COPY

OHM Corporation

site #7

CLOSURE REPORT
QUEENSTOWN STREET FUEL OIL SPILL SITE
FORT DEVENS, MASSACHUSETTS

43H
43I

Prepared for:

U.S. Army Corps of Engineers
New England Division
Waltham, Massachusetts
Contract Number DACW45-89-D-0506

Prepared by:

OHM Remediation Services Corp.
Hopkinton, Massachusetts

Kevin J. Mack
Project Manager

May 14, 1996

CSVS 960510HMC

LIST OF ACRONYMS AND ABBREVIATIONS

AENI	American Environmental Network, Inc.
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CQAR	Chemical Quality Assurance Report
CY	Cubic Yards
IR	Infrared Spectrometer
LRA	Limited Removal Action
MADEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MEP	Master Environmental Plan
MSR	Material Shipping Record
NED	US Army Corps of Engineers New England Division
NPL	National Priorities List
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
QSFO	Queenstown Street Fuel Oil
SA	Study Area
SARA	Superfund Amendments and Reauthorization Act
SSI	Supplemental Site Investigation
TPH	Total Petroleum Hydrocarbons
USAEC	U.S. Army Environmental Center
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Fort Devens was placed on the National Priority List (NPL) on December 21, 1989, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, Superfund Act) as amended by the Superfund Amendments and Reauthorization Act (SARA). Subsequently, under Public Law 101-510, the Defense Base Realignment and Closure Act of 1990, Fort Devens was selected for cessation of operations and closure. In accordance with these acts, a study was conducted at the Queenstown Street fuel oil (QSFO) spill area, which was identified in the Federal Facilities Agreement between the U.S. Environmental Protection Agency and the U.S. Department of Defense as a potential site of contamination. The information gathered through this study indicated petroleum contamination in the subsurface soils. This closure report documents the historical information and investigation results leading to the recommendation to remove soil, and the remedial actions taken at the QSFO spill site.

The QSFO spill site is located within a portion, identified as Area 4, of Study Areas (SAs) 43H and 43I in the central portion of the Main Post. In October 1992, 10 to 15 gallons of diesel fuel were estimated to have leaked from an armored vehicle onto the unpaved ground within the fenced vehicle storage yard adjacent to SA 43H. The spill was located approximately 300 feet southeast of Building 601. Contaminated soil was removed from a 20 X 28 foot area to a maximum depth of six feet. Although samples collected from the excavated area indicated that residual petroleum contamination still remained, the extent of the contamination exceeded the capabilities of the excavation equipment. Therefore, the excavated area was lined with plastic and was backfilled.

The New England Division (NED) of the United States Army Corps of Engineers (USACE) contracted OHM Remediation Services Corporation (OHM) to conduct a Limited Removal Action (LRA), in accordance with the Massachusetts Contingency Plan (MCP), to remove the petroleum-contaminated soil. A LRA is restricted to sites with less than 100 cubic yards (cy) of oil-contaminated soil. OHM removed 143 tons (approximately 95 cy) of soil from the former spill site. Confirmation soil samples were collected and analyzed for the total petroleum hydrocarbons (TPH) to document that the site action level of 500 mg/kg had been met. Stockpiled soils were characterized for disposal and transported to a temporary storage facility on Post for eventual use as cover material in the Consolidation Landfill proposed for construction at Fort Devens. Based on the results of the confirmation samples and the activities described herein, no further action is recommended at this site.

SECTION 1.0
INTRODUCTION

Fort Devens was placed on the National Priority List (NPL) on December 21, 1989, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA; Superfund) as amended by the Superfund Amendments and Reauthorization Act (SARA). Subsequently, under Public Law 101-510, the Defense Base Realignment and Closure Act of 1990, Fort Devens was selected for cessation of operations and closure. This closure report has been prepared as part of the U.S. Department of Defense Base Realignment and Closure program to assess the nature and extent of contamination associated with site operations at Fort Devens. This report contains a summary of the Limited Removal Action (LRA) activities conducted in accordance with the Massachusetts Contingency Plan (MCP) at the Queenstown Street fuel oil spill site.

In conjunction with the Army's Installation Restoration Program, Fort Devens and the U.S. Army Environmental Center (USAEC; formerly the U.S. Army Toxic and Hazardous Materials Agency) developed a Master Environmental Plan (MEP) in 1988. The MEP consisted of assessments of the environmental status of Study Areas (SAs), specified necessary investigations, and provided recommendations for response actions with the objective of identifying priorities for environmental restoration at Fort Devens. The New England Division of the U.S. Army Corps of Engineers (NED) was tasked with removal efforts at the base. This closure report documents the historical findings leading to the LRA recommendation and describes the measures taken at the Queenstown Street fuel oil spill site.

1.1 Site History and Background

The Queenstown Street fuel oil (QSFO) spill site is located within a portion, identified as Area 4, of SAs 43H and 43I in the central portion of the Main Post (Figure 1-1). SAs 43H and 43I were part of an installation-wide fuel distribution and motor pool system that was discontinued in the early 1950s. The former spill area is located approximately 300 feet southeast of Building 601 (Figure 1-2). In October 1992, 10 to 25 gallons of diesel fuel was estimated to have leaked from an armored vehicle onto the unpaved ground within the fenced vehicle storage yard adjacent to SA 43H. Contaminated soil was removed from a 20 X 28 foot area to a depth of six feet at the spill point and an average depth of four feet from the remainder of the excavation area. Although soil samples collected from the excavation area indicated the presence of total petroleum hydrocarbons (TPH), the extent of the contamination exceeded the capabilities of the excavation equipment. Therefore, the excavation was lined with plastic and was backfilled.

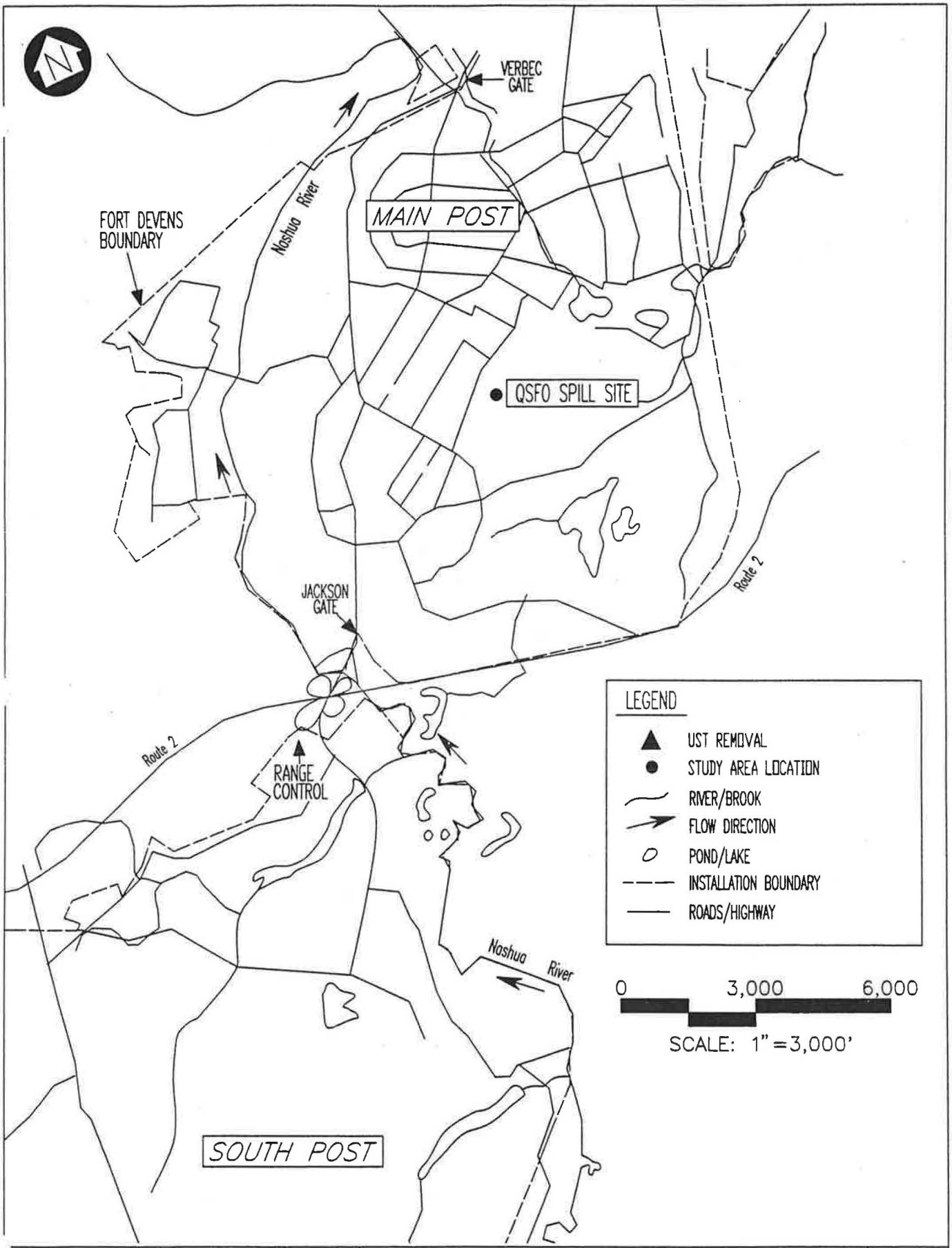
1.2 Site Conditions

The soil below the spill site is comprised of well graded sands and some silty sand layers. Refusal, apparently due to bedrock, was reached at 26 feet below ground surface (bgs) in the vicinity of the spill area while soil borings were being drilled during previous investigations of SA 43H. Groundwater was not encountered.

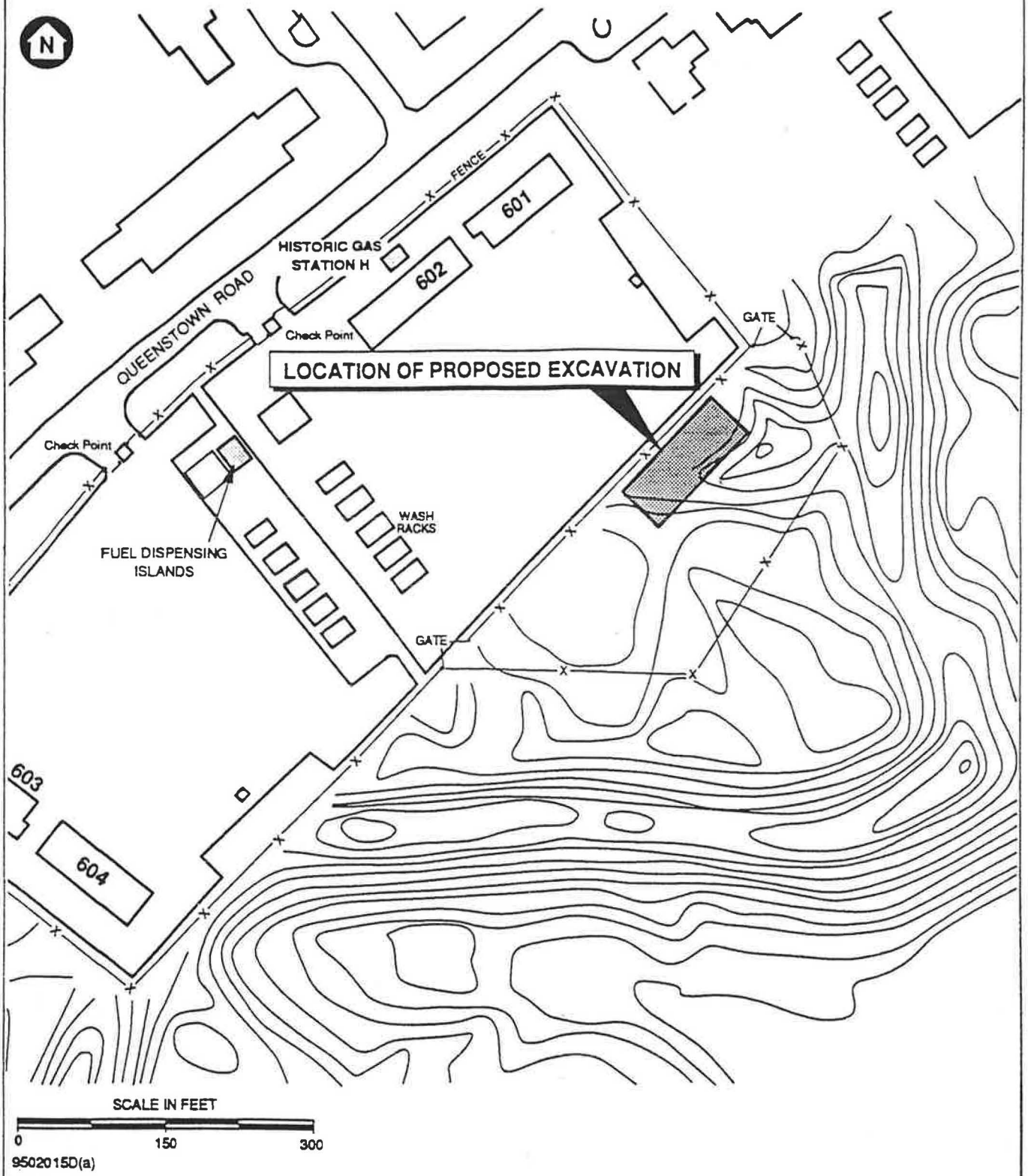
1.3 Previous Investigation Activities

Figure 1-2 shows the location of the excavation area. Following the removal of contaminated soil to a depth of four feet, samples were collected for analysis. TPH was present in a grab sample collected from the point of the spill at a concentration of 1,500 mg/kg. A composite sample was also collected from areas adjacent to the spill area and the TPH concentration of this sample was 2,400 mg/kg. Additional soil was then excavated from the area, to a maximum depth of six feet, and additional samples were collected for analysis. A TPH concentration of 3,200 mg/kg was detected in the grab sample collected at the spill point. A composite sample

was also collected from the excavation area and the TPH concentration of this sample was 590 mg/kg. Although petroleum contamination still remained, additional soil was not removed due to equipment limitations. Instead, the 20 X 28 foot excavation area was lined with plastic and was backfilled. ABB conducted a Supplemental Site Investigation (SSI) of the area adjacent to the excavated area and found no significant contamination surrounding the spill site.



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS	FORT DEVENS, MASSACHUSETTS CONTAMINATED SOIL REMOVAL, VARIOUS SITES COMPREHENSIVE SITE LOCATION MAP	FIGURE 1-1



DEPARTMENT OF THE ARMY NEW ENGLAND DIVISION CORPS OF ENGINEERS WALTHAM, MASS	FORT DEVENS, MASSACHUSETTS CONTAMINATED SOIL REMOVAL, VARIOUS SITES QUEENSTOWN STREET FUEL OIL SPILL SITE Site Location Map	Figure 1-2

SECTION 2.0
PETROLEUM-CONTAMINATED SOIL REMOVAL

OHM was contracted by the USACE NED to conduct a LRA to remove the petroleum-contaminated soil at the QSFO spill site, coordinate disposal of the excavated material and restore the site by backfilling. The MCP restricts LRAs to sites with less than 100 cubic yards (cy) of oil-contaminated soil.

2.1 Site Preparation Activities

Pre-excavation activities were conducted to ensure that contaminants would be contained at the site and to prevent the general population from coming into contact with contaminants exposed through excavation activities. An exclusion zone was demarcated using orange fencing, and staging cells were constructed for temporary storage of contaminated soils. Sand berms were constructed at the perimeter of each staging cell and the cells were double lined with polyethylene sheeting.

2.2 Excavation and Soil Screening Activities

Excavation activities to remove the petroleum-contaminated soil began on June 29, 1995. Clean soil previously used to backfill the excavation had to be removed before reaching the plastic liner. Headspace samples were collected from the material being removed to verify that it did not contain petroleum contamination. Clean soil was staged separately from the petroleum-contaminated soil. Soil beneath the plastic liner was excavated to a depth of approximately five feet. Fourteen screening samples were then collected from the bottom and sidewalls of the excavation area on June 30. Soil samples were screened at the on-site laboratory for TPH. Excavation would only continue in areas where screening results indicated concentrations of TPH in excess of the site action level of 500 mg/kg. A summary of soil sample screening results is presented in Table 2-1 and on-site laboratory data are provided in Appendix A.

TPH concentrations of these initial screening samples ranged from non-detect to 41 mg/kg. Although screening sample concentrations did not exceed 500 mg/kg, these samples were collected from depths of less than five feet and previous data indicated the presence of petroleum contamination at depths of up to six feet. Consequently, seven one-foot deep test pits were dug in the bottom of the excavation area and screening samples were collected on July 10 from each pit to verify that no residual contamination remained. The TPH concentration at one location (672 mg/kg) exceeded the 500 mg/kg action level. Therefore, additional soil was removed from the bottom of the excavation area. Seven additional samples were collected on July 25 from the bottom and sidewalls of the excavation and were screened on site for TPH. A TPH concentration of 895 mg/kg at one bottom sample location led to the removal of additional soil and the re-collection of screening samples on July 26. Again, concentrations exceeded the action level and additional soil was removed and samples re-collected on July 28. The TPH concentration of the bottom sample (548 mg/kg) slightly exceeded the action level. Consequently, more soil was removed and an additional set of screening samples (B16 - B19) were collected from the bottom of the excavation on this same day from depths of approximately 12 feet. TPH concentrations of these four bottom samples ranged from 14 to 189 mg/kg. Confirmation sampling was initiated after screening results indicated that all contaminated material had been removed. Confirmation sampling procedures and analytical results are discussed in the following Section.

Table 2-1
Soil Sample Screening Results
Closure Report - QSFO Spill Site

Sample ID	Sample Location	Sample Date	Sample Depth (ft)	TPH Result (mg/kg)
SBQUEENW1	North sidewall	30-Jun-95	3.5	ND (42)
SBQUEENW2	North sidewall	30-Jun-95	3.6	11 J
SBQUEENW3	North sidewall	30-Jun-95	3.4	8 J
SBQUEENW4	East sidewall	30-Jun-95	3.9	ND (42)
SBQUEENW5	East sidewall	30-Jun-95	4.0	ND (42)
SBQUEENW6	South sidewall	30-Jun-95	3.3	13 J
SBQUEENW7	South sidewall	30-Jun-95	3.7	15 J
SBQUEENW8	South sidewall	30-Jun-95	3.0	41 J
SBQUEENW9	West sidewall	30-Jun-95	3.0	10 J
SBQUEENW10	West sidewall	30-Jun-95	3.9	40 J
SBQUEENB1	Northeast bottom	30-Jun-95	4.5	11 J
SBQUEENB2	Southeast bottom	30-Jun-95	4.4	31 J
SBQUEENB3	Northwest bottom	30-Jun-95	4.8	ND (42)
SBQUEENB4	Southwest bottom	30-Jun-95	4.6	6 J
SBQUEENB5	Northeast bottom	10-Jul-95	5.0 - 5.5	19 J
SBQUEENB6	Southeast bottom	10-Jul-95	5.0 - 5.5	ND (42)
SBQUEENB7	South bottom	10-Jul-95	5.0 - 5.5	10 J
SBQUEENB8	Center bottom	10-Jul-95	5.0 - 5.5	672
SBQUEENB9	North bottom	10-Jul-95	5.0 - 5.5	17 J
SBQUEENB10	Northwest bottom	10-Jul-95	5.0 - 5.5	ND (42)
SBQUEENB11	Southwest bottom	10-Jul-95	5.0 - 5.5	ND (42)
SBQUEENB12	West bottom	25-Jul-95	7.0	9 J
SBQUEENB13	Center bottom	25-Jul-95	7.0	102
SBQUEENB14	East bottom	25-Jul-95	7.0	ND (42)
SBQUEENW11	South sidewall	25-Jul-95	6.0	31 J

Table 2-1 (continued)
Soil Sample Screening Results
Closure Report - QSFO Spill Site

Sample ID	Sample Location	Sample Date	Sample Depth (ft)	TPH Result (mg/kg)
SBQUEENW12	West sidewall	25-Jul-95	6.0	10 J
SBQUEENW13	North sidewall	25-Jul-95	6.0	895
SBQUEENW14	East sidewall	25-Jul-95	6.0	ND (42)
SBQUEENW15	North sidewall	26-Jul-95	6.0	10 J
SBQUEENW16	East sidewall	26-Jul-95	6.0	1369
SBQUEENW17	North sidewall	26-Jul-95	6.0	11 J
SBQUEENB15	Center bottom	28-Jul-95	11.0	548
SBQUEENW18	North sidewall	28-Jul-95	10.5	ND (42)
SBQUEENW19	East sidewall	28-Jul-95	10.5	ND (42)
SBQUEENB16	Southwest bottom	28-Jul-95	11.9	130
SBQUEENB17	Northwest bottom	28-Jul-95	11.7	14 J
SBQUEENB18	Northeast bottom	28-Jul-95	12.2	16 J
SBQUEENB19	Southeast bottom	28-Jul-95	12.3	189

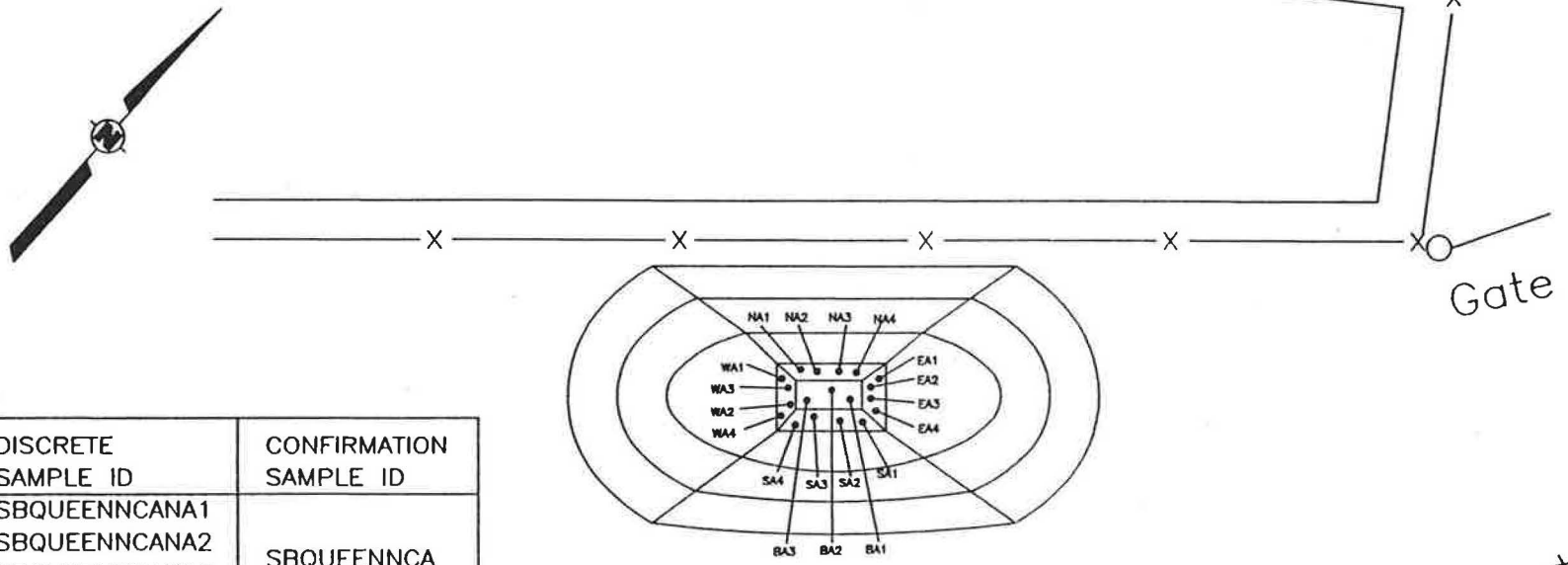
NOTES: TPH = total petroleum hydrocarbons by infrared spectrometry
mg/kg = milligram per kilogram
ND ( ) = indicates TPH was not detected at specified practical quantitation limit (PQL)
J = Qualifier indicating estimated concentration below the practical quantitation limit

2.3 Confirmation Sample Results

Confirmation composite samples were collected from the bottom and sidewalls of the excavation on July 31, 1996. The samples were screened on site prior to shipment to the off-site laboratory to minimize unnecessary testing. The samples were shipped to American Environmental Network, Inc. (AENI) Laboratory located in Columbia, Maryland for TPH analysis by EPA Method 418.1 and semivolatiles analysis by Method 8270. Figure 2-1 provides the confirmation sample locations. The composite sample collected from the south sidewall of the excavation (SBQUEENSCA) was collected in triplicate. Two of the split samples (primary and duplicate) were sent to AENI laboratory and the third split was submitted to the USACE QA laboratory in Hubbardston, Massachusetts.

PLOT SCALE: 1" = 40'

	OHM CORPORATION HOPKINTON, MA	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
		JB 05-21-96			16208



DISCRETE SAMPLE ID	CONFIRMATION SAMPLE ID
SBQUEENNCANA1 SBQUEENNCANA2 SBQUEENNCANA3 SBQUEENNCANA4	SBQUEENNCA
SBQUEENSCASA1 SBQUEENSCASA2 SBQUEENSCASA3 SBQUEENSCASA4	SBQUEENSCA
SBQUEENECAEA1 SBQUEENECAEA2 SBQUEENECAEA3 SBQUEENECAEA4	SBQUEENECA
SBQUEENWCAWA1 SBQUEENWCAWA2 SBQUEENWCAWA3 SBQUEENWCAWA4	SBQUEENWCA
SBQUEENBCABA1 SBQUEENBCABA2 SBQUEENBCABA3	SBQUEENBCA

Scale in Feet

0 40 80

FIGURE 2-1

QUEENSTOWN STREET FUEL OIL SPILL SITE
CONFIRMATION SOIL SAMPLE LOCATIONS

FT. DEVENS
FORT DEVENS, MASSACHUSETTS
PREPARED FOR
USACE
NEW ENGLAND DIVISION – WALTHAM, MA

OHM Remediation Services Corp.

The results of the TPH confirmation sample analyses are summarized in Table 2-2 and the AENI laboratory analytical report for the TPH and semivolatile analyses is presented in Appendix B. Bis(2-ethylhexyl)phthalate, which is a common laboratory contaminant, was detected in all the five composite samples, and the field duplicate, at concentrations ranging from 0.21 to 0.45 mg/kg. N-Nitroso-di-n-propylamine was detected in the sample collected from the north sidewall at a concentration of 0.51 mg/kg. No other semivolatile compounds were detected. TPH concentrations ranged from non-detect to 150 mg/kg. The results of the confirmation sampling indicated that the 500 mg/kg cleanup goal for TPH had been achieved.

Table 2-2
Confirmation Soil Sample Results
Composite Samples
Closure Report - QSFO Spill Site

Sample ID	Sample Date	Sample Location	Sample Depth (ft)	AENI Laboratory TPH Result (mg/kg)
SBQUEENNCA	31-Jul-95	North sidewall	6.5 - 9.1	ND (15)
SBQUEENSCA	31-Jul-95	South sidewall	7.4 - 9.5	ND (16)
SBQUEENECA	31-Jul-95	East sidewall	8.3 - 9.2	ND (16)
SBQUEENWCA	31-Jul-95	West sidewall	7.3 - 9.7	ND (16)
SBQUEENBCA	31-Jul-95	Bottom	11.8	150
SBQUEENDUPA	31-Jul-95	South sidewall	7.4 - 9.5	ND (16)

NOTES: TPH = total petroleum hydrocarbons
mg/kg = milligram per kilogram
ND ( ) = indicates TPH was not detected at specified practical quantification limit (PQL)

2.4 Backfilling and Site Restoration

The excavation was backfilled with clean material removed from the surface of the excavation area and with fill material taken from the North Post of Fort Devens. This fill material was sampled and screened for TPH, BTEX, pesticides and PCBs prior to its use on site. Gravel was placed over the surface of the backfill material to complete the site restoration.

2.5 Waste Characterization & Disposal

A sample was collected from the stockpile of excavated soil in order to characterize the material for disposal. The sample was analyzed for TCLP organics, TCLP inorganics, RCRA characteristics (ignitability, corrosivity, & reactivity), RCRA metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs). The sample was collected in triplicate. The primary and duplicate samples were submitted to AENI and the third split was sent to the USACE QA

laboratory. The analytical reports for the waste characterization sample are located in Appendix C. All TCLP results were below regulatory levels and the RCRA characteristics test results were negative indicating that the soil was non-hazardous. The characterization sample data indicated that the soils could be reused as cover material at lined landfills in the State of Massachusetts.

The 143 tons (approximately 95 cubic yards (cy)) of soil removed from the QSFO spill site have been transferred to a temporary soil storage facility located adjacent to Building 202 in the northeast portion of the Main Post, pending reuse as cover material in the proposed Consolidation Landfill. The shipment was documented using a Material Shipping Record & Log (MSR) which is provided as Appendix D of this report.

2.6 Quality Assurance/Quality Control

Appropriate quality assurance/quality control (QA/QC) measures were taken to ensure the collection of representative soil samples and the generation of accurate and reproducible analytical data.

2.6.1 Sample Collection Quality Control

Soil samples were collected using either a stainless steel trowel or disposable polyethylene scoops. Composite samples were thoroughly homogenized in stainless steel sampling buckets. The sampling equipment was decontaminated using the following procedure:

1) Non-phosphate soap & water rinse;
2) tap water rinse;
3) distilled water rinse;
4) 10% nitric acid rinse;
5) distilled water rinse;
6) methanol rinse; and
7) distilled water rinse.

Sample integrity was also maintained by changing gloves between each sample location. The confirmation composite samples from the south sidewall and the characterization sample were both collected in triplicate for QA/QC purposes. A comparison of the results of samples SBAR69KBC and EXQUEEN01 with their respective duplicate samples indicates a good correlation. A comparison of on-site screening results with off-site analytical results for the confirmation samples also indicates a good correlation.

All samples collected on site were entered on a chain of custody and documented on a sample collection log and a permanent logbook. Samples sent off-site were properly preserved, packaged and overnight shipped to the proper laboratory.

2.6.2 Laboratory Quality Control

Quality control measures were taken in the on-site laboratory to ensure the accuracy and precision of the analytical data. TPH concentrations were determined using an infrared spectrometer (IR). A calibration curve was developed for the IR, prior to the start up of sampling activities, to establish detection limits and document linearity of the instrument response. A single calibration point was run in triplicate to demonstrate measurement precision. Continuing calibrations were also performed on a daily basis thereafter to provide a check on instrument response.

The off-site laboratory took the proper quality control measures as specified in the methods used. Samples were properly preserved upon receipt by the laboratory and sample extraction and analysis were performed within the holding times specified in the methods. Blank and spike samples associated with the QSFO spill site samples were within acceptable QC limits. Refer to the analytical reports for more specific QC information.

The USACE Environmental Laboratory prepared a Chemical Quality Assurance Report (CQAR) to compare their data with the results generated by the contractor laboratory (AENI). The report indicates that the results of the primary (contractor lab) and QA samples agreed overall in 160 (100%) of the 160 comparisons. Refer to Appendix E for the CQAR.

SECTION 3.0
CONCLUSIONS

The Queenstown Street fuel oil (QSFO) spill site is located within a portion, identified as Area 4, of SAs 43H and 43I in the central portion of the Main Post. In October 1992, 10 to 25 gallons of diesel fuel was estimated to have leaked from an armored vehicle onto the unpaved ground within the fenced vehicle storage yard adjacent to SA 43H. The spill occurred approximately 300 feet southeast of Building 601. Contaminated soil was removed from a 20 X 28 foot area to a maximum depth of six feet. Although samples collected from the excavation area indicated the presence of residual petroleum contamination, the extent of the contamination exceeded the capabilities of the excavation equipment. Therefore, the excavation was lined with plastic and was backfilled. A Supplemental Site Investigation (SSI) of the area adjacent to the excavated area conducted by ABB found no significant contamination to be present in the areas adjacent to the spill site.

The NED contracted OHM to remove the petroleum-contaminated soil from the former spill area. OHM removed 143 tons (approximately 95 cy) of soil from the QSFO spill site based on TPH screening performed on-site. Photographs of the removal are provided in Appendix F. Confirmation soil samples were collected and analyzed for TPH to document attainment of the 500 mg/kg action level. The confirmation samples were also analyzed for semivolatile organic compounds. Proper QA/QC measures were observed to ensure the collection of accurate and reproducible data. The excavated soil was transported to the temporary soil storage facility adjacent to Building 202 for eventual disposal at the Consolidation Landfill at Fort Devens. Based on the results of the confirmation samples, no further action is recommended at this site.

Appendix A
On-site Laboratory Soil Screening Data

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 6/30/95 Site Name: Queenstown Oil Spill

Weather: Sunny, some clouds Samplers: BD/EG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt. A	Coordinates Ref. Pt. B	Sample Description	# of Bottles
SBQUEENW1	0824	G	3'6"	70'9"	69'10"	Brown Sandy soil w/ heavy cobble	1x40mL VOA
W2	0829	"	3'7"	65'5"	63'0"	"	"
W3	0832	"	3'5"	60'3"	57'6"	"	"
W4	0837	"	3'11"	61'4"	62'0"	"	"
W5	0839	"	4'0"	54'9"	55'5"	"	"
W6	0842	"	3'3"	49'3"	49'5"	"	"
W7	0845	"	3'9"	50'5"	50'0"	"	"
W8	0847	"	3'0"	52'6"	51'0"	"	"

Ref. Pt. A: ~~Bar~~ Pole next to monitoring well (see map)

Ref. Pt. B: _____

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc # _____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other _____

Relinquished by(dd/tt): [signature] 6/30/95 0935 Received by (dd/tt): [signature] 6.30.95 0935

Relinquished by(dd/tt): _____ Received by (dd/tt): _____

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 6/30/95 Site Name: Queenstown

Weather: Sunny, some clouds Samplers: BD/EG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt A	Coordinates Ref. Pt B	Sample Description	# of Bottles
SBQUEEN W9	0850	G	3'0"	60'9"	58'7"	Brown sandy soil w/heavy cobble	1x40mL VoA
W10	0852	"	3'11"	66'0"	64'1"	"	"
B1	0854	"	4'6"	59'9"	59'11"	"	"
B2	0856	"	4'5"	56'9"	57'0"	"	"
B3	0858	"	4'10"	64'4"	63'11"	"	"
B4	0900	"	4'7"	62'6"	61'0"	"	"

Ref. Pt. A: Pole ~~Bar~~ next To Monitoring Well (see map)

Ref. Pt. B: " " "

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc # _____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other _____

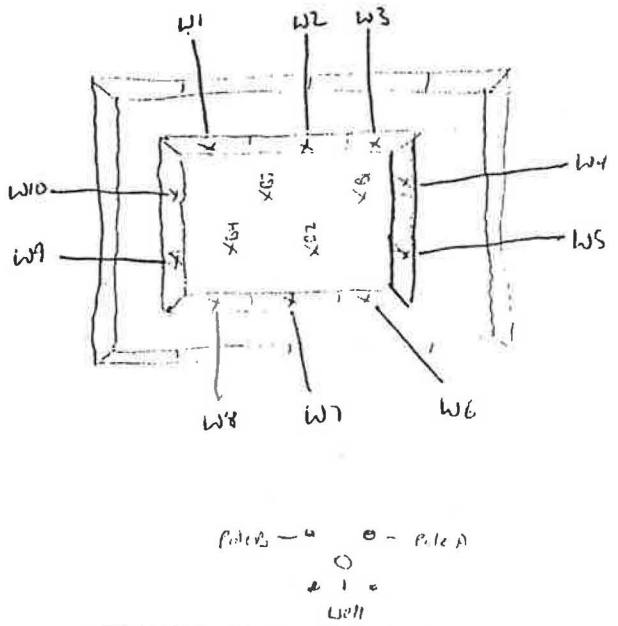
Relinquished by(dd/tt): M. Hummel 6/30/95 Received by (dd/tt): _____

Relinquished by(dd/tt): _____ Received by (dd/tt): _____

Sample Location Map
Fort Devens - Project #16208

Date: 06-30-95

Site Name: Quinsigamond oil spill



Comments/Observations:

- all samples have the attached prefix SBOUEEN

Prepared by: Bill Duke

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 30 June 1995 Site(s): Bldg 2527 , Queenstown Spill Analyst: MRB

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	**Final Result TPH(ppm)**	Qaulifier
SBQUEENB1	18	11	20.1	20.4	1	**11**	J
SBQUEENB2	46	30	20.2	20.9	1	**31**	J
SBQUEENB3	ND				1	**ND**	
SBQUEENB4	10	6	20.3	20.5	1	**6**	J
SBQUEENW1	ND				1	**ND**	
SBQUEENW2	18	11	20.0	20.5	1	**11**	J
SBQUEENW3	13	8	20.3	20.4	1	**8**	
SBQUEENW4	ND				1	**ND**	
SBQUEENW5	ND				1	**ND**	
SBQUEENW6	21	13	20.3	20.8	1	**13**	J
SBQUEENW7	23	14	20.2	20.3	1	**15**	J
SBQUEENW8	55	36	20.0	22.8	1	**41**	J
SBQUEENW9	16	10	20.4	21.1	1	**10**	J
SBQUEENW10	57	37	20.0	21.3	1	**40**	J
SB2527TP13A	29	18	20.2	21.0	1	**19**	J
SB2527TP13B	ND				1	**ND**	
SB2527TP14A	ND				1	**ND**	
SB2527TP14B	ND				1	**ND**	

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 7-10-95 Site Name: Queenstown Spill Site

Weather: Sunny, some clouds Samplers: BD/GG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt. N Ref. Pt. W	Sample Description	# of Bottles
SBQUEEN B5	1435	G	5'-5'6"		Brown sandy soil w/heavy cobble	1x40mL VOA
B6	1437	"	"	See	"	"
B7	1440	"	"	"	"	"
B8	1442	"	"	map	"	"
B9	1445	"	"	"	"	"
B10	1447	"	"	"	"	"
B11	1450	"	"	"	"	"

Ref. Pt. N: See map

Ref. Pt. W: _____

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc # _____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other _____

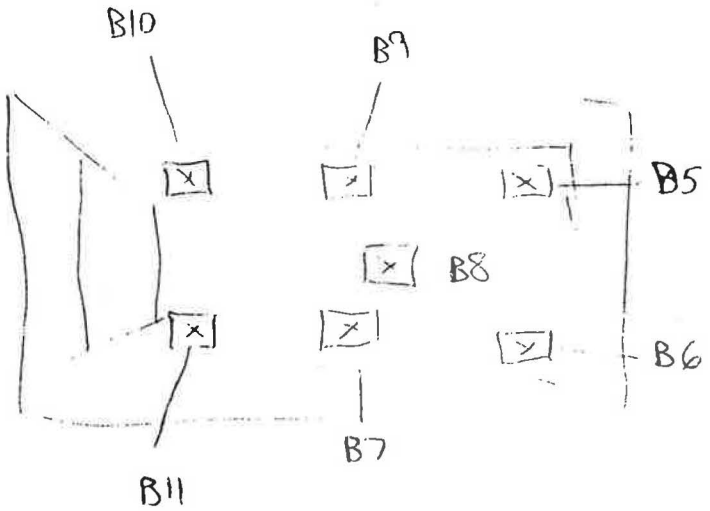
Relinquished by(dd/tt): M Guimond 1500 7-10-95 Received by (dd/tt): _____

Relinquished by(dd/tt): _____ Received by (dd/tt): _____

Sample Location Map
Fort Devens - Project #16208

Date: 7-10-95

Site Name: Queenstown Spill Site



Comments/Observations:

x - Sample location

□ - test pit

- Sample labelled w/ prefix SBQUEEN

Prepared by: Greg Guimond

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 10 July 1995 Site(s): Bldg 3628, Queenstown Spill Site Analyst: GG

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	Final Result TPH(ppm)	Qaulifier
SB3628W9	N.D.				1	N.D.	
SB3628W10	113	74	19.1	21.3	1	83	
SB3628W11	1048	698	20.2	21.1	10	7289	
S3628W12	422	280	20.1	21.3	50	14859	
SBQUEENB5	30	19	20.4	21.0	1	19	J
SBQUEENB6	N.D				1	N.D.	
SBQUEENB7	14	9	20.4	22.1	1	10	J
SBQUEENB8	976	650	20.4	21.1	1	672	
SBQUEENB9	25	16	20.0	21.5	1	17	J
SBQUEENB10	N.D.				1	N.D.	
SBQUEENB11	N.D.					N.D.	

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Pg. 1 of 2

Date: 07-25-95 Site Name: Queenstown Rd.

Weather: Overcast & Humid Samplers: MGQ

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.	Coordinates Ref. Pt.	Sample Description	# of Bottles
SBQUEEN B12	1415	G	~ 7'			Brown coarse sand & gravel	1 x 40 ml
B13	1417		7'				
B14	1450		7'				
W11	1452		6'				
W12	1454		6'				
W13	1457		6'				
W14	1500		6'				

Ref. Pt.___: _____

Ref. Pt.___: _____

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: Onsite Lab AEN - coc # _____ USACE- coc #_____

Duplicate Taken: Yes No Rinsate Taken: Yes No

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other _____

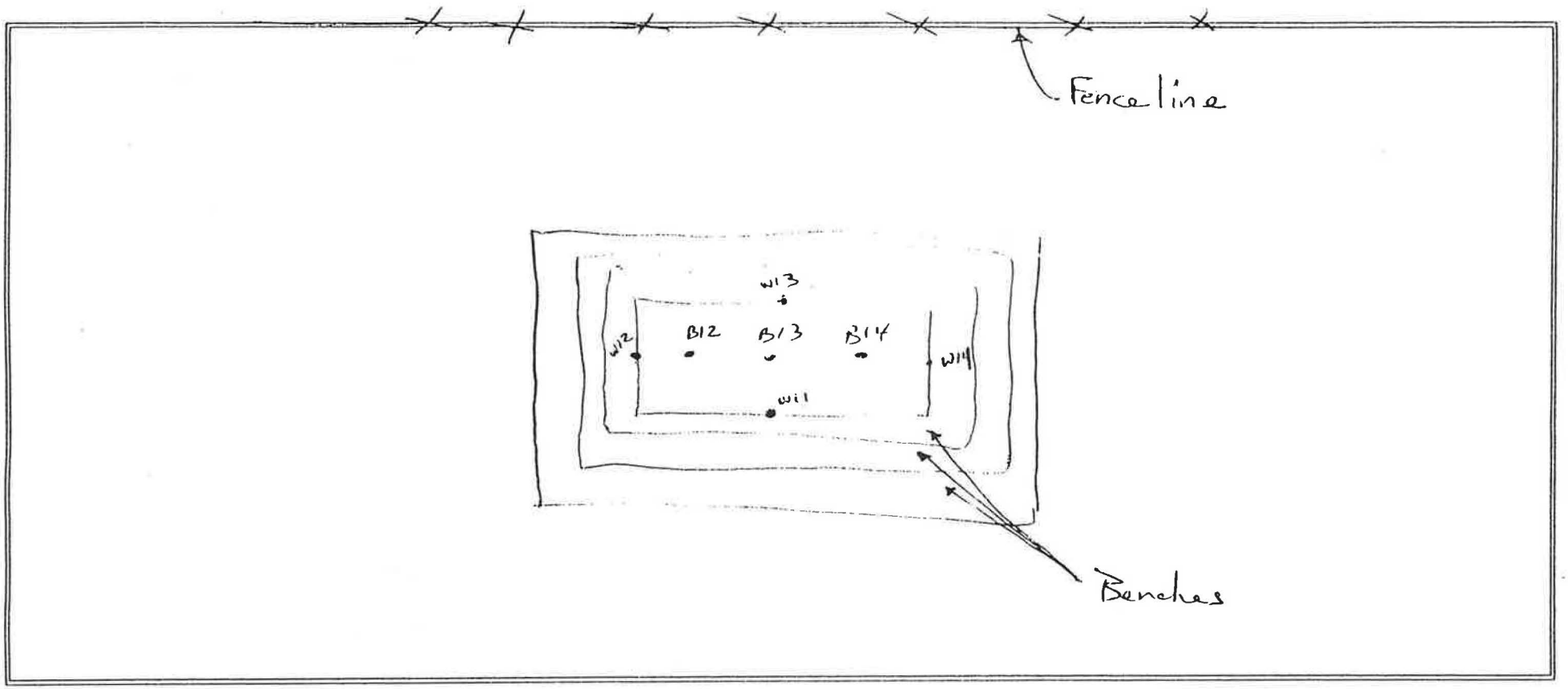
Relinquished by(dd/tt): Michael X Quick 07/25/95 1500 Received by (dd/tt): M X Quick 07/25/95 1500

Relinquished by(dd/tt):_____ Received by (dd/tt):_____

Sample Location Map
Fort Devens - Project #16208

Date: 07.25.95

Site Name: Queenstown Rd. Oil Spill



Comments/Observations:

Prepared by: M. Quinlan

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 25 July 1995 Site(s): Bldg T217, Queenstown Rd Analyst: MRB/MGQ

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	**Final Result TPH(ppm)**	Qaulifier
SBT217C1	13	8	20.1	19.4	1	**7**	J
SBQUEENB12	15	9	21.6	21.5	1	**9**	J
SBQUEENB13	148	98	20.8	21.7	1	**102**	
SBQUEENB14	ND				1	**ND**	
SBQUEENW11	47	30	21.3	21.6	1	**31**	J
SBQUEENW12	16	10	21.0	21.7	1	**10**	J
SBQUEENW13	1252	834	20.5	22.0	1	**895**	
SBQUEENW14	N/D				1	**ND**	

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 7-26-95 Site Name: Queenstown RD oil Spill

Weather: Cloudy Samplers: MGQ / MRB

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.	Coordinates Ref. Pt.	Sample Description	# of Bottles
SB Queen W15	1626	G				Bony soil, moist coarse sand, lots of rubble	1 x 4oz
W16	1630	G				"	"
W17	1628	G				"	"

Ref. Pt.___: See map

Ref. Pt.___: _____

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc #_____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other_____

Relinquished by(dd/tt): SRBlen 7.26.95 Received by (dd/tt):_____

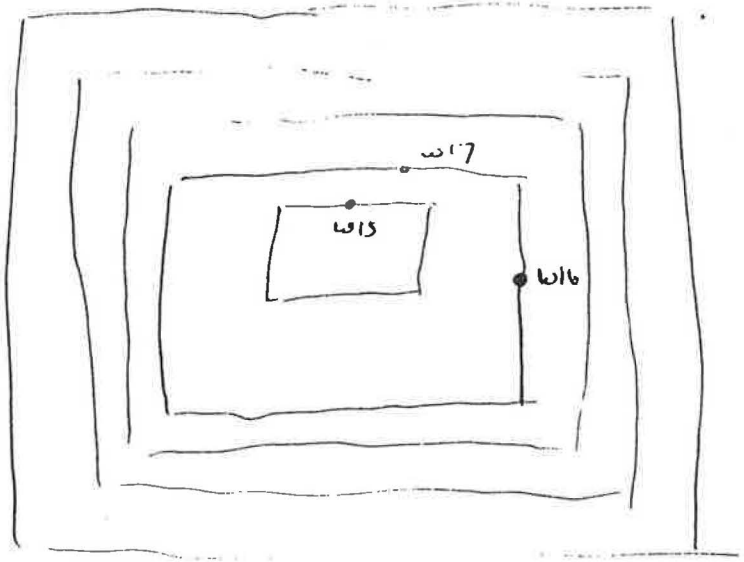
Relinquished by(dd/tt):_____ Received by (dd/tt):_____

Sample Location Map
Fort Devens - Project #16208

Pg. 1 of 2

Date: 7.26.95

Site Name: Queenstown Rd
oil spill



Comments/Observations:

not to scale

Prepared by: MRB

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 26 July 1995

Site(s): Bldg 1434, 1611, 3701, 1421, Queenstown

Analyst: MRB

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	Final Result TPH(ppm)	Qaulifier
SB1434B1	509	338	19.7	19.9	1	342	
SB1434W1	483	321	19.7	20.1	1	328	
SB1421AB1	47	30	20.1	20.1	1	30	J
SB1421AB2	30	19	19.9	19.6	1	19	J
SB1421AB3	16	10	20.0	19.8	1	10	J
SB1421AB4	25	16	20.1	20.4	1	16	J
SB1421AB5	17	10	19.7	20.2	1	11	J
SB1611B1	56	36	20.3	22.9	1	41	J
SB1611W1	39	25	19.7	21.7	1	28	J
SB1611W2	113	74	20.1	20.6	1	76	
SB1611W3	78	51	20.1	20.9	1	53	
SB3701B1	26	16	20.3	20.4	1	17	J
SB3701B2	83	54	20.0	22.5	1	61	
SB3701B3	64	42	19.9	19.5	1	41	J
SB3701B4	67	44	19.9	21.8	1	48	
SB3701B5	82	54	20.1	20.6	1	55	
SBQUEENW15	16	10	19.9	20.6	1	10	J
SBQUEENW16	410	272	20.1	20.2	5	1369	
SBQUEENW17	16	10	20.1	21.7	1	11	J

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 7-28-95 Site Name: Queenstown

Weather: Sunny Samplers: BD/GG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.A	Coordinates Ref. Pt.B	Sample Description	# of Bottles
SBQUEEN B15	0950	G	11'	66'4"	66'2"	Brown sand w/heavy cobble	1 x 40mL VOA
W18	0953	G	10'6"	69'9"	68'9"	"	"
WA	0956	G	10'6"	65'9"	65'0"	"	"

Ref. Pt. A: Post near monitoring well (see map)

Ref. Pt. B: " " "

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc #_____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other_____

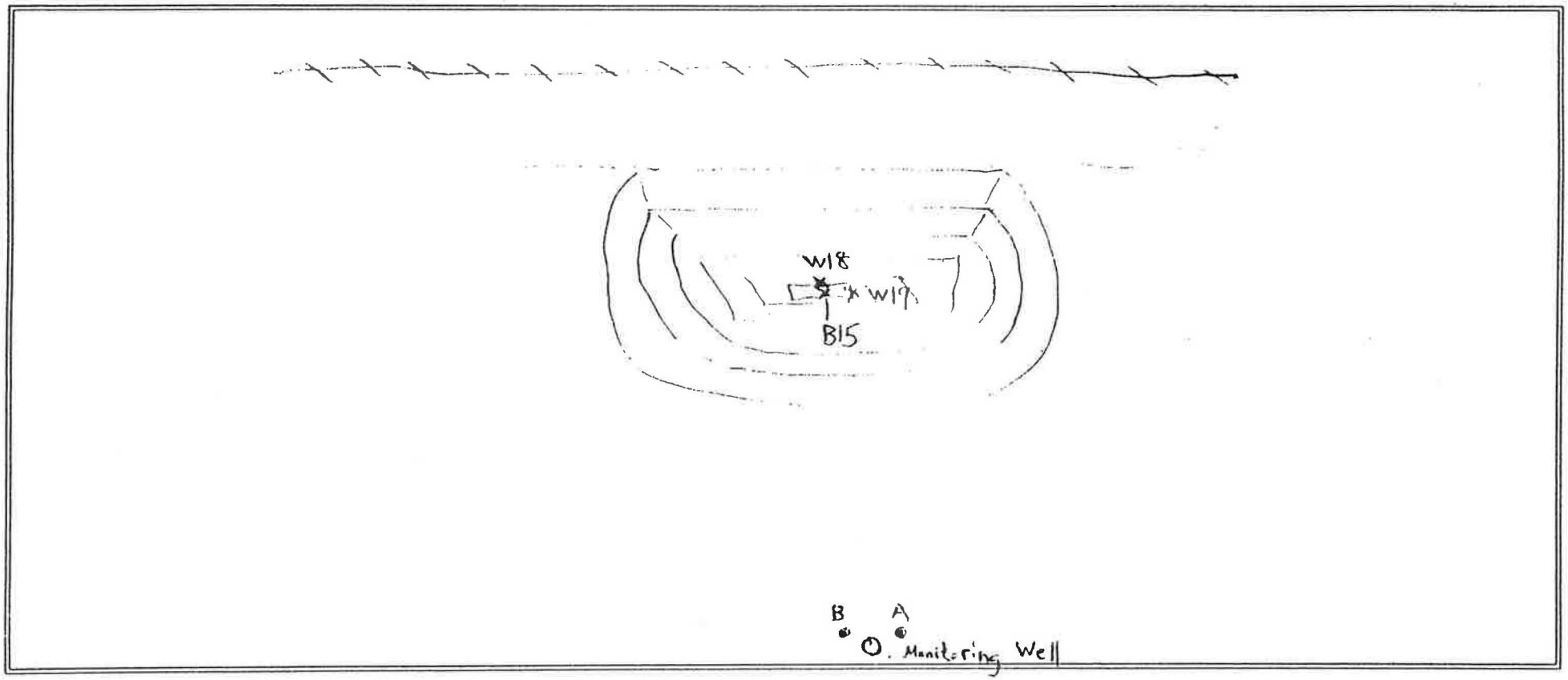
Relinquished by(dd/tt): A Hummel 1010 7-28-95 Received by (dd/tt):_____

Relinquished by(dd/tt):_____ Received by (dd/tt):_____

Sample Location Map
Fort Devens - Project #16208

Date: 7-28-95

Site Name: Queenstown



Comments/Observations:

fence line

• - fixed point

x - sample location

Samples labelled w/prefix SBQUEEN

Prepared by: Greg Guimond

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 28 July 1995

Site(s): Bldg 2013, Queenstown Rd spill

Analyst: MRB/BD

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	**Final Result TPH(ppm)**	Qaulifier
SBQUEENB15	880	586	20.1	18.8	1	**548**	
SBQUEENW18	ND				1	**ND**	
SBQUEENW19	ND				1	**ND**	
SBQUEENB16	183	121	20.1	21.6	1	**130**	
SBQUEENB17	20	12	19.7	22.7	1	**14**	J
SBQUEENB18	24	15	19.7	21.1	1	**16**	J
SBQUEENB19	266	176	20.3	21.8	1	**189**	
SB2013AB1	29	18	20.6	21.8	1	**20**	J
SB2013AB2	13	8	20.2	21.3	1	**8**	J
SB2013AW1	ND				1	**ND**	
SB2013AB3	13	8	19.7	22.9	1	**9**	J
SB2013AW2	18	11	20.1	20.4	1	**11**	J
SB2013BB1	ND				1	**ND**	
SB2013BB2	37	24	20.3	21.5	1	**25**	J

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 7-28-95 Site Name: Queenstown

Weather: Cloudy, muggy Samplers: GG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt. B	Coordinates Ref. Pt. A	Sample Description	# of Bottles
A SBQUEEN816	1341	G	11' 11"	64' 2"	64' 10"	brown sand w/heavy cobble	1x8oz
B SB17	1344	↓	~~11' 8"~~ 12' ref	66' 7"	66' 5"	↓	↓
C SB18	1347		12' 2"	66' 4"	65' 10"		
D SB19	1350	↓	12' 3"	65' 8"	65' 9"	↓	↓

Ref. Pt. A: Post near monitoring well (See map)

Ref. Pt. B: Post near monitoring well

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc #_____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other_____

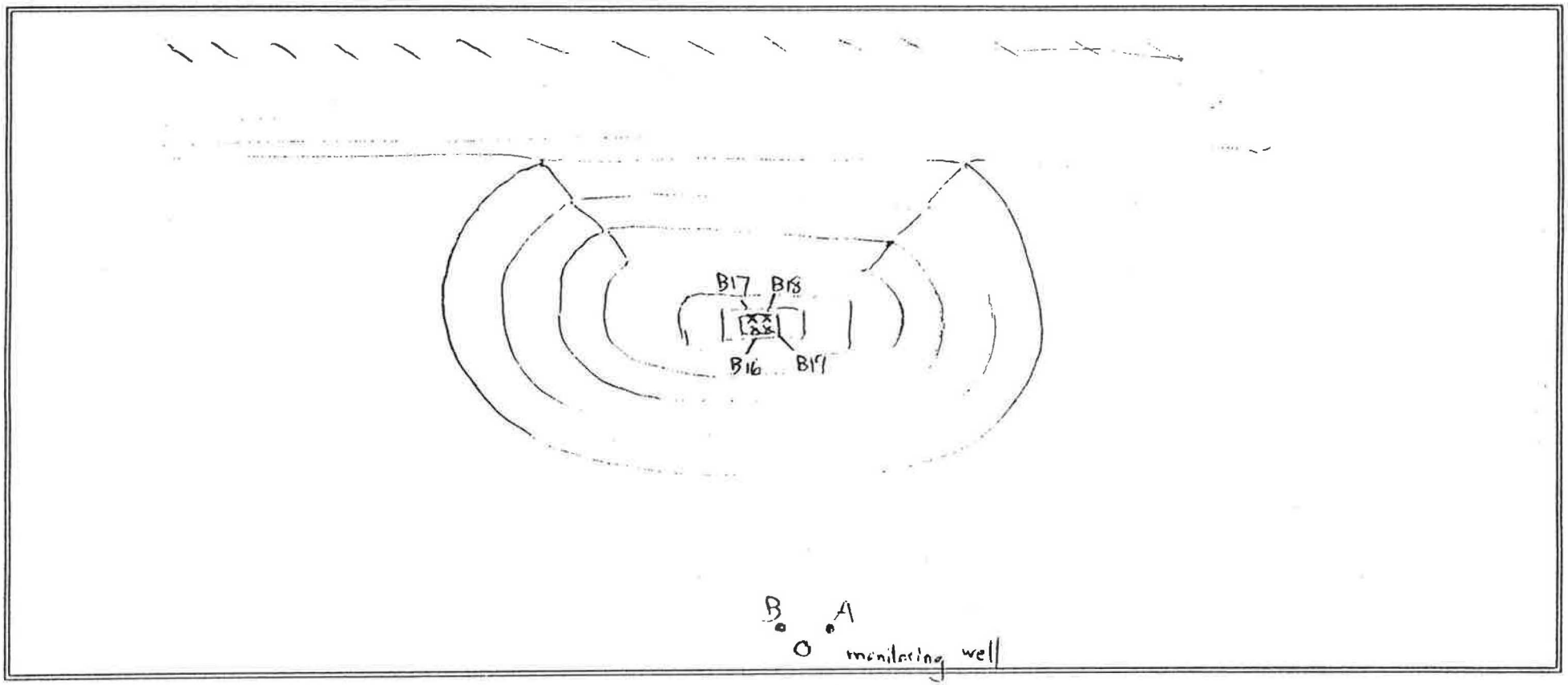
Relinquished by(dd/tt): [signature] 1400 7-28-95 Received by (dd/tt):_____

Relinquished by(dd/tt):_____ Received by (dd/tt):_____

Sample Location Map
Fort Devens - Project #16208

Date: 7-28-95

Site Name: Queenstown



Comments/Observations:

~~~~~~~~ Fence line

• fixed point

x sample location

Samples labelled with prefix SBQUEEN

Prepared by: Greg Guimond
~~~~~~~~

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 28 July 1995

Site(s): Bldg 2013, Queenstown Rd spill

Analyst: MRB/BD

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	**Final Result TPH(ppm)**	Qaulifier
SBQUEENB15	880	586	20.1	18.8	1	**548**	
SBQUEENW18	ND				1	**ND**	
SBQUEENW19	ND				1	**ND**	
SBQUEENB16	183	121	20.1	21.6	1	**130**	
SBQUEENB17	20	12	19.7	22.7	1	**14**	J
SBQUEENB18	24	15	19.7	21.1	1	**16**	J
SBQUEENB19	266	176	20.3	21.8	1	**189**	
SB2013AB1	29	18	20.6	21.8	1	**20**	J
SB2013AB2	13	8	20.2	21.3	1	**8**	J
SB2013AW1	ND				1	**ND**	
SB2013AB3	13	8	19.7	22.9	1	**9**	J
SB2013AW2	18	11	20.1	20.4	1	**11**	J
SB2013BB1	ND				1	**ND**	
SB2013BB2	37	24	20.3	21.5	1	**25**	J

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 7-31-95 Site Name: Queenstown

Weather: Sunny, warm Samplers: BD, GG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.	Coordinates Ref. Pt.	Sample Description	# of Bottles
SBQUEENNCA	1135	C	N/A	N/A	N/A	Brown sandy soil w/heavy cobble	1x8oz
SCA	1140	C	"	"	"	"	"
WCA	1151	C	"	"	"	"	"
ECA	1156	C	"	"	"	"	"
BCA	1202	C	"	"	"	"	"
DDA	1140	C	"	"	"	"	"
TPA	1140	C	"	"	"	"	"

Ref. Pt. A : Pole marked A on map

Ref. Pt. B : " B "

Map Attached: (Yes) No

Sample Type: Screening (Confirmation) Disposal/Characterization

Laboratory Destination: Onsite Lab (AEN - coc # 99998) USACE- coc # 99982

Duplicate Taken: (Yes) No Rinsate Taken: (Yes) No

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other Semivolatiles (TCL)

Relinquished by(dd/tt): M. Quinn 7-31-95 1225 Received by (dd/tt): Will Dd 7-31-95 1225

Relinquished by(dd/tt): _____ Received by (dd/tt): _____

Sample Collection Log Supplemental Form
Composite Sample Data
Fort Devens - Project #16208

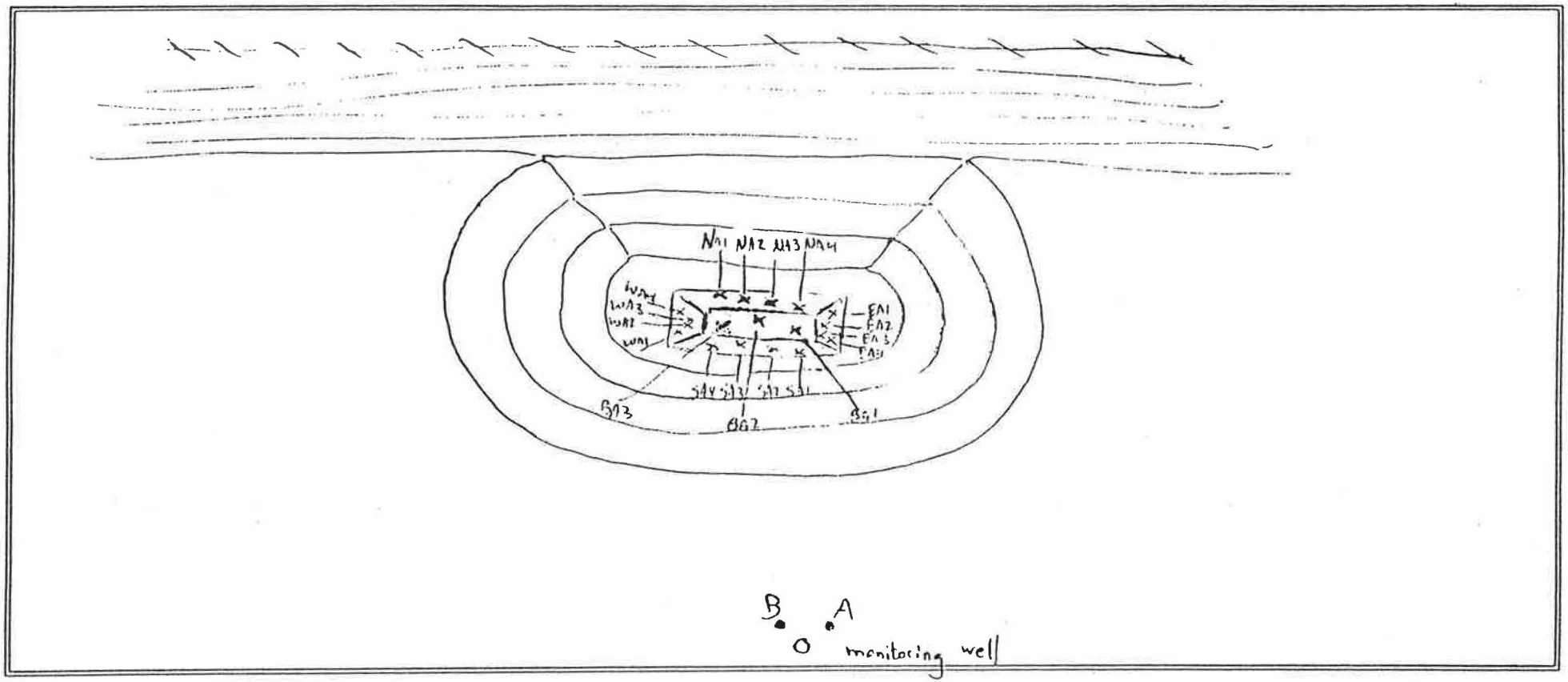
Date: 7-31-95 Site: Queenstown Sampler: BD/GG

Composite Sample ID	Discrete Sample ID	Sample Depth (ft)	Coordinates Ref. Pt. A	Coordinates Ref. Pt. B	Sample Description
SBQUEENWCA	NA1	6'6"	69'9"	70'0"	Brown sandy soil w/heavy cobble
	NA2	7'9"	69'5"	69'4"	
	NA3	7'8"	69'7"	69'2"	
	NA4	9'1"	68'	68'7"	
SBQUEENSCA	SA1	8'8"	60'0"	60'0"	
DUPA	SA2	9'6"	59'9"	59'8"	
TRPA	SA3	9'5"	60'9"	60'4"	
	SA4	7'5"	60'4"	59'11"	
SBQUEENECA	EA1	7'11"	65'3"	65'4"	
	EA2	8'9"	64'2"	64'9"	
	EA3	9'3"	62'6"	62'6"	
	EA4	8'4"	61'2"	61'8"	
SBQUEENWCA	WA1	7'4"	64'1"	63'1"	
	WA2	8'7"	64'11"	64'4"	
	WA3	9'8"	66'6"	65'8"	
	WA4	7'4"	67'11"	67'4"	
SBQUEENBCA	BA1	11'9"	64'11"	64'10"	
	BA2	11'9"	64'	64'1"	
	BA3	11'9"	65'4"	65'	

Sample Location Map
Fort Devens - Project #16208

Date: 7-31-95

Site Name: Queenstown



Comments/Observations:

——— Fence line

• fixed point

x sample location

Samples labelled with prefix SBQUEEN

Prepared by: Bill Dik

TPH Results
On-site Laboratory - Modified Method 418.1
Fort Devens - Project #16208

Date: 31 July 1995

Site(s): Bldg P223, Queenstown Rd

Analyst: MRB/GG

Sample ID #	Instrument Response TPH (ppm)	Calibration Adjusted TPH (ppm)	Sample Weight (g)	Extract Vol. (ml)	Dilution	**Final Result TPH(ppm)**	Qaulifier
SBQUEENBCA	174	115	20.0	21.4	1	**123**	
SBQUEENECA	13	8	19.7	21.5	1	**8**	J
SBQUEENNCA	15	9	19.8	21.1	1	**10**	J
SBQUEENSCA	18	11	19.6	21.1	1	**12**	J
SBQUEENWCA	18	11	20.1	21.1	1	**12**	J
SBQUEENDPA	16	10	20.2	21.1	1	**10**	J
SBQUEENTPA	15	9	20.4	20.6	1	**9**	J
SBP14B2	82	54	20.0	16.4	1	**44**	
SBP14B3	83	54	18.9	20.9	1	**60**	
SBP14B4	71	46	19.9	20.5	1	**48**	
SBP223W10	66	43	19.4	20.6	1	**46**	J
SBP223W11	45	29	20.1	20.5	1	**30**	J
SBP223W12	79	52	19.7	21.0	1	**55**	
SBP223W13	21	13	20.4	20.9	1	**13**	J
SBP223W14	17	10	19.9	21.5	1	**11**	J
SBP223W15	16	10	19.5	21.0	1	**11**	J
SBP223B8	288	191	20.3	21.1	1	**199**	
SBP223B9	643	428	21.0	20.6	5	**2098**	
SBP223B10	54	35	19.7	20.6	1	**37**	J
SBP223B11	23	14	19.9	22.1	1	**16**	J

TPH - Total Petroluem Hydrocarbons
ND - Indicates non detect
J - Indicates estimated concentration below practical quantitation limit

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 9-15-95 Site Name: Queenstown

Weather: Sunny, 70°C Samplers: GG/MJ

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.	Coordinates Ref. Pt.	Sample Description	# of Bottles
EXQUEEN01	1210	C	1'6"-2'			Brown sandy soil w/ heavy cobble	1x1L 3x8oz
EXQUEEN02	1203	G	1'6"			↓	2x40mL
EXQUEENDUP	1210	C	1'6"-2'				1x1L 3x8oz
EXQUEENDUPA	1203	G	1'6"				2x40mL
EXQUEENTRP	1210	C	1'6"-2'				1x1L 3x8oz
EXQUEENTRPA	1203	G	1'6"				2x40mL

Ref. Pt.___: _____

Ref. Pt.___: _____

Map Attached: (Yes) No

Sample Type: Screening Confirmation (Disposal/Characterization)

Laboratory Destination: Onsite Lab (AEN - coc # 158326) (USACE- coc # ~~158339~~)

Duplicate Taken: (Yes) No Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other TCLP, RCRA CHAR, RCRA Metals, PCB's, PAH's, Total VOA

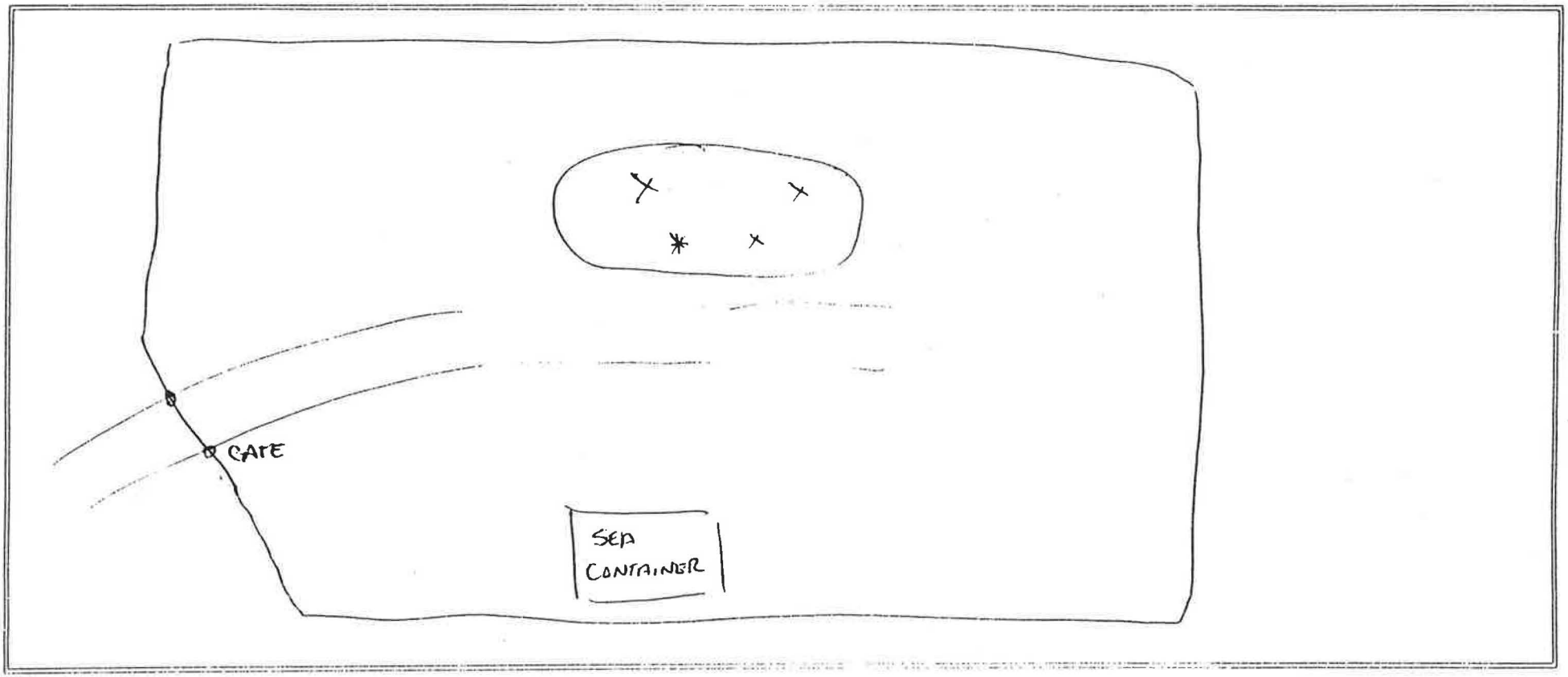
Relinquished by(dd/tt): M Maynard 9-15-95 Received by (dd/tt): _____

Relinquished by(dd/tt): _____ Received by (dd/tt): _____

Sample Location Map
Fort Devens - Project #16208

Date: 9/15/95

Site Name: Queenstown



Comments/Observations:

X denotes unique sample locations for composite

* grab sample taken for VOC's

Prepared by: M. Jones

Soil Sample Collection Log
Fort Devens - Project #16208

Date: 10-31-95 Site Name: Queenstown

Weather: Cloudy, 50° Samplers: MJ, GG

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coordinates Ref. Pt.	Coordinates Ref. Pt.	Sample Description	# of Bottles
~~SB2651~~ QtownP1	0941	G	0-6"	N/A	N/A	Brown Soil w/ Cobble	1 ~~x 8oz~~ 40ml
P2	0940	G	0-6"	N/A	N/A	Brown Soil w/ Cobble	1x40ml

Ref. Pt.___: _____

Ref. Pt.___: _____

Map Attached: (Yes) No

Sample Type: (Screening) Confirmation Disposal/Characterization

Laboratory Destination: (Onsite Lab) AEN - coc # _____ USACE- coc #_____

Duplicate Taken: Yes (No) Rinsate Taken: Yes (No)

On-site Laboratory Chain of Custody/Request for Analysis

Requested Testing: (TPH) BTEX Other_____

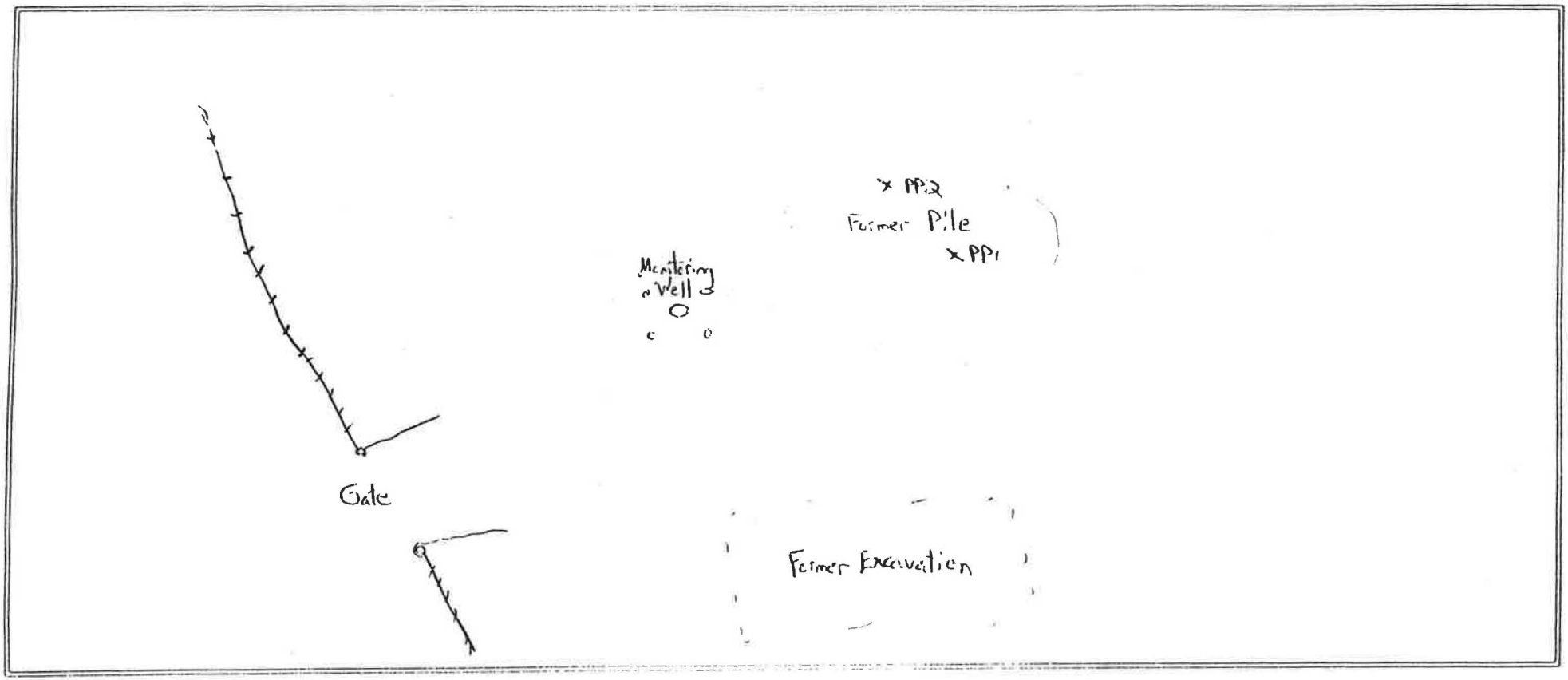
Relinquished by(dd/tt): Matthew N Jones 1130 10-31-95 Received by (dd/tt): [signature] 10-31-95 1130

Relinquished by(dd/tt):_____ Received by (dd/tt):_____

Sample Location Map
Fort Devens - Project #16208

Date: 10-31-95

Site Name: Queenstown Oil Spill



Comments/Observations:

X - indicates location of post-pile grab sample

---- Fenceline

Prepared by: G. Guimond

Appendix B
AENI Analytical Report - Confirmation Soil Sample Results

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9508005
Report To: OHM Corporation
Project: Fort Devens #16208
Date: August 04, 1995
Analysis: Total Petroleum Hydrocarbons, EPA 418.1M

Client ID	AENI ID	Date Sampled	Date Received
SBQUEENNCA	9508005-001	07/31/95	08/01/95
SBQUEENSCA	9508005-002	07/31/95	08/01/95
SBQUEENWCA	9508005-003	07/31/95	08/01/95
SBQUEENECA	9508005-004	07/31/95	08/01/95
SBQUEENBCA	9508005-005	07/31/95	08/01/95
SBQUEENDPA	9508005-006	07/31/95	08/01/95

Six soil samples were received and analyzed for Total Petroleum Hydrocarbons.

The samples were extracted on 08/03/95 and analyzed on 08/04/95.

All quality control met standard laboratory criteria.

This report consists of tabulated sample results.

Report Released By:

Rhonda Green-Barron
General Chemistry Laboratory Manager

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9508005
Report To: OHM Corporation
Project: Ft Devens #16208
Date: August 04, 1995
Analysis: Total Petroleum Hydrocarbons, (EPA 418.1M)

Client ID	AENI ID	%Solids	Result, mg/Kg
SBQUEENNCA	9508005-001	97.4	<15
SBQUEENSCA	9508005-002	95.8	<16
SBQUEENWCA	9508005-003	95.8	<16
SBQUEENECA	9508005-004	95.4	<16
SBQUEENBCA	9508005-005	96.6	150
SBQUEENDPA	9508005-006	96.2	<16
	Method Blank	100	<15

(1) Results reported on a dry weight basis.

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 RUMSEY ROAD
COLUMBIA, MD. 21045
(410) 730-8525

Project Number: 9508-005
Client Name: OH Materials
Project Title: Fort Devens
Ayer, MA

Six soil samples were analyzed for the semivolatile organic compounds in the TCL list by method 8270.
The analyses followed the standard AENI QA/QC and holding time requirements.

This package consists of tabulated results of the sample and the method blanks, along with the QC forms II, III, and IV.

Data Released for Minh-Thuy L. Nguyen (8/10/95)
GC/MS Lab Manager

Semivolatiles Section:

Client ID	AENI ID	Matrix	Date Sampled	Date Received	Date Extracted TCLP	Date Extracted BNA	Date Analyzed
SBQUEENNCA	005-001	Soil	07/31/95	08/01/95	N.A.	08/03	08/09/95
SBQUEENSCA	005-002	Soil	07/31/95	08/01/95	N.A.	08/03	08/09/95
SBQUEENWCA	005-003	Soil	07/31/95	08/01/95	N.A.	08/03	08/09/95
SBQUEENECA	005-004	Soil	07/31/95	08/01/95	N.A.	08/03	08/09/95
SBQUEENBCA	005-005	Soil	07/31/95	08/01/95	N.A.	08/03	08/10/95
SBQUEENDPA	005-006	Soil	07/31/95	08/01/95	N.A.	08/03	08/10/95

Form I (Tabulated Results)
All sample extraction and analyses were performed within the holding time requirement. All sample results are reported on the basis of dry weights.

Form II (Surrogate Recoveries)
The surrogate recoveries for the samples, QC, and method blank were within the method specified limits.

Form III (LCS Recoveries)
A LCS analysis was reported. All spike recoveries were within criteria.

Form IV (Method Blank Results)
The method blank was free of target analytes.

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: _____ Location: _____ Group: _____

Level: (low/med) LOW

	SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	#	#	TOT OUT
01	SBLK01	63	78	78	82	72	111			
02	SBLK01 MS	73	82	84	87	93	118			
03	SBQUEENNCA	56	65	75	81	24	96			
04	SBQUEENSCA	53	63	74	81	24	99			
05	SBQUEENWCA	60	71	83	86	27	96			
06	SBQUEENECA	58	74	87	93	30	108			
07	SBQUEENBCA	61	76	87	92	31	97			
08	SBQUEENDPA	61	73	84	91	29	103			
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

	QC LIMITS
S1 (2FP) = 2-Fluorophenol	(25-121)
S2 (PHL) = Phenol-d5	(24-113)
S3 (NBZ) = Nitrobenzene-d5	(23-120)
S4 (FBP) = 2-Fluorobiphenyl	(30-115)
S5 (TBP) = 2,4,6-Tribromophenol	(19-122)
S6 (TPH) = Terphenyl-d14	(18-137)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: _____ Location: _____ Group: _____

Matrix Spike - Sample No.: SBLK01 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	6700	0	4800	72	(26-90)
2-Chlorophenol	6700	0	4800	72	(25-102)
1,4-Dichlorobenzene	3300	0	2300	70	(28-104)
N-Nitroso-di-n-propylamine	3300	0	2900	88	(41-126)
1,2,4-Trichlorobenzene	3300	0	2700	82	(38-107)
4-Chloro-3-methylphenol	6700	0	5500	82	(26-103)
Acenaphthene	3300	0	2800	85	(31-137)
2,4-Dinitrotoluene	3300	0	2500	76	(28-89)
4-Nitrophenol	6700	0	5300	79	(11-114)
Pentachlorophenol	6700	0	5600	84	(17-109)
Pyrene	3300	0	3100	94	(35-142)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					35	(26-90)
2-Chlorophenol					50	(25-102)
1,4-Dichlorobenzene					27	(28-104)
N-Nitroso-di-n-propylamine					38	(41-126)
1,2,4-Trichlorobenzene					23	(38-107)
4-Chloro-3-methylphenol					33	(26-103)
Acenaphthene					19	(31-137)
2,4-Dinitrotoluene					47	(28-89)
4-Nitrophenol					50	(11-114)
Pentachlorophenol					47	(17-109)
Pyrene					36	(35-142)

* Values outside of QC limits

Comments: _____

SEMIVOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

SBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Lab File ID: DH063.D Lab Sample ID: 0803-JA

Instrument ID: MSD 1 Date Extracted: 8/3/95

Matrix: (soil/water) SOIL Date Analyzed: 8/8/95

Level: (low/med) LOW Time Analyzed: 1823

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK01 MS	0803-JA BS	DH064.D	08/08/95
02	SBQUEENNCA	#001	DH078.D	08/09/95
03	SBQUEENSCA	#002	DH079.D	08/09/95
04	SBQUEENWCA	#003	DH080.D	08/09/95
05	SBQUEENECA	#004	DH081.D	08/09/95
06	SBQUEENBCA	#005	DH082.D	08/10/95
07	SBQUEENDPA	#006	DH083.D	08/10/95
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
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30				

COMMENTS:

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENNCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DH078.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 3 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	340	U
108-95-2	Phenol	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
108-60-1	bis(2-chloroisopropyl)ether	340	U
95-48-7	2-Methylphenol	340	U
67-72-1	Hexachloroethane	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
106-44-5	4-Methylphenol	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	850	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	850	U
208-96-8	Acenaphthylene	340	U
131-11-3	Dimethylphthalate	340	U
606-20-2	2,6-Dinitrotoluene	340	U
83-32-9	Acenaphthene	340	U
99-09-2	3-Nitroaniline	850	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENNCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #001

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DH078.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 3 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	850	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
100-02-7	4-Nitrophenol	850	U
86-73-7	Fluorene	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
84-66-2	Diethylphthalate	340	U
100-01-6	4-Nitroaniline	850	U
534-52-1	4,6-Dinitro-2-methylphenol	850	U
86-30-6	n-Nitrosodiphenylamine	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	850	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-butylphthalate	340	U
86-74-8	Carbazole	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo[a]anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	340	U
207-08-9	Benzo[k]fluoranthene	340	U
50-32-8	Benzo[a]pyrene	340	U
193-39-5	Indeno[1,2,3-cd]pyrene	340	U
53-70-3	Dibenz[a,h]anthracene	340	U
191-24-2	Benzo[g,h,i]perylene	340	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENSCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH079.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	350	U
108-95-2	Phenol	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
108-60-1	bis(2-chloroisopropyl)ether	350	U
95-48-7	2-Methylphenol	350	U
67-72-1	Hexachloroethane	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
106-44-5	4-Methylphenol	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
208-96-8	Acenaphthylene	350	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
83-32-9	Acenaphthene	350	U
99-09-2	3-Nitroaniline	870	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENDPA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #006

Sample wt/vol: 30.9 (g/mL) G Lab File ID: DH083.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	340	U
108-95-2	Phenol	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
108-60-1	bis(2-chloroisopropyl)ether	340	U
95-48-7	2-Methylphenol	340	U
67-72-1	Hexachloroethane	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
106-44-5	4-Methylphenol	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	840	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	840	U
208-96-8	Acenaphthylene	340	U
131-11-3	Dimethylphthalate	340	U
606-20-2	2,6-Dinitrotoluene	340	U
83-32-9	Acenaphthene	340	U
99-09-2	3-Nitroaniline	840	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENSCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH079.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
100-02-7	4-Nitrophenol	870	U
86-73-7	Fluorene	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
84-66-2	Diethylphthalate	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	n-Nitrosodiphenylamine	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-butylphthalate	350	U
86-74-8	Carbazole	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo[a]anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	350	U
207-08-9	Benzo[k]fluoranthene	350	U
50-32-8	Benzo[a]pyrene	350	U
193-39-5	Indeno[1,2,3-cd]pyrene	350	U
53-70-3	Dibenz[a,h]anthracene	350	U
191-24-2	Benzo[g,h,i]perylene	350	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENWCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DH080.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	350	U
108-95-2	Phenol	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
108-60-1	bis(2-chloroisopropyl)ether	350	U
95-48-7	2-Methylphenol	350	U
67-72-1	Hexachloroethane	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
106-44-5	4-Methylphenol	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
208-96-8	Acenaphthylene	350	U
131-11-3	Dimethylphthalate	97	J
606-20-2	2,6-Dinitrotoluene	350	U
83-32-9	Acenaphthene	350	U
99-09-2	3-Nitroaniline	870	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENWCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DH080.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
100-02-7	4-Nitrophenol	870	U
86-73-7	Fluorene	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
84-66-2	Diethylphthalate	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	n-Nitrosodiphenylamine	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-butylphthalate	350	U
86-74-8	Carbazole	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo[a]anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	210	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	350	U
207-08-9	Benzo[k]fluoranthene	350	U
50-32-8	Benzo[a]pyrene	350	U
193-39-5	Indeno[1,2,3-cd]pyrene	350	U
53-70-3	Dibenz[a,h]anthracene	350	U
191-24-2	Benzo[g,h,i]perylene	350	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENECA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #004

Sample wt/vol: 30.3 (g/mL) G Lab File ID: DH081.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 5 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	350	U
108-95-2	Phenol	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
108-60-1	bis(2-chloroisopropyl)ether	350	U
95-48-7	2-Methylphenol	350	U
67-72-1	Hexachloroethane	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
106-44-5	4-Methylphenol	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
208-96-8	Acenaphthylene	350	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
83-32-9	Acenaphthene	350	U
99-09-2	3-Nitroaniline	870	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENECA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #004

Sample wt/vol: 30.3 (g/mL) G Lab File ID: DH081.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 5 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/9/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
100-02-7	4-Nitrophenol	870	U
86-73-7	Fluorene	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
84-66-2	Diethylphthalate	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	n-Nitrosodiphenylamine	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-butylphthalate	350	U
86-74-8	Carbazole	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo[a]anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	270	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo[b]fluoranthene	350	U
207-08-9	Benzo[k]fluoranthene	350	U
50-32-8	Benzo[a]pyrene	350	U
193-39-5	Indeno[1,2,3-cd]pyrene	350	U
53-70-3	Dibenz[a,h]anthracene	350	U
191-24-2	Benzo[g,h,i]perylene	350	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENBCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #005

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DH082.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 3 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	340	U
108-95-2	Phenol	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
108-60-1	bis(2-chloroisopropyl)ether	340	U
95-48-7	2-Methylphenol	340	U
67-72-1	Hexachloroethane	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
106-44-5	4-Methylphenol	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	850	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	850	U
208-96-8	Acenaphthylene	340	U
131-11-3	Dimethylphthalate	340	U
606-20-2	2,6-Dinitrotoluene	340	U
83-32-9	Acenaphthene	340	U
99-09-2	3-Nitroaniline	850	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENBCA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #005

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DH082.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 3 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	850	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
100-02-7	4-Nitrophenol	850	U
86-73-7	Fluorene	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
84-66-2	Diethylphthalate	340	U
100-01-6	4-Nitroaniline	850	U
534-52-1	4,6-Dinitro-2-methylphenol	850	U
86-30-6	n-Nitrosodiphenylamine	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	850	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-butylphthalate	340	U
86-74-8	Carbazole	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo[a]anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	220	J
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo[b]fluoranthene	340	U
207-08-9	Benzo[k]fluoranthene	340	U
50-32-8	Benzo[a]pyrene	340	U
193-39-5	Indeno[1,2,3-cd]pyrene	340	U
53-70-3	Dibenz[a,h]anthracene	340	U
191-24-2	Benzo[g,h,i]perylene	340	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBQUEENDPA

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #006

Sample wt/vol: 30.9 (g/mL) G Lab File ID: DH083.D

Level: (low/med) LOW Date Received: 8/1/95

% Moisture: 4 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/10/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	840	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
100-02-7	4-Nitrophenol	840	U
86-73-7	Fluorene	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
84-66-2	Diethylphthalate	340	U
100-01-6	4-Nitroaniline	840	U
534-52-1	4,6-Dinitro-2-methylphenol	840	U
86-30-6	n-Nitrosodiphenylamine	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	840	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-butylphthalate	340	U
86-74-8	Carbazole	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenz(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: 0803-JA

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH063.D

Level: (low/med) LOW Date Received:

% Moisture: 0 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/8/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
111-44-4	bis(2-Chloroethyl)ether	330	U
108-95-2	Phenol	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
108-60-1	bis(2-chloroisopropyl)ether	330	U
95-48-7	2-Methylphenol	330	U
67-72-1	Hexachloroethane	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
106-44-5	4-Methylphenol	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
208-96-8	Acenaphthylene	330	U
131-11-3	Dimethylphthalate	330	U
606-20-2	2,6-Dinitrotoluene	330	U
83-32-9	Acenaphthene	330	U
99-09-2	3-Nitroaniline	830	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9508005 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: 0803-JA

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DH063.D

Level: (low/med) LOW Date Received:

% Moisture: 0 decanted: (Y/N): N Date Extracted: 8/3/95

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/8/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
100-02-7	4-Nitrophenol	830	U
86-73-7	Fluorene	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
84-66-2	Diethylphthalate	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	n-Nitrosodiphenylamine	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-butylphthalate	330	U
86-74-8	Carbazole	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo[a]anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo[b]fluoranthene	330	U
207-08-9	Benzo[k]fluoranthene	330	U
50-32-8	Benzo[a]pyrene	330	U
193-39-5	Indeno[1,2,3-cd]pyrene	330	U
53-70-3	Dibenz[a,h]anthracene	330	U
191-24-2	Benzo[g,h,i]perylene	330	U

OHM Corporation

CHAIN-OF-CUSTODY RECORD

Form 0(
Field Technical Servi
Rev. 08

9508005

No. 99998

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Ft Devens	PROJECT LOCATION: Ayer, MA	
PROJ NO: 16208	PROJECT CONTACT: M. Quinlan	PROJECT TELEPHONE NO: (508)772-2019
CLIENT'S REPRESENTATIVE: USACE	PROJECT MANAGER/SUPERVISOR: Kevin Mack	

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) Semi Volatiles TCL / TCLP	REMARKS
1	SBQUEENMXA	7.31.95	1135	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-001
2	SBQUEENSCA	"	1140	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-002
3	SBQUEENMXA	"	1151	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-003
4	SBQUEENECA	"	1156	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-004
5	SBQUEENBCA	"	1202	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-005
6	SBQUEENDPA	↓	1140	✓		Brown Sandy Soil w heavy cobble		✓ ✓	-006
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-6	G.M. Blen for GG	Fed Ex Airbill 122672975 2	7.31.95	1530
2			B. Tuttle	8/1	1025
3					
4					

REMARKS
- 4 °C
- Temp Blank included
30 DAY TAT

SAMPLER'S SIGNATURE: G.M. Blen for GG

LAB COPY

Appendix C
AENI Analytical Report - Waste Characterization Soil Samples

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 RUMSEY ROAD
COLUMBIA, MD. 21045
(410) 730-3525

Project Number: 9509-197
Client Name: O.H. Materials
Project Title: Fort Devens
Ayer, MA

Four soil samples were analyzed for the volatile organic compounds in the priority pollutant list by method 8240.
Four soil samples were analyzed for the polynuclear aromatic hydrocarbons by method 8270.
Five soil samples were TCLP leached according to the SW846 guidelines, and analyzed for the volatile and semivolatile organic compounds in the list of Toxic Characteristic Constituents, by methods 8240 and 8270, respectively.
The analyses followed the standard AENI QA/QC and holding time requirements.

This package consists of tabulated results of the samples and the method blanks, along with the QC forms II, III and IV.

Data Released Minh-Thuy L. Nguyen 9/25/96
Minh-Thuy L. Nguyen
GC/MS Lab Manager

VOLATILES Section:

Client ID	AENI ID	Matrix	Date Sampled	Date Received	Date TCLP Leached	Date Analyzed
PP Analysis:						
EXQUEEN02	197-002	Soil	09/15/95	09/16/95	N.A.	09/22/95
EXQUEENDUPA	197-004	Soil	09/15/95	09/16/95	N.A.	09/22/95
EX1302	197-007	Soil	09/15/95	09/16/95	N.A.	09/22/95
EX1302DUP	197-009	Soil	09/15/95	09/16/95	N.A.	09/22/95
TCLP Analysis:						
EX243201	197-005	Soil	09/15/95	09/16/95	09/25/95	09/26/95
EXQUEEN01	197-010	Soil	09/15/95	09/16/95	09/25/95	09/26/95
EXQUEENDUP	197-011	Soil	09/15/95	09/16/95	09/25/95	09/26/95
EX1301	197-012	Soil	09/15/95	09/16/95	09/25/95	09/26/95
EX1301DUP	197-013	Soil	09/15/95	09/16/95	09/25/95	09/26/95

Form I (Tabulated Results)
All sample preparation and analyses were performed within the holding time requirement.
The results of the PP analysis were reported on the basis of dry weight.
The leachates were analyzed at a 1:10 dilution to minimize background interference.

Form II (Surrogate Recoveries)
The surrogate recoveries for the samples and the method blanks were within the method specified criteria.

Form III (MS/MSD Recoveries)
PP Analysis: A batch MS/MSD analysis was reported. All spike recoveries and all %RPD were within the method advisory limits.
TCLP Analysis: A batch MS analysis was reported. All spike recoveries were within the method advisory limits.

Form IV (Method Blank Summary)
The method blanks were free of target analytes.

SEMIVOLATILES Section:

Client ID	AENI ID	Matrix	Date Sampl.	Date Recevd	Date Extracted TCLP	Date Extracted BNA	Date Analz
PAH Analysis:							
EXQUEEN01	197-001	Soil	09/15	09/16	N.A.	09/19	09/21
EXQUEENDUP	197-003	Soil	09/15	09/16	N.A.	09/19	09/21
EX1301	197-006	Soil	09/15	09/16	N.A.	09/19	09/21
EX1301DUP	197-008	Soil	09/15	09/16	N.A.	09/19	09/21
TCLP Analysis:							
EX243201	197-005	Soil	09/15	09/16	09/22	09/23	09/25
EXQUEEN01	197-010	Soil	09/15	09/16	09/22	09/23	09/25
EXQUEENDUP	197-011	Soil	09/15	09/16	09/22	09/23	09/25
EX1301	197-012	Soil	09/15	09/16	09/22	09/23	09/26
EX1301DUP	197-013	Soil	09/15	09/16	09/22	09/23	09/26

Form I (Tabulated Results)
All sample preparation and analyses were performed within the holding time requirement.
The results for the PAH analysis were reported on the basis of dry weight.
The leachates were analyzed at a 1:2 dilution to minimize background interference.

Form II (Surrogate Recoveries)
The surrogate recoveries for all samples, method blanks and LCS were within criteria. Note that the TCLP samples were flagged with 'D' due to the dilution.

Form III (MS Recoveries)
A LCS (PAH analysis) and a TCLP BLK LCS (TCLP analysis) analyses were reported. All spike recoveries were within the method advisory limits.

Form IV (Method Blank Summary)
The method blanks were free of target analytes.

PP VOA Analysis

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVENS Location: AYER, MA Group: _____

Level: (low/med) LOW

	SAMPLE NO.	SMC1 (DCE) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER #	TOT OUT
01	VBLK01	89	99	96		
02	EXQUEEN02	87	96	99		
03	EXQUEENDUPA	91	98	98		
04	EX1302	87	105	87		
05	EX1302DUP	89	108	86		
06						
07						
08						
09						
10						
11						
12						
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	QC LIMITS
SMC1 (DCE) = 1,2-Dichloroethane-d4	(70-121)
SMC2 (TOL) = Toluene-d8	(81-117)
SMC3 (BFB) = Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVENS Location: AYER, MA Group: _____

Matrix Spike - Sample No.: BATCH QC 9509216-003 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	35	70	(59-172)
Trichloroethene	50	0	40	80	(62-137)
Benzene	50	0	51	102	(66-142)
Toluene	50	0	54	108	(59-139)
Chlorobenzene	50	0	55	110	(60-133)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MS % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	50	33	66	6	22	(59-172)
Trichloroethene	50	37	74	8	24	(62-137)
Benzene	50	47	94	8	21	(66-142)
Toluene	50	50	100	8	21	(59-139)
Chlorobenzene	50	50	100	10	21	(60-133)

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

Comments: _____

4A

VOLATILE METHOD BLANK SUMMARY

SAMPLE NO.

VBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVENS Location: AYER, MA Group:

Lab File ID: FI452.D Lab Sample ID: 0922VBLK

Date Analyzed: 9/22/95 Time Analyzed: 1352

GC Column: CAP ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID: F7200

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EXQUEEN02	#002	FI453.D	9/22/95
02	EXQUEENDUPA	#004	FI454.D	9/22/95
03	EX1302	#007	FI455.D	9/22/95
04	EX1302DUP	#009	FI456.D	9/22/95
05				
06				
07				
08				
09				
10				
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEEN02

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVEN Location: AYER, MA Group:

Matrix: (soil/water) SOIL Lab Sample ID: #002

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FI453.0

Level: (low/med) LOW Date Received: 9/16/95

% Moisture: not dec. 2 Date Analyzed: 9/22/95

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.1	U
107-13-1	Acrylonitrile	100	U
107-2-8	Acrolein	100	U
75-69-4	Trichlorofluoromethane	5.1	U
75-35-4	1,1-Dichloroethene	5.1	U
75-34-4	1,1-Dichloroethane	5.1	U
156-60-5	trans-1,2-Dichloroethene	5.1	U
67-66-3	Chloroform	5.1	U
107-06-2	1,2-Dichloroethane	5.1	U
71-55-6	1,1,1-Trichloroethane	5.1	U
56-23-5	Carbon Tetrachloride	5.1	U
75-27-4	Bromodichloromethane	5.1	U
78-87-5	1,2-Dichloropropane	5.1	U
10061-01-5	cis-1,3-Dichloropropene	5.1	U
79-01-6	Trichloroethene	5.1	U
71-43-2	Benzene	5.1	U
124-48-1	Dibromochloromethane	5.1	U
10061-02-6	trans-1,3-Dichloropropene	5.1	U
79-00-5	1,1,2-Trichloroethane	5.1	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5.1	U
127-18-4	Tetrachloroethene	5.1	U
79-34-5	1,1,2,2-Tetrachloroethane	5.1	U
108-88-3	Toluene	7.7	
108-90-7	Chlorobenzene	5.1	U
100-41-4	Ethylbenzene	5.1	U
541-73-1	1,3-Dichlorobenzene	5.1	U
106-46-7	1,4-Dichlorobenzene	5.1	U
95-50-1	1,2-Dichlorobenzene	5.1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEENDUPA

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVEN Location: AYER, MA Group:

Matrix: (soil/water) SOIL Lab Sample ID: #004

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FI454.D

Level: (low/med) LOW Date Received: 9/16/95

% Moisture: not dec. 3 Date Analyzed: 9/22/95

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5.1	U
107-13-1	Acrylonitrile	100	U
107-2-8	Acrolein	100	U
75-69-4	Trichlorofluoromethane	5.1	U
75-35-4	1,1-Dichloroethene	5.1	U
75-34-4	1,1-Dichloroethane	5.1	U
156-60-5	trans-1,2-Dichloroethene	5.1	U
67-66-3	Chloroform	5.1	U
107-06-2	1,2-Dichloroethane	5.1	U
71-55-6	1,1,1-Trichloroethane	5.1	U
56-23-5	Carbon Tetrachloride	5.1	U
75-27-4	Bromodichloromethane	5.1	U
78-87-5	1,2-Dichloropropane	5.1	U
10061-01-5	cis-1,3-Dichloropropene	5.1	U
79-01-6	Trichloroethene	5.1	U
71-43-2	Benzene	5.1	U
124-48-1	Dibromochloromethane	5.1	U
10061-02-6	trans-1,3-Dichloropropene	5.1	U
79-00-5	1,1,2-Trichloroethane	5.1	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5.1	U
127-18-4	Tetrachloroethene	5.1	U
79-34-5	1,1,2,2-Tetrachloroethane	5.1	U
108-88-3	Toluene	6.5	
108-90-7	Chlorobenzene	5.1	U
100-41-4	Ethylbenzene	5.1	U
541-73-1	1,3-Dichlorobenzene	5.1	U
106-46-7	1,4-Dichlorobenzene	5.1	U
95-50-1	1,2-Dichlorobenzene	5.1	U

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No.: 9509197 Laboratory Name: American Environmental Network Inc.

Client ID	AEN ID	DCAA *DB-5*	DCAA *DB-608*
BLANK	BLK 0920LA	55	66
TCLP BLANK	TCLP BLK 0920LA	97	88
BLANK SPIKE	TCLP LCS 0920LA	91	97
BLANK SPIKE DUP	TCLP LCSD 0920LA	89	97
EX243201	9509197-005	91	92
EXQUEEN01	9509197-010	89	85
EXQUEENDUP	9509197-011	89	85
EX1301	9509197-012	95	94
EX1301DUP	9509197-013	85	87

CONTROL LIMITS = 50-150%

* - Values are outside of contract required QC limits.
M-Matrix interference. D-Surrogate diluted out.

0 out of 18
outside QC limits.

AMERICAN ENVIRONMENTAL NETWORK INC.
ORGANIC ANALYSIS DATA SHEET
HERBICIDES METHOD 8150

Sample Number
EXQUEEN01

Case No.:_____ 9509197
Client Name:_____ OHM CORPORATION
Project Name:_____ FORT DEVENS

AEN# 9509197-010

Concentration: _____ Low
Date Sampled:_____ 9/15/95
Date Received:_____ 9/16/95
Date Extract Prepared:_ 9/20/95
Date Analyzed:_____ 9/22/95
Conc/Dil Factor:_____ 1
Matrix_____ LEACH

GPC Cleanup _____ No
Separatory Funnel Ext.: ____ Yes
Continuous Liq-Liq Ext.: ___ No
Percent Moisture (decanted)_ N/A

Compound	Concentration ug/L	Reporting Limit	Qualifier
2,4 D		0.50	U
SILVEX		0.50	U

VI - Volume of extract injected (ul)___ 1
Vs - Volume of water extracted (ml)__ 500
Ws - Mass of soil extracted (g)_____ N/A
Vt- Volume of total extract (ul)_____ 5000

FORM I

AMERICAN ENVIRONMENTAL NETWORK INC.
ORGANIC ANALYSIS DATA SHEET
HERBICIDES METHOD 8150

Sample Number
EXQUEENDUP

Case No.:_____ 9509197
Client Name:_____ OHM CORPORATION
Project Name:_____ FORT DEVENS

AENI # 9509197-011

Concentration: _____ Low
Date Sampled:_____ 9/15/95
Date Received:_____ 9/16/95
Date Extract Prepared:_ 9/20/95
Date Analyzed:_____ 9/22/95
Conc/Dil Factor:_____ 1
Matrix_____ LEACH

GPC Cleanup _____ No
Separatory Funnel Ext.: ____ Yes
Continuous Liq-Liq Ext.: ___ No
Percent Moisture (decanted)_ N/A

Compound	Concentration ug/L	Reporting Limit	Qualifier
2,4 D		0.50	U
SILVEX		0.50	U

Vi - Volume of extract injected (ul)___ 1
Vs - Volume of water extracted (ml)__ 500
Ws - Mass of soil extracted (g)_____ N/A
Vt- Volume of total extract (ul)_____ 5000

FORM I

AMERICAN ENVIRONMENTAL NETWORK INC.
ORGANIC ANALYSIS DATA SHEET
HERBICIDES METHOD 8150

Sample Number
BLANK

Case No.:_____ 9509197
Client Name:_____ OHM CORPORATION
Project Name:_____ FORT DEVENS

AENI # BLK 0920LA

Concentration: _____ Low
Date Sampled:_____ N/A
Date Received:_____ N/A
Date Extract Prepared:_ 9/20/95
Date Analyzed:_____ 9/21/95
Conc/Dil Factor:_____ 1
Matrix_____ WATER

GPC Cleanup _____ No
Separatory Funnel Ext.: ____ Yes
Continuous Liq-Liq Ext.: ____ No
Percent Moisture (decanted)_ N/A

Compound	Concentration ug/L	Reporting Limit	Qualifier
2,4 D		0.25	U
SILVEX		0.25	U

Vl - Volume of extract injected (ul)___ 1
Vs - Volume of water extracted (ml)__ 1000
Ws - Mass of soil extracted (g)_____ N/A
Vt- Volume of total extract (ul)_____ 5000

FORM I

AMERICAN ENVIRONMENTAL NETWORK INC.
ORGANIC ANALYSIS DATA SHEET
HERBICIDES METHOD 8150

Case No.: 9509197
Client Name: OHM CORPORATION
Project Name: FORT DEVENS

Sample Number
TCLP BLANK

AENI # TCLP BLK 0920LA

Concentration: Low
Date Sampled: N/A
Date Received: N/A
Date Extract Prepared: 9/20/95
Date Analyzed: 9/21/95
Conc/Dil Factor: 1
Matrix: LEACH

GPC Cleanup: No
Separatory Funnel Ext.: Yes
Continuous Liq-Liq Ext.: No
Percent Moisture (decanted): N/A

Compound	Concentration ug/L	Reporting Limit	Qualifier
2,4 D		0.50	U
SILVEX		0.50	U

VI - Volume of extract injected (ul) 1
Vs - Volume of water extracted (ml) 500
Ws - Mass of soil extracted (g) N/A
Vt- Volume of total extract (ul) 5000

FORM I

AMERICAN ENVIRONMENTAL NETWORK, INC.
HERBICIDE MATRIX SPIKE RECOVERIES

Case No.: 9509197 Client Sample ID: LCS/LCSD 0920LA

Client Name: OHM CORPORATION Date of Analysis: 9/21/95

Project Name: FORT DEVENS Instrument ID: GC-H

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	BS CONC (ug/L)	BS % REC	BSD CONC (ug/L)	BSD % REC	QC LIMITS REC
2,4-D	5.03	0.0	4.11	82	4.33	86	50-150
Silvex	5.29	0.0	4.74	90	4.53	86	50-150

Spike Recovery: 0 out of 4 outside QC limits.

AMERICAN ENVIRONMENTAL NETWORK, INC.

9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

September 28, 1995

Client: OHM Corporation

Project: Ft. Devens

Case: 9509197

Analysis: Metals

Client ID	AENI ID	Date Sampled	Date Received	Date Analyzed
EXQUEEN01	9509197-001	09/15/95	09/16/95	09/19-27/95
EXQUEENDUP	9509197-003	09/15/95	09/16/95	09/19-27/95
EX243201	9509197-005	09/15/95	09/16/95	09/19-27/95
EX1301	9509197-006	09/15/95	09/16/95	09/19-27/95
EX1301DUP	9509197-008	09/15/95	09/16/95	09/19-27/95
EXQUEEN01	9509197-010	09/15/95	09/16/95	09/19-27/95
EXQUEENDUP	9509197-011	09/15/95	09/16/95	09/19-27/95
EX1301	9509197-012	09/15/95	09/16/95	09/19-27/95
EX1301DUP	9509197-013	09/15/95	09/16/95	09/19-27/95

Four soil samples were received and analyzed for RCRA Metals and five soil samples were received and analyzed for TCLP Metals. Results are reported in units of mg/Kg dry weight for the RCRA metals and ug/L in the leachate for the TCLP Metals.

The RCRA Metals matrix spiked sample was outside control limits for Cd and Cr and the samples were post-spiked with acceptable recovery. All other QC data were within normal control limits.

Report Released By

Christopher Baggett
Metals Laboratory Manager

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METALS DATA ANALYSIS

CLIENT: OHM Corporation DATE: 25-Sep-95

AENI ID #: 9509197-001

SAMPLE ID #: EXQUEEN01 % SOLIDS: 97.7 UNITS: mg/Kg DRY WEIGHT

ANALYTE	METHOD	REPORTING LIMIT		SAMPLE RESULT
ARSENIC	6010	1.0		25
BARIUM	6010	10		29
CADMIUM	6010	0.41	<	0.41
CHROMIUM	6010	1.0		30
LEAD	6010	1.0		13
MERCURY	7471	0.10	<	0.10
SELENIUM	6010	0.51	<	0.51
SILVER	6010	1.0	<	1.0

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METALS DATA ANALYSIS

CLIENT: OHM Corporation DATE: 25-Sep-95

AENI ID #: 9509197-003

SAMPLE ID #: EXQUEENDUP % SOLIDS: 97.8 UNITS: mg/Kg DRY WEIGHT

ANALYTE	METHOD	REPORTING LIMIT		SAMPLE RESULT
ARSENIC	6010	1.0		44
BARIUM	6010	10		24
CADMIUM	6010	0.41	<	0.41
CHROMIUM	6010	1.0		31
LEAD	6010	1.0		11
MERCURY	7471	0.10	<	0.10
SELENIUM	6010	0.51	<	0.51
SILVER	6010	1.0	<	1.0

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METHOD BLANK / LCS % RECOVERY

CLIENT: OHM Corporation

DATE: 25-Sep-95

UNITS: mg/Kg DRY WEIGHT

ANALYTE	METHOD	METHOD BLANK	% RECOVERY LCS
ARSENIC	6010	< 1	95
BARIUM	6010	< 10	103
CADMIUM	6010	< 0.4	100
CHROMIUM	6010	< 1	92
LEAD	6010	< 1	101
MERCURY	7471	< 0.1	87
SELENIUM	6010	< 0.5	95
SILVER	6010	< 1	96

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METALS DATA ANALYSIS

SPIKED SAMPLE RECOVERY

CLIENT: OHM Corporation DATE: 25-Sep-95

AENI ID #: 9509197-008(Hg)/9509192(ICP)

SAMPLE ID #: EX1301DUP/AENI UNITS: mg/Kg DRY WEIGHT

ANALYTE	SAMPLE RESULT	SPIKED RESULTS	SPIKE ADDED	%RECOVERY
ARSENIC	6.4	17	10	99
BARIUM	2500	2680	210	NA
CADMIUM	1.2	8.5	5.2	140 OC
CHROMIUM	72	99	21	128 OC
LEAD	5940	6590	52	NA
MERCURY	< 0.1	1.3	1	120
SELENIUM	< 0.52	8.6	10	82
SILVER	< 1	9.9	10	94

NA = NOT APPLICABLE BECAUSE SAMPLE CONCENTRATION > 4 TIMES SPIKE LEVEL

OC = OUT OF CONTROL LIMTS OF 75-125%

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT. DEVEN Location: AYER, MA Group: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0922VBLK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FI452.D

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 Date Analyzed: 9/22/95

GC Column: CAP ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 1 (uL) Soil Aliquot Volume: 1 (uL)

Concentration Units: (ug/L or ug/Kg) ug/Kg

CAS No.	Compound		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
107-13-1	Acrylonitrile	100	U
107-2-8	Acrolein	100	U
75-69-4	Trichlorofluoromethane	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-4	1,1-Dichloroethane	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
71-43-2	Benzene	5	U
124-48-1	Dibromochloromethane	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
110-75-8	2-Chloroethylvinylether	10	U
75-25-2	Bromoform	5	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
541-73-1	1,3-Dichlorobenzene	5	U
106-46-7	1,4-Dichlorobenzene	5	U
95-50-1	1,2-Dichlorobenzene	5	U

TCLP VOA Analysis

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

	SAMPLE NO.	SMC1 (DCE) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER #	TOT OUT
01	VBLK01	88	101	100		
02	0925TCLP	84	98	98		
03	EX243201	83	101	100		
04	EXQUEEN01	86	101	102		
05	EXQUEENDUP	87	98	97		
06	EX1301	84	98	96		
07	EX1301DUP	81	96	95		
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	QC LIMITS
SMC1 (DCE) = 1,2-Dichloroethane-d4	(76-114)
SMC2 (TOL) = Toluene-d8	(88-110)
SMC3 (BFB) = Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER, MA Group: _____

Matrix Spike - Sample No.: BATCH QC
9509258-001

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	42	84	(61-145)
Trichloroethene	50	0	47	94	(71-120)
Benzene	50	0	58	116	(76-127)
Toluene	50	0	59	118	(76-125)
Chlorobenzene	50	0	61	122	(75-130)

* Values outside of QC limits

Comments: _____

4A

SAMPLE NO.

VBLK01

VOLATILE METHOD BLANK SUMMARY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

Lab File ID: EI343.D Lab Sample ID: 0926EBLK

Date Analyzed: 9/26/95 Time Analyzed: 1342

GC Column: CAP. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: E7200

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	0925TCLP	0925TCLP	EI344.D	9/26/95
02	EX243201	#005	EI347.D	9/26/95
03	EXQUEEN01	#010	EI348.D	9/26/95
04	EXQUEENDUP	#011	EI349.D	9/26/95
05	EX1301	#012	EI350.D	9/26/95
06	EX1301DUP	#013	EI351.D	9/26/95
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COMMENTS:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EXQUEEN01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

Matrix: (soil/water) SOIL Lab Sample ID: #010

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EI348.D

Level: (low/med) Date Received: 9/16/95

% Moisture: not dec. Date Analyzed: 9/26/95

GC Column: CAP. ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
75-01-4	Vinyl Chloride	100	UD
75-35-4	1,1-Dichloroethene	50	UD
67-66-3	Chloroform	50	UD
107-06-2	1,2-Dichloroethane	50	UD
78-93-3	2-Butanone	1000	UD
56-23-5	Carbon Tetrachloride	50	UD
79-01-6	Trichloroethene	50	UD
71-43-2	Benzene	50	UD
127-18-4	Tetrachloroethene	50	UD
108-90-7	Chlorobenzene	50	UD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEENDUP

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

Matrix: (soil/water) SOIL Lab Sample ID: #011

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E1349.D

Level: (low/med) Date Received: 9/16/95

% Moisture: not dec. Date Analyzed: 9/26/95

GC Column: CAP. ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
75-01-4	Vinyl Chloride	100	UD
75-35-4	1,1-Dichloroethene	50	UD
67-66-3	Chloroform	50	UD
107-06-2	1,2-Dichloroethane	50	UD
78-93-3	2-Butanone	1000	UD
56-23-5	Carbon Tetrachloride	50	UD
79-01-6	Trichloroethene	50	UD
71-43-2	Benzene	50	UD
127-18-4	Tetrachloroethene	50	UD
108-90-7	Chlorobenzene	50	UD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

VBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

Matrix: (soil/water) WATER Lab Sample ID: 0926EBLK

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EI343.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 9/26/95

GC Column: CAP. ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
75-01-4	Vinyl Chloride	10	U
75-35-4	1,1-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	100	U
56-23-5	Carbon Tetrachloride	5	U
79-01-6	Trichloroethene	5	U
71-43-2	Benzene	5	U
127-18-4	Tetrachloroethene	5	U
108-90-7	Chlorobenzene	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

0925TCLP

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: FT DEVENS Location: AYER Group: MA

Matrix: (soil/water) WATER Lab Sample ID: 0925TCLP

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EI344.D

Level: (low/med) Date Received:

% Moisture: not dec. Date Analyzed: 9/26/95

GC Column: CAP. ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
75-01-4	Vinyl Chloride	100	UD
75-35-4	1,1-Dichloroethene	50	UD
67-66-3	Chloroform	50	UD
107-06-2	1,2-Dichloroethane	50	UD
78-93-3	2-Butanone	1000	UD
56-23-5	Carbon Tetrachloride	50	UD
79-01-6	Trichloroethene	50	UD
71-43-2	Benzene	50	UD
127-18-4	Tetrachloroethene	50	UD
108-90-7	Chlorobenzene	50	UD

PAH Analysis

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Level: (low/med) LOW

	SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	#	#	#	#	#	TOT OUT
01	SBLK01	77	81	44						
02	SBLK01MS	68	71	39						
03	EXQUEEN01	72	76	38						
04	EXQUEENDUP	43	52	36						
05	EX1301	53	63	35						
06	EX1301DUP	59	64	30						
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	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(23-120)
S2 (FBP) = 2-Fluorobiphenyl	(30-115)
S3 (TPH) = Terphenyl-d14	(18-137)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix Spike - Sample No.: 0919LCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,4-Dichlorobenzene	3300	0	2000	61	(28-104)
N-Nitroso-di-n-propylamine	3300	0	2300	70	(41-126)
1,2,4-Trichlorobenzene	3300	0	2100	64	(41-126)
Acenaphthene	3300	0	2400	73	(31-137)
2,4-Dinitrotoluene	3300	0	2100	64	(28-89)
Pyrene	3300	0	2500	76	(35-142)

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,4-Dichlorobenzene					27	(28-104)
N-Nitroso-di-n-propylamine					38	(41-126)
1,2,4-Trichlorobenzene					38	(41-126)
Acenaphthene					19	(31-137)
2,4-Dinitrotoluene					47	(28-89)
Pyrene					36	(35-142)

* Values outside of QC limits

Comments: _____

_____

SAMPLE NO.

SBLK01

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Lab File ID: DI275.D Lab Sample ID: 0919-JA

Instrument ID: MSD 1 Date Extracted: 9/19/94

Matrix: (soil/water) SOIL Date Analyzed: 9/21/95

Level: (low/med) LOW Time Analyzed: 1548

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK01MS	0919LCS	DI276.D	09/21/95
02	EXQUEEN01	#001	DI279.D	09/21/95
03	EXQUEENDUP	#002	DI280.D	09/21/95
04	EX1301	#006	DI281.D	09/21/95
05	EX1301DUP	#008	DI282.D	09/21/95
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COMMENTS:

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEEN01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #001

Sample wt/vol: 30.5 (g/mL) G Lab File ID: DI279.D

Level: (low/med) LOW Date Received: 9/16/95

% Moisture: 2 decanted: (Y/N): N Date Extracted: 9/19/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	330	U
91-57-6	2-Methylnaphthalene	330	U
91-58-7	2-Chloronaphthalene	330	U
208-96-8	Acenaphthylene	330	U
83-32-9	Acenaphthene	330	U
132-64-9	Dibenzofuran	330	U
86-73-7	Fluorene	330	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
56-55-3	Benzo[a]anthracene	330	U
218-01-9	Chrysene	330	U
205-99-2	Benzo[b]fluoranthene	330	U
207-08-9	Benzo[k]fluoranthene	330	U
50-32-8	Benzo[a]pyrene	330	U
193-39-5	Indeno[1,2,3-cd]pyrene	330	U
53-70-3	Dibenz[a,h]anthracene	330	U
191-24-2	Benzo[g,h,i]perylene	330	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEENDUP

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix: (soil/water) SOIL Lab Sample ID: #002

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DI280.D

Level: (low/med) LOW Date Received: 9/16/95

% Moisture: 2 decanted: (Y/N): N Date Extracted: 9/19/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	340	U
91-57-6	2-Methylnaphthalene	340	U
91-58-7	2-Chloronaphthalene	340	U
208-96-8	Acenaphthylene	340	U
83-32-9	Acenaphthene	340	U
132-64-9	Dibenzofuran	340	U
86-73-7	Fluorene	340	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
206-44-0	Fluoranthene	52	J
129-00-0	Pyrene	41	J
56-55-3	Benzo[a]anthracene	340	U
218-01-9	Chrysene	340	U
205-99-2	Benzo[b]fluoranthene	340	U
207-08-9	Benzo[k]fluoranthene	340	U
50-32-8	Benzo[a]pyrene	340	U
193-39-5	Indeno[1,2,3-cd]pyrene	340	U
53-70-3	Dibenz[a,h]anthracene	340	U
191-24-2	Benzo[g,h,i]perylene	340	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLK01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: 0919-JA

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 01275.D

Level: (low/med) LOW Date Received:

% Moisture: 0 decanted: (Y/N): N Date Extracted: 9/19/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/21/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/Kg	Q
91-20-3	Naphthalene	330	U
91-57-6	2-Methylnaphthalene	330	U
91-58-7	2-Chloronaphthalene	330	U
208-96-8	Acenaphthylene	330	U
83-32-9	Acenaphthene	330	U
132-64-9	Dibenzofuran	330	U
86-73-7	Fluorene	330	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
56-55-3	Benzo[a]anthracene	330	U
218-01-9	Chrysene	330	U
205-99-2	Benzo[b]fluoranthene	330	U
207-08-9	Benzo[k]fluoranthene	330	U
50-32-8	Benzo[a]pyrene	330	U
193-39-5	Indeno[1,2,3-cd]pyrene	330	U
53-70-3	Dibenz[a,h]anthracene	330	U
191-24-2	Benzo[g,h,i]perylene	330	U

TCLP BNA Analysis

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

	SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	#	#	TOT OUT
01	SBLK02	34	27	70	71	117	87			
02	TCLPBLK	44	43	77	70	118	73			
03	TCLPBLKMS	45	42	75	70	118	76			
04	EX243201	53 D	46 D	83 D	101 D	115 D	91 D			
05	EXQUEEN01	53 D	32 D	87 D	113 D	138 D	108 D			
06	EXQUEENDUP	54 D	46 D	80 D	89 D	119 D	89 D			
07	EX1301	55 D	47 D	82 D	89 D	100 D	93 D			
08	EX1301DUP	55 D	51 D	83 D	91 D	110 D	88 D			
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	QC LIMITS
S1 (2FP) = 2-Fluorophenol	(21-100)
S2 (PHL) = Phenol-d5	(10-94)
S3 (NBZ) = Nitrobenzene-d5	(34-114)
S4 (FBP) = 2-Fluorobiphenyl	(43-116)
S5 (TBP) = 2,4,6-Tribromophenol	(10-123)
S6 (TPH) = Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix Spike - Sample No.: TCLPBLKLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	200	0	75	38	(12-89)
2-Chlorophenol	200	0	110	55	(27-123)
1,4-Dichlorobenzene	100	0	65	65	(36-97)
N-Nitroso-di-n-propylamine	100	0	69	69	(41-116)
1,2,4-Trichlorobenzene	100	0	86	86	(39-98)
4-Chloro-3-methylphenol	200	0	130	65	(23-97)
Acenaphthene	100	0	70	70	(46-118)
2,4-Dinitrotoluene	100	0	81	81	(24-96)
4-Nitrophenol	200	0	95	48	(10-80)
Pentachlorophenol	200	0	180	90	(9-103)
Pyrene	100	0	63	63	(26-127)

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					42	(12-89)
2-Chlorophenol					40	(27-123)
1,4-Dichlorobenzene					28	(36-97)
N-Nitroso-di-n-propylamine					38	(41-116)
1,2,4-Trichlorobenzene					28	(39-98)
4-Chloro-3-methylphenol					42	(23-97)
Acenaphthene					31	(46-118)
2,4-Dinitrotoluene					38	(24-96)
4-Nitrophenol					50	(10-80)
Pentachlorophenol					50	(9-103)
Pyrene					31	(26-127)

(1) N-Nitroso-di-n-propylamine

* Values outside of QC limits

Comments: _____

SAMPLE NO.

SBLK02

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: Location: Group:

Lab File ID: C1209.D Lab Sample ID: 0923-RA

Instrument ID: MSD 2 Date Extracted: 9/23/94

Matrix: (soil/water) WATER Date Analyzed: 9/25/95

Level: (low/med) Time Analyzed: 1942

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	TCLPBLK	TBLK	C1210.D	09/25/95
02	TCLPBLKMS	TBLKLCS	C1211.D	09/25/95
03	EX243201	#005	C1212.D	09/25/95
04	EXQUEEN01	#010	C1213.D	09/25/95
05	EXQUEENDUP	#011	C1214.D	09/25/95
06	EX1301	#012	C1215.D	09/26/95
07	EX1301DUP	#013	C1216.D	09/26/95
08				
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COMMENTS:

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEEN01

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix: (soil/water) SOIL Lab Sample ID: #010

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: CI213.D

Level: (low/med) _____ Date Received: 9/16/95

% Moisture: _____ decanted: (Y/N): N Date Extracted: 9/23/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/25/95

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
110-86-1	Pyridine	40	UD
106-46-7	1,4-Dichlorobenzene	40	UD
95-48-7	2-Methylphenol	40	UD
108-39-4	3-Methylphenol	40	UD
67-72-1	Hexachloroethane	40	UD
106-44-5	4-Methylphenol	40	UD
98-95-3	Nitrobenzene	40	UD
87-68-3	Hexachlorobutadiene	40	UD
88-06-2	2,4,6-Trichlorophenol	40	UD
95-95-4	2,4,5-Trichlorophenol	200	UD
121-14-2	2,4-Dinitrotoluene	40	UD
118-74-1	Hexachlorobenzene	40	UD
87-86-5	Pentachlorophenol	200	UD

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

EXQUEENDUP

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: Location: Group:

Matrix: (soil/water) SOIL Lab Sample ID: #011

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: C1214.D

Level: (low/med) Date Received: 9/16/95

% Moisture: decanted: (Y/N): N Date Extracted: 9/23/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/25/95

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
110-86-1	Pyridine	40	UD
106-46-7	1,4-Dichlorobenzene	40	UD
95-48-7	2-Methylphenol	40	UD
108-39-4	3-Methylphenol	40	UD
67-72-1	Hexachloroethane	40	UD
106-44-5	4-Methylphenol	40	UD
98-95-3	Nitrobenzene	40	UD
87-68-3	Hexachlorobutadiene	40	UD
88-06-2	2,4,6-Trichlorophenol	40	UD
95-95-4	2,4,5-Trichlorophenol	200	UD
121-14-2	2,4-Dinitrotoluene	40	UD
118-74-1	Hexachlorobenzene	40	UD
87-86-5	Pentachlorophenol	200	UD

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SBLK02

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0923-RA

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: C1209.D

Level: (low/med) _____ Date Received: _____

% Moisture: _____ decanted: (Y/N): N Date Extracted: 9/23/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/25/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS No.	Compound	Concentration Units: (ug/L or ug/Kg) ug/L of Leach	Q
110-86-1	Pyridine	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-39-4	3-Methylphenol	10	U
67-72-1	Hexachloroethane	10	U
106-44-5	4-Methylphenol	10	U
98-95-3	Nitrobenzene	10	U
87-68-3	Hexachlorobutadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
121-14-2	2,4-Dinitrotoluene	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TCLPBLK

Lab Name: AENI MD Contract: OHM

Project No.: 9509197 Site: _____ Location: _____ Group: _____

Matrix: (soil/water) SOIL Lab Sample ID: TBLK

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: C1210.D

Level: (low/med) _____ Date Received: _____

% Moisture: _____ decanted: (Y/N): N Date Extracted: 9/23/94

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 9/25/95

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Concentration Units:

CAS No.	Compound	(ug/L or ug/Kg) ug/L of Leach	Q
110-86-1	Pyridine	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
108-39-4	3-Methylphenol	20	U
67-72-1	Hexachloroethane	20	U
106-44-5	4-Methylphenol	20	U
98-95-3	Nitrobenzene	20	U
87-68-3	Hexachlorobutadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	100	U
121-14-2	2,4-Dinitrotoluene	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	100	U

AMERICAN ENVIRONMENTAL NETWORK, INC.

September 21, 1995

Client: OHM CORPORATION

Case: 9509197

Project: FORT DEVENS

Analysis: PCBs by SW-846 Method 8080

lient ID	AENI#	Date Sampled	Date Received	Date Extracted	Date Analyzed
XQUEEN01	9509197-001	09/15/95	09/16/95	09/19/95	09/20/95
XQUEENDUP	9509197-003	09/15/95	09/16/95	09/19/95	09/20/95
X1301	9509197-006	09/15/95	09/16/95	09/19/95	09/20/95
X1301DUP	9509197-008	09/15/95	09/16/95	09/19/95	09/20/95

our soil samples were extracted and analyzed for PCB's by SW-846 method 080.

he enclosed package consists specifically of tabulated results (Form I), urrogate spike recoveries (Form II), and lab control sample recovery (Form .

orm I (Tabulated Results)

he qualifier "U" indicates that a compound was analyzed for but not etected at or above the detection limit. The samples were extracted and nalyzed within the method recommended holding time.

orm II (Surrogate Spike Recoveries)

ll recoveries are based on a single column analysis.

ll surrogate recoveries were within EPA CLP criteria (60-150%).

orm III (Matrix Spike Recoveries)

lab control sample (LCS) was prepared with this sample delivery group. CS recovery was within SW-846 method 8080 criteria (29-131%).

Data Released By Noble Nemieboka

Noble Nemieboka
GC/LC Acting Laboratory Manager

AMERICAN ENVIRONMENTAL NETWORK, INC.
ORGANIC ANALYSIS DATA SHEET
PCBs BY 8080

Contract Number: 9509197
Client Name: OHM CORPORATION
Project: FORT DEVENS

CLIENT NUMBER: EXQUEEN01

AENI #: 9509197-001

Concentration: Low
Date Sampled : 09/15/95
Date Received : 09/16/95
Date Extract Prepared : 09/19/95
Date Analyzed: 09/20/95
Conc/Dil Factor: 1

GPC Cleanup: Yes[ ] No[X]
Sonication Ext: [X]
Soxhlett Ext: [ ]
Matrix: SOIL
Percent Moisture: 0

	ug/Kg		
COMPOUND	CONCENTRATION	DETECTION LIMIT	QUALIFIER
AR1016		19	U
AR1221		19	U
AR1232		19	U
AR1242		19	U
AR1248		19	U
AR1254		39	U
AR1260		39	U

U-Indicates that a compound was analyzed for but not detected at or above the detection limit.

Vi - Volume of extract injected (ul) - 1

Vs - Volume of water extracted (ml) - N/A

Ws - Mass of soil extracted (g) - 30.86

Vt - Volume of total extract (ul) - 10000

AMERICAN ENVIRONMENTAL NETWORK, INC.
ORGANIC ANALYSIS DATA SHEET

Contract Number: 9509197 PCBs BY 8080
Client Name: OHM CORPORATION
Project: FORT DEVENS

CLIENT NUMBER: EXQUEENDUP

AENI #: 9509197-003

Concentration: Low
Date Sampled : 09/15/95
Date Received : 09/16/95
Date Extract Prepared : 09/19/95
Date Analyzed: 09/20/95
Conc/Dil Factor: 1

GPC Cleanup: Yes[ ] No[X]
Sonication Ext: [X]
Soxhlett Ext: [ ]
Matrix SOIL
Percent Moisture: 0

	ug/Kg		
COMPOUND	CONCENTRATION	DETECTION LIMIT	QUALIFIER
AR1016		20	U
AR1221		20	U
AR1232		20	U
AR1242		20	U
AR1248		20	U
AR1254		40	U
AR1260		40	U

U-Indicates that a compound was analyzed for but not detected at or above the detection limit.

Vi - Volume of extract injected (ul) - 1

Vs - Volume of water extracted (ml) - N/A

Ws - Mass of soil extracted (g) - 30.24

Vt - Volume of total extract (ul) - 10000

AMERICAN ENVIRONMENTAL NETWORK, INC.
ORGANIC ANALYSIS DATA SHEET
PCBs BY 8080

Contract Number: 9509197
Client Name: OHM CORPORATION
Project: FORT DEVENS

CLIENT NUMBER: BLANK

AENI #: 0919VA

Concentration: Low
Date Sampled : N/A
Date Received : N/A
Date Extract Prepared : 09/19/95
Date Analyzed: 09/21/95
Conc/Dil Factor: 1

GPC Cleanup: Yes[ ] No[X]
Sonication Ext: [X]
Soxhlett Ext: [ ]
Matrix SOIL
Percent Moisture: 0

	ug/Kg		
COMPOUND	CONCENTRATION	DETECTION LIMIT	QUALIFIER
AR1016		20	U
AR1221		20	U
AR1232		20	U
AR1242		20	U
AR1248		20	U
AR1254		40	U
AR1260		40	U

U-Indicates that a compound was analyzed for but not detected at or above the detection limit.

Vi - Volume of extract injected (ul) - 1

Vs - Volume of water extracted (ml) - N/A

Ws - Mass of soil extracted (g) - 30

Vt - Volume of total extract (ul) - 10000

SOIL SURROGATE PERCENT RECOVERY
PCB'S BY SW-846 METHOD 8080

Case no: 9509197

Laboratory: American Environmental Network, Inc.

Client ID	AEN ID	% Rec DCB (60-150)
BLANK	BLK 0919VA	128
BLANK SPIKE	LCS 0919VA	124
EXQUEEN01	9509197-001	144
EXQUEENDUP	9509197-003	116
EX1301	9509197-006	112
EX1301DUP	9509197-008	94

DCB - Decachlorobiphenyl

* - Surrogate outside control limits.

D - Surrogate diluted out.

M - Surrogate masked by interfering peaks

ORGANIC ANALYSIS DATA SHEET

AMERICAN ENVIRONMENTAL NETWORK, Inc.

Case Number: 9509197

Method: PCB 8080

Matrix: Soil

Analysis Date: 9/21/95

Units of AR 1254 in ug/kg

CLIENT ID.	AENI ID.	Spike Added	Sample Results	Conc. LCS	% Rec.
LAB CONTROL SAMPLE	0919VA	170	0	170	100

FORM II

AMERICAN ENVIRONMENTAL NETWORK, INC.

September 27, 1995

Client: OHM CORPORATION

Case: 9509197

Project: FORT DEVENS

Analysis: TCLP Pesticides by SW-846 Method 8080

Client ID	AENI#	Date Sampled	Date Received	Date Extracted	Date Analyzed
EX243201	9509197-005	09/15/95	09/16/95	09/22/95	09/26/95
EXQUEEN01	9509197-010	09/15/95	09/16/95	09/22/95	09/26/95
EXQUEENDUP	9509197-011	09/15/95	09/16/95	09/22/95	09/26/95
EX1301	9509197-012	09/15/95	09/16/95	09/22/95	09/26/95
EX1301DUP	9509197-013	09/15/95	09/16/95	09/22/95	09/26/95

Five soil samples were leached in accordance with 40 CFR 261, Appendix II. The leachates were analyzed for pesticides by SW-846 method 8080.

The enclosed package consists specifically of tabulated results (Form I), surrogate spike recoveries (Form II), and matrix spike recoveries (Form III).

Form I (Tabulated Results)

The qualifier "U" indicates that a compound was analyzed for but not detected above the reporting limit. The samples were prepared and analyzed within method specified holding time.

Form II (Surrogate Spike Recoveries)

All surrogate recoveries were within specified criteria (60-150%).

Form III (Matrix Spike Recoveries)

A lab control sample (LCS) was extracted with this sample set. All LCS recoveries were within specified criteria (see Form III).

Data Released By

Noble Nemieboka
GC/LC Acting Lab Manager

AMERICAN ENVIRONMENTAL NETWORK, INC.

Organic Analysis Data Sheet

TCLP PESTICIDES

Case No.:——— 9509197

Project Name:——— FORT DEVENS

Client Name:——— OHM CORPORATION

Sample Number
EXQUEEN01

AENI # 9509197-010

Concentration:——— Low

Date Sampled:——— 9/15/95

Date Received:——— 9/16/95

Date Ext Prepared:— 9/22/95

Date Analyzed:——— 9/26/95

Conc/Dil Factor:——— 1

Method: ——————— 8080

GPC Cleanup		Yes	X	No
Seperatory Funnel Extraction			X	Yes
Continuous Liquid - Liquid Extration				Yes

Percent Moisture: N/A

Matrix: LEACH

CAS Number	Compound	Concentration ug/L	Detection Limit	Qualifier
58-89-9	gamma-BHC (Lindane)		0.20	U
75-44-8	Heptachlor		0.10	U
1024-57-3	Heptachlor epoxide		0.10	U
72-20-8	Endrin		0.20	U
72-43-5	Methoxychlor		1.0	U
5103-71-9	alpha-Chlordane		0.10	U
5103-74-2	gamma-Chlordane		0.10	U
8001-35-2	Toxaphene		10	U

Vi - Volume of extract injected (ul) - _____ 1

Vs - Volume of Water extracted (ml) - _____ 500

Ws - Weight of sample extracted (g) - _____ N/A

Vt - Volume of total extract (ul) - _____ 10,000

AMERICAN ENVIRONMENTAL NETWORK, INC.

Organic Analysis Data Sheet

TCLP PESTICIDES

Case No.:——— 9509197

Project Name:——— FORT DEVENS

Client Name:——— OHM CORPORATION

Sample Number
EXQUEENDUP

AENI # 9509197-011

Concentration:——— Low

Date Sampled:——— 9/15/95

Date Received:——— 9/16/95

Date Ext Prepared:— 9/22/95

Date Analyzed:——— 9/26/95

Conc/Dil Factor:——— 1

Method: ——————— 8080

GPC Cleanup		Yes	X	No
Seperatory Funnel Extraction			X	Yes
Continuous Liquid - Liquid Extration				Yes

Percent Moisture: N/A

Matrix: LEACH

CAS Number	Compound	Concentration ug/L	Detection Limit	Qualifier
58-89-9	gamma-BHC (Lindane)		0.20	U
75-44-8	Heptachlor		0.10	U
1024-57-3	Heptachlor epoxide		0.10	U
72-20-8	Endrin		0.20	U
72-43-5	Methoxychlor		1.0	U
5103-71-9	alpha-Chlordane		0.10	U
5103-74-2	gamma-Chlordane		0.10	U
8001-35-2	Toxaphene		10	U

Vl - Volume of extract injected (ul) - _____ 1

Vs - Volume of Water extracted (ml) - _____ 490

Ws - Weight of sample extracted (g) - _____ N/A

Vt - Volume of total extract (ul) - _____ 10,000

AMERICAN ENVIRONMENTAL NETWORK, INC.

Organic Analysis Data Sheet

TCLP PESTICIDES

Case No.:——— 9509197

Project Name:——— FORT DEVENS

Client Name:——— OHM CORPORATION

Sample Number
BLANK

AENI # BLK 0922RD

Concentration:——— Low

Date Sampled:——— N/A

Date Received:——— N/A

Date Ext Prepared:— 9/22/95

Date Analyzed:——— 9/26/95

Conc/Dil Factor:—— 1

Method: ——— 8080

GPC Cleanup		Yes	X	No
Seperatory Funnel Extraction			X	Yes
Continuous Liquid - Liquid Extration				Yes

Percent Moisture N/A

Matrix LEACH

CAS Number	Compound	Concentration ug/L	Detection Limit	Qualifier
58-89-9	gamma-BHC (Lindane)		0.10	U
75-44-8	Heptachlor		0.050	U
1024-57-3	Heptachlor epoxide		0.050	U
72-20-8	Endrin		0.10	U
72-43-5	Methoxychlor		0.50	U
5103-71-9	alpha-Chlordane		0.050	U
5103-74-2	gamma-Chlordane		0.050	U
8001-35-2	Toxaphene		5.0	U

Vi - Volume of extract injected (ul) - _____ 1

Vs - Volume of Water extracted (ml) - _____ 1000

Ws - Weight of sample extracted (g) - _____ N/A

Vt - Volume of total extract (ul) - _____ 10,000

AMERICAN ENVIRONMENTAL NETWORK, INC.

Organic Analysis Data Sheet

TCLP PESTICIDES

Case No.:——— 9509197

Project Name:——— FORT DEVENS

Client Name:——— OHM CORPORATION

Sample Number
TCLP BLANK

AENI # TCLP BLK 0922RD

Concentration:——— Low

Date Sampled:——— N/A

Date Received:——— N/A

Date Ext Prepared:—— 9/22/95

Date Analyzed:——— 9/26/95

Conc/Dil Factor:——— 1

Method: ——————— 8080

GPC Cleanup		Yes	X	No
Seperatory Funnel Extraction			X	Yes
Continuous Liquid - Liquid Extration				Yes

Percent Moisture: N/A

Matrix: LEACH

CAS Number	Compound	Concentration ug/L	Detection Limit	Qualifier
58-89-9	gamma-BHC (Lindane)		0.20	U
75-44-8	Heptachlor		0.10	U
1024-57-3	Heptachlor epoxide		0.10	U
72-20-8	Endrin		0.20	U
72-43-5	Methoxychlor		1.0	U
5103-71-9	alpha-Chlordane		0.10	U
5103-74-2	gamma-Chlordane		0.10	U
8001-35-2	Toxaphene		10	U

Vi - Volume of extract injected (ul) - _____ 1

Vs - Volume of Water extracted (ml) - _____ 500

Ws - Weight of sample extracted (g) - _____ N/A

Vt - Volume of total extract (ul) - _____ 10,000

AMERICAN ENVIRONMENTAL NETWORK, INC.

Organic Analysis Data Sheet

TCLP PESTICIDES

Case No.:——— 9509197

Project Name:——— FORT DEVENS

Client Name:——— OHM CORPORATION

Sample Number
TCLP BLANK SPIKE

AENI # TCLP LCS 0922RD

Concentration:——— Low

Date Sampled:——— N/A

Date Received:——— N/A

Date Ext Prepared:—— 9/22/95

Date Analyzed:——— 9/26/95

Conc/Dil Factor:——— 1

Method: ——————— 8080

GPC Cleanup		Yes	X	No
Seperatory Funnel Extraction			X	Yes
Continuous Liquid - Liquid Extration				Yes

Percent Moisture N/A

Matrix LEACH

CAS Number	Compound	Concentration ug/L	Detection Limit	Qualifier
58-89-9	gamma-BHC (Lindane)	0.30	0.20	
75-44-8	Heptachlor	0.33	0.10	
1024-57-3	Heptachlor epoxide		0.10	U
72-20-8	Endrin	0.87	0.20	
72-43-5	Methoxychlor		1.0	U
5103-71-9	alpha-Chlordane		0.10	U
5103-74-2	gamma-Chlordane		0.10	U
8001-35-2	Toxaphene		10	U

Vi - Volume of extract injected (ul) - _____ 1

Vs - Volume of Water extracted (ml) - _____ 500

Ws - Weight of sample extracted (g) - _____ N/A

Vt - Volume of total extract (ul) - _____ 10,000

2E

WATER PESTICIDE SURROGATE RECOVERY

Lab Name: American Environmental Network, Inc. Contract: 9509197

Lab Code: NA Case No.: NA SAS No.: NA

Instrument ID: GC-F

GC Column(1): DB-5 D: 0.53 mm GC Column(2): DB 608 ID: 0.53 mm

Dates of Analyses: 9/26/95 to 9/26/95

Method: 8080

EPA SAMPLE NO.	TCMX 1 %REC	#	TCMX 2 % REC	#	DCB 1 %REC	#	DCB 2 %REC	#	TOTAL OUT
BLK 0922RD	85		71		89		67		0
TCLP BLANK	83		75		100		88		0
TCLP BLANK SPIKE	81		78		80		85		0
EX243201	84		75		92		89		0
EXQUEEN01	84		75		100		83		0
EXQUEENDUP	83		74		87		92		0
EX1301	76		82		84		91		0
EX1301DUP	110		87		103		89		0

ADVISORY QC LIMITS

TCMX = Tetrachloro-m-xylene (60-150)

DCB = Decachlorobiphenyl (60-150)

COLUMN TO BE USED TO FLAG RECOVERY VALUES

* VALUES OUTSIDE OF QC LIMITS

D SURROGATE DILUTED OUT

FORM II PEST-1

3E

WATER BLANK SPIKE RECOVERY

Lab Name: American Environmental Network, Inc. Contract: 9509197

Lab Code: NA Case No.: NA SAS No.: NA

Matrix Spike - EPA Sample No.: TCLP LCS 0922RD

Method: 8080

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	BS CONCENTRATION (ug/L)	BS % REC	#	QC LIMITS REC.
gamma-BHC (Lindane)	0.40	0.0	0.30	75		56 - 123
Heptachlor	0.40	0.0	0.33	83		40 - 131
Aldrin	0.40	0.0	0.30	75		40 - 120
Dieldrin	1.0	0.0	0.84	84		52 - 126
Endrin	1.0	0.0	0.87	87		56 - 121
4,4'-DDT	1.0	0.0	0.77	77		38 - 127

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 6 outside limits.

FORM III PEST-1

AMERICAN ENVIRONMENTAL NETWORK, INC.

September 25, 1995

Client: OHM CORPORATION

Case: 9509197

Project: FORT DEVENS

Analysis: TCLP Herbicides by Method 8150

Client ID	AENI#	Date Sampled	Date Received	Date Extracted	Date Analyzed
EX243201	9509197-005	09/15/95	09/16/95	09/20/95	09/22/95
EXQUEEN01	9509197-010	09/15/95	09/16/95	09/20/95	09/22/95
EXQUEENDUP	9509197-011	09/15/95	09/16/95	09/20/95	09/22/95
EX1301	9509197-012	09/15/95	09/16/95	09/20/95	09/22/95
EX1301DUP	9509197-013	09/15/95	09/16/95	09/20/95	09/22/95

Five soil samples were leached according to 40 CFR 261, Appendix II. The leachates were analyzed for 2,4-D and Silvex using SW-846 Method 8150.

The enclosed package consists specifically of tabulated results (Form I), surrogate spike recoveries (Form II), and matrix spike recoveries (Form III).

Form I (Tabulated Results)

The qualifier "U" indicates that a compound was analyzed for but not detected above the reporting limit. The samples were prepared and analyzed within method specified holding time.

Form II (Surrogate Spike Recoveries)

All surrogate recoveries were within specified criteria (50-150%).

Form III (Matrix Spike Recoveries)

A lab control sample (LCS) and lab control sample duplicate (LCSD) were prepared with this sample delivery group. All recoveries and RPD's were within laboratory criteria.

Data Released By

Noble Nemieboka
GC/LC Acting Lab Manager

APPENDIX B
KEY TO COMMENTS ON DATA COMPARISON TABLES

0 - Data agrees if any one of the following apply:

- both values are less than respective detection limit (N<MDL)
- N_1<MDL_1 and N_2>MDL_2 but <MDL_1
- both values are above respective detection limit (N>MDL) and difference between two values satisfies conditions below

Metals	<2x difference for waters, TCLP extracts <3x difference for airs <10x difference for solids and oils
Semivolatiles Volatiles TPH, BTEX	<5x difference for all matrices
Pesticides Herbicides PCB's	<5x difference for liquids <10x difference for solids
Alkalinity Hardness, Ammonia (water quality, etc.)	<2x difference for all matrices

1 - Minor contamination by laboratory contaminant
2 - Not tested by both laboratories
3 - Minor data discrepancy, disagreement not serious, if any one of the following apply:

- N_1<MDL_1 and N_2>MDL_2 and the difference between values N_2 and MDL_1 does not exceed the upper limit (described below) defining a minor data discrepancy
- both values are above respective detection limit (N>MDL) and conditions described below apply to the difference between the two values

Metals	2x<difference<5x for waters,TCLP extracts 10x<difference<20x for solids, oils 3x<difference<5x for airs
Semivolatiles, VOA, TPH, BTEX	5x<difference<10x for all matrices
Pesticide/PCB Herbicides	5x<difference<10x for liquids 10x<difference<20x for solids
Alkalinity Hardness,Ammonia (water quality, etc.)	2x<difference<5x for all matrices

4 - Major data discrepancy, disagreement serious, if any one of the following apply:

- $N_1 < MDL_1$ and $N_2 > MDL_2$ and the difference between values N_2 and MDL_1 exceeds the limit (described below) defining a major data discrepancy
- both values are above respective detection limit (N>MDL) and conditions described below apply to the difference between the two values

Metals	>5x difference for waters, TCLP extracts, airs >20x difference for solids, oils
Semivolatiles, VOA, TPH, BTEX	>10x difference for all matrices
Pesticide/PCB Herbicides	>10x difference for liquids >20x difference for solids
Alkalinity Hardness, Ammonia (water quality, etc.)	>5x difference for all matrices

MDL = Method Detection Limit
N = Analytical result

Key to data qualifiers:

B - detected in method blank
J - estimated value, above MDL but below practical quantitation limit
NR - Not reported

7. Data comparison for TCLP Herbicides.

There were 2 determinations. In these determinations no herbicides were detected by the QA lab or contractor's laboratory. There was 100% agreement. No major or minor discrepancies were noted.

8. Data comparison for BNA.

There were 81 determinations. In 1 of these determinations BNA's were detected by both the QA lab and contractor's laboratory. There was 100% agreement. There were no major or minor discrepancies noted.

9. Data comparison for PCB.

There was 1 determination. In this determination PCB's were detected by the QA laboratory only. There was 100% agreement. No major or minor discrepancies were noted.

10. Data comparison for TPH.

There was 1 determination. TPH was not detected by either the QA lab or contractor's laboratory. There was 100% agreement. No major or minor discrepancies were noted.

12. Data comparison for Metals.

There were 8 determinations. In 5 of these determinations metals were detected by the QA lab or contractor's laboratory. There was 100% agreement. No major or minor discrepancies were noted.

13. Comments.

Contractor's data package was not in full compliance with Minimum Chemistry Data Reporting Requirements as sample receiving information was not provided.

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: PORT DEVENS Q-TOWN

QA SAMPLE NO.:	32790	CONTRACTOR'S SAMPLE NO.:	9509197-002
QA FIELD ID:	EXQUEENTRPA	CONTRACTOR'S FIELD ID:	EXQUEEN02
QA ANALYSIS DATE:	09/28/95	CONTRACTOR'S ANALYSIS DATE:	09/22/95
QA LABORATORY:	NED	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 09/15/95
UNITS: ng/g

PARAMETER	RESULTS QA LAB MDL		RESULTS CONTRACTOR CRQL		COMPARISON CODE
Dichlorodifluoromethane	< 6.5			NR	2
Chloromethane	< 1.9		< 10		0
Vinyl chloride	< 1.2		< 10		0
Bromomethane	< 2.3		< 10		0
Chloroethane	< 1.7		< 10		0
Trichlorofluoromethane	< 1.3		< 5.1		0
1,1-Dichloroethene	< 1.5		< 5.1		0
Dichloromethane (MeCl2)	< 1.7	B 20	< 5.1		1
trans-1,2-Dichloroethene	< 1.6		< 5.1		0
1,1-Dichloroethane	< 1.2		< 5.1		0
2,2-Dichloropropane	< 4.5			NR	2
cis 1,2-Dichloroethene	< 1.4			NR	2
Chloroform	< 1.4		< 5.1		0
Bromochloromethane	< 1.9			NR	2
1,1,1-Trichloroethane	< 2.1		< 5.1		0
1,1-Dichloropropene	< 1.4			NR	2
Carbon Tetrachloride	< 1.9		< 5.1		0
1,2-Dichloroethane	< 2.7		< 5.1		0
Benzene	< 1.9		< 5.1		0
Trichloroethene	< 1.9		< 5.1		0
1,2-Dichloropropane	< 1.6		< 5.1		0
Bromodichloromethane	< 1.7		< 5.1		0
Dibromomethane	< 2.6			NR	2
cis 1,3-Dichloro,1-propene	< 2.2		< 5.1		0
Toluene	< 1.7			7.7	3
trans 1,3-Dichloro,1-propene	< 3.1		< 5.1		0
1,1,2-Trichloroethane	< 3.2		< 5.1		0
1,2-Dibromoethane	< 3.2			NR	2
1,3-Dichloropropane	< 2.3			NR	2
Tetrachloroethene	< 1.3		< 5.1		0
Dibromochloromethane	< 2.0		< 5.1		0
Chlorobenzene	< 1.2		< 5.1		0
1,1,1,2-Tetrachloroethane	< 1.3			NR	2
Ethylbenzene	< 1.2		< 5.1		0
m/p Xylene	< 1.7			NR	2
o-Xylene	< 1.3			NR	2
Styrene	< 1.2			NR	2
Bromoform	< 2.9		< 5.1		0
Isopropylbenzene	< 1.3			NR	2

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.:	32793	CONTRACTOR'S SAMPLE NO.:	9509197-010
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	10/24/95	CONTRACTOR'S ANALYSIS DATE:	09/25/95
QA LABORATORY:	E3I	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: TCLP EXTRACT
DATE SAMPLED: 09/15/95
UNITS: ug/L

PARAMETER	QA LAB CRQL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
1,4-Dichlorobenzene	< 10		< 40		0
2-Methylphenol	< 10		< 40		0
4-Methylphenol	< 10		< 40		0
Hexachloroethane	< 10		< 40		0
Nitrobenzene	< 10		< 40		0
Hexachlorobutadiene	< 10		< 40		0
2,4,6-Trichlorophenol	< 10		< 40		0
2,4,5-Trichlorophenol	< 25		< 200		0
2,4-Dinitrotoluene	< 10		< 40		0
Hexchlorobenzene	< 10		< 40		0
Pentachlorophenol	< 25		< 200		0
Pyridine	< 10		< 40		0

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
2-Fluorophenol (21-110)	24	53
Phenol (10-110)	16	32
Nitrobenzene-d5 (35-114	87	97
2-Fluorobiphenyl (43-116)	70	113
2,4,6-Tribromophenol (10-123)	33	138
4-Terphenyl-d4 (33-141)	44	108

SEE APPENDIX B FOR KEY TO COMMENTS

Quality Assurance Split Sample
Data Comparison Summary

Project: Ft. Devens - Q-Town

Test Parameter	Overall Agreement (1)		Quantitative Agreement (2)	
	Number	Percent	Number	Percent
BNA-TCLP	12/12	100	0/0	N/A
Metals-TCLP	8/8	100	3/3	100
Pest-TCLP	7/7	100	0/0	N/A
VOA-TCLP	10/10	100	0/0	N/A
Herb-TCLP	2/2	100	0/0	N/A
TPH	1/1	100	0/0	N/A
BNA	81/81	100	1/1	100
PCB	1/1	100	1/1	100
VOA	30/30	100	2/2	100
Metals	8/8	100	5/5	100
Total	160/160	100	12/12	100

NOTES:

(1) Represents the number and percentage agreement of all determinations including analytes not detected by either laboratory.

(2) Represents the number and percentage agreement of only those determinations where an analyte was detected by at least one laboratory.

APPENDIX A

Analytical Methods

Test Parameter	QA lab	Primary Lab
BNA-TCLP	1311/8270	1311/8270
Metals-TCLP	1311/7000/6010	1311/6010/7000
Pest-TCLP	1311/8081	1311/8080
VOA-TCLP	1311/8260	1311/8240
Herb-TCLP	1311/8150	1311/8150
TPH	418.1	418.1
BNA	8270	8270
VOA	8260	8240
METALS	7000/6010	7000/6010

QA SAMPLE NO.: 32790 CONTRACTOR'S SAMPLE NO.: 9509197-002

PARAMETER	RESULTS QA LAB MDL	RESULTS CONTRACTOR CRQL	COMPARISON CODE
1,1,2,2-Tetrachloroethane	< 4.4	< 5.1	0
1,2,3-Trichloropropane	< 2.3	NR	2
n-Propylbenzene	< 1.2	NR	2
Bromobenzene	< 1.4	NR	2
1,3,5-Trimethylbenzene	< 1.3	NR	2
2-Chlorotoluene	< 1.5	NR	2
4-Chlorotoluene	< 1.0	NR	2
tert-Butylbenzene	< 1.4	NR	2
1,2,4-Trimethylbenzene	< 1.2	NR	2
sec-Butylbenzene	< 1.2	NR	2
p-Isopropyltoluene	< 1.2	NR	2
1,3-Dichlorobenzene	< 1.2	< 5.1	0
1,4-Dichlorobenzene	< 1.3	< 5.1	0
n-Butylbenzene	< 1.3	NR	2
1,2-Dichlorobenzene	< 1.4	< 5.1	0
1,2-Dibromo-3-chloropropane	< 3.0	NR	2
1,2,4-Trichlorobenzene	< 1.7	NR	2
Hexachlorobutadiene	< 1.6	NR	2
Napnthalene	< 2.3	NR	2
1,2,3-Trichlorobenzene	< 2.1	NR	2

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
1,2-Dichloroethane D4 (76-114)	NR	87
Toluene D8 (81-117)	98	96
Dibromofluoromethane (80-120)	102	NR
4-Bromofluorobenzene (74-121)	86	99

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.: 32793
QA FIELD ID: EXQUEENTRP
QA LABORATORY: E3I

CONTRACTOR'S SAMPLE NO.: 9509197-010
CONTRACTOR'S FIELD ID: EXQUEEN01
CONTRACTOR'S LABORATORY: AENI

MATERIAL DESCRIPTION: TCLP EXTRACT
DATE SAMPLED: 09/15/95
UNITS: ug/L

PARAMETER	RESULTS QA LAB CRQL	RESULTS QA LAB	REPORTING LIMIT	RESULTS CONTRACTOR	COMPARISON CODE
Silver	< 2.0		< 500		0
Arsenic	< 4.0		< 500		0
Barium		360	< 1000		0
Cadmium	< 1.0		< 40		0
Chromium		J 3.0	< 100		0
Mercury	< 0.20		< 1.0		0
Lead		27	< 100		0
Selenium	< 3.0		< 250		0

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: PORT DEVENS Q-TOWN

QA SAMPLE NO.:	32793	CONTRACTOR'S SAMPLE NO.:	9509197-010
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	10/26/95	CONTRACTOR'S ANALYSIS DATE:	09/26/95
QA LABORATORY:	E3I	CONTRACTORY'S LABORATORY:	AENI

MATERIAL DESCRIPTION: TCLP EXTRACT
DATE SAMPLED: 09/15/95
UNITS: ug/L

PARAMETER	RESULTS QA LAB CRQL	RESULTS QA LAB	DETECTION LIMIT	RESULTS CONTRACTOR	COMPARISON CODE
Gamma-BHC (Lindane)	< 0.050		< 0.20		0
Heptachlor	< 0.050		< 0.10		0
Heptachlor epoxide	< 0.050		< 0.10		0
Endrin	< 0.10		< 0.20		0
Methoxychlor	< 0.50		< 1.0		0
Chlordane	< 0.20		< 0.10		0
Toxaphene	< 5.0		< 10		0

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
TCMX (60-150)	*50	84
DCB (60-150)	75	100

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: PORT DEVENS Q-TOWN

QA SAMPLE NO.:	32793	CONTRACTOR'S SAMPLE NO.:	9509197-010
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	10/11/95	CONTRACTOR'S ANALYSIS DATE:	09/26/95
QA LABORATORY:	NED	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: TCLP EXTRACT
DATE SAMPLED: 09/15/95
UNITS: ug/L

PARAMETER	QA LAB MDL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
Vinyl chloride	< 14		< 100		0
1,1-Dichloroethane	< 0.58		< 50		0
Chloroform	< 0.59		< 50		0
1,2-Dichloroethane	< 0.41		< 50		0
2-Butanone	< 50		< 1000		0
Carbon tetrachloride	< 0.36		< 50		0
Benzene	< 0.63		< 50		0
Trichloroethane	< 0.59		< 50		0
Tetrachloroethane	< 0.46		< 50		0
Chlorobenzene	< 0.75		< 50		0

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
1,2-Dichloroethane D4 (76-114)	NR	86
Toluene D8 (88-110)	98	101
4-Bromofluorobenzene (86-115)	92	NR
Dibromofluoromethane (76-114)	99	102

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.:	32793	CONTRACTOR'S SAMPLE NO.:	9509197-010
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	10/17/95	CONTRACTOR'S ANALYSIS DATE:	09/22/95
QA LABORATORY:	GTEL	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: TCLP EXTRACT
DATE SAMPLED: 09/15/95
UNITS: ug/L

PARAMETER	RESULTS QA LAB CRQL	RESULTS QA LAB	REPORTING LIMIT	RESULTS CONTRACTOR	COMPARISON CODE
2,4-D	< 330		< 0.50		0
2,4,5-TP	< 33		< 0.50		0

SURROGATE RECOVERIES:

	QA	CONTRACTOR
DCBAA (24-154)	61	89

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: PORT DEVENS Q-TOWN

QA SAMPLE NO.:	32789	CONTRACTOR'S SAMPLE NO.:	9509197-001
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	10/13/95	CONTRACTOR'S ANALYSIS DATE:	09/21/95
QA LABORATORY:	NED	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 09/15/95
UNITS: ug/g

PARAMETER	QA LAB MDL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
Napthalene	< 0.0059		< 0.33		0
2-Methylnapthalene	< 0.011		< 0.33		0
Acenaphthylene	< 0.0045		< 0.33		0
Acenaphthene	< 0.010		< 0.33		0
Fluorene	< 0.013		< 0.33		0
Phenanthrene	< 0.011		< 0.33		0
Anthracene	< 0.019		< 0.33		0
Fluoranthene	< 0.013		< 0.33		0
Pyrene	< 0.011		< 0.33		0
Benzo(a)anthracene	< 0.010		< 0.33		0
Chrysene	< 0.010		< 0.33		0
Benzo(b)fluoranthene	< 0.029		< 0.33		0
Benzo(k)fluoranthene	< 0.050		< 0.33		0
Benzo(a)pyrene	< 0.032		< 0.33		0
Indeno(1,2,3-cd)pyrene	< 0.010		< 0.33		0
Dibenz(a,h)anthracene	< 0.010		< 0.33		0
Benzo(g,h,i)perylene	< 0.010		< 0.33		0
Biphenyl		J 0.020		NR	2
Benzo(e)pyrene	< 0.015			NR	2
2-6 Dimethylnaphthalene	< 0.015			NR	2
1-Methylphenanthrene	< 0.015			NR	2
1-Methylnaphthalene	< 0.015			NR	2
Perylene	< 0.015			NR	2
2,3,5-tri-methylnapthalene	< 0.015			NR	2

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
Nitrobenzene-d5 (23-120)	102	72
2-Fluorobiphenyl (30-115)	97	76
Terphenyl-d14 (18-137)	120	38

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.: 32108
QA FIELD ID: SBQUEENTPA
QA ANALYSIS DATE: 08/10/95
QA LABORATORY: E3I

CONTRACTOR'S SAMPLE NO.: 9508005-002
CONTRACTOR'S FIELD ID: SBQUEENSCA
CONTRACTOR'S ANALYSIS DATE: 08/09/95
CONTRACTOR'S LABORATORY: AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 07/31/95
UNITS: ug/kg

PARAMETER	QA LAB CRQL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
Phenol	< 340		< 350		0
Bis(2-chloroethyl)ether	< 340		< 350		0
2-Chlorophenol	< 340		< 350		0
1,3-Dichlorobenzene	< 340		< 350		0
1,4-Dichlorobenzene	< 340		< 350		0
1,2-Dichlorobenzene	< 340		< 350		0
2-Methylphenol	< 340		< 350		0
Bis(2-chloroisopropyl)ether	< 340		< 350		0
4-Methylphenol	< 340		< 350		0
N-Nitroso-di-n-propylamine	< 340		< 350		0
Hexachloroethane	< 340		< 350		0
Nitrobenzene	< 340		< 350		0
Isophorone	< 340		< 350		0
2-Nitrophenol	< 340		< 350		0
2,4-Dimethylphenol	< 340		< 350		0
Bis(2-chloroethoxy)methane	< 340		< 350		0
2,4-Dichlorophenol	< 860		< 870		0
1,2,4-Trichlorobenzene	< 340		< 350		0
Napthalene	< 340		< 350		0
4-Chloroaniline	< 340		< 350		0
Hexachlorobutadiene	< 340		< 350		0
4-Chloro-3-methylphenol	< 340		< 350		0
2-Methylnapthalene	< 340		< 350		0
Hexachlorocyclopentadiene	< 340		< 350		0
2,4,6-Trichlorophenol	< 340		< 350		0
2,4,5-Trichlorophenol	< 860		< 870		0
2-Chloronaphthalene	< 340		< 350		0
2-Nitroaniline	< 860		< 870		0
Dimethylphthalate	< 340		< 350		0
Acenaphthylene	< 340		< 350		0
3-Nitroaniline	< 860		< 870		0
Acenaphthene	< 340		< 350		0
2,4-Dinitrophenol	< 860		< 870		0
4-Nitrophenol	< 860		< 870		0
Dibenzofuran	< 340		< 350		0
2,6-Dinitrotoluene	< 340		< 350		0

QA SAMPLE NO.: 32108 CONTRACTOR'S SAMPLE NO.: 9508005-002

PARAMETER	QA LAB CRQL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
2,4-Dinitrotoluene	< 340		< 350		0
Diethylphthalate	< 340		< 350		0
4-Chlorophenyl-phenylether	< 340		< 350		0
Fluorene	< 340		< 350		0
4-Nitroaniline	< 860		< 870		0
4,6-Dinitro-2-methylphenol	< 860		< 870		0
N-Nitrosodiphenylamine	< 340		< 350		0
4-Bromophenyl-phenylether	< 340		< 350		0
Hexachlorobenzene	< 340		< 350		0
Pentachlorophenol	< 860		< 870		0
Phenanthrene	< 340		< 350		0
Anthracene	< 340		< 350		0
Di-n-butylphthalate	< 340		< 350		0
Fluoranthene	< 340		< 350		0
Pyrene	< 340		< 350		0
Butylbenzylphthalate	< 340		< 350		0
3,3-Dichlorobenzidine	< 340		< 350		0
Benzo(a)anthracene	< 340		< 350		0
Bis(2ethylhexyl)phthalate	< 340	380		420	0
Chrysene	< 340		< 350		0
Di-n-octyl phthalate	< 340		< 350		0
Benzo(b)fluoranthene	< 340		< 350		0
Benzo(k)fluoranthene	< 340		< 350		0
Benzo(a)pyrene	< 340		< 350		0
Indeno(1,2,3-cd)pyrene	< 340		< 350		0
Dibenz(a,h)anthracene	< 340		< 350		0
Benzo(g,h,i)perylene	< 340		< 350		0
Carbazole	< 340		< 350		0

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
Nitrobenzene-d5 (23-120)	58	74
2-Fluorobiphenyl (30-115)	62	81
Terphenyl-d14 (18-137)	54	99
1,2-Dichlorobenzene-d4 (20-130)	59	NR
Phenol-d6 (24-113)	62	63
2-Fluorophenol (25-121)	59	53
2,4,6-Tribromophenol (19-122)	57	24
2-Chlorophenol-d4 (20-130)	59	NR

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.:	31695	CONTRACTOR'S SAMPLE NO.:	NR
QA FIELD ID:	SBQUEENTRP	CONTRACTOR'S FIELD ID:	SBQUEENTRP
QA ANALYSIS DATE:	07/21/95	CONTRACTOR'S ANALYSIS DATE:	NA
QA LABORATORY:	E3I	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 07/06/95
UNITS: ug/kg

PARAMETER	QA LAB CRQL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
Phenol	< 350			NA	2
Bis(2-chloroethyl)ether	< 350			NA	2
2-Chlorophenol	< 350			NA	2
1,3-Dichlorobenzene	< 350			NA	2
1,4-Dichlorobenzene	< 350			NA	2
1,2-Dichlorobenzene	< 350			NA	2
2-Methylphenol	< 350			NA	2
Bis(2-chloroisopropyl)ether	< 350			NA	2
4-Methylphenol	< 350			NA	2
N-Nitroso-di-n-propylamine	< 350			NA	2
Hexachloroethane	< 350			NA	2
Nitrobenzene	< 350			NA	2
Isophorone	< 350			NA	2
2-Nitrophenol	< 350			NA	2
2,4-Dimethylphenol	< 350			NA	2
Bis(2-chloroethoxy)methane	< 350			NA	2
2,4-Dichlorophenol	< 880			NA	2
1,2,4-Trichlorobenzene	< 350			NA	2
Napthalene	< 350			NA	2
4-Chloroaniline	< 350			NA	2
Hexachlorobutadiene	< 350			NA	2
4-Chloro-3-methylphenol	< 350			NA	2
2-Methylnapthalene	< 350			NA	2
Hexachlorocyclopentadiene	< 350			NA	2
2,4,6-Trichlorophenol	< 350			NA	2
2,4,5-Trichlorophenol	< 880			NA	2
2-Chloronaphthalene	< 350			NA	2
2-Nitroaniline	< 880			NA	2
Dimethylphthalate	< 350			NA	2
Acenaphthylene	< 350			NA	2
3-Nitroaniline	< 880			NA	2
Acenaphthene	< 350			NA	2
2,4-Dinitrophenol	< 880			NA	2
4-Nitrophenol	< 880			NA	2
Dibenzofuran	< 350			NA	2
2,6-Dinitrotoluene	< 350			NA	2

PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.: 31695 CONTRACTOR'S SAMPLE NO.: NR

PARAMETER	QA LAB CRQL	RESULTS QA LAB	CONTRACTOR CRQL	RESULTS CONTRACTOR	COMPARISON CODE
2,4-Dinitrotoluene	< 350			NA	2
Diethylphthalate	< 350			NA	2
4-Chlorophenyl-phenylether	< 350			NA	2
Fluorene	< 350			NA	2
4-Nitroaniline	< 880			NA	2
4,6-Dinitro-2-methylphenol	< 880			NA	2
N-Nitrosodiphenylamine	< 350			NA	2
4-Bromophenyl-phenylether	< 350			NA	2
Hexachlorobenzene	< 350			NA	2
Pentachlorophenol	< 880			NA	2
Phenanthrene	< 350			NA	2
Anthracene	< 350			NA	2
Di-n-butylphthalate	< 350	J 75		NA	2
Fluoranthene	< 350			NA	2
Pyrene	< 350			NA	2
Butylbenzylphthalate	< 350			NA	2
3,3-Dichlorobenzidine	< 350			NA	2
Benzo(a)anthracene	< 350			NA	2
Bis(2ethylhexyl)phthalate	< 350	1100		NA	2
Chrysene	< 350			NA	2
Di-n-octyl phthalate	< 350			NA	2
Benzo(b)fluoranthene	< 350			NA	2
Benzo(k)fluoranthene	< 350			NA	2
Benzo(a)pyrene	< 350			NA	2
Indeno(1,2,3-cd)pyrene	< 350			NA	2
Dibenz(a,h)anthracene	< 350			NA	2
Benzo(g,h,i)perylene	< 350			NA	2
Carbazole	< 350			NA	2

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
Nitrobenzene-d5 (23-120)	64	NA
2-Fluorobiphenyl (30-115)	80	NA
Terphenyl-d14 (18-137)	75	NA
1,2-Dichlorobenzene-d4 (20-130)	63	NA
Phenol-d6 (24-113)	56	NA
2-Fluorophenol (25-121)	63	NA
2,4,6-Tribromophenol (19-122)	60	NA
2-Chlorophenol-d4 (20-130)	59	NA

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.:	32789	CONTRACTOR'S SAMPLE NO.:	9509197-001
QA FIELD ID:	EXQUEENTRP	CONTRACTOR'S FIELD ID:	EXQUEEN01
QA ANALYSIS DATE:	11/13/95	CONTRACTOR'S ANALYSIS DATE:	09/20/95
QA LABORATORY:	NED	CONTRACTOR'S LABORATORY:	AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 09/15/95
UNITS: mg/kg

PARAMETER	QA LAB MDL	RESULTS QA LAB	DETECTION LIMIT	RESULTS CONTRACTOR	COMPARISON CODE
Total PCBs		0.0010	< 0.025		0

SURROGATE RECOVERIES (%)

	QA	CONTRACTOR
TCMX (60-150)	97	NR
Decachlorobiphenyl (60-150)	107	144

* = SURROGATE RECOVERY OUTSIDE ACCEPTABLE RANGE

SEE APPENDIX B FOR KEY TO COMMENTS

COMPARISON OF QA AND CONTRACTOR RESULTS

PROJECT: FORT DEVENS Q-TOWN

ANALYSIS PERFORMED: TOTAL PETROLEUM HYDROCARBONS
QA LABORATORY: E3I
CONTRACTOR'S LABORATORY: AENI
UNITS: mg/kg

SAMPLE DATE	SAMPLE MATRIX	CONTRACTOR SAMPLE NO.	CONTRACTOR FIELD ID	ENV. LAB NO.	QA FIELD ID	CONTRACTOR RESULTS	QA LAB RESULTS	C
09/15/95	SOIL	9509197	EXQUEEN01	32789	EXQUEENTRP	NR	< 26	2
07/06/95	SOIL	NR	SBQUEENTRP	31695	SBQUEENTRP	NA	< 26	2
07/31/95	SOIL	9508005-002	SBQUEENSCA	32108	SBQUEENTPA	< 16	< 26	0

COMPARISON OF QA & CONTRACTOR RESULTS
PROJECT: FORT DEVENS Q-TOWN

QA SAMPLE NO.: 32789
QA FIELD ID: EXQUEENTRP
QA LABORATORY: NED

CONTRACTOR'S SAMPLE NO.: 9509197-001
CONTRACTOR'S FIELD ID: EXQUEEN01
CONTRACTOR'S LABORATORY: AENI

MATERIAL DESCRIPTION: SOIL
DATE SAMPLED: 09/15/95
UNITS: ug/g

PARAMETER	RESULTS QA LAB MDL	RESULTS QA LAB	REPORTING LIMIT	RESULTS CONTRACTOR	COMPARISON CODE
Silver	< 0.61		< 1.0		0
Arsenic		35		25	0
Barium		18		29	0
Cadmium		0.35	< 0.41		0
Chromium		16		30	0
Mercury	< 0.10		< 0.10		0
Lead		9.1		13	0
Selenium	< 0.43		< 0.51		0

SEE APPENDIX B FOR KEY TO COMMENTS

HM Corporation

E0251

CHAIN-OF-CUS DY RECORD

Fiel ...nical Services
Form 0019
Rev. 08/89

No. 99939

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME	PROJECT LOCATION
Fort Devens	Ayer MA

PROJ NO.	PROJECT CONTACT	PROJECT TELEPHONE NO
16208	Mike Quinlan	(508)-772-2019

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
USACE	Kevin Mack

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH	Semivolatiles (TCL)	REMARKS
1	SBQUEENTRP	07-06-95	1113	✓		Gold Brown soil w/cobble	1X8oz	✓	✓	Duplicate of SBQUEENDUP
2	11695									" " SBQUEENEC
3										
4										
5										
6										
7										
8										
9										
10										

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1	William Dale	Federal Express Airbill #	07-06-95	1630
2			Ellen Langelier	7-7-95	1130
3					
4					

REMARKS

* Temperature blank included
* Preserved at 4°C
~~* 30 day~~ 60 7-6-95 Hold until notified Please!

SAMPLER'S SIGNATURE: William Dale

LAB COPY

REVISED ON

CENED-ED-GL

SAMPLE CONTAINER RECEIPT FORM

PROJECT: Cent Soil Fort Drum #1188 Project #: F025

Work Order #:

Container received on 7-7-95 and inspected on 7-7-95 by:

1. Temperature ___ °C. Temperature taken on 7-7-95 (date)

2. Shipper ___ Shipper # ___
(USM, UPS, DHL, (FEDEX), P/C, AIR EXP, HAND-DELIVERED)

3. Container type ((Cooler), box, envelope, etc.) ___

4. Were custody seals on outside of container? N/A (Yes) No
How many & where: ___, seal date: ___, seal name: ___

5. Were custody papers taped to lid inside container? N/A (Yes) No

6. Custody papers properly filled out? (ink, signed, etc.) (Yes) No

7. Was project and project # identifiable from custody papers? (Yes) No

8. Did you sign custody papers in appropriate place? (Yes) No

9. Did you attach shipper's packing form to this form? N/A (Yes) No

10. Packing material (peanuts, vermiculite, bubble wrap, (paper), cans, other)

11. Were all samples sealed in separate plastic bags? N/A (Yes) No

12. Did all samples arrive in good condition? (Yes) No

13. Sample labels complete? (#, date, analysis, preservation, sign.) (Yes) No

14. Were correct sample containers used for tests indicated? N/A (Yes) No

15. Were correct preservatives used? (TM pH___, CN- pH___) (N/A) Yes No
(TOC pH___, NUTRIENT pH___, TOX pH___, TPH pH___, OTHER pH___)

16. Were VOA vials bubble-free (H_2O) or no headspace (soil)? N/A (Yes) No

17. Was sufficient amount of sample sent in each container? (Yes) No

18. Did all sample labels agree with custody papers? (Yes) No

19. Were air volumes noted for air samples? (N/A) Yes No

20. Were initial weights noted for pre-weighed filters? (N/A) Yes No

Discrepancies: ___

OHM Corporation

CHAIN-OF-CUSTODY RECORD

IE0251

Form 00
Technical Service
Rev. 08/

No. 99982

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME	PROJECT LOCATION
Ft Devens	Ayer, MA

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
16208	M. Quenzer / M Blean	(508) 772-2019

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
Steve Lembvell	Kevin Mzelc

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH / Semi VOA (TCL)	REMARKS
1	SBT217RP	7.25.95	0955	✓		Triplicate of samples SBT 217C1 and SBT212 Dup	1X402	X X MWB	
2	SBQUEENTRA	7.31.95	1140	✓		Triplicate samples SBQUEENSW and SBDUEENDPA	1X802	X X	
3									
4									
5									
6									
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1	Michael N Zmek	Fed Ex Airbill 111198207	7.26.95	1530
2					
3			Christ Moorman	8.1.95	1200
4					

REMARKS
- Preserved 4°C
- temp blank included

SAMPLER'S SIGNATURE: Michael N Zmek

LAB COPY

REV1

CENED-ED-GL
SAMPLE CONTAINER RECEIPT FORM

..JECT: Fl. [illegible] **Project #:** Eo

Work Order #: ___

..ntainer received on 7-1-95 and inspected on 7-1-95 by: [illegible signature]

. Temperature 2 °C. Temperature taken on 7-1-95 (date)

. Shipper ______ Shipper # [illegible]
(USM, UPS, DHL, (FEDEX), P/C, AIR EXP, HAND-DELIVERED)

. Container type (Cooler), box, envelope, etc.) ______

.. Were custody seals on outside of container? N/A Yes (No)
How many & where: ______, seal date: ______, seal name: ______

5. Were custody papers taped to lid inside container? N/A (Yes) No

6. Custody papers properly filled out? (ink, signed, etc.) (Yes) No

7. Was project and project # identifiable from custody papers? (Yes) No

8. Did you sign custody papers in appropriate place? (Yes) No

9. Did you attach shipper's packing form to this form? N/A (Yes) No

.. Packing material (peanuts, vermiculite, (bubble wrap) paper, cans, other)

11. Were all samples sealed in separate plastic bags? N/A (Yes) No

12. Did all samples arrive in good condition? (Yes) No

13. Sample labels complete? (#, date, analysis, preservation, sign.) (Yes) No

14. Were correct sample containers used for tests indicated? (N/A) Yes No

15. Were correct preservatives used? (TM pH___, CN- pH___) (N/A) Yes No
(TOC pH___, NUTRIENT pH___, TOX pH___, TPH pH___, OTHER pH___)

16. Were VOA vials bubble-free (H_2O) or no headspace (soil)? (N/A) Yes No

17. Was sufficient amount of sample sent in each container? (Yes) No

18. Did all sample labels agree with custody papers? (Yes) No

19. Were air volumes noted for air samples? (N/A) Yes No

20. Were initial weights noted for pre-weighed filters? (N/A) Yes No

Discrepancies: ______

CHAIN-OF-CUSTO RECORD

Field Tec l Services
Rev. 08/89

158343

MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

NAME	PROJECT LOCATION
Fort Devens	Ayer, MA

.	PROJECT CONTACT	PROJECT TELEPHONE NO.
08	Mike Quinlan	(508) 772-2019

REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
USACE	Kevin Mack

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)

SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	TCLP	RCRA Char	RCRA Metals	PAH's	PCB's	TPH	Total Volatiles		REMARKS
QUEENTRP (32789)	9-15 95	1210	X		Brown sandy soil w/heavy cobble	1x1L 3x8oz	X	X	X	X	X	X			Triplicate of EXQUEEN01 and EXQUEENDUP
QUEETRPA (32790)	9-15 95	1203		X	Brown sandy soil w/heavy cobble	2x40mL		not analyzed C.V 9-19-95					X		Triplicate of EXQUEEN02 and EXQUEENDUPA

ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1-2	G. Guimond	Federal Express Airbill #: 2716797146	9.18 95	1530
		Chuyl [illegible]	9/19/95	1200

REMARKS
- Preserved at 4°C
- Temp blank included.

SAMPLER'S SIGNATURE Gregory C Guimond

REVISED ...

CENED-ED-GL

SAMPLE CONTAINER RECEIPT FORM

...ECT: *Cont. Soil Fort Devens* Project #: *F025...*
Work Order #: *94-35...*

...ontainer received on *9.19.95* and inspected on *9.19.95* by: *Cheryl Noonan*

. Temperature *2.4* °C. Temperature taken on *9.19.95* (date)

. Shipper ________________ Shipper #: *2746797146*
(USM, UPS, DHL, **FEDEX**, P/C, AIR EXP, HAND-DELIVERED)

. Container type (**Cooler**, box, envelope, etc.) ________________

. Were custody seals on outside of container? N/A **Yes** No
How many & where: *1 Around Cooler Lid*, seal date: *9.18.95*, seal name: *Signature*

. Were custody papers taped to lid inside container? N/A **Yes** No

. Custody papers properly filled out? (ink, signed, etc.) **Yes** No

. Was project and project # identifiable from custody papers? **Yes** No

. Did you sign custody papers in appropriate place? **Yes** No

. Did you attach shipper's packing form to this form? N/A **Yes** No

Packing material (peanuts, vermiculite, **bubble wrap**, paper, cans, other)

11. Were all samples sealed in separate plastic bags? N/A **Yes** No

12. Did all samples arrive in good condition? **Yes** No

13. Sample labels complete? (#, date, analysis, preservation, sign.) **Yes** No

14. Were correct sample containers used for tests indicated? N/A **Yes** No

15. Were correct preservatives used? (TM pH___, CN- pH___) **N/A** Yes No
(TOC pH___, NUTRIENT pH___, TOX pH___, TPH pH___, OTHER pH___)

headspace found in voa vials

16. Were VOA vials bubble-free (H_2O) or no headspace (soil)? N/A Yes **No**

17. Was sufficient amount of sample sent in each container? **Yes** No

18. Did all sample labels agree with custody papers? **Yes** No

19. Were air volumes noted for air samples? **N/A** Yes No

20. Were initial weights noted for pre-weighed filters? **N/A** Yes No

Discrepancies: ________________

Appendix D
Material Shipping Record

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention

2-0662
Tracking Number

Material Shipping Record & Log

*For the shipment of contaminated soil, urban fill, and dredge materials **not** subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000*

A Location Information

1. Provide the following information on the location where the waste was generated:

QSFO Spill Site
Release name (optional)

Area 4 of SA-43H&I, along Queenstown Street
Street *Location aid*

Fort Devens | MA | 01433
City/Town | *State* | *Zip code*

2. Date/Period of generation:

06/29/95 | 07/28/95
From | *To*

3. U.S. EPA ID number:

MA7210025154

4. 21E release:

☐ yes ☒ no

5. List additional tracking documents associated with this document:

B Generator Information

1. Provide the following generator information:

U.S. Army - Fort Devens
Name of organization

James C. Chambers | BRAC Environmental Officer
Contact name | *Title*

AFZD-BEO-Box 1
Street address

Fort Devens | MA | 01433
City/Town | *State* | *Zip code*

(508) 796-3114
Telephone number and extension

C Owner and/or Operator Information

1. If the owner and/or operator *is different from the generator as indicated in Section B*, provide the following information:

Check applicable: ☐ owner ☐ operator

U.S. Army - Fort Devens
Name of organization

James C. Chambers | BRAC Environmental Officer
Contact name | *Title*

AFZD-BEO-Box 1
Street address

Fort Devens | MA | 01433
City/Town | *State* | *Zip code*

(508) 796-3114
Telephone number and extension

IMPORTANT:
This form is NOT to be used for the management of remediation wastes subject to management under section 310 CMR 40.0035 of the Massachusetts Contingency Plan nor is it to be used in lieu of a hazardous waste manifest for hazardous waste recyclable materials subject to the Massachusetts Hazardous Waste Regulations 310 CMR 30.000.

Bureau of Waste Prevention

Material Shipping Record & Log

2-0662

Tracking Number SA-43H-1

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

D Transporter/Common Carrier Information

1. Provide the following information:

P.J. Keating Company	N/A	N/A
Transporter/Common carrier name	Hazardous waste license number (if applicable)	Licensing state (if applicable)

Mark Nikitas	
Contact person	Title

998 Reservoir Road		
Street		
Lunenberg	MA	01462
City/Town	State	Zip code

(508) 582-9931
Telephone number and extension

E Receiving Facility Information

1. Provide the following information on the receiving facility:

U.S. Army - Fort Devens - Building 202
Operator/facility name

James C. Chambers	BRAC Environmental Officer
Contact person	Title

AFZD-BEO-Box 1	Fort Devens, MA	01433
Street	State	Zip code

(508) 796-3114
Telephone number and extension

2. Type of facility:

- ☐ asphalt batch/cold mix
- ☐ asphalt batch/hot Mix
- ☐ landfill/disposal
- ☐ landfill/daily cover
- ☐ thermal processing
- ☐ landfill/structural fill
- ☒ other: Temporary Storage Facility

3. Permit number: N/A

F Description of Material

Check all that apply:

1. a. ☒ soil ☐ dredge material ☐ fill

   b. Description: BLN, STS w/ COBBLES

   c. Classification: ☐ MIT ☐ USDA ☐ USAEC ☐ ASEE

2. ☒ Other

   Modified Burmeister
   describe

3. Type of contamination

   a. ☐ gasoline ☒ diesel fuel ☐ #2 oil ☐ #4 oil ☐ #6 oil ☐ waste oil ☐ kerosene ☐ jet fuel

   b. ☐ Debris

      ☐ demolition ☐ vegetative ☐ inorganic

   c. ☐ Other

      describe

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention

Material Shipping Record & Log

2-0662
Tracking Number SA43HHI

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

F Description of Material (cont.)

4. Constituents of concern (check all that apply):

☒ As ☐ Cd ☒ Cr ☒ Pb ☐ Hg ☐ Ni ☐ PCBs
☐ HVOCs ☐ PATH ☐ VOCs ☐ PAHs ☐ BNAs
☒ TPH ☒ Other:

Barium
describe

5. Analyses performed (check all that apply):

☒ As ☒ Cd ☒ Cr ☒ Pb ☒ Hg ☒ Ni ☒ PCBs
☐ HVOCs ☐ PATH ☒ VOCs ☒ PAHs ☐ BNAs
☐ TPH ☒ TCLP (inorganic) ☒ TCLP (organic)
☐ Other:

RCRA Characterization
describe

6. Screening performed

none
Type

Instrument Used

Constituents

7. Estimated volume of materials:

95 cubic yards
Cubic Yards

143 tons
Tons

Other

8. Contaminant source (check one/specify):

☐ transportation accident ☐ ust ☒ other:

diesel fuel spill
describe

9. Indicate which waste characterization support documentation is attached

☐ site history information
☐ sampling and analytical methods/procedure
☒ laboratory data ☐ field screening data

If supporting documentation is not appended, provide an attachment stating the date and in connection with what document such information was previously submitted to the facility.

G Qualified Environmental Professional Opinion

T.S. Alving & Associates
Name of organization

Todd Alving — Licensed Site Professional
Name of professional — Title

(508) 435-3679
Telephone number and extension

"I have personally examined and am familiar with the information contained on and submitted with this form. Based on this information, it is my opinion that the testing and assessment actions undertaken were adequate to characterize the waste, and that the facility or location can accept wastes with the characteristics described in this submittal. I am aware that significant penalties including, but not limited to, possible fines and imprisonment may result if I willfully submit information which I know to be false, inaccurate, or materially incomplete."

Signature

10.20.95
Date

4026
License number

Seal:

COMMONWEALTH OF MASSACHUSETTS
TODD S. ALVING
No. 4026
REGISTERED LICENSED SITE PROFESSIONAL

Bureau of Waste Prevention

Material Shipping Record & Log

L-0662-
Tracking Number SA 43 H-I

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

H Certification of Generator

"I certify under penalties of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information contained herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information."

James C Chambers
Signature

1/24/96
Date

Name (print)

I Acknowledgment of Receipt by Receiving Facility

U.S. Army - Fort Devens - Bldg 202
Receiving Facility

James C. Chambers
Representative (print)

BRAC Environmental Officer
Title

James C Chambers 1/24/96
Signature Date

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention

2-0662 - SA43HI

Tracking Number Queenstown Rd

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

ote:
lake additional
opies of this
age as neces-
ary.

J Load Information

LOAD #: 495
Signature of transporter
B202 Soil Storage Area (cell A)
Receiving facility
10.27.95
Date received
1209
Time received
10.27.95
Date of shipment
Time of shipment
MA 22685
Truck/Tractor registration
MA 47499
Trailer registration
82,240 lbs / 41.12 tons
Load size (cubic yards/tons)

LOAD #: 497
Signature of transporter
B 202 Soil Storage Area (Cell A)
Receiving facility
10.27.95
Date received
1215
Time received
10. 27-95
Date of shipment
Time of shipment
N.H. 42552 AP
Truck/Tractor registration
N.H 7208 JT
Trailer registration
85,960 lbs / 42.98 tons
Load size (cubic yards/tons)

LOAD #: 499
Signature of transporter
B202 Soil Storage Area (cell A)
Receiving facility
10.27.95
Date received
1251
Time received
10.27.95
Date of shipment
Time of shipment
MA 22685
Truck/Tractor registration
MA 47499
Trailer registration
76420 lbs / 38.21 tons
Load size (cubic yards/tons)

LOAD #: 500
Signature of transporter
B202 Soil Storage Area (cell A)
Receiving facility
10.27.95
Date received
1307
Time received
10.27.95
Date of shipment
Time of shipment
MA 32588
Truck/Tractor registration
MA 22020
Trailer registration
42,250 lbs / 21.13
Load size (cubic yards/tons)

K Log Sheet Volume Information

286,820 lbs / 143.44 tons
Total volume this page (cubic yards/tons)

Page 1 of 1

~~286,820 lbs~~
Total carried forward (cubic yards/tons)
286,280 lbs / 143.44 tons
Total carried forward and this page (cubic yards/tons)

Appendix E
Chemical Quality Assurance Report

RECORD OF TRANSMITTAL

CENED-ED-GL 5 April 1996

FOR Project Engineer, Mr. Mark Applebee
U.S. Army Corps of Engineer,
New England Division
424 Trapelo Rd.
Waltham, MA 02254-9149

SUBJECT: Fort Devens - Queen Town, Chemical Quality Assurance Report (CQAR)

1. References:

a. Project No. E0251

b. Contractor Data Report, Received January 19, 1996.

c. Memorandum, CEMRD-ED-GC, 16 Aug 1989, Subject: Minimum Chemistry Data Reporting Requirements for DERP and Superfund HTW Projects.

2. Three QA samples were analyzed, resulting in a total of 160 target analyte determinations. Results from analysis of QA samples were compared with results from analysis of the corresponding primary samples (ref 1b). Results of the comparison are as follows:

a. The contractor's laboratory was American Environmental Network, Inc., Columbia, MD.

b. Results from the primary and QA samples agreed overall in 160 (100%) of the comparisons.

c. Results from the primary and QA samples agreed quantitatively in 12 out of 12 (100%) of the comparisons.

d. There were 0 (0%) major discrepancies between results from the primary and QA laboratory samples.

e. There were 0 (0%) minor discrepancies between results from the primary and QA laboratory samples.

3. QA analyses were performed at the NED Environmental Laboratory. QA analyses were also performed at E3I, Somerville, MA; GTEL, Milford, NH.

4. The CENED-ED-GL POC is Gary S. Rogowski, 508-928-4238.

Encl

CF (w/encl):
CEMRO-HX-C Thomas Georgian

QA Findings

(Ft. Devens Q-Town)

1. QA sample shipping and chain-of-custody deficiencies.

Three shipments of QA samples were received on July 7, August 1, and September 19, 1995. Proper sample handling protocols were mostly followed with the following exception: 8/1/96; no custody seals were present on the outside of the cooler, 9/19/96; the VOA vials had a small headspace. The chain-of-custody documents and cooler receipt forms are appended to this report for reference. All shipment information was faxed to Mr. Mark Applebee within 24 hours of receipt. The contractor never analyzed the corresponding sample to QA 31695, thus no data comparison was generated. The QA data is appended to this report for reference.

2. Data comparison for VOA.

There were 30 determinations. In 2 of the determinations VOC's were detected by the QA lab or contractor's lab. There was an overall agreement of 29 (97%) and 1 (50%) quantitative agreement. Disagreement was due to 1 (3%) minor discrepancy between the QA and Contractor's laboratory. No major discrepancies were noted. Post analysis pH values were not reported by either the QA or contractor's laboratory.

3. Data comparison for TCLP BNA.

There were 12 determinations. In 0 of these determinations BNA's were detected by the QA lab or contractor's laboratory. There was 100% agreement. There were no major or minor discrepancies.

4. Data comparison for TCLP Metals.

There were 8 determinations. In 3 of these determinations metals were detected by the QA lab or contractor's laboratory. There was 100% agreement. No major or minor discrepancies were noted.

5. Data comparison for TCLP Pesticides.

There were 7 determinations. In 0 of these determinations pesticides were detected by the QA lab or contractor's laboratory. There was 100% agreement. There were no major or minor discrepancies noted.

6. Data comparison for TCLP VOA.

There were 10 determinations. VOA's were not detected by either the QA lab or contractor's laboratory. There was 100% agreement. No major or minor discrepancies were noted.

Appendix F
Site Photographs

QSFO Excavation

Continuing QSFO Excavation

Backfilling of QSFO Excavation

Site Restoration at QSFO

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METALS DATA ANALYSIS

SPIKED SAMPLE RECOVERY

CLIENT: OHM Corporation DATE: 25-Sep-95

AENI ID #: 9509197-008(Hg)/9509192(ICP)MSD

SAMPLE ID #: EX1301DUP/AENI UNITS: mg/Kg DRY WEIGHT

ANALYTE	SAMPLE RESULT	SPIKED RESULTS	SPIKE ADDED	%RECOVERY
ARSENIC	6.4	17	10	105
BARIUM	2500	2520	210	NA
CADMIUM	1.2	6.5	5.2	102
CHROMIUM	72	125	21	254 OC
LEAD	5940	5560	52	NA
MERCURY	< 0.1	1.3	1	121
SELENIUM	< 0.52	8.8	10	84
SILVER	< 1	9.7	10	92

NA = NOT APPLICABLE BECAUSE SAMPLE CONCENTRATION > 4 TIMES SPIKE LEVEL

OC = OUT OF CONTROL LIMTS OF 75-125%

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

TCLP METALS

CLIENT: OHM Corporation DATE: 28-Sep-95

AENI SAMPLE #: 9509197-010

CLIENT SAMPLE #: EXQUEEN01 UNITS: ug/L in LEACHATE

ANALYTE	METHOD	REPORT LIMIT	SAMPLE RESULT
ARSENIC	6010	500	<500
BARIUM	6010	1,000	<1000
CADMIUM	6010	40	<40
CHROMIUM	6010	100	<100
LEAD	6010	100	<100
MERCURY	7470	1	<1
SELENIUM	6010	250	<250
SILVER	6010	500	<500

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

TCLP METALS

CLIENT: OHM Corporation DATE: 28-Sep-95

AENI SAMPLE #: 9509197-011

CLIENT SAMPLE #: EXQUEENDUP UNITS: ug/L in LEACHATE

ANALYTE	METHOD	REPORT LIMIT	SAMPLE RESULT
ARSENIC	6010	500	<500
BARIUM	6010	1,000	<1000
CADMIUM	6010	40	<40
CHROMIUM	6010	100	<100
LEAD	6010	100	<100
MERCURY	7470	1	<1
SELENIUM	6010	250	<250
SILVER	6010	500	<500

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METHOD BLANK AND %RECOVERY LCS

CLIENT: OHM Corporation

DATE: 28-Sep-95

UNITS: ug/L IN LEACHATE

ANALYTE	METHOD	METHOD BLANK	% RECOVERY LABORATORY CONTROL SAMPLE
ARSENIC	6010	<500	97
BARIUM	6010	<1000	103
CADMIUM	6010	<40	103
CHROMIUM	6010	<100	94
LEAD	6010	<100	105
MERCURY	7470	<1.0	92
SELENIUM	6010	<250	97
SILVER	6010	<500	95

AMERICAN ENVIRONMENTAL NETWORK OF MARYLAND

METALS DATA ANALYSIS

TCLP SPIKED SAMPLE RECOVERY

CLIENT: OHM Corporation DATE:28-Sep-95

AENI SAMPLE #: 9509197-005(ICP)9509197-010(Ag)/9509214-001(Hg)

CLIENT SAMPLE #: EX243201/EXQUEEN01/AENI UNITS: ug/L IN LEACHATE

ANALYTE	SAMPLE RESULT	SPIKED SAMPLE RESULT	SPIKE ADDED	%RECOVERY
ARSENIC	<500	2690	2500	108
BARIUM	<1000	5900	5000	118
CADMIUM	<40	538	500	108
CHROMIUM	<100	2320	2500	93
LEAD	154	5510	5000	107
MERCURY	<1	2.1	2	105
SELENIUM	<250	1370	1250	110
SILVER	<500	2310	2500	92

NA = NOT APPLICABLE BECAUSE SAMPLE CONCENTRATION > 4 TIMES SPIKE LEVEL

OC = OUT OF CONTROL LIMITS 75-125%.

AMERICAN ENVIRONMENTAL NETWORK, INC.
9151 Rumsey Road Suite 150, Columbia, MD 21045-1992
(410) 730-8525 Fax (410) 997-2586

Report Number: 9509197
Report To: OHM Corporation
Project: Fort Devens #16208
Date: September 29, 1995
Analysis: General Chemistry Parameters

Client ID	AENI ID	Date Sampled	Date Received
EXQUEEN01	9509197-001	09/15/95	09/16/95
EXQUEENDUP	9509197-003	09/15/95	09/16/95
EX243201	9509197-005	09/15/95	09/16/95
EX1301	9509197-006	09/15/95	09/16/95
EX1301DUP	9509197-008	09/15/95	09/16/95

Five soil samples were received and analyzed for General Chemistry Parameters.

The samples were extracted for Total Petroleum Hydrocarbons on 09/20/95 and analyzed on 09/29/95.

All quality control met standard laboratory criteria.

This report consists of tabulated sample results.

Report Released By: Rhonda Green-Barron

Rhonda Green-Barron
General Chemistry Laboratory Manager

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(410) 730-8525 Fax (410) 997-2586

Report Number: 9509197
Report To: OHM Corporation
Project: Ft. Devens #16208
Date: September 29, 1995
Sample ID: EXQUEEN01, dated 09/15/95

Parameter	Method	Result	Date Analyzed
Corrosivity (as pH)	SW846 9045	7.8	09/25/95
Flashpoint, °F	SW846 1010	>203	09/25/95
Reactive Cyanide, mg/Kg	(1)	<2	09/25/95
Reactive Sulfide, mg/Kg	(2)	<40	09/25/95

(1) SW846 Chapter 7.3.3
(2) SW846 Chapter 7.3.4

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Report To: OHM Corporation
Project: Ft. Devens #16208
Date: September 29, 1995
Sample ID: EXQUEENDUP, dated 09/15/95

Parameter	Method	Result	Date Analyzed
Corrosivity (as pH)	SW846 9045	7.7	09/25/95
Flashpoint, °F	SW846 1010	>203	09/25/95
Reactive Cyanide, mg/Kg	(1)	<2	09/25/95
Reactive Sulfide, mg/Kg	(2)	<40	09/25/95

(1) SW846 Chapter 7.3.3
(2) SW846 Chapter 7.3.4

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Report Number: 9509197
Report To: OHM Corporation
Project: Ft. Devens #16208
Date: September 29, 1995
Sample ID: Method Blank

Parameter	Method	Result	Date Analyzed
Reactive Cyanide, mg/L	(1)	<0.02	09/25/95
Reactive Sulfide, mg/L	(2)	<1	09/25/95
Total Petroleum Hydrocarbons, mg/Kg (3)	EPA 418.1M	<16	09/29/95

(1) SW846 Chapter 7.3.3
SW846 Chapter 7.3.4
Total Petroleum Hydrocarbon results reported as mg/Kg on a dry weight basis.

Service ... rp.

CHAIN-OF-CUS ...DY RECORD

Form 001 ...
Fi... echnical Service ...
Rev. 08/8...

9509197

158326

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME	PROJECT LOCATION
Ft. Devens	Ayer, MA

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
6208	Mike Quinlan	(508) 772-2019

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR
USACE	Kevin Mack

SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)								REMARKS
							Full TCLP	RCRA chem	RCRA metals	PCB	PAH	TPH	VOA		
EXQUEEN01	9-15-95 ~~1210~~ NB	1210	X		Brown Sandy soil w/ heavy cobble	1X1L 3X802	✓	✓	✓	✓	✓				TCLP -001 / -010
EXQUEEN02	9-15-95	1203		X	Brown Sandy Soil w heavy cobble	2X40ml VOA						✓			-002
EXQUEENDUP	9-15-95	1210	X		Brown Sandy soil w heavy cobble	1X1L 3X802	✓	✓	—	✓	—				-003 / -011
EXQUEENDUP	9-15-95	1203		X	Brown Sandy Soil w heavy cobble	2X40ml VOA						✓			-004

ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-4 Matthew Jones	Fed Ex Airbill 275 1512 751	9-15-95	1530
2			9-16-95	1032
3				
4				

REMARKS
- 4 °C
- 5 day TAT
- preserved 4 °C

cooler recd @ lab Sat 9/16

SAMPLER'S SIGNATURE
Matthew Jones