-CD)PYRENE	0002	S	mG/Kg	0.77	0.81	J	3.8E-01	I
IRON, TOTAL	0001	S	mG/Kg	1.	24900.	J	NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	19400.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	2880.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	24100.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	9.4		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	11.7		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.6	J	5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	18.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	11700.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	3.	11100.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	3.	3330.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	3.	13400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	651.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	583.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	60.9		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	685.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	21.5		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	15.7		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	3.		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	17.7		5.4E+03	I
PHENANTHRENE	0002	S	mG/Kg	0.77	1.3	J	7.8E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	1220.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	100.	1160.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	100.	291.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	100.	1380.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	26.2		NA	I
POTASSIUM-40	1001	S	pCi/g	.5	23.6		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	16.5		NA	I
POTASSIUM-40	0003	S	pCi/g	.5	20.		NA	I
PYRENE	0002	S	mG/Kg	0.77	3.	J	1.1E+00	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0058
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
RADIUM-224	0001	S	pCi/g	.1	1.36		5.0E+00	I
RADIUM-224	1001	S	pCi/g	.1	1.25		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.677		5.0E+00	I
RADIUM-224	0003	S	pCi/g	.1	1.01		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.722		5.0E+00	I
RADIUM-226	1001	S	pCi/g	.1	.733		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.499		5.0E+00	I
RADIUM-226	0003	S	pCi/g	.1	.74		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.34		5.0E+00	I
RADIUM-228	1001	S	pCi/g	.2	1.16		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.671		5.0E+00	I
RADIUM-228	0003	S	pCi/g	.2	.912		5.0E+00	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	204.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	20.	161.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	57.3		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	20.	203.		NA	I
THORIUM-234	0001	S	pCi/g	.5	1.32		1.1E+00	I
THORIUM-234	1001	S	pCi/g	.5	.925		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.08		1.1E+00	I
THORIUM-234	0003	S	pCi/g	.5	.739		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	17.3		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	15.6		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	1.9		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	16.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	52.4		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	46.1		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	44.2		5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	66.2		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0059
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ACETONE	0003	S	mG/Kg	0.006	0.14		2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	4.	8040.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	7170.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	6.	6820.		7.8E+05	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	14.6	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	3.	13.8	J	1.1E+02	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	2.0	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.2	1.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	32.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	26.2		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.2	43.8		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.1	.51		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.67		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.2	.7		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0003	S	mG/Kg	0.8	1.3	J	4.6E+01	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	2.1	J	1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.2	1.7	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	3.	112000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	110000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	2.	113000.		NA	I
CESIUM-137	0001	S	pCi/g	.1	.121		2.1E-02	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	11.7		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	24.1		1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	1.	24.6		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	7.7		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	13.7	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	1.	11.9	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	14.1		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.3		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	1.	19.3		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16600.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	15800.		NA	I
IRON, TOTAL	0003	S	mG/Kg	1.	18900.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	1.7		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	14.9		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.2	7.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	3.	27200.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	16800.		NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	5.	12200.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	385.	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0059
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0002	S	mG/Kg	.2	405.		2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.2	484.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	14.6		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	22.6		5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	2.	17.9		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	100.	948.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	922.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	10.	748.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	18.3		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	19.9		NA	I
POTASSIUM-40	0003	S	pCi/g	.5	20.6		NA	I
RADIUM-224	0001	S	pCi/g	.1	1.1		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	1.17		5.0E+00	I
RADIUM-224	0003	S	pCi/g	.1	1.25		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.766		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.656		5.0E+00	I
RADIUM-226	0003	S	pCi/g	.1	.548		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.02		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	1.52		5.0E+00	I
RADIUM-228	0003	S	pCi/g	.2	1.26		5.0E+00	I
SILVER, TOTAL	0002	S	mG/Kg	1.	12.6	J	1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	1.	12.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	293.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	143.		NA	I
SODIUM, TOTAL	0003	S	mG/Kg	10.	162.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.854		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.48		1.1E+00	I
THORIUM-234	0003	S	pCi/g	.5	.837		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	13.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	21.8	J	1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	1.	22.0	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	40.6		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	79.5	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.5	754.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING-RANGE DRUM STORAGE SITE
Location: MND33-0071
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	5730.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	4210.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	20.3	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	13.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.3	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	1.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	48.5		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	26.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.66		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.65		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.72	1.8	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.2		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	88900.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	217000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.2	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	26.0	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.8	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.2	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	15.8		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	13.3		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0002	S	mG/Kg	0.006	0.011		8.5E+01	I
IRON, TOTAL	0001	S	mG/Kg	1.	11400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	9770.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	7.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	4.2		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.5	30300	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.5	10500.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	289	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	284.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	17.8	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	13.6	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	443.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	653.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	10.5		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	15.8		NA	I
RADIUM-224	0001	S	pCi/g	.1	.657		5.0E+00	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0071
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
RADIUM-224	0002	S	pCi/g	.1	.629		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.506		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.42		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.631		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	14.		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	18.6		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	168.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	188.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.5		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	17.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	29.0	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	32.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0072
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	7530.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	8850.		7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	6.	7200.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	14.4	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	15.0	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	3.	14.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	2.1	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.2	2.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	38.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	48.5		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.2	45.2		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.66		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.79		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.2	.77		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.1		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.1		1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.2	3.		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	64600.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	110000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	2.	152000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.2	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	28.9	J	1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	1.	28.0	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.2	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	12.6	J	3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	1.	10.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	19.1		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	23.9		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	1.	18.5		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16300.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	18300.		NA	I
IRON, TOTAL	1002	S	mG/Kg	1.	15400.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	6.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	5.4		5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.2	5.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.5	21900.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.5	20100.	J	NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	.5	18000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	358.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	461.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.2	438	J	2.7E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0072
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.1	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	25.6	J	5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	2.	20.2	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	980.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	1270.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	10.	987.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	19.0		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	22.4		NA	I
RADIUM-224	0001	S	pCi/g	.1	.916		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.95		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.755		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.552		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.861		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.848		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	11.6		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	15.5		1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	1.	17.1		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	151.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	191.		NA	I
SODIUM, TOTAL	1002	S	mG/Kg	10.	199.		NA	I
THORIUM-234	0001	S	pCi/g	.5	1.17		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.523		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.5		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	25.2		1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	1.	22.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	43.2	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	41.1	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.5	37.8	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0073
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	2920.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	37.6	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	2.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	27.0	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	0.63	J	1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.33	0.43	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	9.4		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	156000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	23.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	7.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	12.5	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	6900.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	5.4		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	63700.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.05	229.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	16.8	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	310.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	9.15		NA	I
RADIUM-224	0001	S	pCi/g	.1	.551		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.369		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.408		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	.01	17.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	265.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.81		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	22.1	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	18.9	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0074
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	6620.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	16.4	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	3.0	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	33.6		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.65		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	3.1		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	72600.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	24.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	11.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	19.8		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	17600.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	9.5		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	21200.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	395.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	24.7	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	869.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	24.4		NA	I
RADIUM-224	0001	S	pCi/g	.1	12.2		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.748		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.22		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	.01	12.9		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	167.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.826		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	23.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	37.4	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0075
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	7780.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	21.5	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.4	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	70.5		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.76		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.7		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	74100.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	24.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	10.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	15.4		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16100.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	7.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	31700.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	504.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.5	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	598.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	13.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	519.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	26.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	39.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0076
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-METHYLNAPHTHALENE	0001	S	mG/Kg	0.71	1.4	J	NA	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4450.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	5060.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	30.9	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	21.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.2	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	3.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	35.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	45.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.66		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.68		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	8.1		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	140000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	142000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.8	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	25.6	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.3	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.9	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	13.7		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	15.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	.57	J	5.4E+03	I
CYANIDE	0002	S	mG/Kg	.2	.62	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	9610.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	11100.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.7		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	9.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	47700.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	27900.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	258.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	409.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	19.3	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	20.4	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	621.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	525.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	13.9		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	20.4		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
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I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0076
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
RADIUM-224	0001	S	pCi/g	.1	.73		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	1.17		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.482		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.648		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.668		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.98		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	16.8	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	17.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	386.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	233.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.859		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.801		1.1E+00	I
TOLUENE	0002	S	mG/Kg	0.006	0.016		5.4E+04	I
TOTAL XYLENES	0002	S	mG/Kg	0.006	0.019		5.4E+05	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	21.9		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	21.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	21.4	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	27.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0077
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	2680.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	5450.		7.8E+05	I
ALUMINUM, TOTAL	0003	S	mG/Kg	.06	10700.		7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	.06	6620.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	39.2	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	24.1	J	1.1E+02	I
ANTIMONY, TOTAL	0003	S	mG/Kg	.03	15.	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	.03	18.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	1.8	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	3.6	J	2.1E+03	I
ARSENIC, TOTAL	0003	S	mG/Kg	.002	3.6	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.002	2.	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	35.7		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	35.8		1.9E+04	I
BARIUM, TOTAL	0003	S	mG/Kg	.002	90.4		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.002	37.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.78		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.77		1.5E-01	I
BERYLLIUM	0003	S	mG/Kg	.002	.98		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.002	.78		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	10.2		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.002	4.		1.4E+02	I
CADMIUM, TOTAL	0003	S	mG/Kg	.002	2.2		1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.002	2.9		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	169000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	114000.		NA	I
CALCIUM, TOTAL	0003	S	mG/Kg	.02	46000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	.02	100000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	24.6	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	24.7	J	1.4E+03	I
CHROMIUM, TOTAL	0003	S	mG/Kg	.01	24.3	J	1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	.01	24.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	7.1	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	9.4	J	3.9E+01	I
COBALT, TOTAL	0003	S	mG/Kg	.01	14.2	J	3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	.01	10.4	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	12.3		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	15.6		1.0E+04	I
COPPER, TOTAL	0003	S	mG/Kg	.01	17.6		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	.01	25.2		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.002	.14	J	5.4E+03	I
CYANIDE	0003	S	mG/Kg	.002	.16	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	.01	6010.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	13000.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0077
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
IRON, TOTAL	0003	S	mG/Kg	.01	23800.		NA	I
IRON, TOTAL	1002	S	mG/Kg	.01	15600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	4.9		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	8.6		5.3E+01	I
LEAD, TOTAL	0003	S	mG/Kg	.002	9.8		5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.002	7.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	64500.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	30100.	J	NA	I
MAGNESIUM, TOTAL	0003	S	mG/Kg	.05	16400.	J	NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	.05	21400.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	253.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	354.	J	2.7E+04	I
MANGANESE, TOTAL	0003	S	mG/Kg	.002	698.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.002	373.	J	2.7E+04	I
MOLYBDENUM	0003	S	mG/Kg	.01	14.5		1.4E+03	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	17.8	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	20.6	J	5.4E+03	I
NICKEL, TOTAL	0003	S	mG/Kg	.02	25.5	J	5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	.02	22.6	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	571.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	703.		NA	I
POTASSIUM, TOTAL	0003	S	mG/Kg	.1	1080.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	.1	955.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	7.13		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	19.4		NA	I
POTASSIUM-40	0003	S	pCi/g	.5	24.8		NA	I
RADIUM-224	0001	S	pCi/g	.1	.369		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.862		5.0E+00	I
RADIUM-224	0003	S	pCi/g	.1	1.21		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.409		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.63		5.0E+00	I
RADIUM-226	0003	S	pCi/g	.1	.83		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.333		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.892		5.0E+00	I
RADIUM-228	0003	S	pCi/g	.2	1.11		5.0E+00	I
SILICON, TOTAL	0003	S	mG/Kg	.01	1100.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	16.5		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	14.6		1.4E+03	I
SILVER, TOTAL	0003	S	mG/Kg	.01	9.3		1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	.01	13.8		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	625.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	234.		NA	I

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mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0077
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0003	S	mG/Kg	.1	199.		NA	I
SODIUM, TOTAL	1002	S	mG/Kg	.1	279.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.778		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.627		1.1E+00	I
THORIUM-234	0003	S	pCi/g	.5	1.34		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	21.8		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	22.3		1.9E+03	I
VANADIUM, TOTAL	0003	S	mG/Kg	.01	27.		1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	.01	21.8		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	14.3	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	30.3	J	5.4E+04	I
ZINC, TOTAL	0003	S	mG/Kg	.005	44.8	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.005	33.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0078
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	3260.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	.06	5480.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	34.6	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	.03	11.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	2.5	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.002	1.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	33.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.002	44.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.78		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.002	.81		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	6.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	147000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	.02	178000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	24.1	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	.01	25.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	7.6	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	.01	7.5	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	13.6		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	.01	12.8		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	7400.		NA	I
IRON, TOTAL	0002	S	mG/Kg	.01	12200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	6.5		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.002	5.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	53900.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	.05	8220.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	342.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.002	296.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	19.7	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	.02	15.	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	398.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	.1	552.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	11.7		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	15.8		NA	I
RADIUM-224	0001	S	pCi/g	.1	.718		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.705		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.662		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.387		5.0E+00	I

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S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0078
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
RADIUM-228	0001	S	pCi/g	.2	.574		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.694		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	.01	16.5		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	.01	16.6		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	302.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	.1	176.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.559		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.845		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	22.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	.01	18.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	22.9	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.005	25.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0079
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-METHYLNAPHTHALENE	0002	S	mG/Kg	0.37	0.77	J	NA	I
ACENAPHTHENE	0002	S	mG/Kg	0.37	6.	J	1.6E+04	I
ACENAPHTHENE	0002	S	mG/Kg	3.7	6.8	J	1.6E+04	D
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	6310.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	6110.		7.8E+05	I
ANTHRACENE	0002	S	mG/Kg	0.37	8.3	J	8.1E+04	I
ANTHRACENE	0002	S	mG/Kg	3.7	15.	J	8.1E+04	D
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	27.4	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	12.5	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.7	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	29.6		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	45.1		1.9E+04	I
BENZO(A)ANTHRACENE	0002	S	mG/Kg	0.37	40.	J	6.0E-01	I
BENZO(A)ANTHRACENE	0002	S	mG/Kg	3.7	43.	J	6.0E-01	D
BENZO(A)PYRENE	0002	S	mG/Kg	0.37	32.	J	8.8E-02	I
BENZO(A)PYRENE	0002	S	mG/Kg	3.7	35.	J	8.8E-02	D
BENZO(B)FLUORANTHENE	0002	S	mG/Kg	0.37	47.	J	6.4E-01	I
BENZO(B)FLUORANTHENE	0002	S	mG/Kg	3.7	59.	J	6.4E-01	D
BENZO(G,H,I)PERYLENE	0002	S	mG/Kg	3.7	19.	J	4.0E+00	D
BERYLLIUM	0001	S	mG/Kg	.2	.73		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.68		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0002	S	mG/Kg	0.37	0.62	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	5.3		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	2.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	114000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	62000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.7	J	1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	22.5	J	1.4E+03	I
CHRYSENE	0002	S	mG/Kg	0.37	48.	J	2.0E+01	I
CHRYSENE	0002	S	mG/Kg	3.7	55.	J	2.0E+01	D
COBALT, TOTAL	0001	S	mG/Kg	1.	9.4	J	3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	9.1	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	19.9		1.0E+04	I
CYANIDE	0002	S	mG/Kg	.2	0.32	J	5.4E+03	I

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I - Initial Analysis
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S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0079
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
DIBENZO(A,H)ANTHRACENE	0002	S	mG/Kg	3.7	5.3	J	7.9E-02	D
DIBENZOFURAN	0002	S	mG/Kg	0.37	4.	J	NA	I
FLUORANTHENE	0002	S	mG/Kg	0.37	32.	J	1.1E+04	I
FLUORANTHENE	0002	S	mG/Kg	3.7	98.	J	1.1E+04	D
FLUORENE	0002	S	mG/Kg	0.37	6.1	J	1.1E+04	I
FLUORENE	0002	S	mG/Kg	3.7	6.5	J	1.1E+04	D
INDENO(1,2,3-CD)PYRENE	0002	S	mG/Kg	0.37	23.	J	3.8E-01	I
INDENO(1,2,3-CD)PYRENE	0002	S	mG/Kg	3.7	18.	J	3.8E-01	D
IRON, TOTAL	0001	S	mG/Kg	1.	13200.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	13800.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.6		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	31.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	42900.	J	NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	18000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	330.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	474.	J	2.7E+04	I
NAPHTHALENE	0002	S	mG/Kg	0.37	1.8	J	1.1E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	23.4	J	5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	19.4	J	5.4E+03	I
PHENANTHRENE	0002	S	mG/Kg	0.37	26.	J	7.8E+03	I
PHENANTHRENE	0002	S	mG/Kg	3.7	73.	J	7.8E+03	D
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1270.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	696.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	18.4		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	15.7		NA	I
PYRENE	0002	S	mG/Kg	0.37	41.	J	1.1E+00	I
PYRENE	0002	S	mG/Kg	3.7	83.	J	1.1E+00	D
RADIUM-224	0001	S	pCi/g	.1	.883		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	1.04		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.603		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.600		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.80		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	1.05		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.3		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	12.7		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	420.		NA	I

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D - Dilution
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.26
OLD FIRING RANGE DRUM STORAGE SITE
Location: MND33-0079
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0002	S	mG/Kg	10.	162.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.787		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.961		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.8		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	22.5		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	32.5	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	60.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
pCi/g - Picocuries per Gram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.24. FARM TRASH AREA

The Farm Trash Area is located near the southwest corner of the undeveloped property at the Mound Plant. This area was used to receive trash, tires, and household debris when the farm was in use, and was characterized by a lack of vegetation and dark soil staining near the eastern edge of the site. The source of the stains is not known, but the stains are probably related to farm vehicle maintenance. Soil sampling was conducted in this area to investigate whether hazardous constituents were released to soils by the previous property owner. A more detailed description of the Farm Trash Area and field investigation procedures is presented in subsection 2.24.

Eight soil samples collected from three locations were analyzed for TCL VOCs, SVOCs, P/PCBs, and TAL inorganics. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.27.

3.24.1. Volatile Organic Compounds

VOCs were not detected above laboratory reporting limits in any of the samples analyzed from the Farm Trash Area.

3.24.2. Semivolatile Organic Compounds

SVOCs were not detected above laboratory reporting limits in soil samples analyzed from the Farm Trash Area.

3.24.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected above laboratory reporting limits in any of the samples analyzed from the Farm Trash Area.

3.24.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Farm Trash Area at concentrations above PRGs or proposed action levels.

3.24.5. Summary

The results of the laboratory analyses for samples collected from Farm Trash Area indicate that the stained soils previously observed in this area are not indicative of impacted soil quality. As a result of these findings, no further action involving site characterization or soil remediation at the Farm Trash Area is recommended.

TABLE III.27
FARM TRASH AREA
Location: MND33-0102
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3330.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	2680.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	3180.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	35.0	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	27.1	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	30.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	5.9	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.2	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	4.8	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	22.4		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	20.9		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	23.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.69		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.59		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.69		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	6.	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	4.8	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	5.5	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	116000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	104000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	105000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	25.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	22.9		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	23.9		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.5		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.4		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	7.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.1		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	14.5		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	16.3		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.1	.12		5.4E+03	I
CYANIDE	0002	S	mG/Kg	.2	.35		5.4E+03	I
CYANIDE	1001	S	mG/Kg	.2	.36		5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	11100.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	7870.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	9100.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	10.1	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	6.8	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	7.4	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	49500.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	37100.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	45000.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.27
FARM TRASH AREA
Location: MND33-0102
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0001	S	mG/Kg	.2	254.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	256.	J	2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	279.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.5		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	21.1		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	24.3		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	461.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	512.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	454.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.7		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	14.7		1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	14.8		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	149.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	123.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	136.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	22.8		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	18.9		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	21.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	33.9	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	25.6	J	5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	30.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.27
FARM TRASH AREA
Location: MND33-0103
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4820.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	2030.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	28.2	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	42.2	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	4.9	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.3	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	32.4		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	16.6		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.71		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.67		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	5.0	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	7.7	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	97900.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	150000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	25.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	30.5		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.4		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	6.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	13.7		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	.38		5.4E+03	I
CYANIDE	0002	S	mG/Kg	.2	.35		5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	12500.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	6470.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	7.5	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	38200.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	68800.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	306.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	276.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	24.9		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	22.1		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	527.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	389.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	14.1		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	17.		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	121.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.27
FARM TRASH AREA
Location: MND33-0103
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0002	S	mG/Kg	10.	170.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	23.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	38.3	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	22.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.27
FARM TRASH AREA
Location: MND33-0104
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3890.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	3590.		7.8E+05	I
ALUMINUM, TOTAL	1002	S	mG/Kg	6.	3780.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	26.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	34.	J	1.1E+02	I
ANTIMONY, TOTAL	1002	S	mG/Kg	3.	30.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.9	J	2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	4.	J	2.1E+03	I
ARSENIC, TOTAL	1002	S	mG/Kg	.2	3.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	26.9		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	23.		1.9E+04	I
BARIUM, TOTAL	1002	S	mG/Kg	.2	31.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.59		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	.68		1.5E-01	I
BERYLLIUM	1002	S	mG/Kg	.2	.7		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	5.2	J	1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	6.0	J	1.4E+02	I
CADMIUM, TOTAL	1002	S	mG/Kg	.2	5.4	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	109000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	113000.		NA	I
CALCIUM, TOTAL	1002	S	mG/Kg	2.	112000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	21.		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	25.		1.4E+03	I
CHROMIUM, TOTAL	1002	S	mG/Kg	1.	25.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.1		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	8.1		3.9E+01	I
COBALT, TOTAL	1002	S	mG/Kg	1.	8.4		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	16.2		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	16.8		1.0E+04	I
COPPER, TOTAL	1002	S	mG/Kg	1.	17.		1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	.3		5.4E+03	I
CYANIDE	0002	S	mG/Kg	.2	.31		5.4E+03	I
CYANIDE	1002	S	mG/Kg	.2	.34		5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	10700.		NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	11400.		NA	I
IRON, TOTAL	1002	S	mG/Kg	1.	10600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.4	J	5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	5.7	J	5.3E+01	I
LEAD, TOTAL	1002	S	mG/Kg	.2	5.7	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	37800.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	48000.		NA	I
MAGNESIUM, TOTAL	1002	S	mG/Kg	5.	41900.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.27
FARM TRASH AREA
Location: MND33-0104
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MANGANESE, TOTAL	0001	S	mG/Kg	.2	232.	J	2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	283.	J	2.7E+04	I
MANGANESE, TOTAL	1002	S	mG/Kg	.2	245.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	21.8		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	24.5		5.4E+03	I
NICKEL, TOTAL	1002	S	mG/Kg	2.	25.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	584.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	508.		NA	I
POTASSIUM, TOTAL	1002	S	mG/Kg	10.	671.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	12.		1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	15.3		1.4E+03	I
SILVER, TOTAL	1002	S	mG/Kg	1.	15.2		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	116.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	143.		NA	I
SODIUM, TOTAL	1002	S	mG/Kg	10.	221.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.2		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	22.7		1.9E+03	I
VANADIUM, TOTAL	1002	S	mG/Kg	1.	22.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	30.2	J	5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	40.4	J	5.4E+04	I
ZINC, TOTAL	1002	S	mG/Kg	.5	34.7	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.25. UNDERGROUND SEWER LINES GRID G5

Sources of water conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases. The Grid 5 sewer line is located next to Building 57 and the sewage treatment plant. The line is constructed of 8-inch vitrified clay pipe with a section of ductile iron pipe.

Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils at this site. A more detailed description of the Underground Sewer Lines Grid G5 site history and field investigation procedures is presented in subsection 2.25.

One soil sample collected from location MND33-0080 and one soil sample collected from location MND33-0081 were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; and nitrate/nitrite. The validated analytical results for all analytes detected above laboratory reporting limits are presented in Table III.28.

3.25.1. Volatile Organic Compounds

VOCs were not detected above laboratory reporting limits in any of the samples analyzed.

3.25.2. Semivolatile Organic Compounds

The only SVOC detected above laboratory reporting limits, bis (2-ethylhexyl) phthalate, was detected in sample MND33-0081 slightly above the laboratory reporting limit and significantly below the PRG. Bis (2-ethylhexyl) phthalate is a common analytical laboratory contaminant and is not considered to be a significant soil contaminant in the Underground Sewer Lines Grid G5 area.

3.25.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected above laboratory reporting limits in any of the samples analyzed.

3.25.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Underground Sewer Lines Grid G5 area at concentrations above PRGs or proposed action levels.

3.25.5. Explosives, Chloride, Nitrates, and Nitrites

Explosives were not detected above laboratory reporting limits in soil samples from the Underground Sewer Lines Grid G5 area. Chloride was detected in both samples, but is not considered to be an analyte of concern. Nitrate and nitrite were present in both samples at levels above the laboratory reporting limits, but below the PRGs and are not considered to be of concern at these concentrations.

3.25.6. Summary

The results of the laboratory analyses for samples collected at the Underground Sewer Lines Grid G5 area indicate sewer line operations in this area have not adversely impacted soil quality in the vicinity of the site. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grid G5 area is recommended.

TABLE III.28
UNDERGROUND SEWER LINES GRID G5
Location: MND33-0080
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	10300.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	8.5	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	42.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.82		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	1.5	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	72900.		NA	I
CHLORIDE	0001	S	mG/Kg	10.	29.5	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	27.	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	12.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.5	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	20300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	8.8	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	10900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	608.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	23.7		5.4E+03	I
NITRATE	0001	S	mG/Kg	2.	20.7		4.3E+05	I
NITRITE AS NITROGEN	0001	S	mG/Kg	2.	3.89		2.7E+04	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1320.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	12.4	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	259.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.2	.56		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	43.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.28
UNDERGROUND SEWER LINES GRID G5
Location: MND33-0081
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	10100.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	13.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	.84	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	19.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.76		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.81	1.5	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.4	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	71100.		NA	I
CHLORIDE	0001	S	mG/Kg	10.	122.7	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	28.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	14.7	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	22.4	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	21800.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	2.9	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	18100.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	529.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	28.9		5.4E+03	I
NITRATE	0001	S	mG/Kg	2.	2.54		4.3E+05	I
NITRITE AS NITROGEN	0001	S	mG/Kg	2.	2.39		2.7E+04	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1750.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	12.6	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	443.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.3		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	46.6	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.26. UNDERGROUND SEWER LINES GRIDS G6 AND G7

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

The sewer lines in Grids G6 and G7 are located near Building 36 and the SM building. The sewers in this area are constructed of concrete, vitrified clay pipe, or polyvinyl chloride. Soil and sediment sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils and sediments in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grids G6 and G7 site history and field investigation procedures is presented in subsection 2.26.

Four soil samples and two sediment samples were collected from the Grids G6 and G7 area. Two soil samples, from locations MND33-0065 and 0067, were only analyzed for TCL VOCs. The remaining soil and sediment samples were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrites/nitrates; and tritium. Sample MND33-0068 was also analyzed for lithium. The validated analytical results for all analytes detected above laboratory reporting limits in each sample are presented in Table III.29.

3.26.1. Volatile Organic Compounds

Tetrachloroethene (PCE) was detected at sediment sample MND33-0130-0001 and duplicate sample -1001 at concentrations above the laboratory reporting limit but below the PRG. No other VOCs were detected in soil or sediment samples from Grids G6 and G7 at concentrations above the laboratory reporting limits. Because VOCs were not detected above laboratory reporting limits, the analytical results for sample locations MND33-0065 and -0067, which were analyzed for VOCs only, are not included in Table III.29.

3.26.2. Semivolatile Organic Compounds

Bis (2-ethylhexyl) phthalate was detected above laboratory reporting limits, but below the PRG in samples MND33-0064 and -0068. Ten PAH compounds were detected in the sediment sample from location MND33-0130. The PAH compounds benzo(a) anthracene, benzo(a) pyrene, benzo(b) fluoranthene, benzo(k) fluoranthene, indeno (1,2,3-CD) pyrene, and pyrene were detected at concentrations above the laboratory reporting limits and PRGs. The PAH compounds benzo(g,h,i) perylene, chrysene, fluoranthene, and phenanthrene were detected at concentrations above laboratory reporting limits but below PRGs. No other SVOCs were detected in soil and sediment samples from Grids G6 and G7. The occurrence of SVOCs at concentrations above laboratory reporting limits in the Grid G6 and G7 sediment sample does not reflect

an impact to sediment quality. The occurrence of PAH compounds in the sediment may be due to surface runoff from nearby asphalt surfaces. The occurrence of bis(2-ethylhexyl) phthalate in two soil samples at concentrations below the PRG does not reflect an impact to site soil quality.

3.26.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.26.4. TAL Inorganics

Inorganic compounds were not detected in soil or sediment samples from the Underground Sewer Lines Grids G6 and G7 area at concentrations above PRGs or proposed action levels.

3.26.5. Explosives, Chloride, Nitrates, Nitrites, Tritium, and Lithium

Explosives were not detected at concentrations above laboratory reporting limits in any soil or sediment samples collected in the Underground Sewer Lines Grids G6 and G7 area. Chloride was detected in soil and sediment samples. A PRG for chloride has not been established. However, the detected concentrations do not reflect an impact to site soil and sediment quality. Nitrate and nitrite were detected in soil and sediment samples at concentrations above laboratory reporting limits but below respective PRGs. Tritium and lithium were not detected in soil or sediment samples at concentrations above laboratory reporting limits.

3.26.6. Summary

The analytical results for samples collected from the Underground Sewer Lines Grids G6 and G7 area indicate that sewer line operations in this area have not adversely impacted soil quality. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grids G6 and G7 area is recommended.

TABLE III.29
UNDERGROUND SEWER LINES GRIDS G6 AND G7
Location: MND33-0064
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	2910.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	32.3	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	7.1	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	56.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.66	J	1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.36	0.89	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	7.3		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	154000.		NA	I
CHLORIDE	0001	S	mG/Kg	10.	15.4	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	23.9	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	7.9	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	13.7	J	1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	8470.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.6	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	51000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	224.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	18.1	J	5.4E+03	I
NITRATE	0001	S	mG/Kg	2.	129.		4.3E+05	I
NITRITE AS NITROGEN	0001	S	mG/Kg	2.	5.02		2.7E+04	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	506.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	16.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	163.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.5	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	23.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.29
UNDERGROUND SEWER LINES GRIDS G6 AND G7
Location: MND33-0068
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4040.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	28.2	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	2.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	30.4		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.7		1.5E-01	I
BIS(2-ETHYLHEXYL)PHTHALATE	0001	S	mG/Kg	0.37	0.41	J	4.6E+01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	4.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	128000.		NA	I
CHLORIDE	0001	S	mG/Kg	10.	10.65	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	25.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	9.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.4		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	12200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	4.5	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	39100.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	262.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	22.7		5.4E+03	I
NITRATE	0001	S	mG/Kg	2.	95.66	J	4.3E+05	I
NITRITE AS NITROGEN	0001	S	mG/Kg	2.	3.07	J	2.7E+04	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	644.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	15.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	173.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	20.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	30.5	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.29
UNDERGROUND SEWER LINES GRIDS G6 AND G7
Location: MND33-0130
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	SE	mG/Kg	6.	5260.		7.8E+05	I
ALUMINUM, TOTAL	1001	SE	mG/Kg	6.	4540.		7.8E+05	I
ANTIMONY, TOTAL	0001	SE	mG/Kg	3.	26.1	J	1.1E+02	I
ANTIMONY, TOTAL	1001	SE	mG/Kg	3.	18.6	J	1.1E+02	I
BARIUM, TOTAL	0001	SE	mG/Kg	.2	47.0	J	1.9E+04	I
BARIUM, TOTAL	1001	SE	mG/Kg	.2	58.8	J	1.9E+04	I
BENZO(A)ANTHRACENE	0001	SE	mG/Kg	0.84	1.9	J	6.0E-01	I
BENZO(A)ANTHRACENE	1001	SE	mG/Kg	0.82	0.93	J	6.0E-01	I
BENZO(A)PYRENE	0001	SE	mG/Kg	0.84	1.7	J	8.8E-02	I
BENZO(A)PYRENE	1001	SE	mG/Kg	0.82	0.91	J	8.8E-02	I
BENZO(B)FLUORANTHENE	0001	SE	mG/Kg	0.84	1.4	J	6.4E-01	I
BENZO(B)FLUORANTHENE	1001	SE	mG/Kg	0.82	1.1	J	6.4E-01	I
BENZO(G,H,I)PERYLENE	0001	SE	mG/Kg	0.84	1.3	J	4.0E+00	I
BENZO(K)FLUORANTHENE	0001	SE	mG/Kg	0.84	1.5	J	1.3E+00	I
BERYLLIUM	0001	SE	mG/Kg	.2	1.4		1.5E-01	I
BERYLLIUM	1001	SE	mG/Kg	.2	1.3		1.5E-01	I
CADMIUM, TOTAL	0001	SE	mG/Kg	.2	7.9	J	1.4E+02	I
CADMIUM, TOTAL	1001	SE	mG/Kg	.2	6.4	J	1.4E+02	I
CALCIUM, TOTAL	0001	SE	mG/Kg	2.	128000.		NA	I
CALCIUM, TOTAL	1001	SE	mG/Kg	2.	122000.		NA	I
CHLORIDE	0001	SE	mG/Kg	.5	121.28		NA	I
CHLORIDE	1001	SE	mG/Kg	.5	104.41		NA	I
CHROMIUM, TOTAL	0001	SE	mG/Kg	1.	23.3		1.4E+03	I
CHROMIUM, TOTAL	1001	SE	mG/Kg	1.	22.8		1.4E+03	I
CHRYSENE	0001	SE	mG/Kg	0.84	2.2	J	2.0E+01	I
CHRYSENE	1001	SE	mG/Kg	0.82	1.2	J	2.0E+01	I
COBALT, TOTAL	0001	SE	mG/Kg	1.	6.2		3.9E+01	I
COBALT, TOTAL	1001	SE	mG/Kg	1.	4.5		3.9E+01	I
COPPER, TOTAL	0001	SE	mG/Kg	1.	63.2	J	1.0E+04	I
COPPER, TOTAL	1001	SE	mG/Kg	1.	35.8	J	1.0E+04	I
FLUORANTHENE	0001	SE	mG/Kg	0.84	5.2	J	1.1E+04	I
FLUORANTHENE	1001	SE	mG/Kg	0.82	2.9	J	1.1E+04	I
INDENO(1,2,3-CD)PYRENE	0001	SE	mG/Kg	0.84	1.3	J	3.8E-01	I
IRON, TOTAL	0001	SE	mG/Kg	1.	11000.	J	NA	I
IRON, TOTAL	1001	SE	mG/Kg	1.	5120.	J	NA	I
LEAD, TOTAL	0001	SE	mG/Kg	.2	39.1		5.3E+01	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.29
UNDERGROUND SEWER LINES GRIDS G6 AND G7
Location: MWD33-0130
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
LEAD, TOTAL	1001	SE	mG/Kg	.2	28.6		5.3E+01	I
MAGNESIUM, TOTAL	0001	SE	mG/Kg	5.	42500.		NA	I
MAGNESIUM, TOTAL	1001	SE	mG/Kg	5.	34500.		NA	I
MANGANESE, TOTAL	0001	SE	mG/Kg	.2	562.		2.7E+04	I
MANGANESE, TOTAL	1001	SE	mG/Kg	.2	504.		2.7E+04	I
NICKEL, TOTAL	0001	SE	mG/Kg	2.	16.4		5.4E+03	I
NICKEL, TOTAL	1001	SE	mG/Kg	2.	13.		5.4E+03	I
NITRATE	1001	SE	mG/Kg	.1	2.69		4.3E+05	I
PHENANTHRENE	0001	SE	mG/Kg	0.84	3.	J	7.8E+03	I
PHENANTHRENE	1001	SE	mG/Kg	0.82	1.5	J	7.8E+03	I
POTASSIUM, TOTAL	0001	SE	mG/Kg	10.	402.		NA	I
POTASSIUM, TOTAL	1001	SE	mG/Kg	10.	402.		NA	I
PYRENE	0001	SE	mG/Kg	0.84	3.2	J	1.1E+00	I
PYRENE	1001	SE	mG/Kg	0.82	1.7	J	1.1E+00	I
SILVER, TOTAL	0001	SE	mG/Kg	1.	12.5		1.4E+03	I
SILVER, TOTAL	1001	SE	mG/Kg	1.	11.7		1.4E+03	I
SODIUM, TOTAL	0001	SE	mG/Kg	10.	554.		NA	I
SODIUM, TOTAL	1001	SE	mG/Kg	10.	538.		NA	I
TETRACHLOROETHENE	0001	SE	mG/Kg	0.006	0.047		1.3E+01	I
TETRACHLOROETHENE	1001	SE	mG/Kg	0.006	0.11		1.3E+01	I
VANADIUM, TOTAL	0001	SE	mG/Kg	1.	18.1		1.9E+03	I
VANADIUM, TOTAL	1001	SE	mG/Kg	1.	15.3		1.9E+03	I
ZINC, TOTAL	0001	SE	mG/Kg	.5	288.	J	5.4E+04	I
ZINC, TOTAL	1001	SE	mG/Kg	.5	159.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
SE - Sediment
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.27. UNDERGROUND SEWER LINES GRID G12

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

The OU 3 Work Plan details an underground sewer line in the Grid G12 area. Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grid G12 site history and field investigation procedures may be found in subsection 2.27.

Two soil samples were collected from a single location near monitor well 0112 and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrates/nitrites; and tritium. The validated analytical results for all analytes detected above laboratory reporting limits in these samples is presented in Table III.30.

3.27.1. Volatile Organic Compounds

VOCs were not present in concentrations above laboratory reporting limits in any of the samples analyzed from the Grid G12 area.

3.27.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Grid G12 area.

3.27.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from the Grid G12 area.

3.27.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Grid G12 area at concentrations above PRGs or proposed action levels.

3.27.5. Explosives, Chloride, Nitrates, Nitrites, and Tritium

Explosives were not detected in either sample. Chloride was detected at estimated concentrations less than 10.0 mG/Kg in both samples. Nitrates, nitrites, and tritium were not detected in either sample from the Grid G12 area.

3.27.6. Summary

The analytical results for samples collected from the Underground Sewer Lines Grid G12 area indicate that sewer line operations in the vicinity have not impacted soil quality. As a result of these findings, no further action involving site characterization of soil remediation at the Underground Sewer Lines Grid G12 area is recommended.

TABLE III.30
UNDERGROUND SEWER LINES GRID G12
Location: MND33-0139
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	3200.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	2650.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	33.7	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	35.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.8	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	2.9	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	17.4		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	15.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.68		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.68		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	7.		1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	7.8		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	143000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	141000.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	5.6	J	NA	I
CHLORIDE	1001	S	mG/Kg	.5	8.3	J	NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	27.5		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	26.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.2		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	7.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.2		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	17.8		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	9120.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	9190.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	5.		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	4.8		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	44600.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	50000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	252.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	267.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.9		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	25.4		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	648.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	538.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	18.5	J	1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	18.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	180.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.30
UNDERGROUND SEWER LINES GRID G12
Location: MND33-0139
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	1001	S	mG/Kg	10.	174.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	23.1		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	23.1		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	30.2		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	34.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.28. UNDERGROUND SEWER LINES GRID G14 WEST

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

The Grid G14 West sewer lines are located south of Building 42, and are constructed of vitrified clay pipe and PVC. Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grid G14 West site history and field investigation procedures is presented in subsection 2.28.

Soil samples were collected from one interval at a single location in the Grid G14 West area and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrates/nitrites; and tritium. The validated analytical results for all analytes detected above laboratory reporting limits are presented in Table III.31.

3.28.1. Volatile Organic Compounds

VOCs were not present in concentrations above laboratory reporting limits.

3.28.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits.

3.28.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits.

3.28.4. TAL Inorganics

Inorganic compounds were not detected in soils from the Underground Sewer Lines Grid G14 West area at concentrations above the PRGs or proposed action levels.

3.28.5. Explosives, Chloride, Nitrates, Nitrites, and Tritium

Explosives, chloride, nitrates, nitrites, and tritium were not detected above laboratory reporting limits in this sample.

3.28.6. Summary

The analytical results for the sample collected at Underground Sewer Lines Grid G14 West indicate that sewer line operations in this area have not adversely impacted soil quality. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grid G14 West Area is recommended.

TABLE III.31
UNDERGROUND SEWER LINES GRID G14 WEST
Location: MND33-0012
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	12700.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	11.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	1.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	22.1		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.83		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	2.0	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	57200.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	34.5		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	16.9		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	22.3		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	.01	29200.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	3.4	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	13800.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	591.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	35.		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2460.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	11.2	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	263.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	25.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	68.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.29. UNDERGROUND SEWER LINES GRID G14 EAST

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

Sewer lines in the Grid G14 East area are located south of Building 27. Lines in this area are constructed of either vitrified clay pipe or PVC. Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grid G14 East site history and field investigation procedures is presented in subsection 2.29.

Soil samples were collected from one interval at a single location in the Grid G14 East area and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrates/nitrites; and tritium. The validated analytical results for all analytes detected above laboratory reporting limits are presented in Table III.32.

3.29.1. Volatile Organic Compounds

Dichloromethane and 4-methyl-2-pentanone were detected at concentrations of 0.015 mG/Kg and 0.044 mG/Kg, respectively. The concentrations of these constituents are significantly less than the respective PRGs for these compounds. Because of the low concentrations of these compounds, they are not considered to reflect a significant impact to site soil quality.

3.29.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits.

3.29.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits.

3.29.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Underground Sewer Lines Grid G14 East area at concentrations above PRGs or proposed action levels.

3.29.5. Explosives, Chloride, Nitrates, Nitrites, and Tritium

Explosives, chloride, nitrates, nitrites, and tritium were not detected above laboratory reporting limits in this sample.

3.29.6. Summary

The analytical results for the sample collected at Underground Sewer Lines Grid G14 East indicate that breaks in sewer line operations in this area have not adversely impacted soil quality. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grid G14 East area is recommended.

TABLE III.32
UNDERGROUND SEWER LINES GRID G14 EAST
Location: MND33-0013
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
4-METHYL-2-PENTANONE	0001	S	mG/Kg	0.011	0.015		1.4E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	.06	11600.	J	7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	.03	15.9	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.002	1.5	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.002	18.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.002	.83		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.002	2.5	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	.02	74200.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	.01	30.2		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	.01	16.8		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	.01	18.8		1.0E+04	I
DICHLOROMETHANE-METHYLENE CHLORIDE	0001	S	mG/Kg	0.005	0.044		8.5E+01	I
IRON, TOTAL	0001	S	mG/Kg	.01	27700.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.002	4.5	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	.05	17000.	J	NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.002	534.	J	2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	.02	32.8		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	.1	2230.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	.01	12.7	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	.1	200.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	.01	25.6		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.005	64.		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.30. UNDERGROUND SEWER LINES GRID G15

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

The sewer line in the Grid G15 area is located east of Building 98 and is constructed of vitrified clay pipe. Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grid G15 site history and field investigation is presented in subsection 2.30.

Five soil samples were collected from three locations in the Grid G15 area. One sample from location MND33-0106 was only analyzed for TCL VOCs. The remaining four samples were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrates/nitrites; and tritium. The validated analytical results for all analytes detected above laboratory reporting limits are presented in Table III.33.

3.30.1. Volatile Organic Compounds

VOCs were not present in concentrations above laboratory reporting limits in any of the samples analyzed from Grid G15.

3.30.2 Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed from Grid G15.

3.30.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.30.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Underground Sewer Lines Grid G15 area at concentrations above PRGs or proposed action levels.

3.30.5. Explosives, Chloride, Nitrates, Nitrites, and Tritium

Explosives were not detected in any soil samples collected from the Grid G15 area. Nitrate was detected above the laboratory reporting limit in samples MND33-0106-0001 and MND33-0116-0001 but was below the PRG. Low concentrations of chloride were present in each of the four samples analyzed for this parameter. There is not a PRG for chloride, but the low concentrations of chloride observed in some samples from the Grid G15 area are not considered to represent an impact to site soil quality. Tritium was not found in any of the soil samples analyzed at concentrations above laboratory reporting limits.

3.30.6. Summary

The analytical results for samples collected from the Underground Sewer Lines Grid G15 area indicate that sewer line operations in this area have not adversely impacted soil quality. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grid G15 area is recommended.

TABLE III.33
UNDERGROUND SEWER LINES GRID G15
Location: MND33-0106
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	4640.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	4420.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	33.	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	32.4	J	1.1E+02	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	3.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	22.6		1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	24.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.67	J	1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.65	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	6.1	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	5.9	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	108000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	106000.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	15.6		NA	I
CHLORIDE	1001	S	mG/Kg	.5	15.1		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.1	J	1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	25.4	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	8.6	J	3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.5	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	15.5	J	1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	16.5	J	1.0E+04	I
CYANIDE	0001	S	mG/Kg	.2	.31	J	5.4E+03	I
CYANIDE	1001	S	mG/Kg	.2	.29	J	5.4E+03	I
IRON, TOTAL	0001	S	mG/Kg	1.	10400.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	10600.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	6.	J	5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	5.2	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	47000.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	45000.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	195.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	227.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	23.8	J	5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	24.6	J	5.4E+03	I
NITRATE	0001	S	mG/Kg	.1	1.07		4.3E+05	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	765.		NA	I
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	755.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	16.6	J	1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.33
UNDERGROUND SEWER LINES GRID G15
Location: MND33-0106
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SILVER, TOTAL	1001	S	mG/Kg	1.	16.2	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	187.	J	NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	198.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.2	J	1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	24.4	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	37.9		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	34.	J	5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.33
UNDERGROUND SEWER LINES GRID G15
Location: MND33-0107
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	6540.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	19.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	1.	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	31.9		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.7		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.6	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	78900.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	7.9		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	26.2		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	11.2		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	17.3		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	16100.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	6.	J	5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	19500.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	377.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	25.1		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	691.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	13.9		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	123.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	24.2		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	40.4		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.33
UNDERGROUND SEWER LINES GRID G15
Location: MND33-0116
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	9820.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	12.8	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	3.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	15.7	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.86		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	130000.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	12.53		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	32.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	14.		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	23.6		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	22100.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	4.		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	10900.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	864.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.4		5.4E+03	I
NITRATE	0001	S	mG/Kg	.1	3.86	J	4.3E+05	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1720.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	17.1		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	184.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	25.9		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	43.3		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.31. UNDERGROUND SEWER LINES GRID G19/14

Sources of wastewater conveyed through the underground sewer lines included restrooms, showers, laundry facilities, laboratory sinks, and rinses from a small metal finishing operation. Some of the laboratory sinks reportedly received small amounts of solvents, photographic solutions, acids, and bases.

The sewer lines in the Grid G19/14 area are located between the sewage disposal building (Building 57) and the bunkers to the northeast. The lines are constructed of vitrified clay pipe. Soil sampling was conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines. A more detailed description of the Underground Sewer Lines Grid G19/14 site history and field investigation procedures is presented in subsection 2.31.

Four soil samples were collected from two locations and were analyzed for TCL VOCs, SVOCs, P/PCBs; TAL inorganics; explosives; chloride; nitrite/nitrate; and tritium. The validated analytical results for all analytes detected above the laboratory reporting limits are presented in Table III.34.

3.31.1. Volatile Organic Compounds

One soil sample, MND33-0117-0001, contained detectable concentrations of 2-butanone and 4-methyl-2-pentanone at concentrations of 0.021 mG/Kg and 0.013 mG/Kg, respectively. The concentrations of these compounds are substantially less than the respective PRGs. Because of the low concentrations, these compounds are not considered to reflect a significant impact to site soil quality.

3.31.2. Semivolatile Organic Compounds

SVOCs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.31.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in concentrations above laboratory reporting limits in any of the samples analyzed.

3.31.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Underground Sewer Lines Grid G19/14 area at concentrations above PRGs or proposed action levels.

3.31.5. Explosives, Chloride, Nitrates, Nitrites, Lithium, and Tritium

Explosives were not detected in any sample analyzed at concentrations above laboratory reporting limits. Chloride was detected at concentrations slightly above the laboratory reporting limit. Nitrate was detected in both samples from location MND33-0117 at levels below the PRG. Lithium was present at a concentration above the laboratory reporting limit in samples from location MND33-0134 but was below the PRG. Tritium was not detected in any soil sample at concentrations above laboratory reporting limits.

3.31.6. Summary

The analytical results for the samples collected from the Underground Sewer Lines Grid G19/14 area indicate that sewer line operations have not adversely impacted soil quality in the site vicinity. As a result of these findings, no further action involving site characterization or soil remediation at the Underground Sewer Lines Grid G19/14 area is recommended.

TABLE III.34
UNDERGROUND SEWER LINES GRID G19/14
Location: MND33-0117
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
2-BUTANONE	0001	S	mG/Kg	0.012	0.021		1.4E+04	I
4-METHYL-2-PENTANONE	0001	S	mG/Kg	0.012	0.013		1.4E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8730.		7.8E+05	I
ALUMINUM, TOTAL	1001	S	mG/Kg	6.	7360.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	14.7	J	1.1E+02	I
ANTIMONY, TOTAL	1001	S	mG/Kg	3.	21.	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.	J	2.1E+03	I
ARSENIC, TOTAL	1001	S	mG/Kg	.2	6.2	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	64.	J	1.9E+04	I
BARIUM, TOTAL	1001	S	mG/Kg	.2	55.4	J	1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.77		1.5E-01	I
BERYLLIUM	1001	S	mG/Kg	.2	.77		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	3.7	J	1.4E+02	I
CADMIUM, TOTAL	1001	S	mG/Kg	.2	5.6	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	40000.		NA	I
CALCIUM, TOTAL	1001	S	mG/Kg	2.	69300.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	109.7		NA	I
CHLORIDE	1001	S	mG/Kg	.5	106.09		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	22.7		1.4E+03	I
CHROMIUM, TOTAL	1001	S	mG/Kg	1.	24.7		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	12.1		3.9E+01	I
COBALT, TOTAL	1001	S	mG/Kg	1.	9.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	20.8		1.0E+04	I
COPPER, TOTAL	1001	S	mG/Kg	1.	19.1		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	1.	18200.		NA	I
IRON, TOTAL	1001	S	mG/Kg	1.	14000.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	11.4		5.3E+01	I
LEAD, TOTAL	1001	S	mG/Kg	.2	12.3		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	19100.		NA	I
MAGNESIUM, TOTAL	1001	S	mG/Kg	5.	35400.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	441.		2.7E+04	I
MANGANESE, TOTAL	1001	S	mG/Kg	.2	358.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.9		5.4E+03	I
NICKEL, TOTAL	1001	S	mG/Kg	2.	25.2		5.4E+03	I
NITRATE	0001	S	mG/Kg	.1	4.20	J	4.3E+05	I
NITRATE	1001	S	mG/Kg	.1	3.35	J	4.3E+05	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	892.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.34
UNDERGROUND SEWER LINES GRID G19/14
Location: MND33-0117
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
POTASSIUM, TOTAL	1001	S	mG/Kg	10.	837.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	1.	9.6		1.4E+03	I
SILVER, TOTAL	1001	S	mG/Kg	1.	13.3		1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	345.		NA	I
SODIUM, TOTAL	1001	S	mG/Kg	10.	333.		NA	I
THALLIUM, TOTAL	0001	S	mG/Kg	.2	.55	J	NA	I
THALLIUM, TOTAL	1001	S	mG/Kg	.2	.6	J	NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	27.9		1.9E+03	I
VANADIUM, TOTAL	1001	S	mG/Kg	1.	27.5		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	50.		5.4E+04	I
ZINC, TOTAL	1001	S	mG/Kg	.5	40.5		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.34
UNDERGROUND SEWER LINES GRID G19/14
Location: MND33-0134
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	8780.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	13200.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	6.	11.7	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	6.	8.0	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.4	11.8		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	10.7		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.4	65.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	106.		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.4	.75		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.4	.84		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.4	3.6		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.4	3.6		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	4.	20400.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	4990.		NA	I
CHLORIDE	0001	S	mG/Kg	.5	71.66		NA	I
CHLORIDE	0002	S	mG/Kg	.5	27.27		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	2.	20.3		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	21.2		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	11.5		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	15.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	2.	20.6		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	2.	18.6		1.0E+04	I
IRON, TOTAL	0001	S	mG/Kg	2.	16500.		NA	I
IRON, TOTAL	0002	S	mG/Kg	2.	24300.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.4	22.7		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.4	14.1		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	.2	10.7		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	.2	12.7		5.4E+03	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	10.	10400.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	4830.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.4	520.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	333.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	4.	31.1		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	41.1		5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	20.	1290.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	978.		NA	I
SILVER, TOTAL	0001	S	mG/Kg	2.	6.4	J	1.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
J - The associated value is an estimated quantity
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

TABLE III.34
UNDERGROUND SEWER LINES GRID G19/14
Location: MND33-0134
Summary of analytical data
for analyte concentrations
above reporting limits
Report Date: 03/05/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
SODIUM, TOTAL	0001	S	mG/Kg	20.	128.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	354.		NA	I
VANADIUM, TOTAL	0001	S	mG/Kg	2.	26.4		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	34.7		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	1.	68.		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	1.	69.9		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
I - Initial Analysis
S - Soil
mG/Kg - Milligrams per Kilogram
(1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

3.32 UNDERGROUND SEWER LINES GRID G24

Sewer lines in the Grid G24 area are located in a sharply sloped area north of the WD building on the Mound Plant Main Hill. The lines are constructed of vitrified clay pipe and PVC. Soil sampling was to be conducted in this area to assess whether breaks in the sewer lines have impacted soils in the vicinity of the sewer lines, but soil samples could not be collected at this site because of auger and split spoon refusal, the steepness of the topography, and the location of underground utility lines. A more detailed description of the Underground Sewer Lines Grid G24 site history and attempted field investigation procedures is presented in subsection 2.32. Further investigation of soil quality at the Grid G24 area may be accomplished using alternative investigative techniques. The Grid G24 sewer lines contain or have contained materials similar to or identical to other OU 3 LFI sewer lines, and the nature of reported structural deficiencies in the Grid G24 sewer line would be similar to other OU 3 LFI sewer lines. Investigative results indicate that soil quality has not been impacted at the OU 3 LFI sewer line grids as a result of previous activities. Based upon these conditions, it is reasonable to assume that soils have not been impacted by site activities at the Grid G24 sewer lines and that further investigative activities would not be necessary.

4. QUALITY ASSURANCE AND QUALITY CONTROL SUMMARY

4.1. QUALITY ASSURANCE PROGRAM

The quality assurance (QA) program for the OU 3 LFI was outlined in the OU 3 LFI Quality Assurance Project Plan (QAPP)(DOE 1991d) and was approved by EPA Region V in October 1991. The QAPP provided procedures for ensuring that data collected is of a specified quality for its intended use. Those procedures are the following:

- Project organization and responsibilities;
- QA objectives in terms of precision, accuracy, completeness, representativeness, and comparability;
- sampling procedures;
- sample custody;
- analytical procedures;
- calibration procedures;
- internal quality control checks (QCCs);
- data reduction, validation, and reporting;
- performance and system audits;
- preventive maintenance;
- routine procedures for assessing data quality;
- corrective action; and
- QA reports to management.

Each of these procedures was implemented as appropriate to the field or project activity. Only portions of these procedures directly affect data quality. Certain conditions arose during field activities where modifications or deviations to specific procedures occurred. The following subsections discuss these modifications and any effect on the data collected.

4.1.1. Project Organization and Responsibility

No modifications were made to designated project organization and responsibilities described in section 2 of the OU 3 QAPP.

4.1.2. Quality Assurance Objectives in Terms of Precision, Accuracy, Completeness, Representativeness, and Comparability

Precision and Accuracy

QA objectives in terms of accuracy and precision were outlined in the QAPP as acceptance criteria for laboratory and field QCCs performed. The data validation performed on laboratory data described in subsection 4.2. summarizes the degree to which acceptance criteria for laboratory QCCs were met and how data quality was affected.

Completeness

Completeness in terms of sample collection, field measurements, and laboratory analyses was determined by the formulas described in the QAPP. The completeness for each of these parameters is presented in Table IV.1.

Laboratory completeness was calculated for each analysis by dividing the number of results identified as usable by the total number of results. Laboratory analysis completeness ranged between 90% to 100% with an average of 97%, except for selenium, copper, 3-nitroaniline, and N-nitroso-di-n-propylamine, which had percent completeness of 38%, 84%, 86%, and 86%, respectively. The specific reasons for the lower completeness results for these analytes is explained in subsection 4.2.2 (SVOCs) and subsection 4.2.7 (metals). Primarily laboratory QC results for several of these analyte results indicated that the data were not usable.

Representativeness

The representativeness of the data collected from the sampling sites is dependent on the sampling and analytical procedures used to determine the concentration of site contaminants. The sampling and analytical procedures were implemented as described in sections 4, 5, and 6 in the QAPP, except as noted in section 2.

Comparability

Procedures for data collection and analysis have been identified and documented for the OU 3 LFI. Since there are no historical data for this investigation, data comparability is not impacted.

Table IV.1. Percent Completeness of Laboratory Analyses – OU 3 LFIR

Analysis	Percent Completion[a]
TCL Volatile Organic Compounds[b]	98.6%
TCL Pesticide/PCBs	99.3%
Lindane	98.9%
4,4'–DDT	98.9%
Dieldrin	98.9%
TCL Semivolatile Organic Compounds[b]	96.7%
Acid fraction	95.9%
N–nitroso–di–n–propylamine	85.9%
bis(2–chloroisopropyl)ether	93.7%
4–nitroaniline	95.9%
3–nitroaniline	86.3%
Benzoic acid	93.7%
Explosives	100%
Extractable Petroleum Hydrocarbons	100%
Dioxin/Furans	100%
TAL Metals, chloride, nitrate/nitrite[b]	100%
Antimony	78.7%
Arsenic	96.8%
Beryllium	92.9%
Cobalt	91.8%
Copper	84.4%
Cyanide	98.9%
Iron	95.0%
Lead	92.2%
Manganese	90.8%
Mercury	99.6%
Selenium	37.6%
Tritium	100%
Gamma Spectroscopy	100%

[a]The percentage of usable data compared to all data collected.
[b]With the exceptions of the specific analytes listed below.
TAL – Target Analyte List
TCL – Target Compound List

4.1.3. Sampling Procedures

Sample collection objectives were implemented as described in the OU 3 LFI QAPP, section 4, through a system of standard operating procedures identified in the QAPP.

4.1.4. Sample Custody

Sample custody was maintained for each sample as described in the OU 3 LFI QAPP, section 5. Exceptions to the QAPP procedures were noted in nonconformance reports and corrective action was taken.

4.1.5. Analytical Procedures

The analytical procedures used to evaluate the concentration of contaminants present in the soil samples were implemented as described in the OU 3 LFI QAPP, section 6. Gamma spectroscopy was added to the analyte list after formal OU 3 QAPP approval. The method was performed by the OU 9 Investigation-approved gamma spectroscopy method. Chloride was analyzed by EPA method 325.1 instead of SW-9250. The reported detection limit and procedures for EPA method 325.1 and SW-9250 are very similar and method 325.1 is an approved method in the OU 9 QAPP, therefore use of method 325.1 does not affect data usability. Other exceptions to the prescribed procedures were documented in the data validation reports, and if there was an impact on data usability, are summarized in subsection 4.2.

4.1.6. Calibration Procedures

Calibration procedures are described in section 7 of the OU 3 LFI QAPP. Exceptions to the field calibration procedures and the impact on the usability of the data are noted in subsection 4.2. Exceptions to analytical calibration procedures and the impact on the usability of the data are summarized from the validation reports and are presented in subsection 4.2.

4.1.7. Internal Quality Control Checks

Internal QCCs were implemented as described in the OU 3 LFI QAPP, section 8.

4.1.8. Data Reduction, Validation, and Reporting

Data Reduction

The implementation of laboratory data reduction procedures cannot be verified without a performance audit. However, the data validation performed would indicate potential problems in reduction and those which potentially impact data usability and are discussed in subsection 4.2. Field data reduction procedures were implemented as required.

Data Validation

The laboratory validation procedures cannot be verified without a performance audit. However, the data validation performed would indicate potential problems in reduction and those which potentially impact data usability and are discussed in subsection 4.2. Data validation was performed according to the procedures described in the OU 3 LFI QAPP. The results of data validation are summarized in subsection 4.2.

Data Reporting

The laboratory reported the data as described in section 9 of the OU 3 LFI QAPP. Field data reporting was also performed according to procedures described in the OU 3 LFI QAPP.

4.1.9. Performance and System Audits

A laboratory systems survey was conducted as described in the OU 3 LFI QAPP, section 10, prior to submitting samples to the laboratories in order to evaluate the ability of the laboratories to carry out the QAPP requirements.

The results of the laboratory systems survey indicated that the laboratories were acceptable for conducting OU 3 analyses. Findings and observations were noted by reviewer, and were resolved with the particular laboratories prior to conducting analyses.

4.1.10. Preventive Maintenance

Preventive maintenance on the field equipment was performed as described in section 11 of the OU 3 LFI QAPP. The laboratory's preventive maintenance program was verified as adequate in the system survey.

4.1.11. Routine Procedures for Assessing Data Quality

Data quality was assessed as described in the OU 3 LFI QAPP, section 12. The results of the data assessment are presented in subsection 4.2.

4.1.12. Corrective Actions

Project nonconformances and variances to the OU 3 QAPP Work Plan were noted on nonconformance reports. Corrective actions were implemented as described in the QAPP. Nonconformances to laboratory analyses were documented in the data validation reports. Implemented laboratory corrective actions were discussed in the case narratives. If a nonconformance affected the usability of the sample data, the impact is discussed in subsection 4.2.

4.1.13. QA Reports to Management

All requirements for QA reports to management as detailed in the OU 3 LFI QAPP, section 14, were performed for the OU 3 LFI.

4.2. DATA QUALITY ASSESSMENT OF ANALYTICAL DATA

Laboratory data packages were validated according to the procedures specified in the OU 3 QAPP. Data validation is performed in order to assess the results of laboratory analyses for their accuracy by performing data validation. Data validation consists of evaluating the raw data, calibration results, and associated QC samples, in addition to checking the calculations performed by the laboratory to arrive at the sample results. Data validation will indicate whether there are significant errors or bias in the analytical results.

Results of laboratory analyses for the OU 3 LFI were validated using EPA's functional guidelines (EPA 1988a and 1988c) for Contract Laboratory Program (CLP) analyses. Results from non-CLP analyses were validated in a manner analogous to the EPA guidelines. Results from radiological analyses (tritium and gamma spectroscopy) were validated with evaluation of the parameters listed in subsections 4.2.9. and 4.2.10.

The validation process for the LFI data resulted in the qualification of several analytical results that did not meet specified QC parameters. The qualifiers applied are the following:

- J - Associated value is an estimated quantity;
- U - Analyte not detected above the associated quantity;

- R - Value is unusable; analyte may or may not be present; and
- UJ - Analyte not detected above the associated quantity; associated value is an estimate and may be inaccurate or imprecise.

The following subsections evaluate how these qualified data have impacted the usability of the analytical results. It should be noted the majority of the validated data was found to be usable for this investigation as summarized in Table IV.1. Only a small percentage of all analytes were rejected due to poor performance of quality control checks also summarized in Table IV.1. The relative poor completeness for the individual analytes in Table IV.1 represent only a small fraction of their target compound lists. A cross reference of laboratory batch numbers to sample identification numbers for use in the following discussion is provided in Table IV.2.

4.2.1. Volatile Organic Compounds (CLP SOW Method)

Five types of QCCs did not meet the criteria specified in the QAPP, and resulted in qualified results for VOCs. QCCs which did not result in qualification of the data are method blanks, equipment blanks, internal standards, field duplicate, and calibration. A summary of the qualifications and their impact on data usability is presented in Table IV.3.

Common laboratory contaminants such as methylene chloride, acetone, 2-butanone, and toluene were reported in method blanks at concentrations ranging from 1.0 μg/Kg to 29.0 μg/Kg. Sample results associated with these method blanks with reported contaminants at concentrations under 10 times the method blank were qualified by the data validators as U. This qualification associates the sample results to laboratory contamination, and essentially raises the detection limit at which these compounds can be reported with any certainty. The highest reported concentration from laboratory contamination was 29.0 μg/Kg (toluene, laboratory batch REA37152), which is significantly below any action level for these compounds. The data qualifications due to method blank contamination do not impact the comparison of action levels to the VOC results.

Other contaminants reported in several of the method blanks were chloroform, 1,2-dichloroethane, 1,1,1-TCA, 4-methyl-2-pentanone, 2-hexanone, acetonitrile, styrene, ethylbenzene, and xylenes. Concentrations for these method blank contaminants ranged from 1.0 μg/Kg to 15.0 μg/Kg. Associated sample results with reported contaminants at concentrations under five times the method blank were qualified as U. The U qualification essentially raised the effective detection limit for the compounds in the associated samples. For compounds with action limits, the maximum extent of positive bias does not impact the comparison of the sample results to the action limits; therefore the data are considered usable.

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA36796	MND33-0001-0001	
REA36796	MND33-0001-0011	D
REA36796	MND33-0002-0001	
REA36804	MND33-0006-0001	
REA36804	MND33-0006-0002	
REA36804	MND33-0006-0003	
REA36809	MND33-0009-0001	
REA36809	MND33-0009-0002	
REA36809	MND33-0009-0003	
REA36816	MND33-0010-0001	
REA36816	MND33-0010-0002	
REA36816	MND33-0010-0003	
REA36816	MND33-0010-0005	
REA36816	MND33-0010-0006	
REA36822	MND33-0011-0001	
REA36822	MND33-0011-0002	
REA36822	MND33-0011-1001	D
REA36822	MND33-0012-0001	
REA36822	MND33-0013-0001	
REA36822	MND33-0014-0001	
REA36822	MND33-0014-0002	
REA36827	MND33-0015-0001	
REA36827	MND33-0015-0002	
REA36827	MND33-0015-0003	
REA36827	MND33-0015-0003	MS/MSD
REA36842	MND33-0001-0002	
REA36842	MND33-0001-0003	
REA36842	MND33-0001-1002	
REA36842	MND33-0002-0002	
REA36842	MND33-0002-0003	
REA37051	MND33-0016-0001	
REA37051	MND33-0017-0001	
REA37051	MND33-0018-0001	
REA37051	MND33-0019-0001	
REA37051	MND33-0019-1001	D
REA37051	MND33-0020-0001	
REA37051	MND33-0021-0001	
REA37051	MND33-0022-0001	
REA37051	MND33-0023-0001	
REA37051	MND33-0023-1001	MS/MSD
REA37051	MND33-0024-0001	
REA37123	MND33-0025-0001	
REA37123	MND33-0025-1001	D
REA37123	MND33-0026-0001	
REA37123	MND33-0027-0001	
REA37123	MND33-0028-0001	
REA37123	MND33-0029-0001	
REA37123	MND33-0030-0001	

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA37123	MND33-0031-0001	
REA37123	MND33-0031-1001	D
REA37123	MND33-0032-0001	
REA37124	MND33-0033-0001	
REA37124	MND33-0034-0001	MS/MSD
REA37124	MND33-0034-0001	
REA37124	MND33-0035-0001	
REA37124	MND33-0036-0001	
REA37124	MND33-0037-0001	
REA37124	MND33-0037-1001	D
REA37124	MND33-0038-0001	
REA37124	MND33-0039-0001	
REA37124	MND33-0040-0001	
REA37128	MND33-0041-0001	
REA37128	MND33-0042-0001	
REA37128	MND33-0043-0001	
REA37128	MND33-0043-1001	D
REA37128	MND33-0044-0001	
REA37128	MND33-0045-0001	
REA37128	MND33-0046-0001	
REA37128	MND33-0046-0001	MS/MSD
REA37128	MND33-0047-0001	
REA37133	MND33-0048-0001	
REA37133	MND33-0048-0002	
REA37133	MND33-0049-0001	
REA37133	MND33-0049-1001	D
REA37133	MND33-0050-0001	
REA37133	MND33-0050-0001	MS/MSD
REA37140	MND33-0051-0001	
REA37140	MND33-0051-0002	
REA37140	MND33-0051-0003	
REA37140	MND33-0051-0004	
REA37140	MND33-0051-1003	D
REA37144	MND33-0052-0001	
REA37144	MND33-0052-0002	
REA37144	MND33-0052-1001	D
REA37145	MND33-0052-0003	
REA37145	MND33-0052-0003	MS/MSD
REA37145	MND33-0053-0001	
REA37145	MND33-0053-0002	
REA37145	MND33-0053-0003	
REA37145	MND33-0053-0004	
REA37148	MND33-0054-0001	
REA37148	MND33-0054-0002	
REA37148	MND33-0054-0003	
REA37149	MND33-0054-0004	
REA37149	MND33-0055-0001	
REA37149	MND33-0055-0002	MS/MSD

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA37149	MND33-0055-0002	
REA37149	MND33-0055-0003	
REA37149	MND33-0055-0004	
REA37149	MND33-0055-1004	D
REA37151	MND33-0056-0001	
REA37151	MND33-0056-0002	
REA37151	MND33-0056-0003	
REA37151	MND33-0057-0001	
REA37152	MND33-0057-0002	
REA37152	MND33-0057-0003	
REA37152	MND33-0058-0001	
REA37152	MND33-0058-1001	D
REA37152	MND33-0059-0001	
REA37157	MND33-0058-0002	
REA37157	MND33-0058-0003	
REA37163	MND33-0059-0002	
REA37163	MND33-0059-0003	
REA37163	MND33-0059-0003	MS/MSD
REA37164	MND33-0060-0001	
REA37164	MND33-0062-0001	
REA37164	MND33-0062-0002	
REA37164	MND33-0062-0003	
REA37164	MND33-0062-1001	D
REA37164	MND33-0062-1002	D
REA37165	MND33-0063-0001	
REA37165	MND33-0063-0001	MS/MSD
REA37166	MND33-0064-0001	
REA37166	MND33-0064-0001	
REA37169	MND33-0068-0001	
REA37169	MND33-0068-0001	
REA37169	MND33-0069-0001	
REA37169	MND33-0069-0002	
REA37169	MND33-0069-0003	
REA37169	MND33-0069-1001	D
REA37172	MND33-0070-0001	
REA37172	MND33-0070-0001	MS/MSD
REA37172	MND33-0070-0002	
REA37172	MND33-0070-0003	
REA37172	MND33-0070-1002	D
REA37181	MND33-0071-0001	
REA37181	MND33-0071-0002	
REA37181	MND33-0072-0001	
REA37181	MND33-0072-0002	
REA37181	MND33-0072-1002	D
REA37181	MND33-0072-4002	EB
REA37185	MND33-0073-0001	
REA37187	MND33-0074-0001	
REA37189	MND33-0075-0001	

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA37189	MND33-0075-0001	MS/MSD
REA37189	MND33-0076-0001	
REA37189	MND33-0076-0002	
REA37190	MND33-0077-0001	
REA37190	MND33-0077-0002	
REA37190	MND33-0077-0003	
REA37190	MND33-0077-1002	D
REA37190	MND33-0078-0001	
REA37190	MND33-0078-0002	
REA37193	MND33-0079-0001	
REA37193	MND33-0079-0002	
REA37194	MND33-0080-0001	
REA37194	MND33-0081-0001	MS/MSD
REA37194	MND33-0081-0001	MS/MSD
REA37194	MND33-0081-0001	
REA37208	MND33-0034-0002	
REA37208	MND33-0039-0002	
REA37222	MND33-0061-0001	
REA37222	MND33-0081-0001	
REA37222	MND33-0081-1001	D
REA37222	MND33-0082-0001	
REA37222	MND33-0083-0001	
REA37222	MND33-0084-0001	MS/MSD
REA37222	MND33-0084-0001	
REA37222	MND33-0085-0001	
REA37222	MND33-0085-0002	
REA37229	MND33-0086-0001	
REA37229	MND33-0086-4001	EB
REA37230	MND33-0087-0001	
REA37230	MND33-0088-0001	
REA37230	MND33-0089-0001	
REA37230	MND33-0090-0001	
REA37230	MND33-0090-1001	D
REA37230	MND33-0091-0001	
REA37230	MND33-0091-0002	
REA37230	MND33-0092-0001	
REA37230	MND33-0092-0001	MS/MSD
REA37230	MND33-0093-0001	
REA37230	MND33-0094-0001	
REA37230	MND33-0094-0002	
REA37230	MND33-0094-1001	D
REA37234	MND33-0095-0001	
REA37234	MND33-0095-4001	EB
REA37234	MND33-0096-0001	
REA37234	MND33-0097-0001	
REA37234	MND33-0097-1001	D
REA37234	MND33-0098-0001	
REA37234	MND33-0098-0002	
REA37280	MND33-0101-0002	

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA37281	MND33-0102-0001	
REA37281	MND33-0102-0002	
REA37281	MND33-0102-1001	D
REA37281	MND33-0103-0001	
REA37281	MND33-0103-0001	MS/MSD
REA37281	MND33-0103-0002	
REA37281	MND33-0104-0001	
REA37281	MND33-0104-0002	
REA37281	MND33-0104-1002	D
REA37283	MND33-0101-0001	
REA37283	MND33-0101-0003	
REA37284	MND33-0106-0001	
REA37284	MND33-0106-1001	D
REA37284	MND33-0107-0001	
REA37284	MND33-0107-0001	MS/MSD
REA37284	MND33-0107-0001	
REA37286	MND33-0107-4001	EB
REA37288	MND33-0105-0001	
REA37288	MND33-0105-0002	
REA37288	MND33-0105-0003	
REA37288	MND33-0105-1003	D
REA37288	MND33-0109-0002	MS/MSD
REA37288	MND33-0109-0002	
REA37291	MND33-0110-0001	
REA37291	MND33-0110-0002	
REA37291	MND33-0110-0003	
REA37291	MND33-0110-1002	D
REA37295	MND33-0111-0001	
REA37295	MND33-0111-0001	MS/MSD
REA37295	MND33-0111-0002	
REA37295	MND33-0111-0003	
REA37295	MND33-0112-0001	
REA37295	MND33-0112-0002	
REA37295	MND33-0112-0003	
REA37295	MND33-0112-0003	MS/MSD
REA37295	MND33-0112-1001	D
REA37304	MND33-0112-4003	EB
REA37305	MND33-0113-0001	
REA37305	MND33-0113-0002	
REA37305	MND33-0113-0003	
REA37305	MND33-0114-0001	
REA37305	MND33-0114-0002	
REA37305	MND33-0114-0002	MS/MSD
REA37305	MND33-0114-1001	D
REA37305	MND33-0115-0001	
REA37305	MND33-0115-0002	
REA37305	MND33-0115-0002	
REA37305	MND33-0115-4002	EB

Table IV.2. Cross Reference of Laboratory Batch Numbers to Sample Identification Numbers

Laboratory Batch Identification	Sample Identification	Sample Type
REA37307	MND33-0116-0001	
REA37307	MND33-0117-0001	
REA37307	MND33-0117-1001	D
REA37322	MND33-0130-0001	
REA37322	MND33-0130-1001	D
REA37331	MND33-0131-0001	
REA37331	MND33-0131-0002	
REA37331	MND33-0131-0003	
REA37332	MND33-0132-0001	
REA37332	MND33-0132-0002	
REA37332	MND33-0132-0002	MS/MSD
REA37332	MND33-0132-0003	
REA37332	MND33-0133-0001	
REA37332	MND33-0133-0002	
REA37332	MND33-0133-0003	
REA37332	MND33-0133-1001	D
REA37336	MND33-0134-0001	
REA37336	MND33-0134-0002	
REA37336	MND33-0135-0001	
REA37336	MND33-0135-0002	
REA37339	MND33-0136-0001	
REA37339	MND33-0136-0001	MS/MSD
REA37339	MND33-0136-0002	
REA37339	MND33-0136-4001	EB
REA37341	MND33-0139-0001	
REA37341	MND33-0139-1001	D
REA37341	MND33-0139-1001	D
REA37341	MND33-0140-0001	
REA37341	MND33-0141-0001	
REA37349	MND33-1140-0001	
REA37349	MND33-1140-1001	D
REA37349	MND33-1141-0001	
REA37349	MND33-1141-4001	EB
REA37349	MND33-1142-0001	
REA37349	MND33-1142-0001	MS
REA37349	MND33-1142-0001	MSD
REA37349	MND33-1142-0001	
REA37349	MND33-1142-1001	D

D – Duplicate
EB – Equipment Blank
MS/MSD – Matrix Spike/Matrix Spike Duplicate

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA36804	MND33-0006-0001	U	MB	None
REA36804	MND33-0006-0001	J	CC	None
REA36804	MND33-0006-0002	U	MB	None
REA36804	MND33-0006-0002	J	IC, CC	None
REA36804	MND33-0006-0003	U	MB	None
REA36804	MND33-0006-0003	J	IC, CC	None
REA36804	MND33-0006-0003	R	IC, CC	Not valid for intended use
REA36804	MND33-0007-0001	U	MB	None
REA36804	MND33-0007-0001	J	IC, CC	None
REA36804	MND33-0007-0001	R	IC, CC	Not valid for intended use
REA36809	MND33-0009-0001	U	MB	None
REA36809	MND33-0009-0001	J	IC, CC	None
REA36809	MND33-0009-0001	R	IC, CC	Not valid for intended use
REA36809	MND33-0009-0002	U	MB	None
REA36809	MND33-0009-0002	J	IC, CC	None
REA36809	MND33-0009-0002	R	IC, CC	Not valid for intended use
REA36809	MND33-0009-0003	U	MB	None
REA36809	MND33-0009-0003	J	IC, CC	None
REA36816	MND33-0010-0001	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0002	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0003	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0004	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0005	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0006	U, UJ	IS, CC	None[g]
REA36816	MND33-0010-0006	R	IS, CC	Reject for 2-butanone
REA36816	MND33-0010-0001	U, UJ	IS, CC	None[g]
REA36822	MND33-0011-0001	U	MB, IC, CC	None
REA36822	MND33-0011-1001	U	MB, IC, CC	None
REA36822	MND33-0011-0002	U	MB, IC, CC	None
REA36822	MND33-0011-5001	U	MB, IC, CC	None
REA36822	MND33-0012-0001	U	MB, IC, CC	None
REA36822	MND33-0013-0001	U	MB, IC, CC	None
REA36822	MND33-0014-0001	U	MB, IC, CC	None
REA36822	MND33-0014-0002	U	MB, IC, CC	None
REA36827	MND33-0015-0001	U	MB, CC	None
REA36827	MND33-0015-0001	U	MB, CC	None
REA36827	MND33-0015-0001	U	MB, CC	None
REA36842	MND33-0001-0002	U	MB	None
REA36842	MND33-0001-1002	U	MB	None
REA36842	MND33-0001-0003	J	IC, CC	None[b]
REA36842	MND33-0002-0002	R	IC, CC	Rejected for 2-butanone
REA36842	MND33-0002-0002	UJ	IC, CC	None[b]
REA36842	MND33-0002-0002	U	MB	None
REA36842	MND33-0002-0003	R	IC, CC	Rejected for 2-butanone
REA36842	MND33-0002-0003	UJ	IC, CC	None[b]
REA36842	MND33-0002-0003	U	MB	None
REA36842	MND33-0001-3003	U	MB	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37051	MND33-0016-0001	U	MB, CC	None
REA37051	MND33-0017-0001	U	MB, CC	None
REA37051	MND33-0018-0001	U	MB, CC	None
REA37051	MND33-0019-0001	U	MB, CC	None
REA37051	MND33-0019-1001	U	MB, CC	None
REA37051	MND33-0020-0001	U	MB, CC	None
REA37051	MND33-0021-0001	U	MB, CC	None
REA37051	MND33-0022-0001	U	MB, CC	None
REA37051	MND33-0023-0001	U	MB, CC	None
REA37051	MND33-0023-1001	UJ	MB, CC	None
REA37051	MND33-0024-0001	U	MB, CC	None
REA37051	MND33-0024-5001	U	MB, CC	None
REA37051	MND33-0016-5001	U	MB, CC	None
REA37123	MND33-0025-0001	U	MB	None
REA37123	MND33-0025-0001	UJ	CC	None
REA37123	MND33-0025-1001	U	MB	None
REA37123	MND33-0025-1001	UJ	CC	None
REA37123	MND33-0026-0001	U	MB	None
REA37123	MND33-0026-0001	UJ	CC	None
REA37123	MND33-0027-0001	U	MB	None
REA37123	MND33-0028-0001	U	MB	None
REA37123	MND33-0029-0001	U	MB	None
REA37123	MND33-0029-0001	UJ	CC	None
REA37123	MND33-0030-0001	U	MB	None
REA37123	MND33-0030-0001	UJ	CC	None
REA37123	MND33-0031-0001	U	MB	None
REA37123	MND33-0031-1001	U	MB	None
REA37123	MND33-0031-5001	U	MB	None
REA37123	MND33-0032-0001	U	MB	None
REA37124	MND33-0033-0001	U	MB	None
REA37124	MND33-0034-0001	U	MB	None
REA37124	MND33-0035-0001	U	MB	None
REA37124	MND33-0036-0001	U	MB	None
REA37124	MND33-0036-0001	UJ	CC	None
REA37124	MND33-0037-0001	U	MB	None
REA37124	MND33-0037-0001	J	CC	None
REA37124	MND33-0037-1001	U	MB	None
REA37124	MND33-0037-1001	J	CC	None
REA37124	MND33-0038-0001	U	MB	None
REA37124	MND33-0039-0001	U	MB	None
REA37124	MND33-0040-0001	U	MB	None
REA37128	MND33-0041-0001	J	CC	None
REA37128	MND33-0041-0001	U	MB	None
REA37128	MND33-0042-0001	J	CC	None
REA37128	MND33-0042-0001	U	MB	None
REA37128	MND33-0043-0001	J	CC	None
REA37128	MND33-0043-0001	U	MB	None
REA37128	MND33-0043-1001	J	CC	None
REA37128	MND33-0043-1001	U	MB	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37128	MND33-0044-0001	J	CC	None
REA37128	MND33-0044-0001	U	MB	None
REA37128	MND33-0045-0001	J	CC	None
REA37128	MND33-0045-0001	U	MB	None
REA37128	MND33-0046-0001	J	CC	None
REA37128	MND33-0046-0001	U	MB	None
REA37128	MND33-0047-0001	J	CC	None
REA37128	MND33-0047-0001	U	MB	None
REA37128	MND33-0046-5001	J	CC	None
REA37128	MND33-0046-5001	U	MB	None
REA37133	MND33-0048-0001	U, UJ	IS	None[b]
REA37133	MND33-0048-0002	U, UJ	IS	None[b]
REA37133	MND33-0049-0001	U, UJ	IS	None[b]
REA37133	MND33-0049-1001	U, UJ	IS	None[b]
REA37133	MND33-0050-0001	U, UJ	IS	None[b]
REA37133	MND33-0050-5001	U, UJ	IS	None[b]
REA37140	MND33-0051-0002	J	CC	None
REA37140	MND33-0051-0003	J	CC	None
REA37140	MND33-0051-1003	J	CC	None
REA37140	MND33-0051-0004	J	CC	None
REA37144	MND33-0052-0001	J	CC	None
REA37144	MND33-0052-1001	J	CC	None
REA37145	MND33-0052-0003	U	MB, TB	None
REA37145	MND33-0052-0003	UJ	CC	None
REA37145	MND33-0053-0001	U	MB, TB	None
REA37145	MND33-0053-0001	UJ	CC	None
REA37145	MND33-0053-0002	U	MB, TB	None
REA37145	MND33-0053-0002	UJ	CC	None
REA37145	MND33-0053-0003	U	MB, TB	None
REA37145	MND33-0053-0003	UJ	CC	None
REA37145	MND33-0053-0004	U	MB, TB	None
REA37145	MND33-0053-0004	UJ	CC	None
REA37148	MND33-0054-0001	UJ, J	CC	None
REA37148	MND33-0054-0002	UJ	CC	None
REA37148	MND33-0054-0003	UJ	CC	None
REA37149	MND33-0054-0004	U	TB	None
REA37149	MND33-0055-0001	U	TB	None
REA37149	MND33-0055-0002	U	TB	None
REA37149	MND33-0055-0003	U	TB	None
REA37149	MND33-0055-0004	U	TB	None
REA37149	MND33-0055-1004	U	TB	None
REA37149	MND33-0055-5001	J	CC	None
REA37151	MND33-0056-0001	J	CC	None
REA37151	MND33-0056-0002	J	CC	None
REA37151	MND33-0056-0003	J, UJ	CC	None
REA37152	MND33-0057-0002	UJ, U, J	CC	None
REA37152	MND33-0057-0003	UJ, U, J	CC	None
REA37152	MND33-0057-5002	UJ, J	CC	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37157	MND33-0058-0002	J	CC	None
REA37157	MND33-0058-0003	J	CC	None
REA37163	MND33-0059-0002	U	MB, CC	None[c]
REA37163	MND33-0059-0003	U	MB, CC	None[c]
REA37164	MND33-0060-0001	U	MB, CC	None
REA37164	MND33-0062-0001	U	MB, CC	None
REA37164	MND33-0062-1001	U	MB, CC	None
REA37164	MND33-0062-0002	U	MB, CC	None
REA37164	MND33-0062-1002	U	MB, CC	None
REA37164	MND33-0062-0003	U	MB, CC	None
REA37164	MND33-0062-5001	U	MB, CC	None
REA37165	MND33-0063-5001	UJ, J	CC	None
REA37165	MND33-0063-5001	U	MB	None
REA37165	MND33-0063-0001	UJ, J	CC	None
REA37165	MND33-0063-0001	U	MB	None
REA37166	MND33-0064-0001	U	MB, CC	None
REA37166	MND33-0065-0001	U	MB, CC	None
REA37169	MND33-0067-0001	U	MB, IC	None
REA37169	MND33-0068-0001	U	MB, IC	None
REA37169	MND33-0069-0001	U	MB, IC	None
REA37169	MND33-0069-1001	U	MB, IC	None
REA37169	MND33-0069-0002	U	MB, IC	None
REA37169	MND33-0069-0003	U	MB, IC	None
REA37169	MND33-0068-5001	U	MB, IC	None
REA37172	MND33-0070-0001	U	MB, IC, CC	None
REA37172	MND33-0070-0002	U	MB	None
REA37172	MND33-0070-0002	J	IC, CC	None
REA37172	MND33-0070-0003	U	MB, IC, CC	None
REA37172	MND33-0070-1002	U	MB, IC, CC	None
REA37181	MND33-0071-0002	U	MB, IC, CC	None[d]
REA37181	MND33-0072-0002	U	MB, IC, CC	None[d]
REA37181	MND33-0072-1002	U	MB, IC, CC	None[d]
REA37181	MND33-0072-4002	U	MB, IC, CC	None[d]
REA37189	MND33-0076-0002	U	MB, IC, CC	None
REA37189	MND33-0076-0002	U	MB, IC, CC	None
REA37190	MND33-0077-0002	U	MB, IC, CC	None
REA37190	MND33-0077-0003	U	MB, IC, CC	None
REA37190	MND33-0078-0002	U	MB, IC, CC	None
REA37190	MND33-0078-0002	U	MB, IC, CC	None
REA37193	MND33-0079-0002	U	MB, IC, CC	None
REA37194	MND33-0080-0001	U	MB, IC, CC	None
REA37194	MND33-0081-0001	U	MB, IC, CC	None
REA37203	MND33-0035-0002	U	MB, IC	None
REA37203	MND33-0040-0002	U	MB, IC	None
REA37203	MND33-0040-1002	U	MB, IC	None
REA37203	MND33-0043-0002	U	MB, IC	None
REA37203	MND33-0044-0002	U	MB, IC	None
REA37203	MND33-0045-0002	U	MB, IC	None
REA37203	MND33-0046-0002	U	MB, IC	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37203	MND33-0047-0002	U	MB, IC	None
REA37203	MND33-0043-4002	U	MB, IC	None
REA37203	MND33-0045-5002	U	MB, IC	None
REA37208	MND33-0033-0002	U	MB, IC, CC	None
REA37208	MND33-0034-0002	U	MB, IC, CC	None
REA37208	MND33-0036-0002	U	MB, IC, CC	None
REA37208	MND33-0038-0002	U	MB, IC, CC	None
REA37208	MND33-0039-0002	U	MB, IC, CC	None
REA37208	MND33-0035-5002	U, J	MB, IC, CC	None
REA37214	MND33-0037-0002	U	MB	None
REA37214	MND33-0037-1002	U	MB	None
REA37214	MND33-0031-0002	U	MB	None
REA37214	MND33-0030-0002	U	MB	None
REA37214	MND33-0042-0002	U	MB	None
REA37214	MND33-0037-0003	U	MB	None
REA37214	MND33-0032-0002	U	MB	None
REA37214	MND33-0042-5002	U	MB	None
REA37222	MND33-0061-0001	U	MB, CC	None
REA37222	MND33-0081-0001	U	MB, CC	None
REA37222	MND33-0081-1001	U	MB, CC	None
REA37222	MND33-0082-0001	U	MB, CC	None
REA37222	MND33-0083-0001	U	MB, CC	None
REA37222	MND33-0084-0001	U	MB, CC	None
REA37222	MND33-0085-0001	U	MB, CC	None
REA37222	MND33-0085-0002	U	MB, CC	None
REA37222	MND33-0085-0003	U	MB, CC	None
REA37222	MND33-0083-5001	U	MB, CC	None
REA37229	MND33-0086-0001	U	MB, CC	None
REA37229	MND33-0086-4001	U, J	MB, CC	None
REA37230	MND33-0087-0001	U	MB, CC	None
REA37230	MND33-0088-0001	U	MB, CC	None
REA37230	MND33-0089-0001	U	MB, CC	None
REA37230	MND33-0090-0001	U	MB, CC	None
REA37230	MND33-0090-1001	U	MB, CC	None
REA37230	MND33-0091-0001	U	MB, CC	None
REA37230	MND33-0091-0002	U	MB, CC	None
REA37230	MND33-0093-0001	U	MB, CC	None
REA37230	MND33-0094-0001	U, J	MB, CC	None
REA37230	MND33-0094-1001	U, J	MB, CC	None
REA37230	MND33-0094-0002	U	MB, CC	None
REA37230	MND33-0094-5001	U	MB, CC	None
REA37234	MND33-0095-0001	U, UJ	MB, CC	None
REA37234	MND33-0096-0001	U	MB, CC	None
REA37234	MND33-0097-0001	U, UJ	MB, CC	None
REA37234	MND33-0097-1001	U	MB, CC	None
REA37234	MND33-0098-0001	U	MB, CC	None
REA37234	MND33-0098-0002	U	MB, CC	None
REA37234	MND33-0095-4001	U	MB, CC	None
REA37234	MND33-0095-5001	U	MB, CC	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37241	MND33-0025-0002	U	MB, IC, CC	None
REA37241	MND33-0026-0002	U	MB, IC, CC	None
REA37241	MND33-0026-1002	U	MB, IC, CC	None
REA37241	MND33-0027-0002	U	MB, IC, CC	None
REA37241	MND33-0028-0002	U	MB, IC, CC	None
REA37241	MND33-0029-0002	U	MB, IC, CC	None
REA37241	MND33-0025-4002	U	MB, IC, CC	None
REA37241	MND33-0025-5002	U	MB, IC, CC	None
REA37280	MND33-0101-0001	U	MB, IC, CC	None
REA37280	MND33-0101-0002	U	MB, IC, CC	None
REA37280	MND33-0101-0003	U, J	MB, IC, CC	None
REA37281	MND33-0102-0001	U, UJ	MB, IC, CC	None
REA37281	MND33-0102-1001	U, UJ	MB, IC, CC	None
REA37281	MND33-0102-0002	U, UJ	MB, IC, CC	None
REA37281	MND33-0103-0002	U, UJ	MB, IC, CC	None
REA37281	MND33-0103-0001	U, UJ	MB, IC, CC	None
REA37281	MND33-0104-0001	U, UJ	MB, IC, CC	None
REA37281	MND33-0104-1002	U, UJ	MB, IC, CC	None
REA37281	MND33-0104-0002	U, UJ	MB, IC, CC	None
REA37281	MND33-0102-5002	U, UJ	MB, IC, CC	None
REA37283	MND33-0101-0004	U, UJ	MB, IC, CC	None
REA37283	MND33-0105-0001	U, UJ	MB, IC, CC	None
REA37283	MND33-0105-0002	U, UJ	MB, IC, CC	None
REA37283	MND33-0105-5001	U, UJ	MB, IC, CC	None
REA37283	MND33-0101-5002	U, UJ	MB, IC, CC	None
REA37284	MND33-0106-0001	U	MB, IC, CC	None[c]
REA37284	MND33-0106-1001	U	MB, IC, CC	None[c]
REA37284	MND33-0107-0001	U	MB, IC, CC	None[c]
REA37284	MND33-0106-0002	U	MB, IC, CC	None[c]
REA37286	MND33-0107-4001	U	MB, IC, CC	None
REA37288	MND33-0105-1003	U	MB, IC, CC	None[c]
REA37288	MND33-0105-0003	U	MB, IC, CC	None[c]
REA37288	MND33-0105-0004	U	MB, IC, CC	None[c]
REA37288	MND33-0105-0005	U	MB, IC, CC	None[c]
REA37288	MND33-0109-0002	U	MB, IC, CC	None[c]
REA37291	MND33-0110-0001	U, UJ	MB, IC, CC	None
REA37291	MND33-0110-0002	U, UJ	MB, IC, CC	None
REA37291	MND33-0110-0003	U, UJ	MB, IC, CC	None
REA37291	MND33-0110-1002	U, UJ	MB, IC, CC	None
REA37295	MND33-0110-0004	U	MB	None
REA37295	MND33-0110-0005	U	MB	None
REA37295	MND33-0111-0001	U	MB	None
REA37295	MND33-0111-0002	U	MB	None
REA37295	MND33-0111-0003	U	MB	None
REA37295	MND33-0112-0001	U	MB	None
REA37295	MND33-0112-0002	U	MB	None
REA37295	MND33-0112-0003	U	MB	None
REA37295	MND33-0112-1001	U	MB	None
REA37304	MND33-0112-4003	U	MB, CC	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37305	MND33-0113-0001	U	MB, CC	None
REA37305	MND33-0113-0002	U	MB, CC	None
REA37305	MND33-0113-0003	U	MB, CC	None
REA37305	MND33-0113-0004	U	MB, CC	None
REA37305	MND33-0113-0005	U	MB, CC	None
REA37305	MND33-0113-0006	U	MB, CC	None
REA37305	MND33-0114-0001	U	MB, CC	None
REA37305	MND33-0114-0002	U	MB, CC	None
REA37305	MND33-0114-1001	U, UJ	MB, CC	None
REA37305	MND33-0115-0001	U	MB, CC	None
REA37305	MND33-0115-0002	U	MB, CC	None
REA37305	MND33-0115-0002	U	MB, CC	None
REA37307	MND33-0116-0001	U, UJ	MB, IC, CC	None[d]
REA37307	MND33-0117-0001	U, UJ	MB, IC, CC	None[d]
REA37307	MND33-0117-1001	U, UJ	MB, IC, CC	None[d]
REA37322	MND33-0130-0001	U, UJ	FD, IC, CC	None
REA37322	MND33-0130-1001	U, UJ	FD, IC, CC	None
REA37331	MND33-0131-0001	U	MB, IC, CC	None[f]
REA37331	MND33-0131-0002	U	MB, IC, CC	None[f]
REA37331	MND33-0131-0003	U	MB, IC, CC	None[f]
REA37331	MND33-0131-5001	U	MB	None
REA37331	MND33-0131-5001	UJ	IC, CC	None[f]
REA37332	MND33-0132-0001	U	MB	None
REA37332	MND33-0132-0001	UJ	IC, CC	None[d]
REA37332	MND33-0132-0002	U	MB	None
REA37332	MND33-0132-0002	UJ	IC, CC	None[d]
REA37332	MND33-0132-0003	U	MB	None
REA37332	MND33-0132-0003	UJ	IC, CC	None[d]
REA37332	MND33-0133-0001	U	MB	None
REA37332	MND33-0133-0001	UJ	IC, CC	None[d]
REA37332	MND33-0133-0002	U	MB	None
REA37332	MND33-0133-0002	UJ	IC, CC	None[d]
REA37332	MND33-0133-0003	U	MB	None
REA37332	MND33-0133-0003	UJ	IC, CC	None[d]
REA37332	MND33-0133-1001	U	MB	None
REA37332	MND33-0133-1001	UJ	IC, CC	None[d]
REA37336	MND33-0134-0001	UJ	IC, CC	None
REA37336	MND33-0134-0001	U	MB	None
REA37336	MND33-0134-0002	UJ	IC, CC	None
REA37336	MND33-0134-0002	U	MB	None
REA37336	MND33-0134-5001	UJ	IC, CC	None
REA37336	MND33-0134-5001	U	MB	None
REA37336	MND33-0135-0001	UJ	IC, CC	None
REA37336	MND33-0135-0001	U, J	MB	None
REA37336	MND33-0135-0002	UJ	IC, CC	None
REA37336	MND33-0135-0002	U	MB	None
REA37336	MND33-0135-5001	UJ	IC, CC	None
REA37336	MND33-0135-5001	U	MB	None

Table IV.3. Summary of Data Usability of Qualified Sample Results
Volatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability[a]
REA37339	MND33-0136-0001	UJ,J	IC, CC	None[b]
REA37339	MND33-0136-0001	U	MB	None
REA37339	MND33-0136-0002	UJ	IC, CC	None[b]
REA37339	MND33-0136-0002	U	MB	None
REA37339	MND33-0136-4001	UJ	IC, CC	None[b]
REA37339	MND33-0136-4001	U	MB	None
REA37341	MND33-0139-0001	U, UJ	MB	None
REA37341	MND33-0139-1001	U, UJ	MB	None
REA37341	MND33-0140-0001	U, UJ	MB	None
REA37341	MND33-0141-0001	U	MB, IC, CC	None[d]
REA37349	MND33-1140-0001	U, UJ	MB, CC	None[d]
REA37349	MND33-1140-1001	U, UJ	MB, CC	None[d]
REA37349	MND33-1140-2001	U, UJ	MB, CC	None[d]
REA37349	MND33-1140-5001	U, UJ	MB, CC	None[d]
REA37349	MND33-1141-0001	U, UJ	MB, CC	None[d]
REA37349	MND33-1141-2001	U, UJ	MB, CC	None[d]
REA37349	MND33-1141-2002	U, UJ	MB, CC	None[d]
REA37349	MND33-1141-4001	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-0001	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-1001	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-2001	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-2002	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-3001	U, UJ	MB, CC	None[d]
REA37349	MND33-1142-5001	U, UJ	MB, CC	None[d]

[a]Based on comparison to the proposed action levels.
[b]Chloromethane and bromomethane may be potentially biased high.
[c]Bromomethane and bromodichloromethane may be potentially biased high.
[d]Bromomethane may be potentially biased high.
[e]Bromomethane and vinyl acetate may be potentially biased high.
[f]Bromomethane, vinyl acetate, and 2-hexanone may be potentially biased high.
[g]Compounds without cleanup criteria may be potentially biased low.
[h]Compounds without cleanup criteria may be potentially biased high.
CC – Continuing calibration.
FD – Field duplicate.
IC – Initial calibration.
IS – Internal standard recovery.
MB – Method blank contamination.
TB – Trip blank.

Methylene chloride, chloroform, and acetone were reported in equipment blanks for laboratory batches REA37149, REA36796, and REA37145 at 3.0 μg/L, 1.0 μg/L, and 10.0 μg/L, respectively. Chloroform was not detected in the associated samples; however, methylene chloride was detected at levels ranging from 5.0 μg/Kg to 9.0 μg/Kg. The positive analytical results for the associated samples are most likely attributed to contamination, either from the field or laboratory. The sample results associated with this blank were qualified as U, by applying EPA guidelines for method blanks in the same manner.

Field duplicate MND33-0130-1001, associated with laboratory batch REA37322, had a relative percent difference (RPD) of 80% for PCE with reported values of 47.0 μg/Kg and 110.0 μg/Kg. The PCE results for this sample and MND33-0130-0001 were qualified as J. This variability among duplicate soil samples is expected because of the heterogeneous nature of soils. The sample results are considered usable, but the variability should be noted.

Internal standard recovery for two laboratory batches were outside of the criteria specified in the OU 3 QAPP. The slightly high recovery reported in laboratory batch REA36816 indicates that the results for that batch are biased slightly low. A low recovery for the internal standard reported for REA37133 may indicate a slightly high bias in associated samples. The usability of these sample results is not impacted because the reported values for these samples are significantly below any proposed action levels for these compounds. For compounds without proposed action levels, the potential bias is noted on Table IV.3.

The fifth QCC that did not meet QAPP specifications occurred during calibration. The relative standard deviation (RSD) of response factors for initial calibration ranged from 35.1 to 57.6% for several compounds in laboratory batches, which is above the QAPP criteria of 35%. Associated sample results with this exceeded criteria were qualified as J. The compound which had the most occurrences with deviation for initial calibration was bromomethane; however, this compound was not detected in any samples. The highest RSD reported was 57.6%, which occurred with methylene chloride in laboratory batch REA36842. For those compounds that have an action level, the potential bias does not impact the comparison of the results to the action levels, because the results are significantly below the proposed action levels. For qualified results due to RSDs which do not have proposed action levels, the impact on data usability is most likely not significant, but the "J" qualifier should be noted.

The percent difference for continuing calibration checks, when compared to the initial calibration, for several laboratory batches exceeded the QAPP criteria of ≥25%. Exceeded criteria ranged from -99.9% to -25% and 25% to 100%. Associated sample results were qualified as J. A negative percent difference indicates a potential negative bias in the associated sample results, and a percent difference above 25% indicates a positive bias. For compounds qualified in sample results with action levels, the reported values were significantly below the action levels, and therefore the potential bias does not impact comparison to the

action level. For compounds without an action level qualified in sample results, the potential bias is noted as such on Table IV.3.

4.2.2. Semivolatile Organic Compounds (CLP SOW Method)

Several results for SVOCs were qualified due to associated QCCs outside QAPP criteria. The QCCs which did not meet QAPP criteria were exceeded holding time, calibration checks, method blank, and surrogate recoveries. Additional concerns for assessing the usability of unqualified SVOC results are: inconsistent sample results, PRGs below the Contract-Required Quantitation Limit (CRQL), and results reported below the CRQL. Table IV.4 summarizes those samples qualified due to these QCCs and the impact of the qualifications and additional concerns on the intended data use.

The QAPP specified an extraction holding time for SVOCs of 7 days. Samples that exceeded the extraction holding time of 7 days were qualified as J. Two types of extraction time violations occurred: soils that exceeded the holding time up to 7 days and soils that exceeded extraction times by more than 7 days. U.S. EPA SW-846 (EPA 1986), method 8270 specifies an extraction holding time for soils of 14 days from collection. The results from soils extracted within 14 days of collection were considered usable based on this accepted method.

Sample MND33-0080-0001 was extracted 21 days after collection and the reported results were qualified as J. The exceeded holding time may have critically impacted results for N-nitroso-di-n-propylamine and bis(2-chloroethyl) ether. Both of these compounds could be biased low due to this extraction time, and both have action levels near the CRQL. Since the results for these compounds may be negatively biased, and the action levels are near the CRQL, the data for these analytes are considered unusable. However, PAHs, which have been consistently present in other soil samples from this investigation and are relatively stable, should be unaffected by the 21-day extraction time. The remaining SVOCs may be biased low. Table IV.4 identifies the PAHs from the TCL SVOC list.

More than one type of criteria for instrument calibration checks were outside the QAPP-specified criteria. The calibration checks can be divided into continuing calibration checks with percent differences (%D) out of compliance, and continuing calibration relative response factors (RRFs) outside compliance, and initial calibration RSDs outside criteria.

Several continuing calibration checks did not meet the %D requirement for specific compounds, and the associated sample results were qualified as J. Continuing calibration %D are used to evaluate the stability of the quantitation curve for specific analytes. The positive %D reported outside criteria ranged from 26% to 100%, and indicate that the associated sample results have a potential positive bias. The negative %D

Table IV.4. Summary of Data Usability of Qualified Sample Results
Semivolatile Organic Compounds

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA36804	MND33-0006-0001	J,UJ	HT	None
REA36804	All	UJ	CC	None
REA36809	All	UJ	CC	None
REA36816	All	UJ	CC	None
REA36822	MND33-0012-0001	J,UJ	SSR	None
REA36822	All	UJ	CC	None
REA36827	MND33-0015-0001	J,UJ	SSR	None
REA36827	MND33-0015-0001	J,UJ	CC	None
REA36827	MND33-0015-0002	R	SSR, MS/MSD	Not valid for intended use
REA36827	MND33-0015-0003	R	SSR, MS/MSD	Not valid for intended use
REA36842	MND33-0001-0002	R	SSR	Not valid for intended use
REA36842	MND33-0001-0003	R	SSR	Not valid for intended use
REA36842	MND33-0001-0003	J,UJ	SSR	All Base/Neutral fraction results may be biased low
REA36842	MND33-0001-1002	R	SSR	Acid fraction not valid for intended use
REA36842	MND33-0001-1002	J,UJ	SSR	All Base/Neutral fraction results may be biased low
REA36842	MND33-0002-0002	R	SSR	Not valid for intended use
REA36842	MND33-0002-0003	R	SSR	Not valid for intended use
REA37051	All	J,UJ	HT	None
REA37051	All	U	MB - phthalates	None
REA37123	All	J,UJ	HT, CC	None
REA37124	All	J,UJ	HT, CC	None
REA37128	All	J,UJ	HT, CC	None
REA37128	All	J,UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37128	All	J,UJ	CC (-%D)	4-methylphenol may be biased low
REA37128	All	J,UJ	CC (-%D)	N-nitroso-di-n-propylamine may be biased low
REA37128	All	J,UJ	CC (-%D)	2-nitroaniline may be biased low
REA37133	All	J,UJ	HT, CC	None
REA37133	MND33-0050-0001	UJ	MS/MSD	None
REA37140	All	J,UJ	HT, CC	None
REA37140	MND33-0051-0002	U	MB - phthalate	None
REA37140	MND33-0051-0003	U	MB - phthalate	None
REA37140	MND33-0051-1003	U	MB - phthalate	None
REA37140	MND33-0051-0004	U	MB - phthalate	None
REA37144	All	J,UJ	HT, CC	None
REA37145	All	J,UJ	HT, CC	None
REA37148	All	J,UJ	HT, CC	None
REA37149	All	UJ	CC	None
REA37151	All	J,UJ	HT, CC	None
REA37152	All	J,UJ	HT, CC	None
REA37152	MND33-0059-0001	J,UJ	SSR	None
REA37157	All	J,UJ	HT, CC	None
REA37157	All	J,UJ	HT, CC	hexachlorocyclopentadiene may be biased low
REA37163	All	J,UJ	HT, CC	None
REA37164	All	J,UJ	HT, CC	None
REA37164	MND33-0060-0001	U	MB	None
REA37165	All	J,UJ	HT, CC, IC	None
REA37166	All	J,UJ	HT, CC, IC	None
REA37166	All	R	4-nitroaniline RRF	Not valid for intended use
REA37169	All	J,UJ	HT, CC, IC	None
REA37172	All	J,UJ	HT, CC, IC	None
REA37172	MND33-0070-0001	J	Sample result inconsistency	None
REA37181	All	J,UJ	HT, CC	None
REA37181	MND33-0072-4002	R	4-nitroaniline RRF	Not valid for intended use
REA37185	All	J,UJ	HT	None

Table IV.4. Summary of Data Usability of Qualified Sample Results
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Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37187	All	J,UJ	HT	None
REA37189	All	J,UJ	HT, CC	None
REA37190	All	J,UJ	HT, CC, IC	None
REA37193	All	J,UJ	HT, CC	None
REA37194	MND33-0080-0001	J,UJ	HT	All results may be biased low
REA37194	MND33-0080-0001	J,UJ	HT	N-nitroso-di-n-propylamine not valid for intended use
REA37194	MND33-0080-0001	J,UJ	HT	bis(2-chloroethyl)ether not valid for intended use
REA37194	MND33-0081-0001	J	HT	Not valid for intended use
REA37194	MND33-0081-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37194	All	UJ	CC, IC	None
REA37194	All	U	MB	None
REA37208	All	J,UJ	HT, CC	None
REA37222	All	J,UJ	HT	None
REA37222	All	UJ	CC, IC	None
REA37222	MND33-0061-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37222	MND33-0083-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37222	MND33-0084-0001RE	R	3-nitroaniline RRF	Not valid for intended use
REA37222	MND33-0084-0001RE	R	SSR	Not valid for intended use
REA37222	MND33-0084-0001RE	J,UJ	HT	Not valid for intended use
REA37229	MND33-0086-0001	J,UJ	HT	None
REA37229	All	UJ	CC	None
REA37230	All	J,UJ	HT, CC, IC	None
REA37230	Method Blank	R	3-nitroaniline RRF	Not valid for intended use
REA37230	MND33-0088-0001	U	MB - phthalate	None
REA37230	MND33-0090-0001	U	MB - phthalate	None
REA37230	MND33-0091-0001	U	MB - phthalate	None
REA37230	MND33-0093-0001	U	MB - phthalate	None
REA37230	MSD	J	IS	None
REA37234	All soils	J,UJ	HT	None
REA37234	MND33-0095-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37234	MND33-0095-0001	UJ	CC	None
REA37234	MND33-0096-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37234	MND33-0096-0001	UJ	CC	None
REA37234	MND33-0097-0001	R	3-nitroaniline RRF	Not valid for intended use
REA37234	MND33-0097-0001	U	MB - phthalate	None
REA37234	MND33-0097-0001	UJ	CC	None
REA37234	MND33-0097-1001	UJ	CC	None
REA37234	MND33-0098-0002	U	MB - phthalate	None
REA37280	All	J,UJ	HT, IC	None
REA37280	All	U	MB	None
REA37280	All	R	3-nitroaniline RRF	Not valid for intended use
REA37281	All	J,UJ	HT	None
REA37281	MND33-0103-0001	J,UJ	SSR	None
REA37281	MND33-0103-0001RE	R	HT	Not valid for intended use
REA37281	All	R	3-nitroaniline RRF	Not valid for intended use
REA37281	MND33-0102-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37281	MND33-0102-0001	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37281	MND33-0102-0001	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37281	MND33-0102-0001	UJ	CC (-%D)	hexachloroethane may be biased low
REA37281	MND33-0102-0001	UJ	CC (-%D)	napthalene may be biased low
REA37281	MND33-0102-0001	UJ	CC (-%D)	2-nitroaniline may be biased low

Table IV.4. Summary of Data Usability of Qualified Sample Results
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Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37281	MND33-0102-0001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37281	MND33-0102-0001	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37281	MND33-0102-1001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37281	MND33-0103-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37281	MND33-0103-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37281	MND33-0104-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37281	MND33-0104-0002	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37281	MND33-0104-0002	UJ	CC (-%D)	hexachloroethane may be biased low
REA37281	MND33-0104-0002	UJ	CC (-%D)	napthalene may be biased low
REA37281	MND33-0104-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37281	MND33-0104-0002	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37281	MND33-0104-1002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37283	All	J,UJ	HT, CC	None
REA37283	All	U	MB	None
REA37283	All	R	3-nitroaniline RRF	Not valid for intended use
REA37283	All	UJ	IC	None
REA37284	All	J,UJ	HT	None
REA37284	All	R	3-nitroaniline RRF	Not valid for intended use
REA37284	MND33-0106-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37284	MND33-0106-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37284	MND33-0106-0001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37284	MND33-0106-1001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37284	MND33-0106-1001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37284	MND33-0106-1001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37284	MND33-0107-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37284	MND33-0107-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37284	MND33-0107-0001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37284	MND33-0107-0001MS	UJ	CC (-%D)	N-nitroso-di-n-propylamine may be biased low
		UJ	CC (-%D)	nitrobenzene - none
REA37284	MND33-0107-0001MS	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37284	MND33-0107-0001MS	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37286	All	UJ	CC, IC	None
REA37288	All	J,UJ	HT, CC, IC	None
REA37288	All	R	3-nitroaniline RRF	Not valid for intended use
REA37288	MND33-0105-0001	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0105-0001	UJ	CC (-%D)	hexachloroethane may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0105-0001	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0105-0002	UJ	CC (-%D)	hexachloroethane may be biased low

Table IV.4. Summary of Data Usability of Qualified Sample Results
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Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37288	MND33-0105-0002	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0105-0002	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0105-0003	UJ	CC (-%D)	hexachloroethane may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0105-0003	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0105-1003	UJ	CC (-%D)	hexachloroethane may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0105-1003	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0109-0002	UJ	CC (-%D)	hexachloroethane may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0109-0002	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	hexachloroethane may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	napthalene may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37288	MND33-0109-0002MS	UJ	CC (-%D)	4-nitroaniline may be biased low
REA37291	All	J,UJ	HT, CC, IC	None
REA37295	All	J,UJ	HT, CC, IC	None
REA37304	All	J,UJ	IC	None
REA37304	All	R	3-Nitroaniline RRF	Not valid for intended use
REA37304	MND33-0112-4003	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37304	MND33-0112-4003	UJ	CC (-%D)	nitrobenzene - none
REA37304	MND33-0112-4003	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37304	MND33-0112-4003	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37305	All Soils	J,UJ	HT, IC	None
REA37305	All	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37305	All	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37305	All	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37305	MND33-0113-0001	R	Benzoic acid RRF	Not valid for intended use
REA37305	MND33-0113-0002	R	Benzoic acid RRF	Not valid for intended use

Table IV.4. Summary of Data Usability of Qualified Sample Results
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Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37305	MND33-0113-0003	J	Benzoic acid RRF	Analyte result may be biased high
REA37305	MND33-0115-4002	R	3-Nitroaniline RRF	Not valid for intended use
REA37305	MND33-0114-0001	R	Benzoic acid RRF	Not valid for intended use
REA37305	MND33-0114-0002	R	Benzoic acid RRF	Not valid for intended use
REA37305	MND33-0114-1001	J	Benzoic acid RRF	Analyte result may be biased high
REA37305	MND33-0114-1001	U	MB	None
REA37305	MND33-0115-0001	R	Benzoic acid RRF	Not valid for intended use
REA37305	MND33-0115-0002	R	Benzoic acid RRF	Not valid for intended use
REA37305	MND33-0115-4002	UJ	CC (-%D)	2-chlorophenol may be biased low
REA37305	MND33-0115-4002	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37305	MND33-0115-4002	UJ	CC (-%D)	hexachloroethane may be biased low
REA37305	MND33-0115-4002	UJ	CC (-%D)	napthalene may be biased low
REA37307	All	J,UJ	HT	None
REA37307	Method Blank	R	Benzoic acid RRF	Not valid for intended use
REA37322	All	J,UJ	HT, IC	None
REA37322	MND33-0130-0001	J	CC	None
REA37322	All	J	MS/MSD	None
REA37331	All	J	HT, CC	None
REA37331	All	R	Benzoic acid RRF	Not valid for intended use
REA37331	MND33-0131-0001	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37331	MND33-0131-0001	UJ	CC (-%D)	4,6-dinitro-2-methylphenol may be biased low
REA37331	MND33-0131-0002	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37331	MND33-0131-0002	UJ	CC (-%D)	4,6-dinitro-2-methylphenol may be biased low
REA37331	MND33-0131-0003	UJ	CC (-%D)	2,4-dinitrotoluene may be biased low
REA37331	MND33-0131-0003	UJ	CC (-%D)	4,6-dinitro-2-methylphenol may be biased low
REA37332	All	J,UJ	HT, CC	None
REA37332	MND33-0132-0001	J	SSR	None
REA37332	MND33-0132-0002	UJ	CC (-%D)	bis(2-chloroethyl)ether not valid for intended use
REA37332	MND33-0132-0003	UJ	CC (-%D)	bis(2-chloroethyl)ether not valid for intended use
REA37332	MND33-0132-0001RE	J,UJ	HT	None
REA37332	MND33-0133-0001	UJ	CC (-%D)	bis(2-chloroethyl)ether not valid for intended use
REA37332	MND33-0133-1001	UJ	CC (-%D)	bis(2-chloroethyl)ether not valid for intended use
REA37332	MND33-0133-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37332	MND33-0133-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37332	MND33-0133-0002	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37332	MND33-0133-0002	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37332	MND33-0133-0003	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37332	MND33-0133-0003	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37332	MND33-0133-0003	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37332	MND33-0133-0003	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37336	All	J	HT, CC	None
REA37336	MND33-0134-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37336	MND33-0134-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37336	MND33-0134-0001	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37336	MND33-0134-0001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37336	MND33-0134-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37336	MND33-0134-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37336	MND33-0134-0002	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37336	MND33-0134-0002	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37336	MND33-0135-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use

Table IV.4. Summary of Data Usability of Qualified Sample Results
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Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37336	MND33-0135-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37336	MND33-0135-0001	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37336	MND33-0135-0001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37336	MND33-0135-0002	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37336	MND33-0135-0002	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37336	MND33-0135-0002	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37336	MND33-0135-0002	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37339	All Soils	J	HT, IC	None
REA37339	MND33-0136-4001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37339	MND33-0136-4001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37339	MND33-0136-4001	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37339	MND33-0136-4001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37339	MND33-0136-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37339	MND33-0136-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37339	MND33-0136-0001	UJ	CC (-%D)	4-nitrophenol may be biased low
REA37339	MND33-0136-0001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37341	All	J,UJ	HT	None
REA37349	All	J,UJ	HT, IC	None
REA37349	MND33-1142-0001RE	R	HT	Not valid for intended use
REA37349	MND33-1140-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37349	MND33-1140-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37349	MND33-1140-0001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37349	MND33-1140-0001	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37349	MND33-1140-0001	J	CC	Benzoic acid biased high
REA37349	MND33-1140-1001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37349	MND33-1140-1001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37349	MND33-1140-1001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37349	MND33-1140-1001	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37349	MND33-1140-1001	J	CC	Benzoic acid biased high
REA37349	MND33-1141-0001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37349	MND33-1141-0001			
REA37349	MND33-1141-0001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37349	MND33-1141-0001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37349	MND33-1141-0001	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37349	MND33-1141-0001	UJ	CC	None
REA37349	MND33-1141-4001	UJ	CC (-%D)	N-nitroso-di-n-propylamine not valid for intended use
REA37349	MND33-1141-4001	UJ	CC (-%D)	2-nitroaniline may be biased low
REA37349	MND33-1141-4001	UJ	CC (-%D)	3,3'-dichlorobenzidine may be biased low
REA37349	MND33-1141-4001	UJ	CC (-%D)	di-n-butylphthalate may be biased low
REA37349	MND33-1141-4001	UJ	CC	None
REA37349	MND33-1142-0001	UJ	CC (-%D)	bis(2-chloroisopropyl)ether may be biased low
REA37349	MND33-1142-0001	R	SSR	Acid fraction non-detects not valid for for intended use

*Based on comparison to the proposed action levels.

CC – Continuing calibration check outside criteria.
HT – Extraction holding time exceeded.
IC – Initial calibration outside criteria.
IS – Internal surrogate outside criteria.
MB – The method blank contained target analytes.
MS/MSD – Matrix spike recovery outside limits.
SSR – A base/neutral and/or acid surrogates failed to meet criteria.

reported outside the QAPP criteria ranged from -26% to -100% for selected compounds, indicating that the associated sample results for these analytes are negatively biased.

For positive %D with non-detections in the associated sample, the qualification of J is not considered to have impacted the usability of the result. The maximum potential bias of a non-detected result would not generate a value above the reported CRQL. This qualification is the most common case for continuing calibration checks outside the QAPP criteria.

For positive %D with detections in the associated samples, the qualification of J generates a potential positive bias, and is noted as such on Table IV.4. For those compounds with action levels and %D outside criteria, the potential positive bias does not impact the usability of the results since the action level is significantly higher than the result.

For negative %D with the analyte result in the associated sample reported as less than the CRQL, the qualification of J does not impact the intended use of the result for those compounds with action levels (except: N-nitroso-di-n-propylamine, bis-(2-chloroethyl)ether, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene). The action levels for SVOCs are significantly higher than the maximum impact of the potential negative bias on associated sample results. For those analytes without action limits, the potential negative bias is noted as such in Table IV.4. For N-nitroso-di-n-propylamine and bis(2-chloroethyl)ether, non-detected results reported under calibration curves with negative %D were determined unusable for the investigation due to the low action limit.

The relative response factors (RRFs) for several continuing calibration checks were outside the QAPP criteria, and resulted in qualification of associated sample results as J. The RRF is a measure of the instrument response to an analyte at a known concentration, relative to the response of a standard from the initial calibration. As the RRF decreases, the ability to accurately detect the presence of an analyte decreases and unreliable results can be generated. The RRF for benzoic acid, 3-nitroaniline, and 4-nitroaniline were below the QAPP criteria in the various laboratory batches. The associated sample results for these compounds with a reported analyte concentration below the CRQL were qualified as R and are considered unusable for this investigation. Associated sample results affected by RRFs, which were outside criteria and were above the CRQL, were qualified as J. Although the J qualification indicates a potential error in quantifying the sample results, the data are considered usable for qualitative purposes.

RSDs for several compounds on the initial calibration curve did not meet the QAPP criteria, and resulted in the qualification of some data as estimated. RSDs outside the criteria ranged from 31% to 67%. The RSD describes the linearity of the calibration curve for specific analytes. If the RSD is outside of criteria, then any analyte concentration determined from the calibration curve may be less accurate. Since the affected

analytes with RSDs outside QAPP criteria were not detected in the samples, the usability of the data is considered unaffected.

Bis(2-ethylhexyl)phthalate, 2-chlorophenol, 1,2,4-trichlorobenzene, pentachlorophenol, and pyrene were reported in several method blanks at concentrations ranging from 30.0 μg/Kg to 100.0 μg/Kg. Benzoic acid was reported in one method blank at 890.0 μg/Kg. Analyte results not detected in samples, but detected in the associated method blank, are considered usable. Analyte results reported above the CRQL that were less than 10 times the level of phthalate in the associated method blank or were less than five times the level of contaminants other than phthalates in the associated blank were marked U. This qualification resulted in the increase of the effective detection limit. The associated samples were not impacted in any other way. Surrogate recoveries were outside the QAPP criteria in a few cases, ranging from 0% to 20%. If more than one surrogate per fraction (acid or base/neutral) was out of specifications, then positive results were marked J, and negative results were marked UJ. If a single surrogate recovery for either fraction was less than 10%, then positive results were marked J, and negative results were marked R. These instances are summarized in Table IV.4.

One sample had an internal standard outside the QAPP criteria which potentially biased the analyte results. Since this sample was a matrix spike, the sample results were not affected and the data are considered usable. Samples MND33-0001-0002, MND33-0001-0003, MND33-0001-1002, MND33-0002-0002, and MND33-0002-0003 were marked unusable during data assessment. While the surrogate rules for data validations permit the positive results for these samples to be marked estimated (J), the overall surrogate performance for both the samples and the associated blank indicated a severe system failure. Because this appears to be a systematic error, the associated sample data was assessed extremely unreliable and unusable.

One inconsistent sample result was noted by the validators. The sample was found to contain pyrene, but the matrix spike and the matrix spike duplicate (MS/MSD) did not contain pyrene. This inconsistency was attributed to variation in the sample matrix and has no impact on the usability of the data.

Sample MND33-0132-0001 had zero percent surrogate recovery for all six surrogates. The sample was re-extracted significantly past holding time with all surrogate recoveries within the QAPP criteria. All target analytes were non-detect in both the initial and re-extracted samples. Since the initial sample results matched the re-extracted results, it is likely that the initial sample was not spiked with surrogates, resulting in the zero percent recoveries. The initial sample results are considered to have no significant bias. Some analyte concentrations reported were significantly below the CRQL (i.e., below one-tenth the CRQL). Analytes reported at these levels are considered unreliable in quantitation and identity, because of the proximity to the instrument's limit of detection. Several SVOCs were found to have PRGs below the QAPP

CRQLs. Some PRGs were also below the CRQL if the sample extracts were subject to gel permeation cleanup. These compounds, their PRGs, and the QAPP CRQLs are summarized in Table IV.5.

Non-detected results for dibenzo(a,b)anthracene, N-nitroso-di-n-propylamine, and benzo(a)pyrene may be inconclusive for all samples. Because of method limitations for these compounds, only data for these analytes that have been negatively biased have been assessed unusable.

Non-detected results for bis(2-chloroethyl)ether, benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene may be inconclusive for extracts which were processed through Gel Permeation Chromatography (GPC). Because of method limitations for these compounds, only data for these analytes that have been negatively biased have been assessed unusable.

4.2.3. Pesticide/PCBs (Method 8080)

Four types of QCCs did not meet QAPP-required criteria for P/PCB analysis. The four QCCs are: extraction holding time, calibration checks, surrogate recoveries, and field duplicates. Table IV.6 summarizes those samples or laboratory batches qualified due to these QCCs and the impact of these qualifications on the intended data use. The majority of the laboratory batch results were qualified as J because of exceeded QAPP extraction holding time. The QAPP specified an extraction holding time of 7 days. Almost all the samples were extracted outside QAPP criteria, but were extracted within 14 days of collection. Other accepted methods, such as EPA SW-846 (EPA 1986), method 8080 (EPA 1986), require soil samples to be extracted within 14 days of collection. Based on this accepted method, samples extracted within 14 days of collection are considered usable.

The samples extracted 17 to 20 days from collection may be negatively biased and are noted on Table IV.6. EPA Region V CLP validation guidelines for CLP Statement of Work 3/90 (EPA 1991a) propose that only samples extracted 28 days after collection are qualified as unusable. PCBs are neither volatile nor very susceptible to environmental degradation. Based on this information, the qualified PCB results are considered usable. Sample MND33-0081-0001 RE is not considered usable for intended data use due to a grossly exceeded extraction time of 44 days. The second QCC identified during the data validation process was initial and continuing calibration checks outside criteria. These calibration checks included RSDs for the initial calibration, percent differences for continuing calibration, and the minimum number of data points used to establish the calibration curve. The associated sample results for this missed criteria were qualified as J.

RSD for several compounds on the initial calibration curve did not meet the QAPP criteria, and resulted in the qualification of some data as J. RSDs outside the criteria ranged from 13% to 33%. The RSD describes

Table IV.5. SVOCs with PRGs less than CRQLs

Compound	PRG (µg/kg)	CRQL (µg/kg)	CRQL w/GPC (µg/kg)
N–nitroso–di–n–proplyamine	91	330	660
Bis (2–chloroethyl)ether	580	330	660
Benzo(a)anthracene	600	330	660
Benzo(b)fluoranthene	640	330	660
Dibenzo(a,h)anthracene	79	330	660
Benzo(a)pyrene	88	330	660
Indeno(1,2,3–cd)pyrene	380	330	660

SVOCs – Semivolatile organic compounds
PRG – Preliminary remediation goal
CRQL – Contract required quantitation limit
GPC – Gel permeation cleanup

Table IV.6. Summary of Data Usability of Qualified Sample Results Pesticides/PCBs

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA36796	All	J	IC	None
REA36804	All	J	IC	None
REA36809	All	J	IC	None
REA36809	MND33-0009-0002	J	SSR	May be biased low
REA36809	MND33-0009-0003	J	SSR	May be biased low
REA36816	All	J	IC	None
REA36822	All	J	IC	None
REA36827	All	J	IC	None
REA36842	MND33-0002-0002	J	SSR	None
REA36842	MND33-0002-0003	J	SSR	None
REA37051	All	J,UJ	HT	None
REA37051	All	UJ	IC	None
REA37123	All	J,UJ	HT	None
REA37123	All	UJ	CC	None
REA37124	All	J,UJ	HT	None
REA37124	All	UJ	IC	None
REA37124	All	UJ	CC	None
REA37124	RE	UJ	HT	Not valid for intended use
REA37124	MND33-0037-0001	UJ	CHROM	None
REA37124	MND33-0037-1001	UJ	CHROM	None
REA37128	All	J,UJ	HT	None
REA37128	MND33-0045-0001	UJ	CC	None
REA37128	MND33-0046-0001	UJ	CC	None
REA37128	All	J	FDRPD	None
REA37133	All	J	HT	None
REA37133	MND33-0049-0001	J	SSR	None
REA37133	MND33-0049-1001	J	SSR	None
REA37133	MND33-0050-0001	J	SSR	None
REA37140	All	J,UJ	HT	None
REA37140	MND33-0051-0001	J	IC	None
REA37140	MND33-0051-0002	J	IC	None
REA37144	All	J,UJ	HT	None
REA37144	All	J	FDRPD	None
REA37144	MND33-0052-0001	J	IC	None
REA37144	MND33-0052-1001	UJ	IC	None
REA37145	All	J,UJ	HT	None
REA37145	MND33-0052-0003	J,UJ	SSR	None
REA37148	All	J,UJ	HT	None
REA37149	All	J	IC	None
REA37149	MND33-0055-0001	J,UJ	SSR	None
REA37151	All	J,UJ	HT	None
REA37152	MND33-0058-0001	J,UJ	FDRPD	None
REA37152	MND33-0058-1001	J,UJ	FDRPD	None
REA37163	All	J,UJ	HT	None
REA37164	All	J,UJ	HT	None
REA37164	MND33-0060-0001	J,UJ	SSR	None
REA37164	MND33-0062-0002	J,UJ	SSR	None
REA37165	All	J,UJ	HT	None
REA37165	MND33-0063-0001	R	MS/MSD	Lindane not valid for intended use
REA37165	MND33-0063-0001	R	MS/MSD	4,4'-DDT not valid for intended use
REA37166	All	J,UJ	HT	None
REA37169	All	J,UJ	HT	None
REA37169	MND33-0068-0001	R	MS/MSD	Dieldrin not valid for intended use
REA37169	MND33-0068-0003	J,UJ	SSR	None
REA37172	All	J,UJ	HT	None
REA37172	MND33-0070-0001	J,UJ	SSR	None
REA37172	MND33-0070-0001	J,UJ	SSR	None
REA37172	MND33-0070-1002	J,UJ	SSR	None
REA37181	All soils	J,UJ	HT	None

Table IV.6. Summary of Data Usability of Qualified Sample Results Pesticides/PCBs

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37181	MND33-0071-0002	J,UJ	SSR	None
REA37181	MND33-0072-1002	J,UJ	SSR	None
REA37181	MND33-0072-4002	J,UJ	SSR	None
REA37181	MND33-0072-0001	J	NC	a-BHC may not be present
REA37181	MND33-0072-0001	J	NC	Heptachlor epoxide may not be present
REA37185	All	J,UJ	HT	None
REA37187	All	J,UJ	HT	None
REA37189	All	J,UJ	HT	None
REA37190	All	J,UJ	HT	None
REA37190	MND33-0077-1002	J,UJ	SSR	May be biased low
REA37193	All	J,UJ	HT	None
REA37194	All	UJ	HT	None
REA37194	All	UJ	CC	None
REA37194	MND33-0081-0001	J	HT	Not valid for intended use
REA37194	MND33-0080-0001	UJ	SSR	None
REA37208	All	J,UJ	HT	None
REA37222	All	J,UJ	HT	None
REA37222	MND33-0081-0001	J,UJ	SSR	None
REA37222	MND33-0081-1001	J,UJ	SSR	None
REA37222	MND33-0083-0001	J,UJ	SSR	None
REA37222	MND33-0085-0001	J,UJ	SSR	None
REA37222	MND33-0085-0002	J,UJ	SSR	None
REA37229	All soils	J,UJ	HT	None
REA37230	All	J, UJ	HT	None
REA37230	MND33-0087-0001	SSR	SSR	None
REA37230	MND33-0090-0001	J, UJ	SSR	None
REA37230	MND33-0091-0002	J, UJ	SSR	None
REA37230	MND33-0091-0001MS	J, UJ	SSR	None
REA37230	MND33-0091-0001MSD	J, UJ	SSR	None
REA37230	MND33-0091-0001AS	J, UJ	SSR	None
REA37230	MND33-0091-0001ASD	J, UJ	SSR	None
REA37230	MND33-0094-1001	J, UJ	SSR	May be biased low
REA37230	MND33-0094-0002	J, UJ	SSR	None
REA37234	All	J, UJ	HT	None
REA37234	MND33-0095-0001	J, UJ	SSR	None
REA37234	MND33-0097-0001	J, UJ	SSR	None
REA37234	MND33-0098-0001	J, UJ	SSR	None
REA37280	All	J,UJ	HT	None
REA37280	All	UJ	CC	None
REA37281	All	J,UJ	HT	May be biased low
REA37283	All	J,UJ	HT	None
REA37283	All	UJ	SSR	None
REA37284	All	J,UJ	HT	None
REA37288	All	J,UJ	HT	None
REA37288	MND33-0105-0001	UJ	SSR	None
REA37288	MND33-0105-0003	UJ	SSR	None
REA37288	MND33-0105-1003	UJ	SSR	None
REA37291	All	J,UJ	HT	None
REA37295	All	J,UJ	HT	None
REA37295	MND33-0112-1001	J,UJ	SSR	None
REA37305	All soils	J,UJ	HT	None
REA37305	MND33-0114-0001	UJ	SSR	None
REA37305	MND33-0115-0002	UJ	SSR	May be biased low
REA37307	All	J,UJ	HT	None
REA37307	MND33-0117-0001	UJ	SSR	None
REA37307	MND33-0117-1001	UJ	SSR	None
REA37322	All	J,UJ	HT	None
REA37322	MND33-0130-0001		CC (-%D)	Endrin - none

Table IV.6. Summary of Data Usability of Qualified Sample Results Pesticides/PCBs

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA37322	MND33-0130-0001		CC (-%D)	Endosulfan II - none
REA37322	MND33-0130-0001		CC (-%D)	Endosulfan sulfate - none
REA37322	MND33-0130-0001		CC (-%D)	4,4'-DDT - none
REA37322	MND33-0130-0001		CC (-%D)	Methoxychlor - none
REA37322	MND33-0130-1001		CC (-%D)	Endrin - none
REA37322	MND33-0130-1001		CC (-%D)	Endosulfan II - none
REA37322	MND33-0130-1001		CC (-%D)	Endosulfan sulfate - none
REA37322	MND33-0130-1001		CC (-%D)	4,4'-DDT - none
REA37322	MND33-0130-1001		CC (-%D)	Methoxychlor - none
REA37322	MND33-0130-1001	J,UJ	SSR	None
REA37331	All	J,UJ	HT	None
REA37331	MND33-0131-0003	J,UJ	SSR	None
REA37332	All	J,UJ	HT	None
REA37332	MND33-0132-0001	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0132-0002	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0132-0002MS	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0132-0002MSD	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0132-0003	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0133-0001	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0133-0002	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0133-0003	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0133-1001	J	CC (-%D)	4,4- DDD - none
REA37332	MND33-0132-0002MSD	J,UJ	HT	None
REA37332	MND33-0133-0001	J,UJ	SSR	None
REA37332	MND33-0132-0002	J,UJ	SSR	None
REA37332	MND33-0132-0003	J,UJ	SSR	None
REA37332	MND33-0133-0002	J,UJ	SSR	May be biased low
REA37332	MND33-0133-0003	J,UJ	SSR	May be biased low
REA37336	All	J,UJ	HT	None
REA37336	All	J	CC (-%D)	4,4-DDD - none
REA37336	MND33-0134-0001	J,UJ	SSR	None
REA37336	MND33-0134-0002	J,UJ	SSR	May be biased low
REA37336	MND33-0135-0001	J,UJ	SSR	None
REA37339	All	J,UJ	HT	None
REA37339	MND33-0136-0001	J,UJ	SSR	None
REA37339	MND33-0136-0002	J,UJ	SSR	None
REA37341	All	J,UJ	HT	None
REA37341	MND33-0140-0001	J,UJ	SSR	None
REA37341	MND33-0141-0001	J,UJ	SSR	None
REA37349	MND33-1140-0001	J,UJ	SSR	None
REA37349	MND33-1141-0001	J,UJ	SSR	None
REA37349	MND33-1141-4001	J,UJ	SSR	None
REA37349	MND33-1142-0001	J,UJ	SSR	None
REA37349	MND33-1142-1001	J,UJ	SSR	None
REA37349	All	UJ	CC	None

*Based on comparison to the proposed action levels.

CC (-%D) - Percent difference negative and could result in negative sample bias.
FDRPD - Field duplicate relative percent difference out of criteria.
HT - Extraction holding time exceeded.
IC - Initial calibration check outside of criteria and could cause the reported concentration to be inaccurate.
NC - Poor chromatography resolution of target analyte.
SSR - Surrogate recovery out.

the linearity of the calibration curve for specific analytes. If the RSD is outside of criteria, then any analyte concentration determined from the calibration curve may be less accurate. Since the affected analytes with RSDs outside QAPP criteria were not detected in the samples, the usability of the data is considered unaffected.

The percent difference between the continuing calibration response and the initial calibration response is used to determine the stability of a calibration curve. Percent differences outside the specified criteria ranged from -16% to - 24% and 16% to 99%. Positive percent differences outside the specified criteria indicate that the affected analyte may be biased high. For positive percent differences with non-detections in the associated sample, the qualification of J is not considered to have impacted the usability of the result. The maximum potential bias of a non-detected result would not generate a value above the reported CRQL. This qualification is the most common case for continuing calibration checks outside the QAPP criteria.

For positive percent differences with detections in the associated samples, the qualification of J generates a potential positive bias, and is noted as such on Table IV.6. For those compounds with action levels and %D outside criteria, the potential positive bias does not impact the usability of the results since the action level is significantly higher than the result.

For negative percent differences with the analyte result in the associated sample reported as less than the CRQL, the qualification of J does not impact the intended use of the result (for those compounds with action levels). The action levels for P/PCB compounds are significantly higher than the maximum impact of the potential negative bias on associated sample results. For those analytes without action limits, the potential negative bias is noted as such on Table IV.6.

The determination of the calibration curve was performed using three data points, rather than the specified five points for several laboratory batches. The validators did not qualify data generated using less than a five-point calibration curve. Using fewer than five data points to determine a calibration curve for quantitation may result in less accurate sample results. However, the inaccuracy contributed by using three data points instead of five data points does not significantly impact the accuracy of the reported sample results and the usability of the results.

Surrogate recoveries for several laboratory batches were 0%, which resulted in the qualification of the data as J. These low surrogate recoveries can be attributed to method/sample-specific limitations, such as matrix interference or dilutions of the extract. The qualified sample results have a potential error which is undefinable; however, the results should be used because of the inherent limitations of the analysis.

Sample results with surrogate recoveries slightly below QAPP criteria of 60% were qualified as J; they are, however, considered usable. These recoveries ranged from 47% to 59%. While these low recoveries could indicate negative bias, the impact on the reported sample values are considered minimal. The minimal potential low bias in the sample results are noted as such on Table IV.6. Target analyte results with action limits are considered usable since the maximum bias is significantly lower than the action limits.

Additional surrogate recoveries were significantly below the QAPP criteria. These recoveries ranged from 11% to 38%. There is no apparent evidence that these recoveries are attributed to matrix interference or dilution. The potential low bias for the affected samples is noted on Table IV.6. An estimate of low bias is not possible because it is impossible to determine whether the low recovery was caused by the sample matrix or laboratory handling.

RPDs for soil field duplicates were outside the QAPP criteria of 35%. Because soil samples are heterogeneous, it is common for the RPDs to exceed 35%. This exceeded QCC is not considered to impact the usability of the analytical results, but the indicated variability of the results should be noted.

4.2.4. USATHAMA Explosives (USATHAMA HPLC Method)

Three types of QCCs did not meet the QAPP-required criteria for explosives and resulted in the qualification of analytical results. The three QCCs were extraction holding time, calibration checks, and low tetryl recovery in MS/MSD samples. Table IV.7 summarizes those samples or laboratory batches qualified due to these QCCs and the impact of these qualifications on the intended data use.

A majority of the explosives data were qualified as J due to the exceeded QAPP extraction holding time of 7 days. The samples were extracted in either 14 to 27 days or 47 to 56 days after sample collection. However, extraction holding time requirements for other HPLC analytical methods for nitroaromatic explosives are less stringent. For example, method 8330 from SW-846 (EPA 1986) permits an extraction up to 14 days from collection and the USATHAMA Quality Assurance Manual (USATHAMA 1990) permits 56 days from collection. Based on these other two accepted analytical methods, the effect of the missed extraction holding times is not considered to impact the usability of the results.

The second exceeded QCC criteria identified during the validation process was the continuing calibration checks. Continuing calibration checks are used to evaluate the stability of the calibration curve and the comparison of the check to the curve is reported as percent difference. The percent differences outside QAPP criteria ranged between 16% to 20%. The exceeded calibration criteria could indicate a positive bias, but since the affected analytes were not detected, this calibration check did not impact the intended use of the results.

Table IV.7. Summary of Data Usability of Qualified Sample Results
Explosives

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA36804	All	UJ	HT	None.
REA36804	All	UJ	MS/MSD	Tetryl biased low
REA36809	All	UJ	HT	None.
REA36809	All	UJ	MS/MSD	Tetryl biased low
REA36816	All	UJ	HT	None.
REA36816	All	UJ	MB	None.
REA36816	All	UJ	MS/MSD	Tetryl biased low
REA36822	All	UJ	HT	None.
REA36822	All	UJ	MS/MSD	Tetryl biased low
REA36827	All	UJ	HT	None.
REA36827	All	UJ	MS/MSD	Tetryl biased low
REA37123	All	UJ	MS/MSD	Tetryl biased low
REA37124	All	UJ	MS/MSD	Tetryl biased low
REA37128	All	UJ	HT,CC	None.
REA37128	All	UJ	MS/MSD	Tetryl biased low
REA37164	All	UJ	MS/MSD	Tetryl biased low
REA37166	MND33-0064-0001	UJ	HT	None.
REA37166	MND33-0064-0001	UJ	MS/MSD	Tetryl biased low
REA37169	All	UJ	HT	None.
REA37169	All	UJ	MS/MSD	Tetryl biased low
REA37194	All	UJ	HT	None.
REA37194	All	UJ	MS/MSD	Tetryl biased low
REA37222	All	UJ	HT	None.
REA37229	All soil samples	UJ	HT	None.
REA37229	All water samples	UJ	HT	None.
REA37230	All	UJ	HT	None.
REA37234	All soil samples	UJ	HT	None.
REA37234	All water samples	UJ	HT	None.
REA37280	MND33-0101-0002	UJ	HT	None.
REA37283	MND33-0101-0001	UJ	HT	None.
REA37283	MND33-0101-0003	UJ	HT	None.
REA37284	All	UJ	HT	None.
REA37288	All	UJ	HT	None.
REA37307	All	UJ	HT	None.
REA37322	All	UJ	HT	None.
REA37331	All	UJ	HT	None.
REA37332	All	UJ	HT	None.
REA37336	All	UJ	HT	None.
REA37341	All	UJ	HT	None.
REA37341	All water samples	UJ	HT	None.

*Based on the comparison to the proposed action levels.

CC – Continuing calibration percent difference outside criteria.

HT – Holding time exceeded.

MB – Method blank contaminated.

MS/MSD – Tetryl recovery very low. QAPP does not require tetryl in MS, therefore no criteria has been set.

Low tetryl recovery, ranging from 0 to 10%, in the MS/MSD samples was noted in several laboratory batches, but was not qualified during validation. The recurring low tetryl recovery in the MS/MSD samples indicates a systematic problem which may indicate a low bias in tetryl results in the associated samples. In all the associated samples, tetryl was not detected; therefore, reported tetryl results are highly suspect.

The tetryl results for these batches are not valid for the intended use, and have been noted as such on Table IV.7.

4.2.5. Petroleum Hydrocarbons

Four types of QCCs for samples analyzed by modified method 8015 did not meet the QAPP criteria for EPHs. The four QCCs were extraction holding times, surrogate recoveries, field duplicates, and matrix interferences. Table IV.8 summarizes those samples or laboratory batches qualified due to these QCCs and the impact of these qualifications on the intended data use.

The QAPP specified extraction holding time of 7 days was routinely exceeded by the laboratory. However, the laboratory did extract the samples within 14 days of sample collection. Based on the 14-day extraction holding time for TPH analysis established in the California LUFT method and in EPA SW-846 (EPA 1986) method for SVOCs, the exceeded extraction time is not considered to impact the intended data use. The EPA SW-846 SVOC method was selected because the analytes, diesel fuel and motor oil, are in many ways similar to the SVOCs listed in the method.

Several surrogate recoveries were below the QAPP criteria and were qualified as J. Surrogate recoveries outside the criteria ranged from 0% to 249%. The low surrogate recovery was attributed to sample matrix interference caused by petroleum hydrocarbon analytes such as diesel fuel and motor oil, which are complex mixtures. These complex mixtures resulted in dilutions, which consequently diluted surrogates below the instrument's sensitivity. Hydrocarbon peaks may have masked or contributed to the surrogate recoveries. Since the surrogate recoveries could be attributed to method-specific limitations, the data are considered usable.

The RPD between field duplicates was greater than the criteria of 35%. Because of the heterogeneous nature of soils and the fact that petroleum hydrocarbons are unevenly distributed in soils, this QCC result does not impact the usability of the data. However, the indicated variability in soil results should be considered. The indicated field duplicate variation reflects a limitation associated with analysis of petroleum hydrocarbons.

Interference from motor oil in the quantitation of diesel fuel results caused the qualification of several results as J. EPH results for these samples ranged from 6.0 mG/Kg to 17.0 mG/Kg. Petroleum hydrocarbons are

Table IV.8. Summary of Data Usability of Qualified Sample Results
Extractable Petroleum Hydrocarbons

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability*
REA36796	All	J	HT	None
REA37009	MND33-0021-0001	J	INT	None
REA37009	MND33-0023-0001	J	INT	None
REA37140	All	J	HT	None
REA37140	MND33-0051-1003	J	SSR	None
REA37140	MND33-0051-0004	J	SSR	None
REA37144	All	J	HT	None
REA37144	MND33-0052-0001	J	FDRPD	None
REA37144	MND33-0052-1001	J	FDRPD	None
REA37145	All	J	HT	None
REA37145	MND33-0052-0003RE	J	HT	None
REA37148	All	J	HT	None
REA37149	All	J	HT	None
REA37149	MND33-0055-0004	J	FDRPD	None
REA37151	All	J	HT	None
REA37151	MND33-0056-0001	J	SSR	None
REA37151	MND33-0056-0006	J	SSR	None
REA37336	MND33-0135-0001	J	HT	None

*Based on comparison to the proposed action levels.

FDRPD – Field duplicate Relative Percent Difference outside criteria.
HT – Holding time exceeded.
INT – Interference.
SSR – Surrogate outside criteria.

determined by evaluating a complex response pattern on a chromatogram. The interference was reported because the motor oil response pattern in the sample overlapped the diesel fuel response pattern. The motor oil detected in the samples was not quantitated. When patterns overlap, the analyst must use professional judgment to mathematically separate the patterns which could result in a positive- or negative-biased sample result for both hydrocarbon groups. The maximum extent of the potential bias compared to the determined concentration and the proposed action limit does not impact the comparison of the sample results to the proposed action limit.

One type of QCC for soil samples analyzed by method 418.1 did not meet the QAPP criteria. The QAPP-specified extraction holding time of 7 days was exceeded by the laboratory for all soil samples. However, the laboratory did extract the samples within 14 days of sample collection. There are no established regulatory holding times for soil samples extracted and analyzed by method 418.1. Based on the 28-day extraction holding time for soil samples extracted for oil and grease by EPA SW-846, method 9071 (EPA 1986), which is used as the preparatory method for 418.1 soil analysis, the exceeded extraction time is not considered to impact the intended data use.

4.2.6. Dioxin/Furans (Method 8280)

The positive results for HxCDD and HxCDF in sample MND33-0135-0001 were qualified as J by the data validators. These values were qualified because the isotopic ratios used to confirm the presence of these compounds were slightly outside the QAPP criteria. HxCDF was further qualified because an area of the isomer was not included in the quantitation. Since the isotopic ratios were not greatly outside the criteria, and other criteria are used to confirm the presence of the compounds, the impact on the intended data use is considered minimal. The missed area for the quantitation of the HxCDF isomer does not impact the reported total toxicity because the isomer concentration is multiplied by zero for the total toxicity calculation.

4.2.7 Target Analyte List Metals and Cyanide (CLP SOW Method)

The QCCs which did not meet criteria were used to evaluate impact on the data. However, because action limits were not used to assess the data, data were not evaluated for usability. The expected impact on a reported result has been summarized in Table IV.9 and the decision process used for this evaluation is described in the following paragraphs.

Inorganic analytical results were qualified during validation primarily due to low matrix spike recoveries and poor reproducibility of laboratory duplicates. Sample results that were qualified, the reason for qualification, and the impact of the qualification on the usability of the data are presented in Table IV.9. Matrix spike recoveries outside the required 75% to 125% range resulted in qualification of the analytical results as J, UJ,

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA36796	All	J, UJ	Ag(MSR=61)	May be biased low
REA36796	All	J	Al(RLD=62)	Inaccuracy possible
REA36796	All	J	As(MSR=72)	May be biased low
REA36796	All	J, UJ	Cd(MSR=40)	May be biased low
REA36796	All	J	Mg(RLD=41)	Inaccuracy possible
REA36796	All	J	Mn(MSR=*)	Probable low bias (significant)
REA36796	All	J	Pb(MSR=42)	May be biased low
REA36796	All	R	Sb(MSR=22)	Probable low bias
REA36796	All	J	Sb(MSR=22)	Probable low bias
REA36796	All	UJ	Tl(MSR=69)	May be biased low
REA36804	All	J	Ag(MSR=61)	May be biased low
REA36804	All	J	Al(RLD=62)	Inaccuracy possible
REA36804	All	J	As(MSR=72)	May be biased low
REA36804	All	J	Cd(MSR=40)	May be biased low
REA36804	All	J	Mg(RLD=41)	Inaccuracy possible
REA36804	All	J	Mn(MSR=*)	Probable low bias (significant)
REA36804	MND33-0006-0001	J	Pb(MSR=42)	Not valid for intended use
REA36804	MND33-0006-0002	J	Pb(MSR=42)	Not valid for intended use
REA36804	All others	J	Pb(MSR=42)	May be biased low
REA36804	MND33-0006-0001	J	Sb(MSR=22)	Not valid for intended use
REA36804	All others	J	Sb(MSR=22)	Probable low bias
REA36804	MND33-0006-0001	UJ	Se(ASR=84.4)	None
REA36804	MND33-0006-0002	UJ	Se(ASR=71.8)	Probable bias of 1.4x
REA36804	All	UJ	Tl(MSR=69)	May be biased low
REA36809	All	J	Ag(MSR=61)	May be biased low
REA36809	All	J	Al(RLD=62)	Inaccuracy possible
REA36809	All	J	As(MSR=72)	May be biased low
REA36809	All	J	Cd(MSR=40)	May be biased low
REA36809	All	J	Mg(RLD=40)	Inaccuracy possible
REA36809	All	J	Mn(MSR=*)	Probable low bias (significant)
REA36809	All	J	Pb(MSR=42)	May be biased low
REA36809	All	J	Sb(MSR=22)	Probable low bias
REA36809	MND33-0009-0003	UJ	Se(ASR=78.1)	Probable low bias of 1.3x
REA36809	All	UJ	Tl(MSR=69)	May be biased low
REA36816	All	J	Ag(MSR=61)	May be biased low
REA36816	All	J	Al(RLD=62)	Inaccuracy possible
REA36816	All	J	As(MSR=72)	May be biased low
REA36816	All	J	Cd(MSR=40)	May be biased low
REA36816	All	J	Mg(RLD=40)	Inaccuracy possible
REA36816	All	J	Mn(MSR=*)	Probable low bias (significant)
REA36816	All	J	Pb(MSR=42)	May be biased low
REA36816	All	J, UJ	Sb(MSR=22)	Probable low bias
REA36816	All	UJ	Tl(MSR=69)	May be biased low
REA36822	MND33-0011-0001	J	Ag(MSR=61)	Probable low bias of 1.7x
REA36822	All others	J	Ag(MSR=61)	May be biased low
REA36822	All	J	Al(RLD=62)	Inaccuracy possible
REA36822	MND33-0011-0001	J	As(MSR=72)	Probable low bias of 1.4x
REA36822	All others	J	As(MSR=72)	May be biased low
REA36822	MND33-0011-0001	J	Cd(MSR=40)	Probable low bias of 2.5x
REA36822	All others	J	Cd(MSR=40)	May be biased low
REA36822	All	J	Mg(RLD=40)	Inaccuracy possible
REA36822	MND33-0011-0001	J	Mn(MSR=*)	Not valid for intended use.
REA36822	All others	J	Mn(MSR=*)	Probable low bias (significant)
REA36822	MND33-0011-0001	J	Pb(MSR=42)	Probable low bias of 2.5x
REA36822	All others	J	Pb(MSR=42)	May be biased low
REA36822	MND33-0011-0001	J	Sb(MSR=22)	Not valid for intended use
REA36822	MND33-0011-0002	J	Sb(MSR=22)	Not valid for intended use
REA36822	MND33-0011-1001	J	Sb(MSR=22)	Not valid for intended use

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA36822	All others	J	Sb(MSR=22)	May be biased low
REA36822	MND33-0011-0001	UJ	Se(ASR=81.5)	Probable low bias of 1.2x
REA36822	MND33-0011-0001	J	Tl(MSR=69)	Probable low bias of 1.5x
REA36822	All others	UJ	Tl(MSR=69)	May be biased low
REA36827	MND33-0015-0001	J	Ag(MSR=43)	Probable low bias of 2.5x
REA36827	All others	J	Ag(MSR=43)	May be biased low
REA36827	MND33-0015-0001	J	As(MSR=67)	Probable low bias of 1.5x
REA36827	All others	J	As(MSR=67)	May be biased low
REA36827	MND33-0015-0001	UJ	Cd(MSR=63)	Probable low bias of 1.6x
REA36827	All others	UJ	Cd(MSR=63)	May be biased low
REA36827	MND33-0015-0001	J	Co(MSR=74)	Probable low bias of 1.4x
REA36827	All others	J	Co(MSR=74)	May be biased low
REA36827	MND33-0015-0001	J	Cr(MSR=63)	Probable low bias of 1.6x
REA36827	All others	J	Cr(MSR=63)	May be biased low
REA36827	MND33-0015-0001	J	Cu(MSR=67)	Probable low bias of 1.5x
REA36827	All	J	Cu(MSR=67)	May be biased low
REA36827	All	J	Sb(MSR=10)	Not valid for intended use
REA36827	MND33-0015-0001	UJ	Tl(MSR=68)	Probable low bias of 1.5x
REA36827	All others	UJ	Tl(MSR=68)	May be biased low
REA36827	MND33-0015-0001	J	Zn(MSR=66)	Probable low bias of 1.5x
REA36827	All others	J	Zn(MSR=66)	May be biased low
REA36842	All	J	Ag(MSR=61)	May be biased low
REA36842	All	J	Al(RLD=62)	Inaccuracy possible
REA36842	All	UJ, J	As(MSR=72)	May be biased low
REA36842	All	J	Cd(MSR=40)	May be biased low
REA36842	All	J	Fe(RLD=72)	Inaccuracy possible
REA36842	All	J	Mn(MSR=*)	Probable low bias (significant)
REA36842	All	J	Pb(MSR=42)	May be biased low
REA36842	MND33-0001-0002	J	Sb(MSR=10)	Not valid for intended use
REA36842	MND33-0001-0003	J	Sb(MSR=10)	Not valid for intended use
REA36842	MND33-0002-0002	J	Sb(MSR=10)	Not valid for intended use
REA36842	All	J	Sb(MSR=22)	Probable low bias
REA36842	All	UJ	Tl(MSR=69)	May be biased low
REA36842	All	J	Zn(RLD=50)	Inaccuracy possible
REA37051	MND33-0020-0001	J	Ba(FDRPD=66)	Inaccuracy possible
REA37051	MND33-0021-0001	J	Ba(FDRPD=66)	Inaccuracy possible
REA37051	MND33-0022-0001	J	Ba(FDRPD=66)	Inaccuracy possible
REA37051	MND33-0023-0001	J	Ba(FDRPD=66)	Results may vary by 66%
REA37051	MND33-0023-1001	J	Ba(FDRPD=66)	Results may vary by 66%
REA37051	MND33-0024-0001	J	Ba(FDRPD=66)	Inaccuracy possible
REA37051	MND33-0023-0001	UJ	Cd(MSR=65)	Probable low bias of 1.5x
REA37051	All others	UJ	Cd(MSR=65)	May be biased low
REA37051	MND33-0016-0001	J	Ca(FDRPD=73)	Inaccuracy possible
REA37051	MND33-0017-0001	J	Ca(FDRPD=73)	Inaccuracy possible
REA37051	MND33-0018-0001	J	Ca(FDRPD=73)	Inaccuracy possible
REA37051	MND33-0019-0001	J	Ca(FDRPD=73)	Results may vary by 73%
REA37051	MND33-0019-1001	J	Ca(FDRPD=73)	Results may vary by 73%
REA37051	MND33-0020-0001	J	Ca(FDRPD=73)	Inaccuracy possible
REA37051	All	J	Cu(SD=14.7)	Inaccuracy possible
REA37051	All	J	Fe(SD=10.8)	None
REA37051	MND33-0016-0001	J	Mg(FDRPD=67)	Inaccuracy possible
REA37051	MND33-0017-0001	J	Mg(FDRPD=67)	Inaccuracy possible
REA37051	MND33-0018-0001	J	Mg(FDRPD=67)	Inaccuracy possible
REA37051	MND33-0019-0001	J	Mg(FDRPD=67)	Result may vary by 67%
REA37051	MND33-0019-1001	J	Mg(FDRPD=67)	Result may vary by 67%
REA37051	MND33-0020-0001	J	Mg(FDRPD=67)	Inaccuracy possible
REA37051	All	J	Ni(MB)	Raised detection limit
REA37051	MND33-0023-0001	UJ	Se(MSR=70)	Probable low bias of 1.4x

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37051	All	J, UJ	Se(MSR=70)	May be biased low
REA37051	MND33-0016-0001	U	Sb(MB)	Raised detection limit
REA37051	MND33-0022-0001	U	Sb(MB)	Raised detection limit
REA37051	MND33-0023-0001	U	Sb(MB)	Raised detection limit
REA37051	MND33-0016-0001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0017-0001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0019-0001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0019-1001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0020-0001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0024-0001	U	Ag(MB)	Raised detection limit
REA37051	MND33-0016-0001	J	As(MSA)	Inaccuracy possible
REA37123	All	UJ	Ag(MSR=74)	Slight low bias possible
REA37123	MND33-0029-0001	J	As(ASR=117)	None
REA37123	MND33-0025-0001	J	As(ASR=123)	Potential high bias of 1.2x
REA37123	MND33-0025-1001	J	Ca(FDRPD=50)	Results may vary by 50%
REA37123	MND33-0025-0001	J	Ca(FDRPD=50)	Results may vary by 50%
REA37123	All others	J	Ca(FDRPD=50)	Inaccuracy possible
REA37123	All	J,UJ	CN(BD)	Uncertainty at low levels
REA37123	MND33-0025-1001	J	Mg(FDRPD=41)	Results may vary by 40%
REA37123	MND33-0025-0001	J	Mg(FDRPD=41)	Results may vary by 40%
REA37123	All others	J	Mg(FDRPD=41)	Inaccuracy possible
REA37123	All	J,UJ	Sb(MSR=37)	Probable low bias
REA37123	All	UJ	Se(MSR=44)	Probable low bias
REA37124	MND33-0034-0001	UJ	Ag(MSR=74)	Probable low bias of 1.4x
REA37124	All others	UJ	Ag(MSR=74)	May be biased low
REA37124	MND33-0035-0001	J	As(ASR=158)	Potential high bias of 1.6x
REA37124	MND33-0037-0001	J	As(ASR=160)	Potential high bias of 1.6x
REA37124	MND33-0034-0001	J	As(ASR=131)	Potential high bias of 1.3x
REA37124	MND33-0037-1001	J	As(ASR=160)	Potential high bias of 1.6x
REA37124	MND33-0040-0001	J	As(ASR=116)	None
REA37124	MND33-0033-0001	J	As(ASR=140)	Potential high bias of 1.4x
REA37124	All	R	Hg(HT)	None
REA37124	MND33-0037-1001	J	Mn(FDRPD=41)	Results may vary by 40%
REA37124	MND33-0037-0001	J	Mn(FDRPD=41)	Results may vary by 40%
REA37124	MND33-0034-0001	UJ	Sb(MSR=37)	Probable low bias of 2.5x
REA37124	All	UJ	Sb(MSR=37)	Probable low bias
REA37124	MND33-0034-0001	UJ	Se(MSR=44)	Probable low bias of 2.5x
REA37124	All	UJ	Se(MSR=44)	Probable low bias
REA37124	MND33-0040-0001	UJ	Tl(ASR=72)	Potential low bias of 1.4x
REA37124	MND33-0036-0001	UJ	Tl(ASR=80)	Potential low bias of 1.2x
REA37124	MND33-0037-1001	J	Zn(FDRPD=38)	Results may vary by 40%
REA37124	MND33-0037-0001	J	Zn(FDRPD=38)	Results may vary by 40%
REA37128	MND33-0046-0001	J, UJ	Ag(MSR=63)	Probable low bias of 1.6x
REA37128	All others	J, UJ	Ag(MSR=63)	May be biased low
REA37128	MND33-0046-0001	J	As(MSR=12)	Probable low bias of 10x
REA37128	All others	J	As(MSR=12)	May be biased low (significant)
REA37128	MND33-0046-0001	J, UJ	Cd(MSR=61)	Probable low bias of 1.6x
REA37128	All others	J, UJ	Cd(MSR=61)	May be biased low
REA37128	All	J	CN(HT)	None
REA37128	All	J, UJ	CN(RLD=57)	Inaccuracy possible
REA37128	MND33-0046-0001	J	Cr(MSR=72)	Probable low bias of 1.4x
REA37128	All others	J	Cr(MSR=72)	May be biased low
REA37128	All	J, UJ	Hg(HT)	None
REA37128	MND33-0045-0001	J	Na(HBI)	Potentially biased 20% high
REA37128	MND33-0043-1001	J	Na(HBI)	Potentially biased 20% high
REA37128	MND33-0043-0001	J	Na(HBI)	Potentially biased 20% high
REA37128	MND33-0046-0001	J	Na(HBI)	Potentially biased 20% high
REA37128	MND33-0046-0001	J, UJ	Sb(MSR=51)	Probable low bias of 2x

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37128	All others	J, UJ	Sb(MSR=51)	Probable low bias
REA37128	MND33-0046-0001	R	Se(MSR=63)	Probable low bias of 1.6x
REA37128	All	R	Se(MSR=63)	Probable low bias
REA37128	MND33-0046-0001	UJ	Tl(MSR=65)	Probable low bias of 1.6x
REA37128	All others	UJ	Tl(MSR=65)	May be biased low
REA37128	MND33-0046-0001		Zn(MSR=70)	Probable low bias of 1.4x
REA37128	All	J	Zn(MSR=70)	May be biased low
REA37133	MND33-0050-0001	J	Ag(MSR, HBI)	Probable high bias of 1.3x
REA37133	All others	J	Ag(MSR, HBI)	May be biased high
REA37133	All	J	Al(RLD=71)	Inaccuracy possible
REA37133	MND33-0050-0001	J	Cd(MSR, HBI)	Probable low bias of 1.4x
REA37133	All others	J	Cd(MSR, HBI)	May be biased low
REA37133	MND33-0048-0002	UJ	CN(BD)	Inaccuracy possible
REA37133	All	J	Co(HBI)	May be biased high
REA37133	MND33-0048-0001	J	Cr(HBI)	May be biased high
REA37133	MND33-0048-0002	J	Cr(HBI)	May be biased high
REA37133	MND33-0050-0001	J	Cr(HBI)	May be biased high
REA37133	MND33-0050-0001	J	Cu (MSR=146)	Probable high bias of 1.5x
REA37133	All others	J	Cu (MSR=146)	May be biased high
REA37133	All	J	Fe(RLD=93)	Inaccuracy possible
REA37133	MND33-0048-0002	UJ	Hg(CC)	Not valid for intended use
REA37133	MND33-0048-0001	R	Hg(CC)	Not valid for intended use
REA37133	MND33-0048-0002	J	Ni(HBI)	May be biased high
REA37133	MND33-0050-0001	J	Ni(HBI)	May be biased high
REA37133	MND33-0048-0001	J	Ni(HBI)	May be biased high
REA37133	MND33-0049-0001	J	Pb(RLD=50)	Not valid for intended use
REA37133	MND33-0050-0001	J	Pb(RLD=50)	Not valid for intended use
REA37133	All	J	Pb(RLD=50)	Inaccuracy possible
REA37133	MND33-0050-0001	J	Sb(MSR=73)	Probable low bias of 1.4x
REA37133	All others	J	Sb(MSR, HBI)	Probable low bias
REA37133	MND33-0050-0001	UJ	Se(MSR=46)	Probable low bias of 2x
REA37133	All	UJ	Se(MSR=46)	Probable low bias
REA37133	MND33-0050-0001		Tl(MSR=68)	Probable low bias of 1.5x
REA37133	All	J, UJ	Tl(MSR=68)	May be biased low
REA37133	All	J	V(HBI)	May be biased high
REA37140	MND33-0051-0003	J	Ag(FDRPD=132)	Results may vary by 132%
REA37140	MND33-0051-1003	J	Ag(FDRPD=132)	Results may vary by 132%
REA37140	MND33-0051-0003	J	Ba(FDRPD=40)	Results may vary by 40%
REA37140	MND33-0051-1003	J	Ba(FDRPD=40)	Results may vary by 40%
REA37140	MND33-0051-0003	J	Ca(FDRPD=54)	Results may vary by 54%
REA37140	MND33-0051-1003	J	Ca(FDRPD=54)	Results may vary by 54%
REA37140	All	UJ	Cd(LBI)	May be biased low
REA37140	All	J	CN(MSR, HT)	May be biased low
REA37140	MND33-0051-0003	J	Ni(FDRPD=37)	None
REA37140	MND33-0051-1003	J	Ni(FDRPD=37)	None
REA37140	MND33-0051-0002	J	Pb(CC)	None
REA37140	MND33-0051-0003	J	Pb(CC,ASR=83)	Probable low bias
REA37140	MND33-0051-0004	J	Pb(CC,RLD)	Inaccuracy possible
REA37140	MND33-0051-1003	J	Pb(CC,RLD)	Inaccuracy possible
REA37140	All	UJ	Sb(MSR=41)	Probable low bias
REA37140	All	R?	Se(MSR=14)	Probable low bias (significant)
REA37140	MND33-0051-0001	UJ	Tl(ASR=69)	Probable low bias of 1.4x
REA37140	MND33-0051-0003	UJ	Tl(CC)	Inaccuracy possible
REA37140	MND33-0051-0004	UJ	Tl(CC)	Inaccuracy possible
REA37140	MND33-0051-0002	UJ	Tl(CC,ASR=73)	Probable low bias by 1.3x
REA37140	MND33-0051-1003	UJ	Tl(CC,ASR=70)	Probable low bias by 1.4x
REA37140	MND33-0051-1003	J	Zn(FDRPD=36)	Results may vary by 36%
REA37140	MND33-0051-0003	J	Zn(FDRPD=36)	Results may vary by 36%

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37144	MND33-0052-0001	J	As(MSA)	Inaccuracy possible
REA37144	MND33-0052-1001	J	Ba(FDRPD=37)	None
REA37144	MND33-0052-0001	J	Ba(FDRPD=37)	None
REA37144	MND33-0052-0001	J	Ca(FDRPD=70)	Results may vary by 70%
REA37144	MND33-0052-1001	J	Ca(FDRPD=70)	Results may vary by 70%
REA37144	All	UJ	Cd(LBI)	May be biased low
REA37144	All	UJ	CN(MSR=49)	May be biased low
REA37144	MND33-0052-1001	J	Cu(FDRPD=44)	Results may vary by 45%
REA37144	MND33-0052-0001	J	Cu(FDRPD=44)	Results may vary by 45%
REA37144	MND33-0052-0001	J	Fe(FDRPD=44)	Results may vary by 45%
REA37144	MND33-0052-1001	J	Fe(FDRPD=44)	Results may vary by 45%
REA37144	MND33-0052-1001	J	Hg(FDRPD=100)	Results may vary by 100%
REA37144	MND33-0052-0001	J	Hg(FDRPD=100)	Results may vary by 100%
REA37144	MND33-0052-0001	J	Mn(FDRPD=38)	Results may vary by 40%
REA37144	MND33-0052-1001	J	Mn(FDRPD=38)	Results may vary by 40%
REA37144	MND33-0052-1001	J	Ni(FDRPD=41)	Results may vary by 40%
REA37144	MND33-0052-0001	J	Ni(FDRPD=41)	Results may vary by 40%
REA37144	MND33-0052-1001	J	Pb(FDRPD=69)	Results may vary by 70%
REA37144	MND33-0052-0001	J	Pb(FDRPD=69)	Results may vary by 70%
REA37144	All	UJ	Sb(MSR=41)	Probable low bias
REA37144	All	R	Se(MSR=14)	Probable low bias (significant)
REA37144	MND33-0052-0002	UJ	Tl(ASR=76)	Probable low bias of 1.3x
REA37144	MND33-0052-0001	J	V(FDRPD=38)	None
REA37144	MND33-0052-1001	J	V(FDRPD=38)	None
REA37145	MND33-0053-0001	J	As(MSA=NR)	None
REA37145	MND33-0053-0003	J	As(MSA=NR)	None
REA37145	MND33-0053-0001	J	As(MSA=NR)	None
REA37145	MND33-0052-0003	UJ	CN(MSR=49)	Probable low bias of 2x
REA37145	All others	UJ	CN(MSR=49)	May be biased low
REA37145	MND33-0052-0003	J	Pb(MSA=NR)	None
REA37145	MND33-0053-0004	J	Pb(MSA=NR)	None
REA37145	MND33-0052-0003	UJ	Sb(MSR=41)	Probable low bias of 2x
REA37145	All others	UJ	Sb(MSR=41)	Probable low bias
REA37145	MND33-0052-0003	R	Se(MSR=14)	Probable low bias of 10x
REA37145	All others	R	Se(MSR=14)	Probable low bias
REA37145	MND33-0053-0004	UJ	Tl(ASR=79)	Probable low bias of 1.3x
REA37148	MND33-0054-0003	J	As(ASR=129)	Probable high bias of 1.3x
REA37148	MND33-0054-0002	J	As(ASR=129)	Probable high bias of 1.3x
REA37148	All	UJ	Cd(LBI)	May be biased low
REA37148	All	UJ	CN(MSR=49)	May be biased low
REA37148	MND33-0054-0003	J	Pb(ASR=79)	Probable low bias of 1.3x
REA37148	All	UJ	Sb(MSR=41)	Probable low bias
REA37148	All	R	Se(MSR=14)	Probable low bias
REA37148	MND33-0054-0001	UJ	Tl(ASR=84)	Potential low bias of 1.2x
REA37148	MND33-0054-0001	UJ	Tl(ASR=80)	Potential low bias of 1.2x
REA37148	MND33-0054-0001	UJ	Tl(ASR=79)	Potential low bias of 1.3x
REA37149	MND33-0055-0002	J	As(MSR=152)	Probable high bias of 1.5x
REA37149	All others	J	As(MSR=152)	May be biased high
REA37149	All	UJ	Cd(LBI)	May be biased low
REA37149	MND33-0055-0002	UJ	CN(MSR=63)	Probable low bias by 1.5x
REA37149	All others	UJ	CN(MSR=63)	May be biased low
REA37149	MND33-0055-0004	J	Pb(MSA=NR)	None
REA37149	MND33-0054-0004	J	Pb(MSA=NR)	None
REA37149	MND33-0055-1004	J	Pb(MSA=NR)	None
REA37149	MND33-0055-0003	J	Pb(MSA=NR)	None
REA37149	MND33-0055-0002	UJ	Sb(MSR=51)	Probable low bias of 2x
REA37149	All	UJ	Sb(MSR=51)	Probable low bias
REA37149	MND33-0055-0002	R	Se(MSR=28)	Probable low bias of 3.3x

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37149	All	R	Se(MSR=28)	Probable low bias
REA37149	MND33-0054-0004	UJ	Tl(ASR=84)	None
REA37149	MND33-0055-1004	UJ	Tl(ASR=67)	Probable low bias of 1.5x
REA37149	MND33-0055-0004	UJ	Tl(ASR=72)	Probable low bias of 1.4x
REA37149	MND33-0055-0003	UJ	Tl(ASR=83)	None
REA37151	MND33-0057-0001	J	Fe(SD=16)	May vary by 16%
REA37151	MND33-0056-0002	J	Fe(SD=16)	May vary by 16%
REA37151	MND33-0056-0003	J	Fe(SD=16)	May vary by 16%
REA37151	MND33-0056-0003	J	Pb(MSA)	None
REA37151	MND33-0057-0001	J	Zn(SD=16)	May vary by 16%
REA37151	MND33-0056-0002	J	Zn(SD=16)	May vary by 16%
REA37151	MND33-0056-0003	J	Zn(SD=16)	May vary by 16%
REA37151	MND33-0056-0002	UJ	As(ASR=130)	Probable high bias of 1.3x
REA37151	MND33-0056-0001	J	As(ASR=116)	None
REA37151	All	R	CN(BD)	May be biased low
REA37151	All	J, UJ	Sb(MSR=41)	Probable low bias
REA37151	All	R	Se(MSR=14)	Probable low bias
REA37151	MND33-0056-0002	UJ	Tl(ASR=75)	Potential low bias of 1.3x
REA37152	MND33-0058-0001	J	As(ASR=125)	Probable high bias of 1.3x
REA37152	MND33-0058-1001	J	As(ASR=122)	Probable high bias of 1.2x
REA37152	MND33-0057-0002	J	As(MSA)	None
REA37152	All	R	CN(BD)	May be biased low
REA37152	All	J, UJ	Sb(MSR=41)	Probable low bias
REA37152	All	R	Se(MSR=14)	Probable low bias
REA37152	MND33-0057-0003	UJ	Tl(ASR=82)	May be biased slightly low
REA37152	MND33-0059-0001	UJ	Tl(ASR=75)	Probable low bias of 1.3x
REA37157	All	J	As(MSR=152)	May be biased high
REA37157	All	R	CN(BD)	May be biased low
REA37157	MND33-0058-0002	J	Pb(MSA=NR)	None
REA37157	All	UJ	Sb(MSR=51)	Probable low bias
REA37157	All	R	Se(MSR=28)	Probable low bias
REA37157	MND33-0058-0002	UJ	Tl(ASR=62)	Probable low bias of 1.6x
REA37163	MND33-0059-0003	J	Ag(MSR=73)	Probable low bias of 1.4x
REA37163	All others	J	Ag(MSR=73)	May be biased low
REA37163	MND33-0059-0003	J	As(MSR=41)	Probable low bias of 2.5x
REA37163	All	J	As(MSR=41)	May be biased low
REA37163	All	J	Cd(HBI)	May be biased low
REA37163	All	J	Co(HBI)	May be biased low
REA37163	MND33-0059-0002	UJ	Hg(CC)	May be biased low
REA37163	MND33-0059-0003	J	Sb(HBI, MSR=23)	May be biased low
REA37163	MND33-0059-0002	J	Sb(HBI, MSR=23)	May be biased low
REA37163	MND33-0059-0003	R	Se(MSR=25)	Probable low bias of 4x
REA37163	All	R	Se(MSR=25)	Probable low bias (significant)
REA37163	MND33-0059-0003	UJ	Tl(MSR=75)	None
REA37163	All others	UJ	Tl(MSR=75)	None
REA37163	All	J	V(HBI)	May be biased high
REA37163	All	J	Zn(RLD=127, SD)	Inaccuracy possible
REA37164	MND33-0062-1001	J	Ag(HBI,MSR=73)	Inaccuracy possible
REA37164	MND33-0062-0001	J	Ag(HBI,MSR=73)	Inaccuracy possible
REA37164	MND33-0062-0002	J	Ag(HBI,MSR=73)	Inaccuracy possible
REA37164	MND33-0062-0003	J	Ag(HBI,MSR=73)	Inaccuracy possible
REA37164	MND33-0062-1002	J	Ag(HBI,MSR=73)	Inaccuracy possible
REA37164	All	J	Ag(MSR=73)	May be biased low
REA37164	All	J	Al(FDRPD=40)	Inaccuracy possible
REA37164	All	J	As(MSR=41)	May be biased low
REA37164	All	J	Cd(FDRPD=86)	Inaccuracy possible
REA37164	MND33-0062-0002	J	Cd(HBI)	May be biased high
REA37164	MND33-0062-0001	J	Cd(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37164	MND33-0062-1001	J	Cd(HBI)	May be biased high
REA37164	MND33-0062-0003	J	Cd(HBI)	May be biased high
REA37164	MND33-0062-1002	J	Cd(HBI)	May be biased high
REA37164	MND33-0062-1002	J	Co(HBI)	May be biased high
REA37164	MND33-0062-0002	J	Co(HBI)	May be biased high
REA37164	MND33-0062-1001	J	Co(HBI)	May be biased high
REA37164	MND33-0062-0003	J	Co(HBI)	May be biased high
REA37164	MND33-0062-0001	J	Co(HBI)	May be biased high
REA37164	MND33-0062-1002	J	Cu(HBI)	May be biased high
REA37164	MND33-0062-0003	J	Cu(HBI)	May be biased high
REA37164	MND33-0062-0002	J	Cu, Ni(HBI)	May be biased high
REA37164	All	J	Fe(FDRPD=44)	Inaccuracy possible
REA37164	MND33-0062-0003	J	Ni(HBI)	May be biased high
REA37164	MND33-0062-1002	J	Ni(HBI)	May be biased high
REA37164	All	J	Pb(FDRPD=102)	Inaccuracy possible
REA37164	MND33-0062-1001	J	Sb(MSR=23,HBI)	Not valid for intended use
REA37164	MND33-0062-0003	J	Sb(MSR=23,HBI)	May be biased low
REA37164	MND33-0062-0002	J	Sb(MSR=23,HBI)	May be biased low
REA37164	MND33-0062-1002	J	Sb(MSR=23,HBI)	May be biased low
REA37164	MND33-0062-0001	J	Sb(MSR=23,HBI)	Not valid for intended use
REA37164	All others	R	Sb(MSR=23)	Probable low bias
REA37164	All	R	Se(MSR=25)	Probable low bias
REA37164	All	UJ	Tl(MSR=75)	May be biased low
REA37164	MND33-0062-0002	J	V(HBI)	May be biased high
REA37164	MND33-0062-0003	J	V(HBI)	May be biased high
REA37164	MND33-0062-1001	J	V(HBI)	May be biased high
REA37164	MND33-0062-0001	J	V(HBI)	May be biased high
REA37164	MND33-0062-1002	J	V(HBI)	May be biased high
REA37164	All	J	Zn(RLD=127, SD=13)	Inaccuracy possible
REA37165	MND33-0063-0001	J	As(MSR=33)	Probable low bias of 3.3x
REA37165	MND33-0063-0001	J	Ba(RLD=2.9 CRDL)	Inaccuracy possible
REA37165	MND33-0063-0001	J	CN(DCS)	None
REA37165	MND33-0063-0001	J	Fe(RLD=39)	Inaccuracy possible
REA37165	MND33-0063-0001	J	Mn(RLD=91)	Inaccuracy possible
REA37165	MND33-0063-0001	R	Sb(MSR=28)	Probable low bias
REA37165	MND33-0063-0001	UJ	Se(MSR=37)	Probable low bias of 2.5x
REA37165	MND33-0063-0001	J	Zn(SD)	Inaccuracy possible
REA37166	MND33-0064-0001	J	Ag(HBI)	May be biased high
REA37166	MND33-0064-0001	J	As(MSR=68)	May be biased low
REA37166	MND33-0064-0001	J	Be(HBI)	May be biased high
REA37166	MND33-0064-0001	R	CN(CDL)	None
REA37166	MND33-0064-0001	J	Co(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Cr(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Cu(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Mg(RLD=35.3)	None
REA37166	MND33-0064-0001	J	Mn(MSR=75)	May be biased low
REA37166	MND33-0064-0001	J	Ni(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Ni(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Pb(MSR=239)	May be biased high
REA37166	MND33-0064-0001	J	Sb(MSR=57)	Probable low bias
REA37166	MND33-0064-0001	UJ	Se(MSR=40)	Probable low bias
REA37166	MND33-0064-0001	UJ	Tl(MSR=70)	May be biased low
REA37166	MND33-0064-0001	J	V(HBI)	May be biased high
REA37166	MND33-0064-0001	J	Zn(HBI,SD)	Inaccuracy possible
REA37169	All	J	As(MSR=33)	May be biased low
REA37169	MND33-0068-0001	J	Cl(MSR=200)	Potentially biased up to 2x high.
REA37169	MND33-0069-1001	J	Cn(MSR=173)	None
REA37169	All	J	Mg(RLD=35)	Inaccuracy possible

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37169	All	J	Mn(MSR=75)	May be biased low
REA37169	MND33-0068-0001	J	Nitrate(MS=NR)	None
REA37169	MND33-0068-0001	J	Nitrite(MS=NR)	None
REA37169	All	J	Pb(MSR=239)	May be biased high
REA37169	All	J	Sb(MSR=57)	Probable low bias
REA37169	All	UJ	Se(MSR=40)	Probable low bias
REA37169	All	UJ	Tl(MSR=70)	May be biased low
REA37169	All	J	Zn(SD=20)	Inaccuracy possible
REA37172	MND33-0070-0001	J	As(MSR=68)	Probable low bias of 1.5x
REA37172	All others	J	As(MSR=68)	May be biased low
REA37172	MND33-0070-0002	J	CN(MSR=173)	May be biased high by 1.7x
REA37172	MND33-0070-1002	J	CN(MSR=173)	May be biased high by 1.7x
REA37172	MND33-0070-0001	J	CN(MSR=173)	May be biased high
REA37172	All	J	Mg(RLD=35)	Inaccuracy possible
REA37172	MND33-0070-0001	J	Mn(MSR=75)	Probable low bias of 1.4x
REA37172	All others	J	Mn(MSR=75)	May be biased low
REA37172	MND33-0070-0001	J	Pb(MSR=239)	Probable high bias of 2.3x
REA37172	All others	J	Pb(MSR=239)	May be biased high
REA37172	MND33-0070-0001	J	Sb(MSR=57)	Probable low bias of 2x
REA37172	All others	J	Sb(MSR=57)	May be biased low
REA37172	MND33-0070-0001	UJ	Se(MSR=40)	Probable low bias of 2.5x
REA37172	All others	UJ	Se(MSR=40)	Probable low bias
REA37172	MND33-0070-0001	UJ	Tl(MSR=70)	Probable low bias of 1.4x
REA37172	All	UJ	Tl(MSR=70)	May be biased low
REA37172	All	J	Zn(SD)	Inaccuracy possible
REA37181	MND33-0072-4002	UJ	As(MSR=65)	NA-RINSATE
REA37181	All soils	J	As(MSR=65)	May be biased low
REA37181	All soils	U	CN(MB)	None
REA37181	All Soils	J	Co(MSR=74)	May be biased low
REA37181	MND33-0072-4002	UJ	Co(MSR=74)	NA-RINSATE
REA37181	MND33-0072-4002	UJ	Cr(MSR=71)	NA-RINSATE
REA37181	All soils	J	Cr(MSR=71)	May be biased low
REA37181	MND33-0072-4002	UJ	Mg(RLD=38)	NA-RINSATE
REA37181	All soils	J	Mg(RLD=38)	Inaccuracy possible
REA37181	MND33-0072-4002	J	Mn(MSR=56)	NA-RINSATE
REA37181	All soils	J	Mn(MSR=56)	May be biased low
REA37181	MND33-0072-4002	UJ	Ni(MSR=73)	NA-RINSATE
REA37181	All soils	J	Ni(MSR=73)	May be biased low
REA37181	MND33-0072-4002	UJ	Sb(MSR=39)	NA-RINSATE
REA37181	All soils	J	Sb(MSR=39)	Probable low bias
REA37181	MND33-0072-4002	UJ	Se(MSR=71)	NA-RINSATE
REA37181	All soils	UJ	Se(MSR=71)	Probable low bias
REA37181	MND33-0072-4002	UJ	Tl(MSR=72)	NA-RINSATE
REA37181	All soils	UJ	Tl(MSR=72)	May be biased low
REA37181	MND33-0072-4002	UJ	Zn(MSR=66)	NA-RINSATE
REA37181	All soils	J	Zn(MSR=66)	May be biased low
REA37185	MND33-0073-0001	J	Ag(HBI)	None
REA37185	MND33-0073-0001	J	As(MSR=65)	May be biased low
REA37185	MND33-0073-0001	J	Ba(HBI)	May be biased high
REA37185	MND33-0073-0001	J	Be(HBI)	May be biased high
REA37185	MND33-0073-0001	UJ	CN(MB,DCS)	Raised detection limit
REA37185	MND33-0073-0001	J	Co(MSR=74,HBI)	Inaccuracy possible
REA37185	MND33-0073-0001	J	Cr(MSR=71,HBI)	Inaccuracy possible
REA37185	MND33-0073-0001	J	Cu(HBI)	May be biased high
REA37185	MND33-0073-0001	J	Mg(RLD=38)	Inaccuracy possible
REA37185	MND33-0073-0001	J	Mn(RLD=56)	Inaccuracy possible
REA37185	MND33-0073-0001	J	Ni(MSR=73,HBI)	Variability may be significant
REA37185	MND33-0073-0001	J	Sb(MSR=39)	Probable low bias

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37185	MND33-0073-0001	UJ	Se(MSR=71, HDL)	Probable low bias
REA37185	MND33-0073-0001	UJ	Tl(MSR=72)	May be biased low
REA37185	MND33-0073-0001	J	V(HBI)	May be biased high
REA37185	MND33-0073-0001	J	Zn(MSR=66,HBI)	Inaccuracy possible
REA37187	MND33-0074-0001	J	As(MSR=65)	May be biased low
REA37187	MND33-0074-0001	UJ	CN(MB,DCS)	Raised detection limit
REA37187	MND33-0074-0001	J	Co(MSR=74)	May be biased low
REA37187	MND33-0074-0001	J	Cr(MSR=71)	May be biased low
REA37187	MND33-0074-0001	J	Fe(QCD)	None
REA37187	MND33-0074-0001	J	Mg(RLD=38)	Inaccuracy possible
REA37187	MND33-0074-0001	J	Mn(RLD=56)	Inaccuracy possible
REA37187	MND33-0074-0001	J	Ni(MSR=73)	May be biased low
REA37187	MND33-0074-0001	J	Sb(MSR=39)	Probable low bias
REA37187	MND33-0074-0001	UJ	Se(MSR=71, HDL)	Probable low bias
REA37187	MND33-0074-0001	UJ	Tl(MSR=72)	May be biased low
REA37187	MND33-0074-0001	J	Zn(MSR=66)	May be biased low
REA37189	MND33-0075-0001	J	As(MSR=65)	Probable low bias of 1.5x
REA37189	All others	J	As(MSR=65)	May be biased low
REA37189	MND33-0075-0001	J	CN(MSR=125)	Probable high bias of 1.2x
REA37189	All others	J	CN(MSR=125)	May be biased high
REA37189	MND33-0075-0001	J	Co(MSR=74)	Probable low bias of 1.4x
REA37189	All others	J	Co(MSR=74)	May be biased low
REA37189	MND33-0075-0001	J	Cr(MSR=71)	Probable low bias of 1.4x
REA37189	All others	J	Cr(MSR=71)	May be biased low
REA37189	All	J	Mg(RLD=38)	Inaccuracy possible
REA37189	All	J	Mn(RLD=56)	Inaccuracy possible
REA37189	MND33-0075-0001	J	Ni(MSR=73)	May be biased low by 1.4x
REA37189	All others	J	Ni(MSR=73)	May be biased low
REA37189	MND33-0075-0001	J	Sb(MSR=39)	Probable low bias of 2.5x
REA37189	All	J	Sb(MSR=39)	Probable low bias
REA37189	MND33-0075-0001	UJ	Se(MSR=71, HDL)	Probable low bias of 1.4x
REA37189	All	UJ	Se(MSR=71, HDL)	Probable low bias
REA37189	MND33-0075-0001	UJ	Tl(MSR=72)	Probable low bias of 1.4x
REA37189	All	UJ	Tl(MSR=72)	Probable low bias
REA37189	MND33-0075-0001	J	Zn(MSR=66)	Probable low bias of 1.5x
REA37189	All	J	Zn(MSR=66)	May be biased low
REA37190	All	J	As(MSR=65)	May be biased low
REA37190	MND33-0076-0001	J	CN(MSR=125)	May be biased high
REA37190	MND33-0077-0001	J	CN(MSR=125)	May be biased high
REA37190	All	J	Co(MSR=74)	May be biased low
REA37190	All	J	Cr(MSR=71)	May be biased low
REA37190	All	J	Mg(RLD=38)	Inaccuracy possible
REA37190	All	J	Mn(RLD=56)	Inaccuracy possible
REA37190	All	J	Ni(MSR=73)	May be biased low
REA37190	All	J	Sb(MSR=39)	Probable low bias
REA37190	All	UJ	Se(MSR=71, HDL)	Probable low bias
REA37190	All	UJ	Tl(MSR=72)	May be biased low
REA37190	All	J	Zn(MSR=66)	May be biased low
REA37193	All	J	As(MSR=65)	May be biased low
REA37193	MND33-0079-0002	J	CN(MSR=125)	May be biased high
REA37193	MND33-0079-0002	J	Co(MSR=74)	May be biased low
REA37193	MND33-0079-0001	J	Co(MSR=74)	May be biased low
REA37193	All	J	Cr(MSR=71)	May be biased low
REA37193	All	J	Mg(RLD=38)	Inaccuracy possible
REA37193	All	J	Mn(RLD=56)	Inaccuracy possible
REA37193	All	J	Ni(MSR=73)	May be biased low
REA37193	All	J	Sb(MSR=39)	Probable low bias
REA37193	All	UJ	Se(MSR=71, HDL)	Probable low bias

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37193	All	UJ	TL(MSR=72)	May be biased low
REA37193	All	J	Zn(MSR=66)	May be biased low
REA37194	MND33-0081-0001	J	Ag(MSR=71)	Probable low bias of 1.4x
REA37194	All	J	Ag(MSR=71)	May be biased low
REA37194	MND33-0081-0001	J	As(MSR=41)	Probable low bias of 2.5x
REA37194	All	J	As(MSR=41)	May be biased low
REA37194	MND33-0081-0001	J	Cd(MSR=67)	Probable low bias of 1.5x
REA37194	All	J	Cd(MSR=67)	May be biased low
REA37194	MND33-0081-0001	J	Cl(MS=44)	Probable low bias of 2.3
REA37194	MND33-0080-0001	J	Cl(MS=44)	Probable low bias of 2.3
REA37194	MND33-0081-0001	J	Co(MSR=74)	Probable low bias of 1.4x
REA37194	All	J	Co(MSR=74)	May be biased low
REA37194	MND33-0081-0001	J	Cr(MSR=75)	Probable low bias of 1.3x
REA37194	All	J	Cr(MSR=75)	May be biased low
REA37194	MND33-0081-0001	J	Cu(MSR=75)	Probable low bias of 1.3x
REA37194	All	J	Cu(MSR=75)	May be biased low
REA37194	MND33-0081-0001	U	Nitrite(CDL)	Raised detection limit
REA37194	MND33-0081-0001	J	Pb(MSR=59)	Probable low bias of 1.7x
REA37194	All	J	Pb(MSR=59)	May be biased low
REA37194	MND33-0081-0001	J	Sb(MSR=30)	Probable low bias of 3.3x
REA37194	All	J	Sb(MSR=30)	Probable low bias
REA37194	MND33-0081-0001	J	Zn(MSR=73)	Probable low bias of 1.4x
REA37194	All	J	Zn(MSR=73)	May be biased low
REA37208	All	J	Ag(MSR=71,HBI)	Inaccuracy possible
REA37208	All	J	As(MSR=41)	May be biased low
REA37208	All	J	Be(HBI)	May be biased high
REA37208	All	J,UJ	Cd(MSR=67,HBI)	Inaccuracy possible
REA37208	All	UJ	CN(DCS)	None
REA37208	MND33-0039-0002	J	Co(MSR=74,HBI)	Inaccuracy possible
REA37208	MND33-0034-0002	J	Co(MSR=74,HBI)	Inaccuracy possible
REA37208	All	J	Cr(HBI)	May be biased high
REA37208	All	J	Cu(HBI)	May be biased high
REA37208	All	J	Fe(QCD)	None
REA37208	All	J	Ni(HBI)	May be biased high
REA37208	All	J	Pb(MSR=59)	May be biased low
REA37208	All	J	Sb(MSR=30)	Probable low bias
REA37208	MND33-0039-0002	UJ	Tl(ASR=83)	None
REA37208	All	J	V(HBI)	None
REA37208	All	J	Zn(MSR=73)	May be biased low
REA37222	MND33-0082-0001	J	Ag(HBI)	May be biased high
REA37222	MND33-0085-0001	J	Ag(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Ag(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Ag(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Be(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Be(HBI)	May be biased high
REA37222	MND33-0082-0001	J	Be(HBI)	May be biased high
REA37222	MND33-0085-0001	J	Be(HBI)	May be biased high
REA37222	MND33-0082-0001	J	Cd(HBI)	May be biased high
REA37222	MND33-0085-0001	J	Cd(HBI)	May be biased high
REA37222	MND33-0083-0001	11.5UJ	Cl(CDL)	None
REA37222	All samples for metals	J	CN(DCS)	None
REA37222	MND33-0083-0001	J	Co(HBI)	May be biased high
REA37222	MND33-0085-0001	J	Co(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Co(HBI)	May be biased high
REA37222	MND33-0082-0001	J	Co(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Cr(HBI)	May be biased high
REA37222	MND33-0085-0001	J	Cr(HBI)	May be biased high
REA37222	MND33-0082-0001	J	Cr(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37222	MND33-0085-0002	J	Cr(HBI)	May be biased high
REA37222	All samples for metals	J	Cu(MSR=151,RLD=50)	Inaccuracy possible
REA37222	MND33-0081-0001	J	Fe(QCD)	None
REA37222	MND33-0084-0001	J	Fe(QCD)	None
REA37222	MND33-0082-0001	J	Fe(QCD)	None
REA37222	MND33-0061-0001	J	Fe(QCD)	None
REA37222	MND33-0081-1001	J	Fe(QCD)	None
REA37222	MND33-0085-0001	J	Fe(QCD)	None
REA37222	MND33-0083-0001	J	Fe(QCD)	None
REA37222	MND33-0082-0001	J	Na(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Na(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Na(HBI)	May be biased high
REA37222	MND33-0083-0001	10UJ	Nitrite(CDL)	None
REA37222	MND33-0083-0002	10UJ	Nitrite(CDL)	None
REA37222	MND33-0085-0001	J	Ni(HBI)	May be biased high
REA37222	MND33-0082-0001	J	Ni(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Ni(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Ni(HBI)	May be biased high
REA37222	All samples for metals	J	Pb(RLD=116)	Inaccuracy possible
REA37222	All	J,UJ	Sb(MSR=73)	Probable low bias
REA37222	MND33-0081-1001	UJ	Se(ASR=82)	Probable low bias of 1.2x
REA37222	MND33-0061-0001	UJ	Se(ASR=120)	Probable low bias of 1.2x
REA37222	MND33-0081-0001	UJ	Se(ASR=128)	Probable low bias of 1.3x
REA37222	MND33-0085-0002	UJ	Se(ASR=60)	Probable low bias of 1.7x
REA37222	MND33-0083-0001	UJ	Se(ASR=62)	Probable low bias of 1.6x
REA37222	MND33-0082-0001	UJ	Se(ASR=69)	Probable low bias of 1.4x
REA37222	MND33-0085-0001	UJ	Se(ASR=58)	Probable low bias of 1.7x
REA37222	MND33-0085-0001	J	V(HBI)	May be biased high
REA37222	MND33-0082-0001	J	V(HBI)	May be biased high
REA37222	MND33-0083-0001	J	V(HBI)	May be biased high
REA37222	MND33-0085-0002	J	V(HBI)	May be biased high
REA37222	MND33-0085-0002	J	Zn(HBI)	May be biased high
REA37222	MND33-0083-0001	J	Zn(HBI)	May be biased high
REA37229	MND33-0086-4001	UJ	CN(DCS)	None
REA37229	MND33-0086-0001	J	CN(DCS)	None
REA37229	MND33-0086-0001	J	Cu(RLD=50)	Inaccuracy possible
REA37229	MND33-0086-0001	J	Fe(QCD)	None
REA37229	MND33-0086-0001	J	Pb(RLD=116)	Inaccuracy possible
REA37229	MND33-0086-0001	J	Sb(MSR=73)	Probable low bias
REA37229	MND33-0086-0001	J	Se(MSA)	Probable low bias
REA37229	MND33-0086-0001	U	Tl(MB)	Raised detection limit
REA37230	MND33-0092-0001	J	Ag(MSR=52)	Probable low bias of 2x
REA37230	All others	J	Ag(MSR=52)	May be biased low
REA37230	MND33-0094-1001	J	Al(FDRPD=137)	Results may vary by 137%
REA37230	MND33-0094-0001	J	Al(FDRPD=137)	Results may vary by 137%
REA37230	MND33-0092-0001	J	As(MSR=50)	Probable low bias by 2x
REA37230	All others	J	As(MSR=50)	May be biased low
REA37230	MND33-0093-0001	J	Be(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Be(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Be(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Be(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Be(HBI)	May be biased high
REA37230	MND33-0091-0001	J	Be(HBI)	May be biased high
REA37230	MND33-0090-1001	J	Be(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Be(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Ca(FDRPD=131)	None
REA37230	MND33-0094-1001	J	Ca(FDRPD=131)	None
REA37230	MND33-0090-1001	J	Ca(FDRPD)	None

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37230	MND33-0090-0001	J	Ca(FDRPD)	None
REA37230	MND33-0094-0001	J	Ca(FDRPD)	None
REA37230	MND33-0090-0001	J	Cd(FDRPD)	None
REA37230	MND33-0094-0001	J	Cd(FDRPD)	None
REA37230	MND33-0094-1001	J	Cd(FDRPD)	None
REA37230	MND33-0090-1001	J	Cd(FDRPD)	None
REA37230	MND33-0091-0001	J	Cd(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Cd(HBI)	May be biased high
REA37230	MND33-0090-1001	J	Cd(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Cd(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Cd(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Cd(HBI)	May be biased high
REA37230	MND33-0093-0001	J	Cd(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Cd(HBI)	May be biased high
REA37230	MND33-0091-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0091-0002	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0090-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0087-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0090-1001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0093-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0094-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0094-0002	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0088-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0089-0001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0094-1001	UJ	CN(MB,RLD,DCS)	Raised detection limit
REA37230	MND33-0092-0001	J	CN(RLD,DCS)	Inaccuracy possible
REA37230	MND33-0093-0001	J	Co(HBI)	May be biased high
REA37230	MND33-0091-0001	J	Co(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Co(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Co(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Co(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Co(HBI)	May be biased high
REA37230	MND33-0090-1001	J	Co(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Co(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Cr(MSR=73)	Probable low bias of 1.3x
REA37230	All others	J	Cr(MSR=73)	May be biased low
REA37230	MND33-0090-1001	J	Cu(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Cu(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Cu(HBI)	May be biased high
REA37230	MND33-0091-0001	J	Cu(HBI)	May be biased high
REA37230	MND33-0093-0001	J	Cu(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Cu(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Cu(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Cu(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Fe(FDRPD=135.3)	Results may vary by 135%
REA37230	MND33-0094-1001	J	Fe(FDRPD=135.3)	Results may vary by 135%
REA37230	MND33-0090-0001	J	Fe(QCD)	None
REA37230	MND33-0093-0001	J	Fe(QCD)	None
REA37230	MND33-0090-1001	J	Fe(QCD)	None
REA37230	MND33-0092-0001	J	Fe(QCD)	None
REA37230	MND33-0094-1001	J	Fe(QCD)	None
REA37230	MND33-0094-0002	J	Fe(QCD)	None
REA37230	All	J	Mg(RLD=40.6)	Inaccuracy possible
REA37230	MND33-0092-0001	J	Mn(MSR=*)	Not valid for intended use
REA37230	All others	J	Mn(MSR=*)	May be biased low (significant)
REA37230	MND33-0090-1001	J	Na(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Na(HBI)	May be biased high
REA37230	MND33-0093-0001	J	Na(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37230	MND33-0091-0001	J	Na(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Na(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Na(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Na(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Na(HBI)	May be biased high
REA37230	MND33-0094-0001	J	Ni(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Ni(HBI)	May be biased high
REA37230	MND33-0090-1001	J	Ni(HBI)	May be biased high
REA37230	MND33-0093-0001	J	Ni(HBI)	May be biased high
REA37230	MND33-0090-0001	J	Ni(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Ni(HBI)	May be biased high
REA37230	MND33-0091-0002	J	Ni(HBI)	May be biased high
REA37230	MND33-0091-0001	J	Ni(HBI)	May be biased high
REA37230	MND33-0094-1001	J	Pb(FDRPD=91)	Results may vary by 91%
REA37230	MND33-0094-0001	J	Pb(FDRPD=91)	Results may vary by 91%
REA37230	MND33-0092-0001	J	Sb(MSR=14)	Probable low bias by 7x
REA37230	MND33-0090-0001	J	Sb(MSR=14)	Not valid for intended use
REA37230	MND33-0090-1001	J	Sb(MSR=14)	Not valid for intended use
REA37230	MND33-0091-0002	J	Sb(MSR=14)	Not valid for intended use
REA37230	MND33-0091-0003	J	Sb(MSR=14)	Not valid for intended use
REA37230	MND33-0093-0001	J	Sb(MSR=14)	Not valid for intended use
REA37230	MND33-0094-0001	J	Sb(MSR=14)	Not valid for intended use
REA37230	All others	J,R	Sb(MSR=14)	May be biased low (significant)
REA37230	MND33-0091-0001	J	Se(ASR=77)	Probable low bias of 1.3x
REA37230	MND33-0094-0001	J	Se(ASR=78)	Probable low bias of 1.3x
REA37230	MND33-0091-0002	J	Se(ASR=79)	Probable low bias of 1.3x
REA37230	MND33-0093-0001	J	Se(MSA)	Inaccuracy possible
REA37230	MND33-0093-0001	J	V(HBI)	May be biased high
REA37230	MND33-0090-0001	J	V(HBI)	May be biased high
REA37230	MND33-0094-1001	J	V(HBI)	May be biased high
REA37230	MND33-0092-0001	J	V(HBI)	May be biased high
REA37230	MND33-0094-0001	J	V(HBI)	May be biased high
REA37230	MND33-0091-0002	J	V(HBI)	May be biased high
REA37230	MND33-0090-1001	J	V(HBI)	May be biased high
REA37230	MND33-0091-0001	J	V(HBI)	May be biased high
REA37230	MND33-0092-0001	J	Zn(MSR=72)	Probable low bias of 1.3x
REA37230	All	J	Zn(MSR=72)	May be biased low
REA37234	All soils	J	Ag(MSR=52)	May be biased low
REA37234	All soils	J	As(MSR=50)	May be biased low
REA37234	MND33-0098-0002	J	Be(HBI)	May be biased high
REA37234	MND33-0097-1001	J	Ca(FDRPD=52)	Inaccuracy possible
REA37234	MND33-0097-0001	J	Ca(FDRPD=52)	Results may vary by 52%
REA37234	MND33-0095-4001	UJ	CN(DCS)	Results may vary by 52%
REA37234	All soils	J	CN(RLD=>2 CRDL,DCS)	Inaccuracy possible
REA37234	MND33-0098-0002	J	Co(HBI)	May be biased high
REA37234	All soils	J	Cr(MSR=73)	May be biased low
REA37234	MND33-0098-0002	J	Cu(HBI)	May be biased high
REA37234	All soils	J	Fe(QCD)	None
REA37234	All soils	J	Mg(RLD=41)	Inaccuracy possible
REA37234	All soils	J	Mn(MSR=*)	May be biased low (significant)
REA37234	MND33-0098-0002	J	Na(HBI)	May be biased high
REA37234	MND33-0098-0002	J	Ni(HBI)	May be biased high
REA37234	All soils	R, J	Sb(MSR=14)	Probable low bias (significant)
REA37234	MND33-0098-0002	J	V(HBI)	May be biased high
REA37234	All soils	J	Zn(MSR=72)	May be biased low
REA37280	MND33-0101-0002	J	Ag(HBI)	May be biased high
REA37280	MND33-0101-0002	J	As(MSR=74,ASR=70)	Probable low bias by 1.3x
REA37280	MND33-0101-0002	J	Be(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37280	MND33-0101-0002	J	Cd(MSR=75,HBI)	Inaccuracy possible
REA37280	MND33-0101-0002	J	CN(DCS)	None
REA37280	MND33-0101-0002	J	Co(HBI)	May be biased high
REA37280	MND33-0101-0002	J	Cr(HBI)	May be biased high
REA37280	MND33-0101-0002	J	Cu(HBI)	May be biased high
REA37280	MND33-0101-0002	J	Fe(QCD)	None
REA37280	MND33-0101-0002	J	Mn(MSR=41)	May be biased low
REA37280	MND33-0101-0002	J	Ni(HBI)	May be biased high
REA37280	MND33-0101-0002	J	Pb(MSR=67)	May be biased low
REA37280	MND33-0101-0002	J	Sb(MSR=17)	Probable low bias (significant)
REA37280	MND33-0101-0002	J	Se(ASR=82)	May be biased slightly low
REA37280	MND33-0101-0002	J	Tl(MSR=69)	May be biased low
REA37280	MND33-0101-0002	J	V(HBI)	May be biased high
REA37280	MND33-0101-0002	J	Zn(MSR=73)	May be biased low
REA37281	MND33-0103-0001	J	As(MSR=75)	Probable low bias by 1.3x
REA37281	All	J	As(MSR=75)	May be biased low
REA37281	MND33-0103-0001	J	Cd(MSR=75,HBI)	Probable low bias by 1.3x
REA37281	All	J	Cd(MSR=75,HBI)	Inaccuracy possible
REA37281	MND33-0103-0001	J	Mn(MSR=41)	Probable low bias by 2.5x
REA37281	All	J	Mn(MSR=41)	May be biased low
REA37281	MND33-0103-0001	J	Pb(MSR=67)	Probable low bias by 1.5x
REA37281	All	J	Pb(MSR=67)	May be biased low
REA37281	MND33-0103-0001	J	Sb(MSR=17)	Probable low bias by 5x
REA37281	All	J	Sb(MSR=17)	Probable low bias (significant)
REA37281	MND33-0103-0001	J	Tl(MSR=69)	Probable low bias by 1.3x
REA37281	All	J	Tl(MSR=69)	May be biased low
REA37281	MND33-0103-0001	J	Zn(MSR=73)	Probable low bias by 1.3x
REA37281	All	J	Zn(MSR=73)	May be biased low
REA37283	MND33-0101-0001	J	Ag(HBI)	May be biased high
REA37283	All	J	As(MSR=74)	May be biased low
REA37283	MND33-0101-0001	J	Be(HBI)	May be biased high
REA37283	MND33-0101-0001	J	Cd(HBI)	May be biased high
REA37283	All	J	Cd(MSR=75)	May be biased low
REA37283	All	J	CN(DCS)	None
REA37283	MND33-0101-0001	J	Co(HBI)	May be biased high
REA37283	MND33-0101-0001	J	Cr(HBI)	May be biased high
REA37283	MND33-0101-0001	J	Cu(HBI)	May be biased high
REA37283	MND33-0101-0003	J	Fe(QCD)	None
REA37283	All	J	Mn(MSR=41)	May be biased low
REA37283	MND33-0101-0001	J	Na(HBI)	May be biased high
REA37283	MND33-0101-0001	J	Ni(HBI)	May be biased high
REA37283	All	J	Pb(MSR=67)	May be biased low
REA37283	MND33-0101-0001	J	Sb(MSR=17)	Not valid for intended use
REA37283	MND33-0101-0003	J	Sb(MSR=17)	Probable low bias (significant)
REA37283	All	J	Tl(MSR=69)	May be biased low
REA37283	MND33-0101-0001	J	V(HBI)	May be biased high
REA37283	MND33-0101-0001	J	Zn(MSR=73,HBI)	Inaccuracy possible
REA37283	All others	J	Zn(MSR=73)	May be biased low
REA37284	MND33-0106-1001	J	Ag(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Ag(HBI)	May be biased high
REA37284	MND33-0106-0001	U	As(MB)	Raised detection limit
REA37284	MND33-0107-0001	J	As(MSR=43)	Probable low bias of 2.5x
REA37284	All others	J	As(MSR=43)	May be biased low
REA37284	MND33-0106-1001	J	Be(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Be(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Cd(HBI)	May be biased high
REA37284	All others	J	Cd(MSR=74)	May be biased low
REA37284	All	J	CN(DCS)	None

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37284	MND33-0106-0001	J	Co(HBI)	May be biased high
REA37284	MND33-0106-1001	J	Co(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Cr(HBI)	May be biased high
REA37284	MND33-0106-1001	J	Cr(HBI)	May be biased high
REA37284	MND33-0106-1001	J	Cu(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Cu(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Na(HBI)	May be biased high
REA37284	MND33-0106-1001	J	Ni(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Ni(HBI)	May be biased high
REA37284	MND33-0106-1001	J	V(HBI)	May be biased high
REA37284	MND33-0106-0001	J	V(HBI)	May be biased high
REA37284	MND33-0106-1001	J	Zn(HBI)	May be biased high
REA37284	MND33-0106-0001	J	Sb(MSR=24)	Not valid for intended use
REA37284	MND33-0106-1001	J	Sb(MSR=24)	Not valid for intended use
REA37284	MND33-0107-0001	J	Cd(MSR=74)	Probable low bias of 1.3x
REA37284	MND33-0107-0001	J	Pb(MSR=152,RLD=39)	Probable high bias by 1.5x
REA37284	All others	J	Pb(MSR=152,RLD=39)	May be biased high
REA37284	MND33-0107-0001	J	Sb(MSR=24)	Probable low bias of 4x
REA37284	All others	J	Sb(MSR=24)	Probable low bias
REA37284	MND33-0107-0001	J	Tl(ASR=72)	Potential low bias of 1.4x
REA37284	MND33-0107-0001	U	Tl(MB)	Raised detection limit
REA37286	MND33-0107-4001	J	Fe(CC)	Probable low bias
REA37286	MND33-0107-4001	UJ	Se(ASR=117)	None
REA37288	MND33-0109-0002	J	Ag(HBI)	May be biased high
REA37288	MND33-0105-0001	J	Ag(HBI)	May be biased high
REA37288	All	J	As(MSR=71)	May be biased low
REA37288	All	J	Ba(SD=10.2)	None
REA37288	MND33-0105-0002	J	Be(MSR=74)	May be biased low
REA37288	MND33-0105-1003	J	Be(MSR=74)	May be biased low
REA37288	MND33-0105-0003	J	Be(MSR=74)	May be biased low
REA37288	MND33-0109-0002	J	Be(MSR=74, HBI)	Inaccuracy possible
REA37288	MND33-0105-0001	J	Be(MSR=74, HBI)	Inaccuracy possible
REA37288	MND33-0109-0002	J	Cd(HBI)	May be biased high
REA37288	MND33-0105-0001	J	Cd(HBI)	May be biased high
REA37288	All	J	CN(DCS)	None
REA37288	MND33-0105-0001	J	Co(HBI)	May be biased high
REA37288	MND33-0109-0002	J	Co(HBI)	May be biased high
REA37288	MND33-0109-0002	J	Cr(HBI)	May be biased high
REA37288	MND33-0105-0001	J	Cr(HBI)	May be biased high
REA37288	MND33-0105-0001	J	Cu(HBI)	May be biased high
REA37288	MND33-0109-0002	J	Cu(HBI)	May be biased high
REA37288	MND33-0105-0003	J	Fe(QCD)	None
REA37288	MND33-0105-0002	J	Fe(QCD)	None
REA37288	MND33-0109-0002	J	Fe(QCD)	None
REA37288	MND33-0105-1003	J	Fe(QCD)	None
REA37288	All	J	Mn(MSR=65)	May be biased low
REA37288	MND33-0105-0001	J	Ni(HBI)	May be biased high
REA37288	MND33-0109-0002	J	Ni(HBI)	May be biased high
REA37288	All	J	Sb(MSR=25)	May be biased low
REA37288	All	UJ	Se(MSR=60)	May be biased low
REA37288	All	UJ	Tl(MSR=67)	May be biased low
REA37288	MND33-0109-0002	J	V(HBI)	May be biased high
REA37288	MND33-0105-0001	J	V(HBI)	May be biased high
REA37288	All	J	Zn(MSR=69)	May be biased low
REA37291	MND33-0110-0002	J	Ag(HBI)	May be biased high
REA37291	MND33-0110-0003	J	Ag(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Ag(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Ag(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37291	All	J	As(MSR=71)	May be biased low
REA37291	All	J	Ba(SD=10.2)	None
REA37291	All	J	Be(MSR=74)	May be biased low
REA37291	MND33-0110-0003	J	Cd(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Cd(HBI)	May be biased high
REA37291	MND33-0110-0002	J	Cd(HBI)	May be biased high
REA37291	All	J,UJ	CN(DCS)	None
REA37291	MND33-0110-0003	J	Co(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Co(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Co(HBI)	May be biased high
REA37291	MND33-0110-0002	J	Co(HBI)	May be biased high
REA37291	MND33-0110-0002	J	Cr(HBI)	May be biased high
REA37291	MND33-0110-0003	J	Cr(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Cr(HBI)	May be biased high
REA37291	MND33-0110-0002	J	Cu(HBI)	May be biased high
REA37291	MND33-0110-0003	J	Cu(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Cu(HBI)	May be biased high
REA37291	MND33-0110-0001	J	Fe(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Fe(QCD)	None
REA37291	MND33-0110-0001	J	Fe(QCD)	None
REA37291	All	J	Mn(MSR=65)	May be biased low
REA37291	MND33-0110-0002	J	Na(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Na(HBI)	May be biased high
REA37291	MND33-0110-0003	J	Na(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Na(HBI)	May be biased high
REA37291	MND33-0110-0003	J	Ni(HBI)	May be biased high
REA37291	MND33-0110-1002	J	Ni(HBI)	May be biased high
REA37291	MND33-0110-0002	J	Ni(HBI)	May be biased high
REA37291	All	J	Sb(MSR=25)	Not valid for intended use
REA37291	All	UJ	Se(MSR=60)	May be biased low
REA37291	All	UJ	Tl(MSR=67)	May be biased low
REA37291	MND33-0110-1002	J	V(HBI)	May be biased high
REA37291	MND33-0110-0002	J	V(HBI)	May be biased high
REA37291	MND33-0110-0003	J	V(HBI)	May be biased high
REA37291	All	J	Zn(MSR=69)	May be biased low
REA37295	MND33-0111-0001	J	Ag(MSR=72,HBI)	Probable low bias of 1.4x
REA37295	All others	J	Ag(MSR=72,HBI)	Inaccuracy possible
REA37295	MND33-0111-0001	J	As(MSR=70)	Probable low bias of 1.4x
REA37295	All others	J	As(MSR)	None
REA37295	All	J	Be(HBI)	May be biased high
REA37295	MND33-0111-0001	J	Cd(MSR=70,HBI)	Probable low bias of 1.4x
REA37295	All others	J	Cd(MSR,HBI)	Inaccuracy possible
REA37295	MND33-0112-0002	R	CN(CDL)	None
REA37295	MND33-0111-0003	R	CN(CDL)	None
REA37295	MND33-0112-0003	R	CN(CDL)	None
REA37295	MND33-0111-0003	J	CN(CDL)	None
REA37295	MND33-0112-1001	R	CN(CDL)	None
REA37295	MND33-0111-0002	R	CN(CDL)	None
REA37295	MND33-0112-0001	R	CN(CDL)	None
REA37295	MND33-0111-0001	R	CN(CDL)	None
REA37295	All	J	Co(HBI)	May be biased high
REA37295	All	J	Cr(HBI)	May be biased high
REA37295	All	J	Cu(HBI)	May be biased high
REA37295	MND33-0111-0001	J	Mn(MSR=71)	Probable low bias of 1.4x
REA37295	All others	J	Mn(MSR)	Inaccuracy possible
REA37295	All	J	Na(HBI)	May be biased high
REA37295	All	J	Ni(HBI)	May be biased high
REA37295	MND33-0111-0001	J	Pb(MSR=139)	Probable high bias of 1.3x

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37295	All others	J	Pb(MSR)	May be biased high
REA37295	MND33-0111-0001	J	Sb(MSR=23)	Not valid for intended use
REA37295	MND33-0111-0002	J	Sb(MSR=25)	Not valid for intended use
REA37295	MND33-0111-0003	J	Sb(MSR=25)	Not valid for intended use
REA37295	All others	J	Sb(MSR)	Probable low bias (significant)
REA37295	MND33-0111-0001	UJ	Tl(MSR=69, ASR=76)	Probable low bias of 1.4x
REA37295	MND33-0112-1001	UJ	Tl(MSR=69, ASR=65)	Probable low bias of 1.5x
REA37295	MND33-0112-0003	UJ	Tl(MSR=69, ASR=75)	Probable low bias of 1.4x
REA37295	MND33-0111-0002	UJ	Tl(MSR=69, ASR=82)	Probable low bias of 1.2x
REA37295	MND33-0112-0002	UJ	Tl(MSR=69)	Probable low bias
REA37295	MND33-0112-0001	UJ	Tl(MSR=69, ASR=75)	Probable low bias of 1.3x
REA37295	MND33-0111-0003	UJ	Tl(MSR=69, ASR=76)	Probable low bias of 1.3x
REA37295	MND33-0112-1001	J	V(HBI)	May be biased high
REA37295	MND33-0112-0001	J	V(HBI)	May be biased high
REA37295	MND33-0111-0001	J	V(HBI)	May be biased high
REA37295	MND33-0112-0003	J	V(HBI)	May be biased high
REA37295	MND33-0111-0003	J	V(HBI)	May be biased high
REA37295	MND33-0112-0002	J	V(HBI)	May be biased high
REA37295	MND33-0111-0002	J	V(HBI)	May be biased high
REA37295	MND33-0112-1001	J	Zn(HBI)	May be biased high
REA37295	MND33-0112-0001	J	Zn(HBI)	May be biased high
REA37295	MND33-0111-0002	J	Zn(HBI)	May be biased high
REA37295	MND33-0111-0001	J	Zn(HBI)	May be biased high
REA37295	MND33-0112-0002	J	Zn(HBI)	May be biased high
REA37295	MND33-0112-0003	J	Zn(HBI)	May be biased high
REA37304	MND33-0112-4003	UJ	CN(DCS)	None
REA37304	MND33-011204003	UJ	Tl(ASR=71)	Probable low bias of 1.4x
REA37305	MND33-0113-0003	J	Ag(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Ag(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Ag(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Ag(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Ag(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Ag(HBI)	May be biased high
REA37305	MND33-0114-0001	J	Al(FDRPD=61)	Inaccuracy possible
REA37305	MND33-0114-1001	J	Al(FDRPD=61)	Inaccuracy possible
REA37305	MND33-0114-0002	J	As(MSR=150)	Probable high bias by 1.5x
REA37305	All others	J	As(MSR)	May be biased high
REA37305	MND33-0114-0002	J	Be(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Be(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Be(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Be(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Be(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Be(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Ca(FDRPD=101)	Results may vary by 101%
REA37305	MND33-0114-0001	J	Ca(FDRPD=101)	Results may vary by 101%
REA37305	MND33-0114-0002	J	Cd(MSR=73)	Probable low bias of 1.4x
REA37305	All others	J	Cd(MSR)	May be biased low
REA37305	MND33-0113-0001	J	Co(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Co(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Co(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Co(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Co(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Co(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Cr(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Cr(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Cr(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Cr(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Cr(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37305	MND33-0113-0001	J	Cr(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Cu(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Cu(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Cu(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Cu(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Cu(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Cu(HBI)	May be biased high
REA37305	MND33-0115-0001	J	Fe(QCD)	None
REA37305	MND33-0114-0001	J	Fe(QCD)	None
REA37305	MND33-0115-0002	J	Fe(QCD)	None
REA37305	MND33-0114-0001	J	Fe(FDRPD=57)	Results may vary by 57%
REA37305	MND33-0114-1001	J	Fe(FDRPD=57)	Results may vary by 57%
REA37305	MND33-0113-0002	R	Hg(CDL)	None
REA37305	MND33-0113-0003	R	Hg(CDL)	None
REA37305	MND33-0114-1001	J	Mg(FDRPD=103)	Results may vary 103%
REA37305	MND33-0114-0001	J	Mg(FDRPD=103)	Results may vary 103%
REA37305	MND33-0114-0001	J	Mn(FDRPD=73)	Results may vary by 73%
REA37305	MND33-0114-1001	J	Mn(FDRPD=73)	Results may vary by 73%
REA37305	MND33-0113-0002	J	Na(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Na(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Na(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Na(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Na(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Na(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Ni(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Ni(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Ni(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Ni(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Ni(HBI)	May be biased high
REA37305	MND33-0114-0001	J	Ni(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Sb(MSR=24)	Not valid for intended use
REA37305	MND33-0114-1001	J	Sb(MSR=24)	Not valid for intended use
REA37305	MND33-0114-0002	J	Sb(MSR=24)	Probable low bias of 4x
REA37305	MND33-0115-0001	R	Sb(MSR=24)	Probable low bias
REA37305	All others	J	Sb(MSR=24)	Probable low bias
REA37305	MND33-0114-0002	UJ	Se(MSR=62)	Probable low bias of 1.6x
REA37305	All others	UJ	Se(MSR=62)	Probable low bias
REA37305	MND33-0114-0002	J	Tl(MSR=59)	Probable low bias of 1.6x
REA37305	All others	J,UJ	Tl(MSR=59)	May be biased low
REA37305	MND33-0114-0002	J	V(HBI)	May be biased high
REA37305	MND33-0113-0001	J	V(HBI)	May be biased high
REA37305	MND33-0113-0002	J	V(HBI)	May be biased high
REA37305	MND33-0114-1001	J	V(HBI)	May be biased high
REA37305	MND33-0113-0003	J	V(HBI)	May be biased high
REA37305	MND33-0115-0002	J	V(HBI)	May be biased high
REA37305	MND33-0114-0002	J	Zn(HBI)	May be biased high
REA37305	MND33-0113-0002	J	Zn(HBI)	May be biased high
REA37305	MND33-0113-0001	J	Zn(HBI)	May be biased high
REA37305	MND33-0115-0002	J	Zn(HBI)	May be biased high
REA37305	MND33-0114-1001	J	Zn(HBI)	May be biased high
REA37305	MND33-0113-0003	J	Zn(HBI)	May be biased high
REA37307	All	J	As(MSR=150)	May be biased high
REA37307	All	J	Ba(SD=10.8)	None
REA37307	All	J	Cd(MSR=73)	None
REA37307	All	J	Nitrate(CC)	May be biased low
REA37307	All	J	Nitrite(CC)	May be biased low
REA37307	MND33-0116-0001	J	Sb(MSR=24)	Probable low bias
REA37307	MND33-0117-0001	J	Sb(MSR=24)	Not valid for intended use

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37307	MND33-0117-0001	J	Sb(MSR=24)	Not valid for intended use
REA37307	All	UJ	Se(MSR=62)	Probable low bias
REA37307	All	J,UJ	Tl(MSR=59)	May be biased low
REA37322	All	UJ	As(MSR=150)	May be biased high
REA37322	All	J	Ba(SD=10.8)	None
REA37322	All	J	Cd(MSR=73)	May be biased low
REA37322	MND33-0133-0001	J	Cu(FDRPD=55)	Results may vary by 55%
REA37322	MND33-0133-1001	J	Cu(FDRPD=55)	Results may vary by 55%
REA37322	MND33-0133-0001	J	Fe(FDRPD=73)	Results may vary by 73%
REA37322	MND33-0133-1001	J	Fe(FDRPD=73)	Results may vary by 73%
REA37322	MND33-0130-0001	10UJ	Nitrate(CDL)	Raised DL
REA37322	MND33-0130-0001	10UJ	Nitrite(CDL)	Raised DL
REA37322	All	J	Sb(MSR=24)	Not valid for intended use
REA37322	All	UJ	Se(MSR=62)	Probable low bias
REA37322	All	UJ	Tl(MSR=59)	May be biased low
REA37322	MND33-0133-0001	J	Zn(FDRPD=57)	Results may vary by 57%
REA37322	MND33-0133-1001	J	Zn(FDRPD=57)	Results may vary by 57%
REA37331	All	J	Ag(LCS=77)	May be biased low
REA37331	All	J	As(MSR=59)	May be biased low
REA37331	MND33-0131-0002	J	Be(HBI)	May be biased high
REA37331	MND33-0131-0002	R	CN(CDL)	None
REA37331	MND33-0131-0003	UJ	CN(DCS)	None
REA37331	MND33-0131-0001	UJ	CN(DCS)	None
REA37331	MND33-0131-0002	J	Co(HBI)	May be biased high
REA37331	MND33-0131-0002	J	Cr(HBI)	May be biased high
REA37331	All	J	Cu(MSR=62,RLD)	May be biased low
REA37331	MND33-0131-0003	J	Fe(QCD)	None
REA37331	MND33-0131-0002	J	Fe(QCD)	None
REA37331	MND33-0131-0001	J	Hg(MSR=137)	May be biased high
REA37331	MND33-0131-0002	J	Ni(HBI)	May be biased high
REA37331	All	J	Sb(MSR=18)	Probable low bias (significant)
REA37331	MND33-0131-0002	J	V(HBI)	May be biased high
REA37331	MND33-0131-0002	J	Zn(HBI)	May be biased high
REA37332	MND33-0133-1001	J	Ag(FDRPD=3.7CRDL)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Ag(FDRPD=3.7CRDL)	Inaccuracy possible
REA37332	MND33-0132-0003	J	Ag(HBI)	May be biased high
REA37332	MND33-0133-1001	J	Al(FDRPD=93)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Al(FDRPD=93)	Inaccuracy possible
REA37332	MND33-0132-0002	J	As(MSR=59)	Probable low bias of 1.6x
REA37332	All others	J	As(MSR=59)	May be biased low
REA37332	MND33-0132-0003	J	Be(HBI)	May be biased high
REA37332	MND33-0133-0001	J	Be(HBI)	May be biased high
REA37332	MND33-0133-0001	J	Ca(FDRPD=96)	Results may vary by 96%
REA37332	MND33-0133-1001	J	Ca(FDRPD=96)	Results may vary by 96%
REA37332	MND33-0133-0001	J	Cd(FDRPD=4.6CRDL)	Inaccuracy possible
REA37332	MND33-0133-1001	J	Cd(FDRPD=4.6CRDL)	Inaccuracy possible
REA37332	MND33-0132-0003	J	Cd(HBI)	May be biased high
REA37332	MND33-0133-0001	J	Cd(HBI)	May be biased high
REA37332	MND33-0133-1001	J	CN(DCS)	None
REA37332	MND33-0133-0003	UJ	CN(DCS)	None
REA37332	MND33-0132-0003	UJ	CN(DCS)	None
REA37332	MND33-0132-0001	J	CN(DCS)	None
REA37332	MND33-0133-0002	UJ	CN(DCS)	None
REA37332	MND33-0132-0002	UJ	CN(DCS)	None
REA37332	MND33-0133-0001	R	CN(CDL)	None
REA37332	MND33-0133-0001	J	Co(HBI)	May be biased high
REA37332	MND33-0132-0003	J	Co(HBI)	May be biased high
REA37332	MND33-0132-0003	J	Cr(HBI)	May be biased high

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37332	MND33-0133-0001	J	Cr(HBI)	May be biased high
REA37332	MND33-0132-0002	J	Cu(MSR=62,RLD)	Probable low bias of 1.6x
REA37332	All others	J	Cu(MSR=62,RLD)	Probable low bias of 1.6x
REA37332	MND33-0133-0001	J	Fe(FDRPD=80)	Inaccuracy possible
REA37332	MND33-0133-1001	J	Fe(FDRPD=80)	Inaccuracy possible
REA37332	MND33-0133-0003	J	Fe(QCD)	None
REA37332	MND33-0132-0003	J	Fe(QCD)	None
REA37332	MND33-0133-0002	J	Fe(QCD)	None
REA37332	MND33-0132-0001	J	Fe(QCD)	None
REA37332	MND33-0132-0002	J	Fe(QCD)	None
REA37332	MND33-0133-1001	J	Fe(QCD)	None
REA37332	MND33-0133-1001	UJ	Hg(FDRPD=4.5CRDL)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Hg(FDRPD=4.5CRDL)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Hg(MSR=137)	Probable high bias of 1.4x
REA37332	All others	J	Hg(MSR=137)	May be biased high
REA37332	MND33-0133-1001	J	Mg(FDRPD=121)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Mg(FDRPD=121)	Inaccuracy possible
REA37332	MND33-0133-1001	J	Mn(FDRPD=57)	Inaccuracy possible
REA37332	MND33-0133-0001	J	Mn(FDRPD=57)	Inaccuracy possible
REA37332	MND33-0132-0003	J	Ni(HBI)	May be biased high
REA37332	MND33-0133-0001	J	Ni(HBI)	May be biased high
REA37332	MND33-0132-0002	J	Sb(MSR=18)	Probable low bias of 4x
REA37332	All others	J	Sb(MSR)	Probable low bias (significant)
REA37332	MND33-0333-0001	J	Sb(MSR=18)	Not valid for intended use
REA37332	MND33-0132-0003	UJ	Se(ASR=120)	Probable low bias of 1.2x
REA37332	MND33-0133-0001	UJ	Se(ASR=117)	None
REA37332	MND33-0132-0003	J	V(HBI)	May be biased high
REA37332	MND33-0133-0001	J	V(HBI)	May be biased high
REA37332	MND33-0132-0003	J	Zn(HBI)	May be biased high
REA37336	All	J,UJ	Ag(MSR=73)	May be biased low
REA37336	MND33-0135-0002	J	As(ASR=82)	May be biased slightly low
REA37336	All	J	Sb(MSR=18)	Probable low
REA37336	All	UJ	Se(MSR=67)	May be biased low
REA37336	All	UJ	Tl(MSR=67)	May be biased low
REA37339	MND33-0136-0001	J	Ag(MSR=73,LCS=78)	Probable low bias of 1.3x
REA37339	MND33-0136-0002	J	Ag(MSR,LCS,HBI)	Inaccuracy possible
REA37339	MND33-0136-0002	J	Be(HBI)	May be biased high
REA37339	MND33-0136-0002	J	Cd(HBI)	May be biased high
REA37339	MND33-0136-0002	R	CN(CDL)	None
REA37339	MND33-0136-0001	J	CN(DCS)	None
REA37339	MND33-0136-4001	UJ	CN(DCS)	None
REA37339	MND33-0136-0002	J	Co(HBI)	May be biased high
REA37339	MND33-0136-0002	J	Cr(HBI)	May be biased high
REA37339	MND33-0136-0002	J	Cu(HBI)	May be biased high
REA37339	MND33-0136-0001	J	Fe(QCD)	None
REA37339	MND33-0136-0002	J	Fe(QCD)	None
REA37339	MND33-0136-0001	U	Li(FB)	Raised DL
REA37339	MND33-0136-0002	U	Li(FB)	Raised DL
REA37339	MND33-0136-0002	J	Ni(HBI)	May be biased high
REA37339	MND33-0136-0001	J	Sb(MSR=31)	Probable low bias by 3x
REA37339	MND33-0136-0002	J	Sb(MSR=31)	Probable low bias
REA37339	MND33-0136-0001	J	Se(MSR=67)	Probable low bias by 1.5x
REA37339	MND33-0136-0002	UJ	Se(MSR=67)	Probable low bias
REA37339	MND33-0136-0001	J	Tl(MSR=73)	Probable low bias by 1.4x
REA37339	MND33-0136-0002	UJ	Tl(MSR=73)	Probable low bias
REA37339	MND33-0136-0002	J	V(HBI)	May be biased high
REA37341	All	J	Ag(MSR=73)	May be biased low
REA37341	All	J	As(CCB)	None

Table IV.9. Summary of Data Usability of Qualified Sample Results
Inorganic Analyses

Laboratory Batch	Sample Identification	Validation Qualifier	Reason Qualified	Impact on Usability
REA37341	MND33-0139-0001	J	Nitrate(FDRPD=38)	Results may vary by 38%
REA37341	MND33-0139-1001	J	Nitrate(FDRPD=38)	Results may vary by 38%
REA37341	MND33-0141-0001	J	Sb(MSR=31)	Not valid for intended use
REA37341	All	J	Sb(MSR=31)	May be biased low
REA37341	All	UJ	Se(MSR=67)	May be biased low
REA37341	MND33-0139-0001	J	Tl(MSA)	None
REA37349	MND33-1142-0001	U	Ca(MB)	Raised DL
REA37349	MND33-1142-1001	U	Ca(MB)	Raised DL
REA37349	All	UJ	CN(DCS)	None
REA37349	MND33-1140-0001	UJ	Se(ASR=118)	May be biased slightly high
REA37349	MND33-1141-0001	U	Tl(MB)	Raised DL
REA37349	MND33-1140-1001	U	Zn(MB)	Raised DL
REA37349	MND33-1140-0001	U	Zn(MB)	Raised DL
REA37349	MND33-1141-0001	U	Zn(MB)	Raised DL

•	– Recovery equal to or less than 0%
ASR	– Analytical spike recovery exceeded limits.
BD	– Baseline drift.
C	– Initial calibration problems.
CC	– Continuing calibration problems.
CDL	– Errors in calculating the detection limits.
DCS	– Distillation check standard not used.
FDRPD	– Field duplicate RPD exceeds limits.
HBI	– Potential high bias from ICP interference.
HDL	– High detection limit.
LBI	– Potential low bias from ICP interference.
MB	– Field blank.
MS	– No matrix spike used.
MSA	– QC problems.
MSR	– Matrix spike recovery exceeded limits.
NR	– Not run.
QCD	– Quality control deficiencies.
RLD	– Poor reproducibility of laboratory duplicates.
SD	– Serial dilution problems.

A high bias of 1.4x means that the actual sample concentration may actually be the reported value/1.4x.
A low bias of 1.4x means that the actual sample concentration may actually be the reported value • 1.4x.

and R. Data were marked J, and UJ, when the matrix spike recovery was outside the 75% to 125% specification. If the matrix spike recovery was less than 30% and the analyte concentration in the sample was above the instrument detection limit, the result was marked J, or if the analyte concentration in the sample was not greater than the instrument detection limit, the data were marked R. Matrix spike recoveries outside the criteria ranged as low as -21% and as high as 239%. Several metal results were assessed inconclusive for this investigation due to poor spike recovery in associated matrix spike samples. The inconclusive results are summarized by analyte and sample identification in Table IV.10.

A recovery of 50% for an element indicates that the digestion procedure only recovers half the metal added to the sample. The associated sample results would be estimated during validation and would be expected to be biased low by roughly a factor of 2. Based on this matrix spike recovery, other samples in the analytical batch may be biased low. However, since a known spike was not added to these samples, it is not possible to estimate the amount of potential bias.

For selenium and antimony, the matrix spike recoveries were consistently below criteria. Because the matrix spike recoveries were consistently low for the samples in the associated analytical batch, it is more probable that the analyte results are biased low. However, since a known spike was not added to these samples, it is not possible to estimate the amount of potential bias. This probable bias has been indicated in the impact column.

For samples in batches associated with very low matrix spike recoveries, the bias could be significant. The reported result could be as little as one-tenth of the actual concentration in the sample. However, since spikes were not performed on each of the samples in the analytical batch, it is not possible to estimate whether the result was actually biased.

Matrix spike recoveries above the acceptance criteria were also noted on Table IV.9. Similarly, the samples in the associated laboratory batch may also have been above the acceptance criteria. However, since spikes were not performed on each of the samples in the analytical batch, it is not possible to estimate whether the result was actually biased.

In cases where matrix spike recoveries were outside criteria and other QCCs also impacted that data, it was only possible to note that the reported result may be subject to greater variability and, consequently, inaccuracy. It is not possible to estimate the amount of variability.

Table IV.10. Inorganic Analytes Rejected Due to Poor Matrix Spike Recovery

Analyte	Sample Number
Antimony	MND33-0001-0002
	MND33-0001-0003
	MND33-0002-0002
	MND33-0006-0001
	MND33-0009-0001
	MND33-0010-0001
	MND33-0010-0006
	MND33-0011-0001
	MND33-0011-0002
	MND33-0011-1001
	MDN33-0015-0001
	MDN33-0015-0002
	MDN33-0015-0003
	MND33-0062-0001
	MND33-0062-1001
	MND33-0090-0001
	MND33-0090-1001
	MND33-0091-0001
	MND33-0091-0002
	MND33-0092-0001
	MND33-0093-0001
	MND33-0094-0001
	MND33-0101-0001
	MND33-0106-0001
	MND33-0106-1001
	MND33-0110-0001
	MND33-0110-0002
	MND33-0110-0003
	MND33-0110-1001
	MND33-0111-0001
	MND33-0111-0002
	MND33-0111-0003
	MND33-0114-0001
	MND33-0114-0002
	MND33-0114-1001
	MND33-0117-0001
	MND33-0117-1001
	MND33-0130-0001
	MND33-0130-1001
	MND33-0133-0001
	MND33-0141-0001
Lead	MND33-0006-0001
	MND33-0006-0002
	MND33-0049-0001
	MND33-0050-0001

Several non-detected sample results for antimony were rejected by the validator because associated matrix spike recoveries were below 30%. These sample results have potential false negatives. Since no action limits have been assigned for these sample results, the type of bias and, where possible, the extent of potential bias, have been noted on Table IV.9.

Laboratory duplicates are used to examine the precision of the analytical results due to laboratory procedures. Poor reproducibility for soil samples often can be attributed to the heterogeneous nature of soil itself. Field duplicates are used to evaluate field sampling precision and laboratory precision. The RPD between duplicates was greater than the criteria of 35% for a number of the analytes. It is most likely that this is due to the heterogeneous nature of these soil samples. Results for major soil components such as aluminum, calcium, magnesium, and iron were particularly variable.

The variability of the samples used as field duplicates, expressed as RPD, has been noted on Table IV.9. Because the difference in field duplicate results are outside criteria, the other samples in the associated batch may be less accurate and subject to similar variability. Because the nature of soil samples varies greatly, the extent of variability in the reported results for the samples in the associated batch cannot be estimated.

Elements determined by inductively coupled plasma (ICP) analysis are subject to several QCCs. The laboratory performs a serial dilution on one of the samples. The results of the original sample and the diluted sample (corrected for the dilution) must agree within 10% or the associated data is qualified as J. The serial dilution tests for sample matrix suppression or enhancement of the ICP signal. Barium and zinc results were estimated for a few samples when the 10% criteria was slightly exceeded. These reported results may be less accurate. It is not possible to estimate whether the reported results are biased or low, nor to what extent the results may be biased for samples in the associated batches.

The effect of the common ICP interferents aluminum, calcium, iron, and magnesium is determined by analysis of interference check samples. One of these two check samples contains only the interfering elements. Results from this sample are used to determine the apparent concentrations (positive or negative) of the other ICP elements when high levels of all four of the interfering elements are present. The results for samples containing high levels of one or more of the interferents may be biased high or low by the interferents. If the potential interference could have a significant impact on the sample results, then those results were estimated. Sample results for a number of the analytes (primarily barium, beryllium, cadmium, cobalt, copper, manganese, nickel, sodium, silver, and zinc) were qualified as J because of potential bias. The positive or negative bias was indicated in the impact column. However, the actual amount of bias cannot be estimated.

The elements determined by graphite furnace atomic absorption analysis (generally arsenic, lead, selenium, and thallium) are subject to several method-specific QCCs. Each sample digest is spiked to determine whether the laboratory calibration curve is valid for the sample. This spike is called the post-digestion analytical spike and the recovery must be within the 85% to 115% range. Low concentration sample results are estimated when that range is exceeded, and sample results are expected to be biased to the same degree as that of the spike recovery. The potential bias has been reported in Table IV.9.

High concentration sample results require that the sample be re-run by the method of standard additions when the analytical spike recovery range is exceeded. The method of standard additions essentially generates a calibration curve in the sample itself. Standard addition results are subject to qualification if higher than normal error is suspected due to a low correlation coefficient of the calibration line or the use of matrix spike concentrations that are not optimum. These qualified results are subject to greater inaccuracy.

Sample results may be qualified as estimated when the QAPP sample holding times are exceeded because of possible loss of analytes. Cyanide has a holding time of 14 days and mercury has a holding time of 28 days. Other analytes have a holding time of 180 days. EPA's validation guidelines do not provide a holding time for soil samples. The QAPP holding times are those generally required for water samples. Holding times were exceeded by 4 to 5 days for cyanide in laboratory batches 37124 and 37140. Holding times were exceeded by 4 days for mercury in laboratory batches 37124 and 37128. Several positive and non-detected results for cyanide and mercury were qualified as estimated by the validators. These qualifications are considered not to have significant impact on the use of the data for comparison to action levels that are much greater than sample results. The potential bias for these results is negative.

Sample results less than five times the highest observed blank were qualified as U, with a detection limit equal to the sample result. This action is taken to avoid reporting of false positive results. The raised detection limits for these analytes should be maximum values.

Cyanide sample results in five laboratory batches were qualified as J, UJ, or R because of instrument baseline drift. This qualification affects sample results at or near the CRDL most significantly. Samples with reported non-detects may actually contain cyanide, though probably at low levels. Samples with detected levels of cyanide may be biased low. However, it is not possible to estimate the extent of the potential bias.

Several sample results were qualified as J due to initial or continuing calibration results. The recoveries of these standards are used to determine if the original calibration curve is still valid. Sample results qualified for this reason may be either positively or negatively biased. If the direction of the bias could be determined, it was indicated on Table IV.9. The extent of the bias could not be determined.

Some sample results were qualified as J because the associated laboratory control sample did not meet the QAPP 80% to 120% criteria. Because associated laboratory control spike recovery for silver was slightly below the acceptance limit for laboratory batches 37331 (77%) and 37339 (78%), the silver results were qualified as J. The potential small negative bias indicated by these control spikes is not likely to significantly impact the data.

Cyanide for several sample results were often qualified as J and UJ because results for a distilled standard as required by the SOW could not be found. This is a technical deficiency that should have little impact on sample results because the recovery of the matrix spike includes the distillation efficiency.

Iron results for several samples were qualified when the results were taken from a secondary analytical line which did not include the QCCs required by the SOW. The secondary line was often utilized for quantitation of samples with high concentrations of iron (>10,000 mG/Kg). The qualification due to this quantitation should have no impact on sample results because the probable error is small. Results from the primary and secondary lines were in good agreement.

For some samples the reported detection limit was calculated incorrectly. The affected analytes have been marked with CDL on Table IV.9. This technical deficiency was corrected during validation and does not impact the data.

4.2.8. Chloride and Nitrate-Nitrite (Methods 325.1 and 353.2)

Sample results for nitrate were qualified as J or R due to initial or continuing calibration results. The recoveries of these standards are used to determine if the original calibration curve is still valid. Nitrate results in samples MND33-0083-0001 and MND33-0083-0002 may be biased low.

Sample results were qualified as J due to lack of a matrix spike for nitrate-nitrite in laboratory batch REA37169 and chloride in batch REA37194. While this does not indicate bias in the results, the results are more uncertain than usual because recovery from the sample matrix has not been shown. Sample results for chloride were qualified as J in batch REA37169 because the matrix spike recovery exceeded limits. The extent of potential positive bias for the samples has been indicated on Table IV.9.

Some sample results for nitrate and nitrite were qualified as J because of a calibration check standard outside of limits in batch REA37307. Sample results may be biased low.

Sample results were qualified as J for nitrate in samples MND33-0139-0001 and MND33-0139-1001 due to reproducibility of field duplicates exceeding limits. The reported element concentrations in these samples indicate potential variability in the soil samples.

4.2.9. Tritium (Method 906)

The tritium results are usable as reported for the intended data use.

4.2.10. Gamma Spectroscopy (IT SOP Method)

Several sample results for cesium-137, radium-226, and radium-228 were reported as less than the background. Because error bars for these radionuclides could not be determined, the reported limits were qualified by the validators as J. The lack of error bars does not impact the usability of the data for its intended purpose.

5. CONCLUSIONS

The discussion in section 3 which compares investigation results to risk-based PRGs is intended to offer criteria by which to evaluate existing data. Efforts to establish site-specific preliminary remediation goals (PRGs) are currently in progress. As the RI/FS process at Mound Plant proceeds, action levels will evolve from PRGs to become parts of the final remedial action objectives, which will include consideration of applicable or relevant and appropriate requirements (ARARs) and site risk assessments.

As discussed in section 1, the primary objective of the OU 3 LFI Report is to identify the presence or absence of potential site contaminants, and the types of potential site contaminants; based on these results, it supports a decision for no further action, further site characterization, or removal action/remedial action. In cases where further characterization or removal action/remedial action is required, the investigation site will be combined with another appropriate Mound OU.

Based upon the analytical results of the OU 3 LFI and in comparison to the proposed action levels, a recommendation concerning the disposition of each investigation site was made. For applicable sites requiring further characterization or removal action/remedial action, the primary contaminant of concern was noted and a recommendation for combining the site with another appropriate Mound OU was also determined. For sites not requiring further characterization or remedial response, the site was assigned to Operable Unit 2 or 5. Each site not requiring further characterization or remedial response will be closed out in the work plan for that particular operable unit. A summary of the proposed disposition for each investigation site is presented in Table V.1.

Table V.1. OU 3 Limited Field Investigation Report
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 Grid G19/14	No	No		OU 2
Underground Sewer Lines Grid G24	No	No		OU 2

*Disposition of site undetermined

6. REFERENCES

Bowser-Morner, Inc. 1991. Preliminary Closure Site Assessment, Three (3) Underground Storage Tanks, U.S. Department of Energy's Mound Laboratories, Miamisburg, Ohio, Bowser-Morner Report No. 10813-491-174, April 19, 1991 and Preliminary Closure Site Assessment, Three (3) Underground Storage Tanks, U.S. Department of Energy's Mound Laboratories, Miamisburg, Ohio, Bowser-Morner Report No. 10813-1290-934, December 26, 1990.

DOE. 1986. "Phase I Installation Assessment Mound [DRAFT]." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. April 1986.

DOE. 1987a. "Phase II: Mound Installation Generic Monitoring Plan/Site Specific Monitoring Plan [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. January 1987.

DOE. 1987b. "Phase II: Installation Generic Monitoring Plan/Site Investigation Plan — Stage 2 Supplement Mound [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. September 1987.

DOE. 1989a. "Remedial Investigation Mound Plant, Task AL-MD-1, Groundwater Stage 3 Supplement [DRAFT]." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. February 1989.

DOE. 1989b. "Reconnaissance Sampling Plan, Mound Plant, Radioactively Contaminated Soil Operable Unit (AL-MD-3-2) [DRAFT]." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. June 1989.

DOE. 1989c. "Reconnaissance Sampling Plan, Mound Plant, Decontamination and Decommissioning Sites Operable Unit Program [DRAFT]." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. May 1989.

DOE. 1989d. "Reconnaissance Sampling Plan, Mound Plant, RCRA Sites Operable Unit (AL-MD-5) [DRAFT]." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. June 1989.

DOE. 1990. "Revised RCRA Part A Permit Application." U.S. Department of Energy, Mound Plant, Miamisburg, Ohio. May 1990.

DOE. 1991a. "Remedial Investigation/Feasibility Study, OU9, Site-Wide Work Plan (DRAFT)." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. February 1991.

DOE. 1991b. "Site Scoping Report, Volume I — Groundwater Dates: February 1987 - July 1990." U.S. Department of Energy, Environmental Restoration Program, Technical Support Office, Los Alamos National Laboratory, Los Alamos, New Mexico. February 1991.

DOE. 1991c. "Operable Unit 9, Site Scoping Report — Volume 6, Photo History Report." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. May 1991.

DOE. 1991d. "Limited Field Investigation Work Plan, Mound Plant, Miscellaneous Sites, Operable Unit 3 [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. June 1991.

DOE. 1991e. "Limited Field Investigation Operable Unit 3, Miscellaneous Sites, Quality Assurance Project Plan, Mound Plant, Miamisburg, Ohio." October 1991.

DOE. 1991f. "RCRA Part B Permit Application." Environmental Restoration Program. U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. 8 November 1991.

DOE. 1991g. "Operable Unit 9, Site Scoping Report, Volume 7 — Waste Management Report (DRAFT, revision 0)." U.S. Department of Energy, Environmental Restoration Program, Technical Support Office, Los Alamos National Laboratory, Los Alamos, New Mexico. November 1991.

DOE. 1991h. "Limited Field Investigation Operable Unit 3, Miscellaneous Sites. Health and Safety Plan, Mound Plant, Miamisburg, Ohio." Final, November 1991.

DOE. 1992a. "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Mound Plant, Miamisburg, Ohio." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. April 1992.

DOE. 1992b. "Reconnaissance Sampling Report Decontamination and Decommissioning Areas, Operable Unit 6." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. May 1992.

DOE. 1992c. "Closure Report, Building 34 — Aviation Fuel Storage Tank." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. July 1992.

DOE. 1992d. "Closure Report, Building 51 — Waste Storage Tank." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. August 1992.

DOE. 1992e. "Soil Gas Survey and Geophysical Investigations, Main Hill and SM/PP Hill Areas, Reconnaissance Sampling." Environmental Restoration Program, U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. December 1992.

DOE. 1993. "RCRA Part B Permit Application for the U.S. Department of Energy, Mound Plant, Miamisburg, Ohio." Volume II. 26 January 1993.

Eisenbud, M. 1987. "Environmental Radioactivity — From Natural, Industrial, and Military Sources." Academic Press, Inc., New York, NY.

EPA. 1986. "Test Methods for Evaluating Solid Waste." SW846 3rd Edition. Vol. 1A. November 1986.

EPA. 1988a. "Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses." U.S. Environmental Protection Agency. 1 February 1988.

EPA. 1988b. "Guidelines for Groundwater Classification Under the EPA Groundwater Protection." U.S. Environmental Protection Agency. June 1988.

EPA. 1988c. "Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses." U.S. Environmental Protection Agency. 1 July 1988.

EPA. 1988d. "Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant Conducted by A.T. Kearney, May 1988." U.S. Environmental Protection Agency, Region V, EPA Contract Number 68-01-7374, Chicago, Illinois. July 1988.

EPA. 1988e. "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA [INTERIM FINAL]." OWSWER Directive 9355.3-01. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. October 1988.

EPA. 1990a. "Federal Facility Agreement, Statement of Work." U.S. Environmental Protection Agency. Administrative Docket Number: OH6 890 008 984.

EPA. 1990b. "Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule, 40 CFR Part 264." *Federal Register*. 27 July 1990.

EPA. 1991a. "National Functional Guidelines for Organic Data Review." U.S. Environmental Protection Agency. June 1991.

EPA. 1991b. "Human Health Evaluation Manual, Part B: Development of Risk-Based Preliminary Remediation Goals." U.S. Environmental Protection Agency, OSWER Directive 9285.7-01B. 13 December 1991.

EPA. 1992a. "U.S. DOE Mound Plant Site, OU 3 Modification to Work, Schedules." EPA letter to A. Kleinrath (DOE DAO), 8 May 1992.

EPA. 1992b. "Health Effects Assessment Summary Tables, Annual FY 1992." U.S. Environmental Protection Agency, OSWER (OS-230), ORD (RD-689), OERR 9200.6-303 (92-1), NTIS No. PB92-921199. March 1992.

EPA. 1992c. "Region III Risk Based Concentration Table V6.2. Roy L. Smith, U.S. Environmental Protection Agency. 23 July 1992.

IRIS. 1992. Integrated Risk Information System (On-line data base). U.S. Environmental Protection Agency, Environmental Criteria and Assessment Office. Cincinnati, Ohio.

Lawlor, L. 1992. "Operable Unit 3 LFI Miscellaneous Sites, WD Building Area-Underground Sewer Lines: Soil Sample Collection." WESTON letter to J. Price, et al., 15 January 1992.

Mauzy, M.P. 1991a. "ER Program, Mound Plant OU 3 Old Firing Range Drum Storage Site." WESTON letter to G.T. Farmer, Los Alamos National Laboratory, Los Alamos, New Mexico. 2 August 1991.

Mauzy, M.P. 1991b. "ER Program, Mound Plant Old Firing Range Drum Storage Area Site Scoping Efforts." WESTON letter to K. Rea, Los Alamos National Laboratory, Los Alamos, New Mexico. 14 October 1991.

Mauzy, M.P. 1992a. "Operable Unit 3, Miscellaneous Sites Limited Field Investigation." WESTON letter to K. Rea, Los Alamos National Laboratory, Los Alamos, New Mexico. 7 February 1992.

Mauzy, M.P. 1992b. "Preliminary Results, Building 34 Fire-Fighting Training Area." WESTON letter to K. Rea, Los Alamos National Laboratory, Los Alamos, New Mexico. 11 February 1992.

MRC. 1979. "Final Environmental Impact Statement, DOE Mound Facility." Miamisburg, Ohio. U.S. Department of Energy. June 1979.

OEPA (Ohio Environmental Protection Agency). 1991. Petroleum Contaminated Soil, Interim Final, Ohio EPA, PP 01 03 200. 25 March 1991.

RFA. 1988. Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant conducted by A.T. Kearney, May, 1988, U.S. Environmental Protection Agency, Region V, EPA Contract Number 68-01-7374, Chicago, Illinois.

Shacklette, H.T. and J.G. Boerngen. 1984. "Element Concentrations in Soils and other Surficial Materials of the Conterminous United States." U.S. Geological Survey.

U.S. Air Force. 1989. "Installation Restoration Program Stage 2 Final Report DRAFT Volume I Technical Report." U.S. Air Force. July 1989.

USATHAMA. 1990. "Quality Assurance Program." USATHAMA PAM 11-41, Revision No. 0. "U.S. Army Toxic and Hazardous Materials Agency." 1 January 1990.

ATTACHMENT A

REFERENCES

Blumer, Max, Walter Blumer, and Theodore Reich. 1977. "Polycyclic Aromatic Hydrocarbons in Soils of a Mountain Valley: Correlation with Highway Traffic and Cancer Incidence." In: *Environmental Science and Technology*, pp. 1082-1084, Vol. 11 No. 12.

Hoffman, Eva J., James S. Latimer, Gary L. Mills, and James G. Quinn. 1982. "Petroleum Hydrocarbons in Urban Runoff from a Commercial Land Use Area." In: *Journal WPCF*, Vol. 54, No. 11, pp. 1517-1525.

MacKenzie, Moira J. and Joseph V. Hunter. 1979. "Sources and Fates of Aromatic Compounds in Urban Stormwater Runoff." In: *Environmental Science and Technology*, pp. 179-183, Vol. 13, No. 2.

Radding, S.B., T. Mill, C.W. Gould, D.H. Liu, H.L. Johnson, D.C. Bomberger, and C.V. Fojo. 1976. "The Environmental Fate of Selected Polynuclear Aromatic Hydrocarbons." Prepared for EPA. U.S. Department of Commerce, National Technical Information Service, PB-250 948.

Trosset, Ruth P., David Warshawsky, Constance Lee Menefee, and Eula Bingham. 1978. "Investigation of Selected Potential Environmental Contaminants; Asphalt and Coal Tar Pitch." Prepared for EPA. U.S. Department of Commerce National Technical Information Service, PB-289 128.

Waibel, M. 1976. "Air and Water Contamination by Road Abrasion." In: *Zentralbi. Bakteriol. Parasitenkund. Infektionstr. Hyg. Abt. Orig. Reihe B*, 163, pp. 458-469.

Wakeham, Stuart G., Christian Schaffner, and Walter Giger. 1990. "Polycyclic Aromatic Hydrocarbons in Recent Lake Sediments - I. Compounds having Anthropogenic Origins." In: *Geochim. Cosmochim. Acta*, Vol. 46, pp. 403-413. Pergamon Press Ltd., Great Britain.