



CLOSURE REPORT BUILDING 3657 FUEL OIL SPILL SITE FORT DEVENS, MASSACHUSETTS

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

June 18, 1996

SVS 96061 OHMC

TABLE OF CONTENTS

Title

Page No.

Section

		-
EXE	UTIVE SUMMARY	1
1.0	NTRODUCTION	1
	1.1 Site History and Background 1-	1
	1.2 Site Conditions	1
	1.3 Previous Investigation Activities	1
2.0	ETROLEUM-CONTAMINATED SOIL REMOVAL 2-	1
	2.1 Site Preparation Activities 2-	1
	2.2 Excavation and Soil Screening Activities	1
	2.3 Confirmation Sample Results	2
	2.4 Backfilling and Site Restoration	2
	2.5 Waste Characterization & Disposal	2
	2.6 Quality Assurance/Quality Control	.2
	2.6.1 Sample Collection Quality Control 2-	2
	2.6.2 Laboratory Quality Control	1
	2.0.2 Laboratory Quality Control	4
3.0	ONCLUSIONS	1

LIST OF TABLES

Table	Title	Page No.
2-1	Soil Sample Screening Results	2-1

LIST OF FIGURES

Figures	Title	Page No.
1-1	Site Location Map	1-2
1-2	Site Plan	1-3
2-1	Confirmation Soil Sample Location Map	2-3

i

in Iga

LIST OF ACRONYMS AND ABBREVIATIONS

CY	Cubic Yards
ЕМО	Environmental Management Office
IR	Infrared Spectrometer
LRA	Limited Removal Action
МСР	Massachusetts Contingency Plan
MSR	Material Shipping Record
NED	US Army Corps of Engineers New England Division
РАН	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
ТРН	Total Petroleum Hydrocarbons

USACE United States Army Corps of Engineers

EXECUTIVE SUMMARY

The Fort Devens Environmental Management Office (EMO) requested that the New England Division (NED) of the Army Corps of Engineers (USACE) remove a small oil spill located in the area of Building 3657. The removal of this spill was to be conducted as part of normal operation and maintenance activities. In response to the EMO's request, the NED contracted OHM Remediation Services Corporation (OHM) to conduct a Limited Removal Action (LRA), in accordance with the Massachusetts Continency Plan (MCP), to remove the oil-stained soil.

Building 3657 is located off of Queenstown Street, near the installation golf course, on the southern portion of the Main Post. A small spill area was discovered adjacent to Building 3657. The stained soil was attributed to a recent spill of fuel or lubricating oil, possibly from one of the golf course maintenance vehicles. OHM removed 2.42 tons (approximately 1.61 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 soil storage facility located adjacent to Building 202. 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

The Fort Devens Environmental Management Office (EMO) requested that the New England Division (NED) of the Army Corps of Engineers (USACE) remove oil-stained soil from a small area located adjacent to Building 3657. This report contains a summary of the Limited Removal Action (LRA) activities conducted in accordance with the Massachusetts Contingency Plan (MCP) at the Building 3657 site.

1.1 Site History and Background

Building 3657 is located off of Queenstown Street, near the installation golf course on the southern portion of the Main Post (Figure 1-1). An unidentified road, running north-south adjacent to the site, was historically used for golf course maintenance vehicles and golf carts. A small oil spill was discovered adjacent to Building 3657 (Figure 1-2). The stained soil was believed to be the result of a recent fuel or oil lubricating spill, possibly from one of the golf course maintenance vehicles.

1.2 Site Conditions

The soil below the spill site was primarily comprised of rocky sands. There are no bodies of water in the immediate vicinity of Building 3657. Groundwater was not encountered during the soil removal activities.

1.3 Previous Investigation Activities

The area near Building 3657 was previously investigated by Arthur D. Little in association with a transformer leak. PCB-contaminated soil was found to the southeast of the transformer pole and this PCB-contaminated area was referred to as AREE 66C. However, no previous investigations of the Building 3657 oil spill area were conducted.





SECTION 2.0 <u>PETROLEUM-CONTAMINATED SOIL REMOVAL</u>

OHM was contracted by the USACE NED to conduct a LRA to remove petroleum-contaminated soil from a recent oil spill at Building 3657, 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 established using orange fencing, and a staging cell was constructed for temporary storage of contaminated soils. Sand berms were constructed at the perimeter of the staging cell and the cell was double lined with polyethylene sheeting.

2.2 Excavation and Soil Screening Activities

Excavation activities to remove the petroleum-contaminated soil began on December 16, 1994. After removing the visibly contaminated soil, five screening samples were collected from the bottom and sidewalls of the excavation area. Soil samples were screened by 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 9 to 435 mg/kg. Confirmation sampling was initiated after screening results indicated that the action level of 500 mg/kg had been attained. Confirmation sampling procedures and analytical results are discussed in the following Section.

Sample ID	Sample Location	Sample Date	Sample Depth (ft)	TPH Result (mg/kg)
SBAR66COW1	East sidewall	16-Dec-94	0.7	435
SBAR66COW2	North sidewall	16-Dec-94	0.3	118
SBAR66COW3	West sidewall	16-Dec-94	0.7	9 J
SBAR66COW4	South sidewall	16-Dec-94	0.3	149
SBAR66COB1	Bottom center	16-Dec-94	2.1	68

Table 2-1
Soil Sample Screening Results
Closure Report - Building 3657 oil spill site

NOTES: TPH = total petroleum hydrocarbons by infrared spectrometry mg/kg = milligram per kilogram J = Qualifier indicating estimated concentration below the practical quantitation limit (PQL)

NEED TO FIX SAMPLE LOCATION DESCRIPTIONS



2.3 Confirmation Sample Results

A six-point composite confirmation sample was collected on December 20, 1994 from the bottom and sidewalls of the excavation. This sample was sent to ASC laboratory located in Findlay, Ohio for TPH analysis by EPA Method 418.1. The confirmation sample locations are shown in Figure 2-1. TPH was detected at a concentration of 34.9 mg/kg. The ASC analytical report is provided in Appendix B.

2.4 Backfilling and Site Restoration

The excavation was backfilled with fill material provided by Lagasse Trucking, Inc. A composite sample was collected from the off-site source of fill and analyzed on site for TPH, pesticides, and PCB, prior to using as backfill. None of these constituents were detected in the composite sample.

2.5 Waste Characterization & Disposal

A six-point composite sample was collected on January 4, 1995 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), polychlorinated biphenyls (PCBs), RCRA metals, PAHs, and TPH. 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. TPH was detected at a concentration of 1,460 mg/kg. The characterization sample data indicated that the soils could be reused as cover material at lined landfills in the State of Massachusetts.

The 2.42 tons (approximately 1.61 cubic yards (cy)) of soil removed from the Building 3657 spill site have been transferred to a temporary soil storage facility located adjacent to Building 202 in the northeast portion of the Main Post. 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 maintained by changing gloves between each sample location. 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 Building 3657 site samples were within acceptable QC limits. Refer to the analytical reports for more specific QC information.

SECTION 3.0 CONCLUSIONS

Building 3657 is located off of Queenstown Street, near the installation golf course, on the southern portion of the Main Post. A recent fuel or lubricating oil spill was discovered adjacent to the building. The NED contracted OHM to conduct a Limited Removal Action (LRA), in accordance with the MCP, to remove the petroleum-contaminated soil from the former spill area. OHM removed 2.42 tons (approximately 1.61 cy) of soil from the Building 3657 spill site based on TPH screening performed on-site. Photographs of the removal are provided in Appendix E. Confirmation soil samples were collected and analyzed for TPH to document attainment of the 500 mg/kg action level. 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. 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 Lo	g
Fort Devens - Project #162	08

Date: 12.16.94

AREE Site Name: 66C



Weather: C	Joue	y ₁ w	iØ,	S
Sample		·Comp/	Sample	
ID Number	Time	Grab	Depth (ft)	R
SBAR66C-		C	i d	
OWI	1000		1 8	1
062	1206		3"	
_				

Samplers:

Sample		Comp/	Sample	Coord	inates	Sample	# of
ID Number	Time	Grab	Depth (ft)	Ref. PtG	Ref. Pt.//	Description	Bottles
SBARGOC- OWI	1003	C-	8.1	13'4"	4 10"	had brow soil	
062	1206		3"	17' ? "	3'7"	Coulde, bronz Sand	
Ow7	1009	5	8 "	21'7"	11'5"	jilly ht tan seil	
Owy	1000		3"	₽'z*	7'1"	Blacka mad brown Scillblatting	
OB1.	0956	\downarrow	2'1"	17'1"	74"	Gulain draye sail -	
						,	
	-						
		,					
Ref. Pt_G	:_B(dy T	5365	7 1	Sof 1	it come	
Ref. Pt. 4	: <u> </u>	e2,	the	.10-B			19
Map Attach	ed: K	es	No			*	
Sample Typ	be: 📺 S	Screenii	ng C	onfirmatio	on Dis	posal/Characterization	
Laboratory	Destin	ation:	Onsite L	ab As	SC - coc #	usace- coc #	
	Duplic	ate Tak	en: Yes	s No	Ri	insate Taken: Yes No	
	On-s	site Lab	oratory C	hain of C	ustody/Re	equest for Analysis	
Requested	Testin	g: TF	РН В	TEX	Chlorda	ne PCBs Other	A
Relinquishe	ed by(d	d/tt):	Sh	Blen	I	Received by (dd/tt): M. Lund	1 1020
Relinquishe	ed by(d	d/tt):				/ Received by (dd/tt):	
1.1	N Beach		art 4.	a - 345	171 1		1. 1. 1. 1.



Prepared by: ______

·, ¹ AREE66C Page of Site: Ft. Devens, MA Location No.: Date: /2 ./6 .94 GC Analyst: **TPH Analys** Method 8080 Sample ID Concentration Action 57 (mg/kg) Level Aroclor 1260 2 ppm .. chlordane 1 ppm Percent Recovery 2,4,5,6-1cmx decachlorobiphenyl . Method 418.1 Sample ID SBAR66C-Concentration Action 常 Olly OW Chiz. CBI 0403 (mg/kg) Level TRPH 118 95 149 500 ppm 435 68 500 ppm . 500 ppm 2 -

Soil Sample Colle	ection Log
Fort Devens - Proj	ect #16208

Date: 12, 20.94 Weather: Sunny, Coid

Site Name:

AREE66C

Pg. 1 of Z

Samplers:

Sample ID Number	Time	Comp/ Grab	Sample Depth (ft)	Coord Ref. Pt	linates Ref. Pt	Sample Description	# of Bottles
SBARGED	1304	C		Ge a	toded	Orzącon Szudysoil lots of small convers	1×402
				-			
					R.		
	1						
	-				1		
		1.00				4.	
Ref. Pt <u>6</u>	:_ <u>F</u>	vt R	+ of	Bldg	<u>t</u> 3	657	
Ref. Pt. <u>H</u>	: <u> </u>	elep	hove p	ole			
Map Attach	ied:	res	No			*	
Sample Ty	pe:	Screeni	ng (C	Confirmatio	on Dis	posal/Characterization	
Laboratory	Destin	ation:	Onsite L	ab A	SC - coc ;	107766 USACE- coc #	۰- ۱
	Dupli	cate Tak	en: Yes	s No	R	insate Taken: Yes No	
fi 	On-	site Lab	oratory C	hain of C	ustody/R	equest for Analysis	:
Requested	Testin	ig: (TF	рн) е	TEX	Chlorda	ne PCBs Other	
Relinquish	ed by(a	id/tt):	Dru	Blen	1330	Received by (dd/tt): DUBI	12, 20, 1 20 13 30
Relinquish	ed by(a	d/tt):				Received by (dd/tt):	
					: 1		



Sample Collection Log Supplemental Form **Composite Sample Data** Fort Devens - Project #16208 Pg. Cof 3 Date: 12-20-94 Site: AVREEGGC Sampler: MRR Blag 73657 Telepine pole Depti Composite Discrete Coordinates Ref. Pt.G Ref. Pt. H Sample Description Sample ID Sample ID 4134 12'9" med Brendin Same SBA1266 '3' Lits oc Grebble. CD-WI= <u>(</u> < 8 AR 160 517" Plice Process Ana 14" 1717" Lots eF Cabble -W25 11'6 " Oringe Silt -1141 12 1.016 -63 = 1'1" 6184 17 ' Orange Sand Lots of Gabble --WY = 5'11" Crayerh sal lotsopsad 1515" 2" -BI91511 and sad north yell, 1914" 21 -B2= ling h: Ka

(ic mts) up i ratisoumo

1

Soil Sample Collection Log	
Fort Devens - Project #16208	

Date:	4.9 Parti	т У ~у, Сс	۵ (حا	Site Name Samplers:	: A(2EE	66C. 2tro-	Pile	Pg.l_of_	2
Sample ID Number	Time	Comp/ Grab	Sample Depth (ff)	Coordin Ref. Pt F	nates Ref. Pt		Sampl	e	# of Bottles	7
EXARGGCIC	11:3	C	12-			6 p+ AREI	Longoe ELLC:	site tro	1 IXIL	
						med some	60000	e sundy su.		1
		*						•	-	1
	(4)							•		1
		-					.*			1
										1
							-			-
Ref. Pt Ref. Pt Map Attach	ed: Y	N N jes	A A No			1 			*	_
Sample Typ Laboratory	Destin Destin	Screenii ation: cate Tak	ng C Onsite L ten: Yes	confirmation ab AS	n Dis IC - coc i R	posal/Cha <u>#_107</u> insate Tal	774 ken: Ye	USACE- coo	;#	-
On-site Laboratory Chain of Custody/Request for Analysis Requested Testing: TPH BTEX Chlordane PCBs Other Full TCLP 1156 Relinquished by(dd/tt): UBlen 1.4.95 Received by (dd/tt): SUBLEN 1.4.95										
Relinquishe	ed by(d	ld/tt):				Received	by (dd/tt):			1

the address of the second s



Appendix B ASC Analytical Report - Confirmation Soil Sample Results



Analytical Services Corp.

ANALYTICAL REPORT

Client: OHM Remediation Services Corporation -Eastern Region (Hopkinton, MA)

Attn: William Snow Ron Kenyon Mike Quinlan

Project: 16208C - USACE; Fort Devens, MA

Sample Type(s): Solid

Analysis Performed: Conventional and Organic

Date Sample Received:December 21, 1994Date Order Received:December 21, 1994

Joblink(s): 617310

This report is "<u>PROPRIETARY AND CONFIDENTIAL</u>" and delivered to, and intended for the exclusive use of the above named client only. Analytical Services Corporation assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

Reviewed and	1	LI A	\bigcirc		1	1005
Approved by:		Ancelette	Lberz	Date:	January 3.	7995
	Thom	as E. Gran, Ph.D., Vice I	President			

The following items relate to the samples and analytical data contained in this report.

- o All sample results are reported on a "dry weight" basis.
- o Note any and all comments at the bottom of the tables in Appendix B and/or Appendix C.
- ASC will retain samples for a maximum of thirty (30) days after completion of the analysis, samples will be held for a longer period of time, if appropriate arrangements are made in advance. A nominal disposal charge of \$5.00/ sample will be imposed for unreturned samples.

APPENDIX A

DATA SUMMARY REPORT

NOTE: The Tentatively Identified Volatile (GC/MS) Screen result(s), if applicable, is included in Appendix B.

DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

	Sample Poi ASC Sample N Sample Facility	Int ID: Number: Date: Code:	SBAR66CD JN6453 941220 016208C					
Parameters		Units						
Conventional Data	(CV10)							
Solids, Total		8	90.9					
fotal Petroleum H	ydrocarbon Ana	lysis,	IR (IR00)				1	
Petroleum Hydroc	arbons (IR)	mg/kg	34.9	N. 0				

DATE: 12/29/94

APPENDIX B

•

•2

QUANTITATIVE RESULTS

TOTAL PETROLEUM HYDROCARBON ANALYSIS, IR (IROO)

Company	Name			Facility	Sample Point	ASC Sample No.
OHM REMA	DIATION	SERVICES	CORPORATION	016208C	SBAR66CD	JN6453

C	ompounds		Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Petroleum H	ydrocarbons	(IR)	34.9	7.14	ND	Q2T41912
	<u>N</u>					
-		0	141			
				-84 -		
Ì						
	÷.					
1						
				08		
,						
1						
1						
1						
I						
1						

APPENDIX C

10 C 10

QUALITY ASSURANCE DATA

SUMMARY OF ANALYTICAL METHODOLOGY

ASC Joblink # 617310

R	EFERENC	E	TITLE
160.3		CAWW	Residue, Total, Gravimetric, Dried at 103-105 C
418.1	•	MCAWW	Petroleum Hydrocarbons, Total Recoverable

METHODOLOGY REFERENCES

ASTM American Society for Testing and Materials, 1985 edition.

- **CAWW** Methods for Chemical Analysis of Water and Wastes, April 1979 and Updated #1 March 1983.
- CLP USEPA Contract Laboratory Program, Document #OLMO1.0, updates December 1990 #OLMO1.1 and February 1991 #OLMO1.1.1.
- EPA-500 USEPA Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039 December 1988.
- EPA-600 USEPA Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057 July 1982.
- **NIOSH** National Institute for Occupational Safety and Health, 3rd edition, 1984.
- SMEWW Standard Methods for the Examination of Water and Wastewater, 17th edition, 1989.
- **STOA** Spot Tests In Organic Analysis, 7th edition, 1966.
- **SW-846** Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd edition, September 1986 and Update #1 July 1992.
- (1) This method was modified to incorporate the use of Boron Trifluoride (BF3) as the derivatizing reagent according to Method 6640 in *SMEWW*, 17th edition, 1989.
- Title 22Waste Extraction Test, Title 22, Section 66261.126 Appendix 2 of the
California Administrative Code, May 1991.

ASC Certifications

State	Agency	Certification #			
Alabama	ADEM	40830			
California	CADOH	1178			
Colorado	СОДОН	OH113			
Delaware	DEHSS	OH113			
Kansas	KSDHE	E-202 & E-1173			
Louisiana	LADOHH	92-10			
Maryland	MDDHMH	210			
Massachusetts	MADEP	M-OH113			
New Jersey	NJDEPE	74603			
New York	NYDOH	10712			
North Carolina	NCDEM	392			
Ohio	OHEPA	OH113			
Oklahoma	OKDEQ	9216			
Pennsylvania	PADER	68-450			
South Carolina	SCDEHNR	92002			
Tennessee	TNDOH/TNDEC	2978			
Virginia	VADGS	00011			
Washington	WADOE	C154			
Wisconsin	WIDNR	999037160			

Validated by:

o US Army Corps of Engineers

Chemical Analysis in Various Matrices

Approvals:

0	Chemical Waste Management	Waste Characterization Analysis
0	Envirosafe	Waste Characterization Analysis
0	USDA	Permit for Importing Soils
0	Florida DEP	Quality Assurance Plan #930034G
0	Naval Facilities Engineering Service Center	Chemical Analysis in Various Matrices

REPORT KEY

÷ ...

mg/kg	=	milligram per kilogram (ppm)
Mg/m ³	=	milligram per cubic meter
ug/kg	=	microgram per kilogram (ppb)
mg/L	=	milligram per liter (ppm)
ug/L	=	microgram per liter (ppb)
mg/W	=	milligram per wipe
ug/W	=	microgram per wipe
mg/SMP	=	milligram per sample
ug/SMP	=	microgram per sample (Tedlar Bag)
ug/smp	=	microgram per sample
um/cm	=	microMho per centimeter
pCi/l	=	picocurie per liter
gm/cc	=	grams per cubic centimeter
ppm	=	parts per million
ррb	=	parts per billion
ND	=	Not detected at or above stated detection limit
<	=	less than
>	=	greater than
%	Ħ	percent
BTU/lb	=	British Thermal Units per pound
Deg. C	=	Degrees Celsius
n/a	=	not applicable
Unk	=	unknown
std	=	result is relative to standard pH units
CV	=	Conventionals
IR	=	Infrared Spectrophotometric
GC	=	Gas Chromatograph Instrument
GC/MS	¥	Gas Chromatography/Mass Spectrometer Instrument
GRO	=	Gasoline Range Organics
DRO	=	Diesel Range Organics
PCB	=	Polychlorinated Biphenyls (PCBs)
EP TOX	=	Extraction Procedure Toxicity
TCLP	=	Toxicity Characteristic Leaching Procedure
RCRA	=	Resource Conservation and Recovery Act
SOW	=	Statement of Work

QUALITY ASSURANCE DATA

TOTAL PETROLEUM HYDROCARBON ANALYSIS, IR (IR00)

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number
Petroleum Hydrocarbons (IR)	ND	83	34.9	134	35	Q2T41912
		195	*			*
					- 1	
			÷			

APPENDIX D

CHAIN-OF-CUSTODY RECORD(S)



CHAIN-OF-CUSTODY RECORD

Form 0019 Field Technical Services Rev. 08/89

No. 107766

C	.H. MATERIAL	S COR	P. •	1	Ρ.0	D. BOX 551	• FINDLAY, OH 45839-0551		41	9-423	-3526				-
PROJECT NAME Ft Devens PROJECT LOCATION Ayon MA PROJECT TELEPHONE NO. 16208 Mike Quantan CLIENT'S BERRESENTATIVE CLIENT'S BERRESENTATIVE COLEMA (LSKE) PROJECT MANAGER/SUPERVISOR Bill Show							NUMBER	AN. (INE SEP COP	INALYSIS DESIRED NDICATE EPARATE ONTAINERS)						
ITEM NO	SAMPLE NUMBER	DATE	ТІМЕ	COMP	GRAB		SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)							REMARKS	
	SBAR 66C	94	° 1304	1		le point a	empersite - wellon	IX	452 J						
2						/		-							
3								_		*					
4								-							
5								-							
6								-							
7															
8								-						1	
9								-							
10								-							
			- i			FERS SHED BY	TRANSFERS ACCEPTED BY	DATE	TIME	REN	ARKS	P	res em	er P	blank included
	$\frac{1}{2}$	(Enly	> . 29	n 189	131 con 34/59/14	Onitogenser	4/21/4	189		•	3	? d	2	TAT
-	4									SAM			21	31	2a_
Appendix C ASC Analytical Report - Waste Characterization Soil Samples



ANALYTICAL DIVISION Laboratory Analysis Report

Client: OHM Remediation Services Corp. Eastern Region (Hopkinton, MA)

Attn: William Snow Ron Kenyon Mike Quinlan

Project: 16208C - USACE; Fort Devens, MA

Sample Type(s): Solid

Analysis Performed: Conventionals, Organics and RCRA TCLP Leachate Parameters

Date Sample Received: January 5, 1995

Date Order Received: January 5, 1995

Joblink(s): 617360

This report is "<u>PROPRIETARY AND CONFIDENTIAL</u>" and delivered to, and intended for the exclusive use of the above named client only. OHM Remediation Services Corp., Analytical Division, assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

Reviewed and Approved by:

Thomas E. Gran. Ph.D., Vice Presidebt

Date: January 19, 1995

The following items relate to the samples and analytical data contained in this report.

- o All solid sample results for Organic constituents are reported on a "dry weight" basis.
- o Note any and all comments at the bottom of the tables in Appendix B and/or Appendix C.
- Samples will be retained for a maximum of thirty (30) days after completion of the analysis, samples will be held for a longer period of time, if appropriate arrangements are made in advance. A nominal disposal charge of \$5.00/ sample will be imposed for unreturned samples.

APPENDIX A

DATA SUMMARY REPORT

DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

	Sample Point ID: ASC Sample Number: Sample Date: Facility Code:	BXAR66C1C JN6926 950103 016208C				
Parameters	Units					2
Conventional Data	(CV10)					
Flash Point, Seta Reactive Cyanide Reactive Sulfide Solids, Total pH (Electrode)	Flash Deg C mg/kg mg/kg % std	>93 <10.0 <20.0 90.0 7.00			×	
Priority Pollutant	PCB Analysis, GC,	(GS13)				
Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248	mg/kg mg/kg mg/kg mg/kg mg/kg	<.182 <.182 <.182 <.182 <.182 <.182		, 8		
Aroclor 1254 Aroclor 1260	mg/kg mg/kg	<.182 <.182				
CRA TCLP Leachate	Herbicide Analysis	GC, (GS52)				
2,4-D 2,4,5-TP (Silvex)	mg/L mg/L	<.250 <.250				
CRA TCLP Leachate	Pesticide Analysis	GC, (GS54)				
Chlordane Endrin Heptachlor Heptachlor epoxide Lindane	mg/L mg/L mg/L mg/L mg/L	<.020 <.002 <.002 <.002 <.002 <.002				
Methoxychlor Toxaphene	mg/L mg/L	<.002 <.040				
otal Petroleum Hyd	irocarbon Analysis,	IR (IROO)				
Petroleum Hydrocar	rbons (IR) mg/kg	1460				

DATE: 01/17/95

PAGE: 1

DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

Sample Po:	int ID:	EXAR66C1C
ASC Sample I	Number:	JN6926
Sample	e Date:	950103
Facility	y Code:	016208C
Parameters	Units	
RCRA TCLP Leachate Metals Analy	ysis, (M	(E52)
Arsenic	mg/L	<.050
Barium	mg/L	.117
Cadmium	mg/L	<.003
Chromium	mg/L	<.010
Lead	mg/L	<.050
Mercury	mg/L	<.001
Selenium	mg/L	<.050
Silver	mg/L	<.010
Copper	mg/L	.010
Zinc	mg/L	<.100
RCRA TCLP Leachate Base/Neutral	L/ACId A	nalysis, MS, (MS52)
2,4-Dinitrotoluene	mg/L	<.100
Hexachlorobenzene	mg/L	<.100
Hexachloroethane	mg/L	<.100
Hexachlorobutadiene	mq/L	<.100
2-Methylphenol	mg/L	<.100
4-Methylphenol	mg/L	<.100
Nitrobenzene	mg/L	<.100
Pentachlorophenol	mg/L	<.100
Pvridine	mg/L	<.100
2,4,5-Trichlorophenol	mg/L	<.100
2,4,6-Trichlorophenol	mg/L	<.100
CRA TCLP Leachate (ZHE) Volati	le Anal	ysis, MS, (MV50)
Benzene	mg/L	<.125
Carbon tetrachloride	mg/L	<.125
Chlorobenzene	mg/L	<.125
Chloroform	mg/L	<.125
1,4-Dichlorobenzene	mg/L	<.125
1 2-Dichloroethane	mg/L	<.125
1.1-Dichloroethylene	mg/L	<.125
Methyl ethyl ketone	mg/L	<.125
Tetrachloroethylene	mg/L	<.125
Trichloroethylene	mg/L	<.125
	_ · ·	

DATE: 01/17/95

PAGE: 2

DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

	Sample Point ID: ASC Sample Number: Sample Date: Facility Code:	EXAR66C1C JN6926 950103 016208C					
Parameters	Units						
RCRA TCLP Leachate	(ZHE) Volatile Anal	ysis, MS, (MV5	0)				
Vinyl chloride	mg/L	<.125					
							ž.
				- X.:			
							5
							×.
					3		

DATE: 01/17/95

PAGE: 3

APPENDIX B

QUANTITATIVE RESULTS

CONVENTIONAL DATA (CV10)

Company Name	Facility	Sample Point	ASC Sample No.
OHM REMEDIATION SERVICES CORPORATION	016208C	EXAR66C1C	JN6926

Compounds	Sample Results	Detection Limits	Blank Results	Batch Number
Compounds Reactive Cyanide mg/} Reactive Sulfide mg/} Solids, Total * pH (Electrode) std Flash Point, Seta Flash Deg	g ND g ND g ND g 90.0 7.00 C >93	Detection Limits 10.0 20.0 .100 -	Blank Results ND - - - -	Batch Number Q2I4102 Q2I4103
		2		

.....

PRIORITY POLLUTANT PCB ANALYSIS, GC, (GS13)

Company Name		Facility	Sample Point	ASC Sample No.
OHM REMEDIATION SERVICE	5 CORPORATION	016208C	EXAR66C1C	JN6926

Compounds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Aroclor 1016 Aroclor 1221 Aroclor 1232 Aroclor 1242 Aroclor 1248	ND ND ND ND ND	.182 .182 .182 .182 .182 .182	ND ND ND ND	Q2P50008 Q2P50008 Q2P50008 Q2P50008 Q2P50008 Q2P50008
Aroclor 1254 Aroclor 1260	ND ND	.182 .182	ND ND	Q2P50008 Q2P50008

This sample was calculated on a dry weight basis.

. .

TOTAL PETROLEUM HYDROCARBON ANALYSIS, IR (IR00)

Company Name	Facility	Sample Point	ASC Sample No.
OHM REMEDIATION SERVICES CORPORATION	016208C	EXAR66C1C	JN6926

Compoun	ds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Petroleum Hydroca	rbons (IR)	1460	73.5	ND	Q2T50012
		×			2
					2
				E	
		~			1. I.
	2				2
					*

1 . .

RCRA TCLP LEACHATE HERBICIDE ANALYSIS, GC, (GS52)

Company Name	Facility	Sample Point	ASC Sample No.
OHM REMEDIATION SERVICES CORPORATION	016208C	EXAR66C1C	JN6926

Compounds	Sample Results mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
2,4-D 2,4,5-TP (Silvex)	ND ND	.250 .250	ND ND	Q7H50014 Q7H50014
-				
	~			
- -				
	4			

RCRA TCLP LEACHATE PESTICIDE ANALYSIS, GC, (GS54)

Company Name			Facility	Sample Point	ASC Sample No.
OHM REMEDIATION	SERVICES	CORPORATION	016208C	EXAR66C1C	JN6926

Compounds	Sample Results mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
Chlordane Endrin Heptachlor Heptachlor epoxide Lindane	ND ND ND ND ND	.020 .002 .002 .002 .002	ND ND ND ND ND	Q7P50015 Q7P50015 Q7P50015 Q7P50015 Q7P50015
Methoxychlor Toxaphene	ND ND	.002 .040	ND ND	Q7P50015 Q7P50015
			2	25

RCRA TCLP LEACHATE METALS ANALYSIS, (ME52)

Company Name	Facility	Sample Point	ASC Sample No.	
OHM REMEDIATION SERVICES CORPORA	TION 016208C	EXAR66C1C	JN6926	

Compounds	Sample Results mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
Arsenic Barium Cadmium Chromium Lead	ND .117 ND ND ND	.050 .050 .003 .010 .050	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838
Mercury Selenium Silver Copper Zinc	ND ND ND .010 ND	.001 .050 .010 .010 .100	22 23 29 29 29 29 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	Q7G5832 Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838
*	-			
				5
				-
	÷			

RCRA TCLP LEACHATE BASE/NEUTRAL/ACID ANALYSIS, MS, (MS52)

Company Name	Facility	Sample Point	ASC Sample No.	
OHM REMEDIATION SERVICES CORPORATION	016208C	EXAR66C1C	JN6926	

Compounds	Sample Results mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Hexachlorobutadiene 2-Methylphenol	ND ND ND ND ND	.100 .100 .100 .100 .100	3338 8888	Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013
4-Methylphenol Nitrobenzene Pentachlorophenol Pyridine 2,4,5-Trichlorophenol	ND ND ND ND ND	.100 .100 .100 .100 .100	원 20 21 21 21 21 21 21	Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013
2,4,6-Trichlorophenol	ND	.100	ND	Q7C50013
			(e)	
				5. a 0

3-Methyl- and 4-Methylphenol coelute and are reported as the total

RCRA TCLP LEACHATE (ZHE) VOLATILE ANALYSIS, MS, (MV50)

Company NameFacilitySample PointASC Sample No.OHM REMEDIATION SERVICES CORPORATION016208CEXAR66C1CJN6926

Compounds	Sample Results mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
Benzene Carbon tetrachloride Chlorobenzene Chloroform 1,4-Dichlorobenzene	ND ND ND ND ND	.125 .125 .125 .125 .125 .125	22 22 23 29 29 29 29	Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147
1,2-Dichloroethane 1,1-Dichloroethylene Methyl ethyl ketone Tetrachloroethylene Trichloroethylene	ND ND ND ND ND	.125 .125 .125 .125 .125 .125	ND ND ND ND ND	Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147
Vinyl chloride	D	.125	ND	Q7V4147
				2
	đ			

APPENDIX C

QUALITY ASSURANCE DATA

SUMMARY OF ANALYTICAL METHODOLOGY

14

 \mathbf{x}_{i}

ASC Joblink # 617360

REFERENC	E	TITLE
1020	SW-846	Flash Point, Setaflash
1311	SW-846	Toxicity Characteristic Leaching Procedure
160.3	CAWW	Residue, Total, Gravimetric, Dried at 103-105 C
418.1	MCAWW	Petroleum Hydrocarbons, Total Recoverable
6010	SW-846	Inductively Coupled Plasma Atomic Emmision Spectroscopy
7470	SW-846	Mercury in Liquid Waste (Manual Cold-Vapor Technique)
8080	SW-846	Organochlorine Pesticides and/or PCBs
8150	SW-846	Chlorinated Herbicides
8240	SW-846	GC/MS for Volatile Organics
8270	SW-846	GC/MS for Semivolatile Organics: Capillary Column Techniqu
CLP 1.7.1.1	CLP	pH, Electrode
SECTION 7.3.3.2	SW-846	Test Method to Determine HCN Released from Wastes
SECTION 7.3.4.2	SW-846	Test Method to Determine HS Released from Wastes

METHODOLOGY REFERENCES

ASTM American Society for Testing and Materials, 1985 edition.

- CAWW Methods for Chemical Analysis of Water and Wastes, April 1979 and Updated #1 March 1983.
- CLP USEPA Contract Laboratory Program, Document #OLMO1.0, updates December 1990 #OLMO1.1 and February 1991 #OLMO1.1.1.
- EPA-500 USEPA Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039 December 1988.
- EPA-600 USEPA Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057 July 1982.
- **NIOSH** National Institute for Occupational Safety and Health, 3rd edition, 1984.
- SMEWW Standard Methods for the Examination of Water and Wastewater, 17th edition, 1989.
- **STOA** Spot Tests In Organic Analysis, 7th edition, 1966.
- **SW-846** Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd edition, September 1986 and Update #1 July 1992.
- (1) This method was modified to incorporate the use of Boron Trifluoride (BF3) as the derivatizing reagent according to Method 6640 in *SMEWW*, 17th edition, 1989.
- Title 22 Waste Extraction Test, Title 22, Section 66261.126 Appendix 2 of the California Administrative Code, May 1991.

Laboratory Certifications

State	Agency	Certification #		
Alabama	ADEM	40830		
California	CADOH	1178		
Colorado	СОДОН	OH113		
Delaware	DEHSS	OH113		
Kansas	KSDHE	E-202 & E-1173		
Louisiana	LADOHH	92-10		
Maryland	MDDHMH	210		
Massachusetts	MADEP	M-OH113		
New Jersey	NJDEPE	74603		
New York	NYDOH	10712		
North Carolina	NCDEM	392		
Ohio	OHEPA	OH113		
Oklahoma	OKDEQ	9216		
Pennsylvania	PADER	68-450		
South Carolina	SCDEHNR	92002		
Tennessee	TNDOH/TNDEC	2978		
Virginia	VADGS	00011		
Washington	WADOE	C154		
Wisconsin	WIDNR	999037160		

Validated by:

	0	US Army	Corps of	f Engineers		
--	---	---------	----------	-------------	--	--

Chemical Analysis in Various Matrices

Approvals:

0	Chemical Waste Management	Waste Characterization Analysis
0	Envirosafe	Waste Characterization Analysis
0	USDA	Permit for Importing Soils
0	Florida DEP	Quality Assurance Plan #930034G
0	Naval Facilities Engineering Service Center	Chemical Analysis in Various Matrices

REPORT KEY

.

2.

mg/kg	=	milligram per kilogram (ppm)
Mg/m ³	Ŧ	milligram per cubic meter
ug/kg	=	microgram per kilogram (ppb)
mg/L	=	milligram per liter (ppm)
ug/L	=	microgram per liter (ppb)
mg/W	=	milligram per wipe
ug/W	3	microgram per wipe
mg/SMP	=	milligram per sample
ug/SMP	=	microgram per sample (Tedlar Bag)
ug/smp	=	microgram per sample
um/cm	=	microMho per centimeter
pCi/l	=	picocurie per liter
gm/cc	=	grams per cubic centimeter
ррт	8	parts per million
ppb	=	parts per billion
ND	=	Not detected at or above stated detection limit
<	=	less than
>	=	greater than
%	=	percent
BTU/lb	=	British Thermal Units per pound
Deg. C	=	Degrees Celsius
n/a	=	not applicable
Unk	N	unknown
std	=	result is relative to standard pH units
CV	=	Conventionals
IR	=	Infrared Spectrophotometric
GC	=	Gas Chromatograph Instrument
GC/MS	=	Gas Chromatography/Mass Spectrometer Instrument
GRO	=	Gasoline Range Organics
DRO	Ŧ	Diesel Range Organics
PCB	×	Polychlorinated Biphenyls (PCBs)
EP TOX	=	Extraction Procedure Toxicity
TCLP	=	Toxicity Characteristic Leaching Procedure
RCRA	=	Resource Conservation and Recovery Act
SOW	Ξ	Statement of Work

UUALITY ASSURANCE DATA

CONVENTIONAL DATA (CV10)

Compounds		Blank Results	Blank Spike Recov	Unspiked Sample Results	Matrix Spike Recov	Relative Percent Diff	Batch Number
Reactive Cyanide m Reactive Sulfide m	ng/kg ng/kg	ND ND	79 85	-	-	-	Q2I4102 Q2I4103
				-			
				ei V	×		

UUALITY ASSURANCE DATA

PRIORITY POLLUTANT PCB ANALYSIS, GC, (GS13)

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number		
Aroclor 1248	ND	104	ND	96	l	Q2P50008		
1					4			
		•						
				5 G A				
						~		
					÷.			
~								
	*							
					-			
3								

UDALITY ASSURANCE DATA

TOTAL PETROLEUM HYDROCARBON ANALYSIS, IR (IR00)

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number
Petroleum Hydrocarbons (IR)	ND	82	1460	-	5	Q2T50012
			8			
-						
	÷			÷		
0•°						
a.						

Matrix spike recoveries are not available due to the dilution of the QC matrix spike sample extracts during analysis.

•

UUALITY ASSURANCE DATA

RCRA TCLP LEACHATE METALS ANALYSIS, (ME52)

Compounds	Blank Results mg/L	Blank Spike Recov	Unspiked Sample Results mg/L	Matrix Spike Recov	Relative Percent Diff	Batch Number
Arsenic Barium Cadmium Chromium Lead	ND ND ND ND ND	87 92 93 87 90	ND .117 ND ND ND	93 95 96 89 93	3 4 2 3 3	Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838
Mercury Selenium Silver Copper Zinc	ND ND ND ND ND	90 80 89 89 90	ND ND ND .010 ND	108 87 76 94 94	12 4 3 4 3	Q7G5832 Q7M5838 Q7M5838 Q7M5838 Q7M5838 Q7M5838
			-			

UUALITY ASSURANCE DATA

RCRA TCLP LEACHATE HERBICIDE ANALYSIS, GC, (GS52)

Compounds	Blank Results mg/L	Blank Spike Recov	Unspiked Sample Results mg/L	Matrix Spike Recov	Relative Percent Diff	Batch Number
2,4-D 2,4,5-TP (Silvex)	ND ND	78 77	ND ND	46 46	1 1	Q7H50014 Q7H50014
			i.			
-						
	1245					
	0					
					-	

QUALITY ASSURANCE DATA

RCRA TCLP LEACHATE PESTICIDE ANALYSIS, GC, (GS54)

Compounds	Blank Results mg/L	Blank Spike Recov	Unspiked Sample Results mg/L	Matrix Spike Recov	Relative Percent Diff	Batch Number
Chlordane Endrin Heptachlor Heptachlor epoxide Lindane	ND ND ND ND ND	113 108 97 107 67	ND ND ND ND ND	94 105 70 97 61	4 3 7 1 4	Q7P50015 Q7P50015 Q7P50015 Q7P50015 Q7P50015 Q7P50015
Methoxychlor	ND	90	ND	91	3	Q7P50015
*		-	-			
			×			

QUALITY ASSURANCE DATA

RCRA TCLP LEACHATE BASE/NEUTRAL/ACID ANALYSIS, MS, (MS52)

Compounds	Blank Results mg/L	Blank Spike Recov	Unspiked Sample Results mg/L	Matrix Spike Recov	Relative Percent Diff	Batch Number
2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Hexachlorobutadiene 2-Methylphenol	ND ND ND ND ND	92 97 45 45 81	ND ND ND ND ND	76 51 22 18 66	28 36 26 24 24	Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013
4-Methylphenol Nitrobenzene Pentachlorophenol Pyridine 2,4,5-Trichlorophenol	ND ND ND ND ND	78 80 72 74 81	ND ND ND ND ND	66 63 58 61 75	22 23 31 18 10	Q7C50013 Q7C50013 Q7C50013 Q7C50013 Q7C50013
2,4,6-Trichlorophenol	ND	82	ND	67	23	Q7C50013
			a.			

3-Methyl- and 4-Methylphenol coelute and are reported as the total

QUALITY ASSURANCE DATA

RCRA TCLP LEACHATE (ZHE) VOLATILE ANALYSIS, MS, (MV50)

Compounds	Blank Results mg/L	Blank Spike Recov	Unspiked Sample Results mg/L	Matrix Spike Recov	Relative Percent Diff	Batch Number
Benzene Carbon tetrachloride Chlorobenzene Chloroform 1,4-Dichlorobenzene	ND ND ND ND ND	93 89 89 93 76	ND ND ND ND ND	98 97 90 88 77	1 1 2 1 1	Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147
1,2-Dichloroethane 1,1-Dichloroethylene Methyl ethyl ketone Tetrachloroethylene Trichloroethylene	Р 20 20 20 20 20	94 87 75 90 94	ND ND ND ND ND	104 86 89 92 94	2 1 1 2 1	Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147 Q7V4147
Vinyl chloride	ND	81	ND	79	3	Q7V4147
		L +				
						#

QUALITY ASSURANCE DATA Surrogate Summary Report

ĵ

÷.,

SURROGATE ID	A159	B732	A121	A884	A158	B142	# OUT	
QC BATCH: Q7C50	013 Leachate	(Semi-Vola	atile orga	nics by 1	as)			
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	85 87 84 92 87	84 86 77 92 85	75 76 79 87 79	88 91 97 97 91	90 90 92 95 88	46 62 95 112 93	0 0 0 0	
QC LIMITS	(21-110)	(10-110)	(10-123)	(35-114)	(43-116)	(33-141)		
SURROGATE ID	F047	# OUT:						
QC BATCH: Q7H50	014 Leachate	(Herbicide	e compound	ds by GC)				
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	101 102 105 100 101	0 0 0 0 0		ŝ	×			
QC LIMITS	(30-130)							
SURROGATE ID	F048	F096	# OUT					
QC BATCH: Q2P50	008 Solid (Pe	sticide co	ompounds !	by GC)				
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	124 123 84 131 * 131 *	82 81 66 71 69	0 0 1 1					
QC LIMITS	(30-130)	(30-130)						
SURROGATE ID	B816	A500	# OUT					
QC BATCH: Q7P50	015 Leachate	(Pesticid	e compoun	ds by GC)				
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	82 90 87 87 85	51 48 86 82 86						
		SU	RROGATE I	D				
A047 = 1,2-Dich B185 = Toluene- B668 = Bromoflu A159 = 2-Fluoro B732 = Phenol-I A121 = 2,4,6-Tr A884 = Nitrober A158 = 2-Fluoro B142 = Terpheny B816 = 2,4,5,6-	aloroethane-D4 D8 orobenzene ophenol of ribromophenol nzene-D5 obiphenyl /l-D14 Tetrachloro-m	1-xylene	A500 = F048 = F047 = F096 =	Decachlo Decachlo 2,4-Dich 2,4,5,6-	robipheny robipheny loropheny TCMX (PCB	l l (PCB) lacetic-a	lcid	
* Values outsic D Sample was di	le of method of luted, howeve	puality co r, some s	ntrol lim urrogates	its may be r	eported i	f results	were obs	erved.
It is ASC's lab	poratory polic	y to allo	w one sur	rogate pe	r sample	fraction	(acid, ba	se-neutral

or pesticide) to exceed the stated QC limits. This policy is based upon the USEPA SOW for the Contract Laboratory Program (CLP).

UUALITY ASSURANCE DATA SURROGATE SUMMARY REPORT

19.1

SAMPLE ID			307	
QC LIMITS	(30-130) (30-1	30)		
URROGATE ID	A047 B185	B668 # OUT		
C BATCH: Q7V4147 I	Leachate (Volati	le organics by MS)		
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS QC LIMITS	109 99 106 94 108 99 107 102 113 101 (70-121) (81-1	105 0 98 0 101 0 103 0 103 0		
		9		
		SURROGATE ID		
047 = 1,2-Dichlord 185 = Toluene-D8 1668 = Bromofluorol 159 = 2-Fluoropher 1732 = Phenol-D6 121 = 2,4,6-Tribro 1884 = Nitrobenzene 158 = 2-Fluorobipl 142 = Terphenyl-D 1816 = 2,4,5,6-Tet	oethane-D4 benzene nol omophenol e-D5 henyl 14 rachloro-m-xyler	A500 = Decad F048 = Decad F047 = 2,4-D F096 = 2,4,5	hlorobiphenyl hlorobiphenyl (PC ichlorophenylacet ,6-TCMX (PCB)	IB) :ic-acid
Values outside of Sample was dilute	f method quality ed, however, son	v control limits	e reported if res	sults were observed.

APPENDIX D

CHAIN-OF-CUSTODY RECORD(S)



-

CHAIN-UF-CUSTODY RECORD

Field Technical Services Rev. 08/89

	JANUURA															_	No. 107774	•
0.H. N	MATERIALS	CORP	. •		P.C). BOX 551	• FINDLAY, OH 45839	-0551	•	419)-423·	-3526				· . ~	>	
PROJECT NAME Fort Devens PROJECT LOCATION Ayon Ma PROJECT LOCATION Ayon Ma PROJECT TELEPHONE NO. 16208 Mile Quintan CLIENT'S REPRESENTATIVE Tim Coleman (USACE) Bill Snow						NUMBER F CONTAINERS	ANA (IND SEPA CON	ALYSIS ICATE ARATE TAINER		RED	2,20	Jest Jest	3					
ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB		SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)		ō		50	V Ÿ	Ys	9		/	REMARKS	
TEXI	PRGGCIC	1.4 95	1103	J		6 print con excention	posite fron AREE 60 pile, mal bronk sz	i C d	IXIL	V	1	1	1					
2							• /											
3																		
4																		
5																		
6																		
7												×						
8																		
9																		
10																		
TRANSFER	ITEM NUMBER		f	TR RELIN	ANSF	ERS HED BY	TRANSFERS ACCEPTED BY		DATE	тіме	REM	ARKS	Te	evn	P	١	stark included	
1	t	•	-25		L	31 cm	Fad EX A: bill 2459345811		1.4 45	1530		•	Pw	2.52	くら	کہ	2 at y°C.	
2	1	Fr	nex :	291	893	45811	abrita Jenson		195 10	1:05	-	•	5	q.	5y		TAI	Ē
3											SAMP	ER'S SI	GNATI	IRE			Temp. OC	
4												2	5	6	L.,	B	lean	

 \mathcal{X}

LAB COPY

.



ANALYTICAL DIVISION Laboratory Analysis Report

Client: OHM Remediation Services Corp. Eastern Region (Hopkinton, MA)

Attn: William Snow Ron Kenyon Mike Quinlan

Project: 16208C - USACE; Fort Devens, MA

Sample Type(s): Solid

Analysis Performed: Metals and Organics

Date Sample Received: January 5, 1995

Date Order Received: January 14, 1995

Joblink(s): 617427

This report is "<u>PROPRIETARY AND CONFIDENTIAL</u>" and delivered to, and intended for the exclusive use of the above named client only. OHM Remediation Services Corp., Analytical Division, assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

Reviewed and Approved by komas'E. Gran, Ph.D. resident

Date: January 23, 1995

The following items relate to the samples and analytical data contained in this report.

- o All solid sample results are reported on a "dry weight" basis.
- o Elevated detection limits for the PNA Analysis are due to high hydrocarbons present in the sample.
- o Note any and all comments at the bottom of the tables in Appendix B and/or Appendix C.
- Samples will be retained for a maximum of thirty (30) days after completion of the analysis, samples will be held for a longer period of time, if appropriate arrangements are made in advance. A nominal disposal charge of \$5.00/ sample will be imposed for unreturned samples.

APPENDIX A

÷.

•[]

DATA SUMMARY REPORT
DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

A	Sample Point ID: SC Sample Number: Sample Date: Facility Code:	EXAR66C1C JN7237 950104 016208C
Parameters	Units	
Priority Pollutant P	esticide Analysis,	GC, (GS14)
Aldrin Alpha-BHC Beta-BHC Chlordane 4,4'-DDD	mg/kg mg/kg mg/kg mg/kg	<.018 <.018 <.018 <.183 <.018
4,4'-DDE 4,4'-DDT Delta-BHC Dieldrin Endosulfan sulfate	mg/kg mg/kg mg/kg mg/kg	<.018 <.018 <.018 <.018 <.018
Endosulfan I Endosulfan II Endrin Endrin aldehyde Gamma-BHC	mg/kg mg/kg mg/kg mg/kg mg/kg	<.018 <.018 <.018 <.018 <.018
Heptachlor Heptachlor epoxide Toxaphene	mg/kg mg/kg mg/kg	<.018 <.018 <.366
RCRA Total Metals An	alysis, (ME50)	
Arsenic Barium Cadmium Chromium Lead	mg/kg mg/kg mg/kg mg/kg mg/kg	26.6 10.2 <1.06 13.4 14.1
Mercury Selenium Silver	mg/kg mg/kg mg/kg	.059 <5.32 <1.06
Priority Pollutant P	NA Analysis, MS, (M	S17)
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene	mg/kg mg/kg mg/kg mg/kg e mg/kg	<7.35 <7.35 <7.35 <7.35 <7.35

DATE: 01/19/95

PAGE: 1

DATA SUMMARY REPORT

Company: OHM REMEDIATION SERVICES CORPORATION

Sampl ASC Sam S Fac Parameters	e Point ID: ple Number: ample Date: ility Code: Units	EXAR66C1C JN7237 950104 016208C
Priority Pollutant PNA Ana	lysis, MS, (MS17)
Benzo (k) fluoranthene Benzo (ghi) perylene Benzo (a) pyrene Chrysene Dibenzo (a,h) anthracene	mg/kg mg/kg mg/kg mg/kg mg/kg	<7.35 <7.35 <7.35 <7.35 <7.35 <7.35
Fluoranthene Fluorene Indeno (1,2,3-cd) pyrene Naphthalene Phenanthrene	mg/kg mg/kg mg/kg mg/kg mg/kg	<7.35 <7.35 <7.35 <7.35 <7.35 <7.35
Pyrene	mg/kg	<7.35

DATE: 01/19/95

PAGE: 2

APPENDIX B

.

. tot.

QUANTITATIVE RESULTS

	RCRA TOTAL	METALS ANALYSIS,	(ME50)	e
Company Name		Facility	Sample Point	ASC Sample No.
OHM REMEDIATION S	SERVICES CORPORATI	ON 016208C	EXAR66C1C	JN7237

-

Compounds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Arsenic Barium Cadmium Chromium Lead	26.6 10.2 ND 13.4 14.1	5.32 1.06 1.06 1.06 2.13	20 27 29 29 29 29 29	Q2M5858 Q2M5858 Q2M5858 Q2M5858 Q2M5858 Q2M5858
Mercury Selenium Silver	, 059 ND ND	.052 5.32 1.06	ND ND ND	Q2G5868 Q2M5858 Q2M5858
	a.			

×

PRIORITY POLLUTANT PESTICIDE ANALYSIS, GC, (GS14)

Company Name

OHM REMEDIATION SERVICES CORPORATION

Facility 016208C Sample Point ASC Sample No.

EXAR66C1C JN7237

Compounds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Aldrin Alpha-BHC Beta-BHC Chlordane 4,4'-DDD	ND ND ND ND ND	.018 .018 .018 .183 .018	ND ND ND ND ND	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
4,4'-DDE 4,4'-DDT Delta-BHC Dieldrin Endosulfan sulfate	ND ND ND ND ND	.018 .018 .018 .018 .018 .018	20 20 20 20 20 20 20	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
Endosulfan I Endosulfan II Endrin Endrin aldehyde Gamma-BHC	ND ND ND ND ND	.018 .018 .018 .018 .018 .018	ND ND ND ND ND	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
Heptachlor Heptachlor epoxide Toxaphene	ND ND ND	.018 .018 .366	ND ND ND	Q2P50037 Q2P50037 Q2P50037
		1 d f		
		ά.		

PRIORITY POLLUTANT PNA ANALYSIS, MS, (MS17)

Company NameFacilitySample PointASC Sample No.OHM REMEDIATION SERVICES CORPORATION016208CEXAR66C1CJN7237

Compounds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene	ND ND ND ND ND	7.35 7.35 7.35 7.35 7.35 7.35	22 22 23 23 24 24 24 25 24 24 24 24 24 24 24 24 24 24 24 24 24	Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050
Benzo(k)fluoranthene Benzo(ghi)perylene Benzo(a)pyrene Chrysene Dibenzo(a,h)anthracene	ND ND ND ND ND	7.35 7.35 7.35 7.35 7.35 7.35	ND ND ND ND ND	Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050
Fluoranthene Fluorene Indeno (1,2,3-cd) pyrene Naphthalene Phenanthrene	ND ND ND ND ND	7.35 7.35 7.35 7.35 7.35 7.35	ND ND ND ND	Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050 Q2C50050
Pyrene	ND	7.35	ND	Q2C50050
: 42				
	24			

Surrogate recoveries which are outside of control limits were attributed to dilution of extract during analysis.

Sample and/or extract required dilution resulting in elevated detetion limits (DLs).

APPENDIX C

20.00

QUALITY ASSURANCE DATA

SUMMARY OF ANALYTICAL METHODOLOGY

.....

f = x

Joblink # 617427

•

	Reference	TITLE				
6010	SW-846	Inductively Coupled Plasma Atomic Emmision Spectroscopy				
7471	SW-846	Mercury in Solid Waste (Manual Cold-Vapor Technique)				
8080	SW-846	Organochlorine Pesticides and/or PCBs				
8270	SW-846	GC/MS for Semivolatile Organics: Capillary Column Technique				

METHODOLOGY REFERENCES

ASTM American Society for Testing and Materials, 1985 edition.

- **CAWW** Methods for Chemical Analysis of Water and Wastes, April 1979 and Updated #1 March 1983.
- CLP USEPA Contract Laboratory Program, Document #OLMO1.0, updates December 1990 #OLMO1.1 and February 1991 #OLMO1.1.1.
- EPA-500 USEPA Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88/039 December 1988.
- EPA-600 USEPA Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057 July 1982.
- NIOSH National Institute for Occupational Safety and Health, 3rd edition, 1984.
- **SMEWW** Standard Methods for the Examination of Water and Wastewater, 17th edition, 1989.
- **STOA** Spot Tests In Organic Analysis, 7th edition, 1966.
- **SW-846** Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd edition, September 1986 and Update #1 July 1992.
- (1) This method was modified to incorporate the use of Boron Trifluoride (BF3) as the derivatizing reagent according to Method 6640 in *SMEWW*, 17th edition, 1989.
- Title 22 Waste Extraction Test, Title 22, Section 66261.126 Appendix 2 of the California Administrative Code, May 1991.

State	Agency	Certification #
Alabama	ADEM	40830
California	CADOH	1178
Colorado	СОДОН	OH113
Delaware	DEHSS	OH113
Kansas	KSDHE	E-202 & E-1173
Louisiana	LADOHH	92-10
Maryland	MDDHMH	210
Massachusetts	MADEP	M-OH113
New Jersey	NJDEPE	74603
New York	NYDOH	10712
North Carolina	NCDEM	392
Ohio	OHEPA	OH113
Oklahoma	OKDEQ	9216
Pennsylvania	PADER	68-450
South Carolina	SCDEHNR	92002
Tennessee	TNDOH/TNDEC	2978
Virginia	VADGS	00011
Washington	WADOE	C154
Wisconsin	WIDNR	999037160

Laboratory Certifications

Validated by:

.

o US Army Corps of Engineers

Chemical Analysis in Various Matrices

Approvals:

0	Chemical Waste Management	Waste Characterization Analysis
0	Envirosafe	Waste Characterization Analysis
0	USDA	Permit for Importing Soils
0	Florida DEP	Quality Assurance Plan #930034G
0	Naval Facilities Engineering Service Center	Chemical Analysis in Various Matrices

REPORT KEY

1

mg/kg	=	milligram per kilogram (ppm)
Mg/m^3	=	milligram per cubic meter
ug/kg	=	microgram per kilogram (ppb)
mg/L	=	milligram per liter (ppm)
ug/L	=	microgram per liter (ppb)
mg/W	=	milligram per wipe
ug/W	=	microgram per wipe
mg/SMP	Ξ	milligram per sample
ug/SMP	-	microgram per sample (Tedlar Bag)
ug/smp	=	microgram per sample
um/cm	=	microMho per centimeter
pCi/l	N	picocurie per liter
gm/cc	=	grams per cubic centimeter
ppm	=	parts per million
ppb	=	parts per billion
ND	=	Not detected at or above stated detection limit
<	=	less than
>	=	greater than
%	=	percent
BTU/lb	=	British Thermal Units per pound
Deg. C	=	Degrees Celsius
n/a	=	not applicable
Unk	=	unknown
std	=	result is relative to standard pH units
CV	=	Conventionals
IR	-	Infrared Spectrophotometric
GC	=	Gas Chromatograph Instrument
GC/MS	=	Gas Chromatography/Mass Spectrometer Instrument
GRO	=	Gasoline Range Organics
DRO	=	Diesel Range Organics
PCB	=	Polychlorinated Biphenyls (PCBs)
EP TOX	=	Extraction Procedure Toxicity
TCLP	=	Toxicity Characteristic Leaching Procedure
RCRA	=	Resource Conservation and Recovery Act
sow	=	Statement of Work

. '

...

·** ---

QUALITY ASSURANCE DATA

RCRA TOTAL METALS ANALYSIS, (ME50)

2.00%

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number
Arsenic Barium Cadmium Chromium Lead	ND ND ND ND ND ND	84 90 80 83 83	5.38 7.32 ND 3.54 3.78	88 92 86 88 91	1 1 2 1 9	Q2M5858 Q2M5858 Q2M5858 Q2M5858 Q2M5858 Q2M5858
Mercury Selenium Silver	ND ND ND	92 87 66	. 059 ND ND	81 90 81	9 1 6	Q2G5868 Q2M5858 Q2M5858
			ъ.		-	
		2				

QUALITY ASSURANCE DATA

PRIORITY POLLUTANT PESTICIDE ANALYSIS, GC, (GS14)

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number
Aldrin Alpha-BHC Beta-BHC Chlordane 4,4'-DDD	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	80 81 89 97 100	ND ND ND ND ND	69 55 71 92 84	5 12 5 1 4	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
4,4'-DDE 4,4'-DDT Delta-BHC Dieldrin Endosulfan sulfate	8년 8년 8년 8년 8년	97 112 92 99 70	ND ND ND ND ND ND	79 101 58 103 77	4 6 1 2	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
Endosulfan I Endosulfan II Endrin Endrin aldehyde Gamma-BHC	ND ND ND ND ND ND ND	89 88 104 66 87	ND ND ND ND ND	88 91 93 81 65	7 7 5 12 10	Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037 Q2P50037
Heptachlor Heptachlor epoxide	ND ND	87 92	ND ND	86 86	6 3	Q2P50037 Q2P50037
				5		

QUALITY ASSURANCE DATA

PRIORITY POLLUTANT PNA ANALYSIS; MS, (MS17)

Compounds	Blank Results mg/kg	Blank Spike Recov	Unspiked Sample Results mg/kg	Matrix Spike Recov	Relative Percent Diff	Batch Number
Acenaphthene Pyrene	ND ND	72 74	ND ND	108 128	9 4	Q2C50050 Q2C50050
		ž				
						ан 12
		-				

QUALITY ASSURANCE DATA Surrogate Summary Report

5.

SURROGATE ID	A159	B732	A121	A884	A158	B142	# OUT	
QC BATCH: Q2C50050	Solid (Sen	ni-Volatil	Le organic	s by MS)	in the second second			
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	75 78 109 D 100 D 120 D	84 79 136 D 126 D 137 D	75 87 79 D 74 D 99 D	85 79 100 D 101 D 119 D	83 82 143 D 127 D 144 D	77 86 135 D 129 D 131 D		
QC LIMITS	(25-121)	(24-113)	(19-122)	(23-120)	(30-115)	(18-137)		
SURROGATE ID	B816	A500	# OUT					
QC BATCH: Q2P50037	Solid (Pea	sticide co	ompounds h	DY GC)				
SAMPLE ID BLANK BLANK SPIKE EXAR66C1C EXAR66C1C MD EXAR66C1C MS	80 76 54 53 59	82 80 86 88 93	0 0 0 0					
QC LIMITS	(30-130)	(30-130)	-					
3								
		SU	KRUGATE I	U				
A159 = 2-Fluorophe B732 = Phenol-D6 A121 = 2,4,6-Tribr A884 = Nitrobenzen A158 = 2-Fluorobip B142 = Terphenyl-D B816 = 2,4,5,6-Tet A500 = Decachlorob	enol comophenol le-D5 ohenyl D14 crachloro-m- oiphenyl	-xylene						
* Values outside o D Sample was dilut	of method queed, however	uality con r, some su	ntrol lim urrogates	its may be r	eported i	f results	were of	oserved.
It is ASC's labora	tory policy	v to allo	w one sur	rogate pe	r sample	fraction	(acid.)	pase-neutral

It is ASC's laboratory policy to allow one surrogate per sample fraction (acid, base-neutral or pesticide) to exceed the stated QC limits. This policy is based upon the USEPA SOW for the Contract Laboratory Program (CLP).

APPENDIX D

CHAIN-OF-CUSTODY RECORD(S)

dia na OHM Corporation

-

CHAIN-OF-CUSTODY RECORD

Form 0019 Field Technical Services-Rev. 08/89

	IM CO	rporation															ľ	No. 10777	4
(О.Н. М	ATERIALS	CORF	•		P.C). BOX 551	• FINDLAY, OH 45839-055	٠	41	9-423	-352	6			•.~	>	ė.	
PR PR CL	OJECT N JOJ. NO. 620 TIM	AME + D PROJEC 08 / EPRESENTATIVE Cole +	e 24 51 CONT. M. 7 	2~5 ACT (4	2. (51	 7-Ci	PROJECT LOC Aye (2) PROJECT MAN Bill	PROJECT TELEPHONE NO (SOB) 772-2019 UNGERVISOR SMOW	NUMBER	AN (INI SEI CO	IALYSI DICATE ARATE NTAINEI	S DES	SIRED		13	4			
ITEM NO.	S N	SAMPLE IUMBER	DATE	TIME	COMP	GRAB		SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	OF		hey.	X	Z	9		/		REMARKS	
T	EXA	R6661C	1.4 95	1103	J		6 pint con excevation	posite fron AREEGGC	-1214	- V	1	1	~	1.					
2									-										
3																		· · · · · · · · · · · · · · · · · · ·	
4									-										
5									-										
6							10		-										
7									-										
8									-										
9									_								á!		
10									-										
	TRANSFER	ITEM NUMBER		F	TR RELIN	ANSF	ERS HED BY	TRANSFERS ACCEPTED BY	DATE	TIME	REM	ARKS	Te	ern	P	1	olaric	included)
	1	t		-25	-,	CI	31 cm	Fed EX A: bill 2:159345811	1.4 45	1530		٠	Pw	2.52.	くら	a.)	2 at y	°C.	
	2	1	4	nex :	29	893	45811	Amita Jensen	195	10:05	+	ø .	5	q.	Sλ		TAT		э.
	3																Temp	. 0°C	
	4										SAMP	LER'S		JAE 6	L.,	B	lean		

Appendix D Material Shipping Record



INSCUS HEMAI UNAILL OF CITH UNINCHIAL FI ULALIUM Bureau of Waste Prevention **Material Shipping Record & Log**

2-0662 Tracking Number

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

	Bldg 3657	(small oil spill)	
	Reinase name (optional) Post Golf	Course		
	Smr Fort Deve	ns	Location aid MA	01433
	City/Town		State	Zip code
2.	Date/Period of gener	ation:	5. List additional tu	racking documents associated with this
	01/04/95	01/04/95	document:	
	From	Io		13.1
3.	U.S. EPA ID number	r.		
MA7210025154				
4.	21E reiease:	no		

. . Generator Information

1. Provide the following generator information:

U.S. Army - Fort Devens		
Kame or organization		
James C. Chambers	BRAC	Environmental Officer
Contact name	Dite	
AFZD-BEO-Box 1		
Street address		
Fort Devens	MA	01433
City/Town	State	Zip code
(508) 796-3114		
Telephone number and edension		

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 🔲 operato	r	
U.S. Army - Fort Devens		
Name of organization		
James C. Chambers	BRAC	Environmental Officer
Contact name	Dite	
AFZD-BEO-Box 1		
Street 2007:55		
Fort Devens	MA	01433
City/lom	State	Zip code
(508) 796-3114		
Eductions suffer and atlantion		

Rev. 3/94



Bureau of Waste Prevention Material Shipping Record & Log Tracking Number Tracking Number

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

Transporter/Common Carrier Information

1. Provide the following information:

P.J. Keating Company	N/A	N/A	
Transporter/Common carter name Mark Nikitas	Hazardous waste Boanse number (11 applicable)	Licensing stalls (11 applicable)	
Contact person 998 Reservoir Road	Tibe .		
Smer Lunenberg	МА	01462	
City/Town (508) 582-9931	Starv	Zip code	
Telephone number and extension			

E Receiving Facility Information

1. Provide the following information on the receiving facility:

U.S. Army - Fort I	Devens - Building 202
Openato Facility name James C. Chambers	BRAC Environmental Officer
Contact person AFZD-BEO-Box 1	ne Fort Devens, MA 01433
Stree (508) 796-3114	Stare Zio coore
Telephone number and edension Type of facility:	* 2
asphalt batch/cold mix asphalt batch/hot Mix X other: Temporary Stor	Landfill/disposal Indfill/structural fill Landfill/structural fill Landfill/structural fill
Permit number: N/A	
Description of Material	
a.)2(soil 🗆 dredge material 🗆 fill	3. Type of contamination:
b. Description: BRN, S+9, SUME C	 a. gasoline dieselfuel 12 oil 44 oil b. Debris:
c. Classification: IMIT USAEC	□ USDA □ ASEE c. ☑ Other: □ ASEE
Other:	describe

	ection 310 CMR 40.0035 nor manifesting under 3 Description of Material (cont.)	10 Cl	MR 30.000
4.	Constituents of concern (check all that apply):	7.	Estimated volume of materials:
	152 As ⊡ Cd ⊠:∵Cr 23, Pb 23, Hg ⊡ Na ⊡ PC8s		1.61
	HVOCE PATH VOCE PAHE BNAS		Caddic Yards
	Se TPH 123 Other:		Lor
	Barium		10
	describe		Other
5.	Analyses performed (check all that apply):	8.	Contaminant source (check one/specify):
	XX AS DE COL DE CI DE PÓ DE HO DE Na XX PCBS		Transportation accident Ust & other
	HVOCS PATH VOCS PAHS BNAS		
	Si Other:		describe
	RCRA Cheretari-tion		
	desorbe	9.	Indicate which waste characterization support
			documentation is attached:
6,	Screening performed		site history information
	None		sampling and analytical methods/procedure
	Туре		🕱 laboratory data 📋 field screening data
	-		If supporting documentation is not appended, provide an
	instrum ~ Usind		attachment stating the date and in connection with what
	Constituents		document such information was previously submitted to the

Kame d organization	
Todd Alving	Licensed Site Professional
Name of protessional (508) 435-3679	Do:
Telephone number and extension "I have personally examined and am familiar with the ormation contained on and submitted with this form, sed on this information, it is my opinion that the testing and sessment actions undertaken were adequate to characterize a waste, and that the facility or location can accept wastes th the characteristics described in this submittal. I am rare that significant penalties including, but not limited to, issible fines and imprisonment may result if I willfully bmit information which I know to be false, inaccurate, or aterially incomplete."	Signature 12.12.95 Dere 407. CAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

•

1225



Bureau of Waste Prevention **Material Shipping Record & Log**

le C Tracking Number

6

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 faise, inaccurate, or incomplete information."

inter (print)

Acknowledgment of Receipt by Receiving Facility

	U.S. Army - Fort Devens - Bldg 202
Receive	ng Facility
	James C. Chambers
Auprus	BRAC Environmental Officer
Dine	James C Chat 1/24/98
sorte	Date

L	
£	and all
-	
	DEP

2-0662 Bureau of Waste Prevention Tracking Number 5 ife 3657 Material Shipping Record & Log

I LITH WHOULD

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

	J Load Information	· · ·
	LOAD 1: 832 A	LOAD 1: 83 2B
Notes	SanCan	Sa Ca
Make additional copies of this page as neces- sary.	Signature ditansponer Bldg 202 Soil Starray Conea cell A. Receiving Jacility _12/15/95 Dere received	Spinnen al transporter <u>Bldg 202 Solt Stoway Carea</u> call A Receiving tactity <u>12115195</u> Deterministred
	Time incerved <u>12(15)</u> Date of shoment	There acceled 12/15/95 Date of shipment
	Time of shipment Of HM936 102000 Truck/Tracky majos Fraton	Time of shipment OFM 936 0300
	Indian negostration 2780/bs/1,39/tung Load stat (Quore yards/rons)	Industration 31001bs/1155 tons Load size (addic yerschards)
	LOAD #:	LOAD #:
	Signature of transporter	Signature of transporter
	Receiving facility	Auceir4 ng tacility
	Date raceived	Dime micritred
	Time raceived	Terre received
	Dire of shipment	Dive of shipment
	Time of shipment	Terre of shipment
	Truck/Tractor mpistration	Incl/Tactor repistration
	Trailer registration	Tratier registration
	Load star (cubic yards/lons)	Lowd size (cubic yards:Aons)

5	280	lbs/	3	. 00	tong

Total carried loward (cubic yards/lons)

Total carried boward and this page (cubic parts/lons)

Page 1 of 1

Appendix E Site Photographs

Bldg. 3657 Spill Site



Oil Spill Area



Excavation



Stockpiled Contaminated Soil