U.S. Army Corps of Engineers

New England District
Concord, Massachusetts

CONTAMINATED SOIL REMOVAL- PHASE II

STUDY AREA 57, AREA 1
STORM DRAIN SYSTEM No. 6 OUTFALL

REMOVAL ACTION REPORT

Contract/Purchase Order No.
DACW33-95-D-0004
Delivery Order No. 0004
DCN: VRA-072498-AALE

July 1998

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STUDY AREA 57, AREA 1
STORM DRAIN SYSTEM No. 6 OUTFALL
DEVENS, MASSACHUSETTS

REMOVAL ACTION REPORT

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DCN: VRA-072498-AALE

Prepared for

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 Virginia Road
Concord, Massachusetts

Prepared by

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Devens, Massachusetts 01433

July 1998

W.O. No. 03886-118-004-4900

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EXECUTIVE SUMMARY

This document presents the removal actions conducted at the Storm Drain No. 6 Outfall at Devens, Massachusetts, in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, as amended.

The Storm Drain No. 6 Outfall is located in the northeast portion of the North Post of Fort Devens and collects runoff from the area around buildings 3712 and 3713, which includes a former commissary, vehicle storage/maintenance facility, and an unpaved area of railroad track. The site is located in a heavily wooded and vegetated low lying area located immediately downgradient of three storm sewer outfall pipes which make up the outfall. The drainage swale ultimately leads to Lower Cold Spring Brook, located 800 feet southeast of the outfall area.

In 1978, an undetermined amount of No. 4 fuel oil was released from an overfilled underground storage tank (UST) at one of the buildings that ultimately drain into the System No. 6 outfall. Investigation after the occurrence of the release indicated that the System No. 6 outfall had received an estimated 3,000-gallons of fuel oil, as a result of the release. It is unknown whether contaminated soil was removed during initial remedial actions conducted at the time of the release.

The Site Investigation (SI) conducted by ABB Environmental Services, Inc. (ABB-ES) for the U.S. Army Environmental Center (USAEC) included documentation of five surface soil/sediment samples which were collected in June 1992 and June 1993 during previous investigations. These samples were collected from ground surface to a maximum depth of one foot below ground surface (bgs) in the vicinity and downstream of the outfall. A total of three soil/sediment samples were collected in the June 1992 sampling round and were submitted for laboratory analyses for total petroleum hydrocarbons (TPH) and semi-volatile organic compounds (SVOCs). One soil/sediment sample and a duplicate sample were collected in June 1993 and were submitted for laboratory analyses for TPH, SVOCs, volatile organic compounds (VOCs), and metals.

Analytical results indicated TPH concentrations ranging from 1,410 to 3,500 parts per million (ppm) in the soil/sediment samples, which exceeded the then current Massachusetts Contingency

Plan (MCP) Method 1 S-1/GW-1 clean-up standard of 500 ppm. In addition, several SVOCs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and chrysene, were detected in the two samples collected during the June 1993 sampling round. Detected concentrations exceeded the applicable MCP S-1/GW-1 standard of 0.7 ppm for all four compounds, the highest SVOC concentration being benzo(b)fluoranthene at 4.9 ppm. These contaminants may not have been detected in soil/sediment samples collected during the June 1992 sampling round since analytical detection limits for this event exceeded the June 1993 concentrations. An elevated lead concentration of 420 ppm was detected in the June 1993 duplicate soil/sediment sample which exceeded the MCP S-1/GW-1 clean-up standard of 300 ppm. No VOCs were detected in soil/sediment samples collected during the June 1993 sampling round. The soil/sediment in the drainage path was characterized as well-graded sand to a silty sand.

Based on the known history of the site and the surrounding area, as well as on limited analytical results from soil/sediment sampling in the area during previous investigations, a soil removal action was recommended to address contamination resulting from releases of petroleum oil to the storm drain outfall as per the document *Contaminated Soil Removal - Phase II, Action Memorandum for Study Area 57, Area 1, Storm Drain No. 6 Outfall, Devens, Massachusetts*, dated October 1996.

Roy F. Weston, Inc. (WESTON) conducted the time-critical removal actions during February 1997. Initial removal operations conducted by WESTON included excavation of a 15' x 15' area, to a maximum depth of 2 feet below ground surface (bgs), at the outfall location; field analytical screening of the excavation limits; and collection of soil samples from the excavation limits for confirmatory laboratory analyses, respectively.

After excavation of the initial limits, WESTON collected a total of four composite samples from the sidewalls and floor of the excavation area. The sidewall samples were collected at depths between 1 to 2 feet bgs. The floor sample was collected at 2 feet bgs. All field screen samples were compared to the removal objective clean-up goal of 500 ppm for TPH, as specified in the WESTON *Action Memorandum*. Field screen results indicated TPH concentrations ranging from 66 to 271 ppm.

On February 13, 1997, WESTON collected a total of six confirmatory soil samples, including a duplicate, from the sidewalls and bottom of the excavation. The soil samples were submitted to an offsite laboratory for analysis for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) using the Massachusetts Department of Environmental Protection (MADEP) method. Soil samples were also sent to an offsite laboratory for Priority Pollutant Metals. Analytical results were compared to the MADEP MCP S-1/GW-2 regulatory action levels.

Laboratory analysis indicated elevated concentrations of polyaromatic hydrocarbons (PAHs) above the S-1/GW-1 standards in composite samples collected from three of the sidewalls of the excavation.

Based on confirmatory results from the initial sampling round, it was decided to perform additional excavation along the contaminated sidewalls. An additional three feet was removed from the sidewalls perpendicular to the outfall pipes. Approximately seven feet was further excavated from the wall opposite the outfall pipes. The maximum depth of excavation was three feet bgs.

After additional excavation, WESTON collected three additional confirmatory composite samples from the three sidewalls. Two samples were sent to an offsite laboratory for SVOCs using EPA Method 8270. The third sample was sent to an offsite laboratory for EPH analysis based on the elevated C_{10} - C_{22} aromatic fraction detected along the sidewall during the initial sampling round.

Confirmatory analytical results for the second round of sampling indicated elevated PAH concentrations in two sidewalls. A total of ten PAH contaminants exceeded the applicable MCP S-1/GW-1 standards in each of the two sample locations. The highest concentrations were detected in the sample located downstream of the outfall pipes. No SVOCs or EPH fractions were detected above the MCP S-1/GW-1 cleanup standards in the third sample.

To assess the nature and regulatory context of the elevated PAH concentrations at the System No. 6 Outfall, a comparison has been made in this document with concentrations of PAHs

detected in sediment samples at the System No. 6 outfall with sediment samples collected at eight other storm drain outfalls which also drain into Cold Spring Brook at Devens, MA. The objective of this comparison is to provide sufficient evidence that PAHs detected in soil samples collected at the System No. 6 Outfall are consistent with the past uses of properties which formerly and/or currently drain into the outfall, and are not the result of the documented fuel oil spill. The conclusion made by this comparison is that the types and concentrations of PAHs in sediments at the Storm Drain No. 6 Outfall are consistent with concentrations at various outfalls along Cold Spring Brook. The current analytical data therefore strongly indicates that fuel oil-related contamination at this outfall was successfully removed, and that what remain in soil/sediment at the outfall are PAHs that are likely related to runoff from paved, trafficked areas along Barnum Road. Based on the information provided, this type of PAH contamination which cannot feasibly be eliminated from runoff from asphalt paved areas, is specifically exempted from MCP requirements due to its relative ubiquity at these types of outfalls.

1. PURPOSE

The purpose of this report is to document the removal action activities conducted at the Storm Drain System No. 6 Outfall, located within Study Area 57, Area 1 at Devens, Massachusetts, in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, as amended. The time-critical removal action at the System No. 6 Outfall included the excavation of approximately 25 cubic yards of semi-volatile organic compound (SVOC) contaminated soil along the drainage pathway associated with the outfall.

This *Removal Action Report* was prepared for the U.S. Army Corps of Engineers, New England District (CENAE), in accordance with the Roy F. Weston, Inc. (WESTON®) *Contaminated Soil Removal - Phase II, Action Memorandum for Study Area 57, Area 1, Storm Drain No. 6 Outfall, Devens, Massachusetts*, dated October 1996, and the references incorporated within.

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2. BACKGROUND AND PHYSICAL SETTING

2.1 SITE DESCRIPTION AND HISTORY

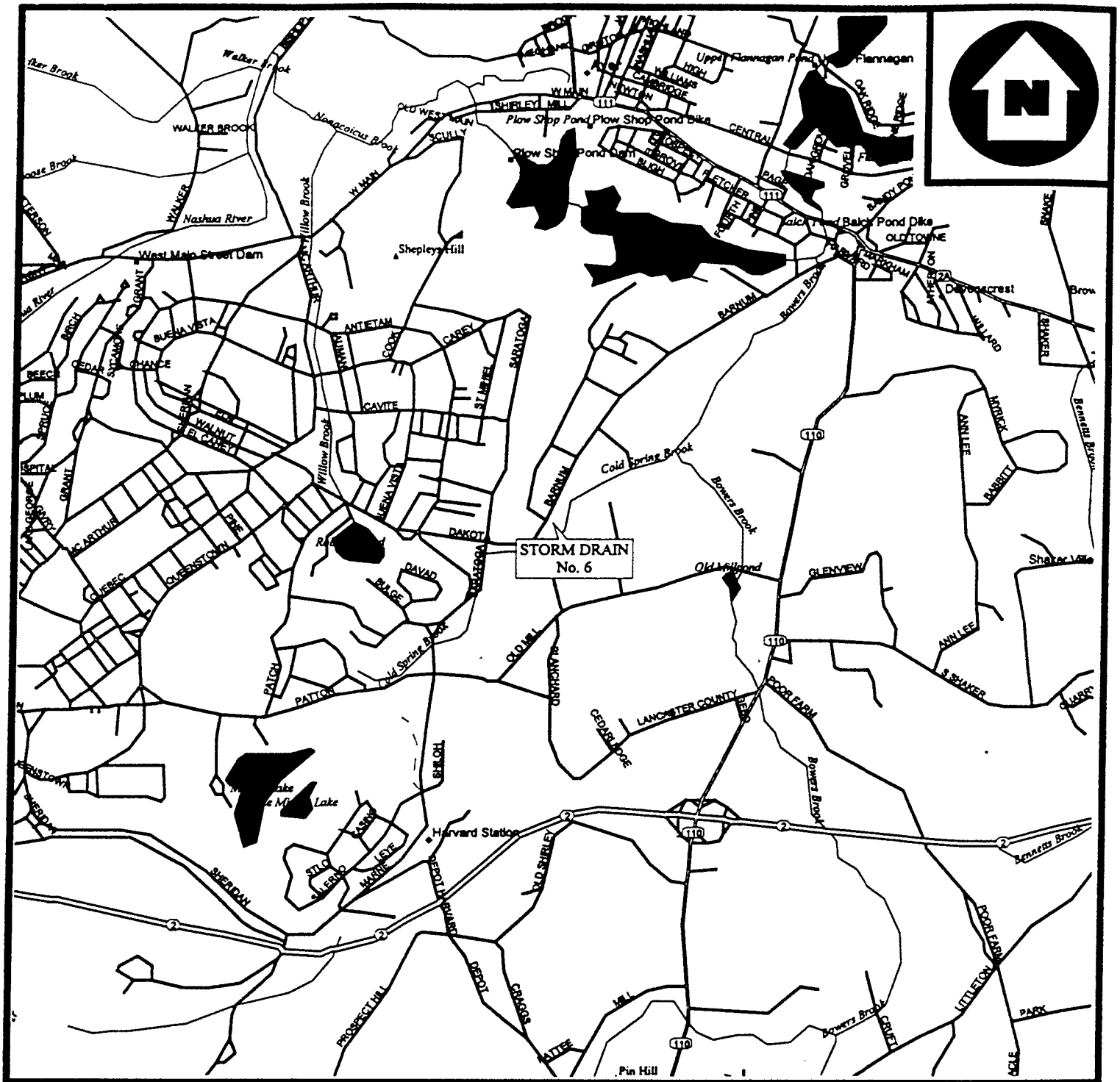
On December 21, 1989, Devens (formerly Fort Devens) was placed on the National Priorities List pursuant to the CERCLA as amended. Devens is located within the towns of Ayer, Harvard, Lancaster, and Shirley, Massachusetts and consists of approximately 9,280 acres (Figure 2-1). Fort Devens was used for a variety of U.S. military training missions from 1917 until 1996. In 1991 the installation was selected for cessation of operations and closure under Public Law 101-50, the Base Realignment and Closure (BRAC) Act of 1990.

The Storm Drain No. 6 Outfall is located in the northeast portion of the North Post of Fort Devens and collects runoff from the area around buildings 3712 and 3713, which includes a former commissary, vehicle storage/maintenance facility, and an unpaved area of railroad track. The site is located in a heavily wooded and vegetated low lying area located immediately downgradient of three storm sewer outfall pipes which make up the outfall. The drainage swale ultimately leads to Lower Cold Spring Brook, located 800 feet southeast of the outfall area.

In 1978, an undetermined amount of No. 4 fuel oil was released from an overfilled underground storage tank (UST) at one of the buildings that ultimately drain into the System No. 6 outfall. Investigation after the occurrence of the release indicated that the System No. 6 outfall had received an estimated 3,000-gallons of fuel oil, as a result of the release. It is unknown whether contaminated soil was removed during initial remedial actions conducted at the time of the release.

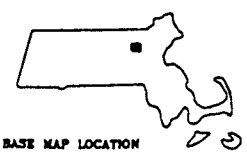
2.2 REGIONAL GEOLOGY

Devens is near the western boundary of the Seaboard Lowland Section of the New England Maritime Physiographic province. It is adjacent to the Worcester County Plateau of the Central Uplands province, and part of the installation lies within the province. The land surface is almost completely covered with unconsolidated glacial outwash deposits, resulting in few bedrock outcrops. The surficial deposits are underlain by a highly complex assemblage of intensely folded



1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET



BASE MAP LOCATION

LOCATION MAP

STUDY AREA 57, AREA 1
STORM DRAIN SYSTEM No. 6 OUTFALL
DEVENS, MASSACHUSETTS

WESTON
MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2-1

and faulted metsedimentary rocks and occasional igneous intrusions. The geomorphology of the region is dominated by glacial features such as outwash plains, kames, kame terraces, drumlins, and eskers.

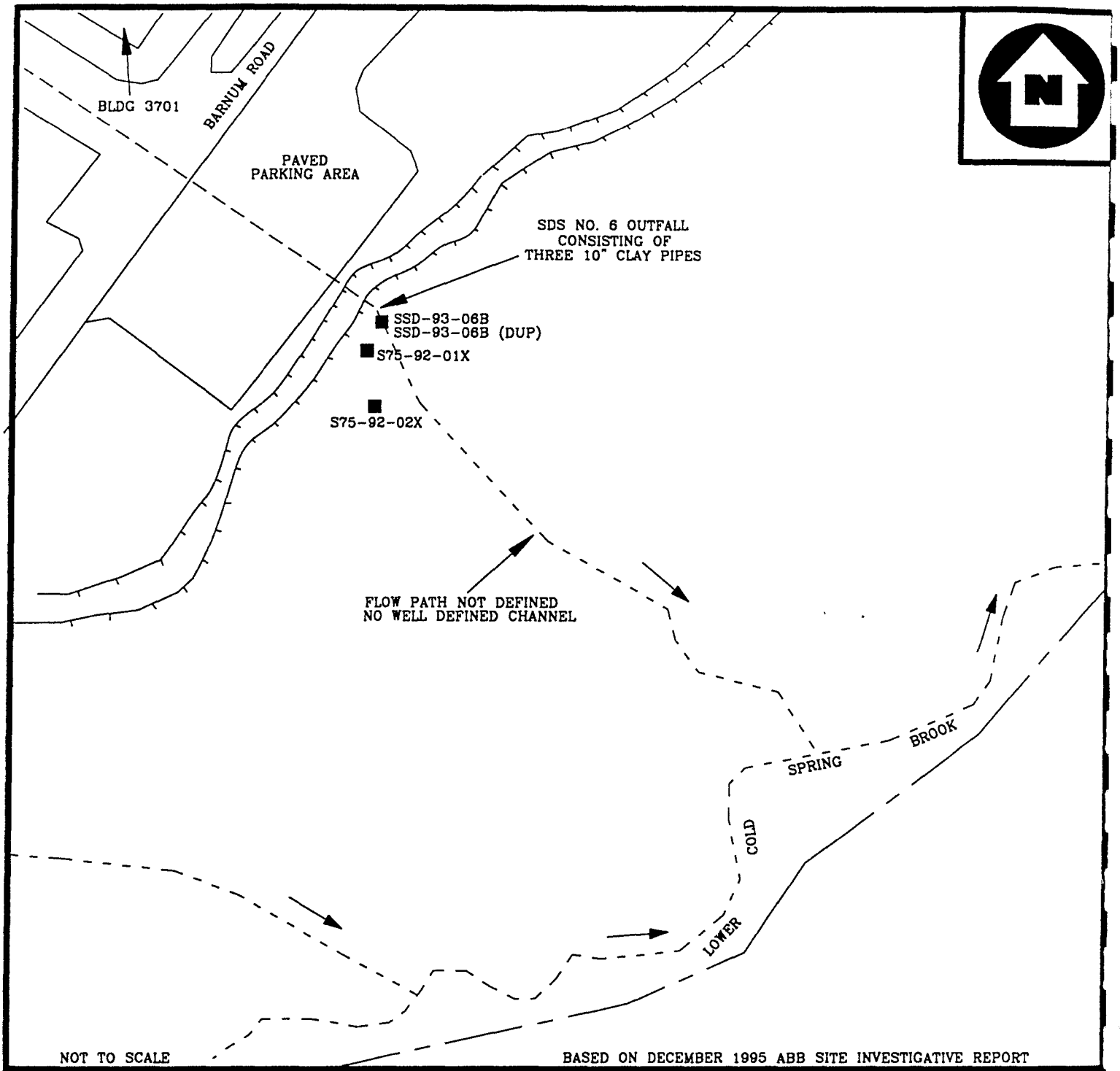
2.3 REGIONAL HYDROGEOLOGY

Groundwater at Devens occurs largely in the permeable glacial-deltaic outwash deposits of sand, gravel, and boulders. Well yields within these sediments are dependent upon hydraulic characteristics of the aquifer and can range from 2 to over 300 gallons per minute (gpm). Small amounts of groundwater can be obtained from fractured bedrock with yields ranging from 2 to 10 gpm. Minor amounts of groundwater may be found in thin, permeable glacial lenses elsewhere on the installation. The primary hydrogeologic feature at Devens is the Nashua River, which flows adjacent to the northern portion of the Moore Army Air Field, in a south to north direction, with an average discharge rate of 55 cubic feet per second (ft^3/s). In addition to the Nashua River, numerous brooks that are associated with attendant wetlands dissect the terrain.

2.4 PREVIOUS INVESTIGATIONS

The Site Investigation (SI) conducted by ABB Environmental Services, Inc. (ABB-ES) for the U.S. Army Environmental Center (USAEC) included documentation of five surface soil/sediment samples which were collected in June 1992 and June 1993 during previous investigations. Figure 2-2 depicts the sampling locations. These samples were collected from ground surface to a maximum depth of one foot below ground surface (bgs) in the vicinity and downstream of the outfall. A total of three soil/sediment samples were collected in the June 1992 sampling round and were submitted for laboratory analyses for total petroleum hydrocarbons (TPH) and semi-volatile organic compounds (SVOCs). One soil/sediment sample and a duplicate sample were collected in June 1993 and were submitted for laboratory analyses for TPH, SVOCs, volatile organic compounds (VOCs), and metals.

Analytical results indicated TPH concentrations ranging from 1,410 to 3,500 parts per million (ppm) in the soil/sediment samples, which exceeded the then current Massachusetts Contingency Plan (MCP) Method 1 S-1/GW-1 clean-up standard of 500 ppm. In addition, several SVOCs,



PREVIOUS SAMPLING LOCATIONS
SOIL DRAIN SYSTEM No. 6 OUTFALL
DEVENS, MASSACHUSETTS

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 2-2

including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and chrysene, were detected in the two samples collected during the June 1993 sampling round. Detected concentrations exceeded the applicable MCP S-1/GW-1 standard of 0.7 ppm for all four compounds, the highest SVOC concentration being benzo(b)fluoranthene at 4.9 ppm. These contaminants may not have been detected in soil/sediment samples collected during the June 1992 sampling round since analytical detection limits for this event exceeded the June 1993 concentrations. An elevated lead concentration of 420 ppm was detected in the June 1993 duplicate soil/sediment sample which exceeded the MCP S-1/GW-1 clean-up standard of 300 ppm. No VOCs were detected in soil/sediment samples collected during the June 1993 sampling round. The soil/sediment in the drainage path was characterized as well-graded sand to a silty sand.

Based on the known history of the site and the surrounding area, as well as on limited analytical results from soil/sediment sampling in the area during previous investigations, a soil removal action was recommended to address contamination resulting from releases of petroleum oil to the storm drain outfall.

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3. FIELD ACTIVITIES

3.1 REMOVAL ACTION

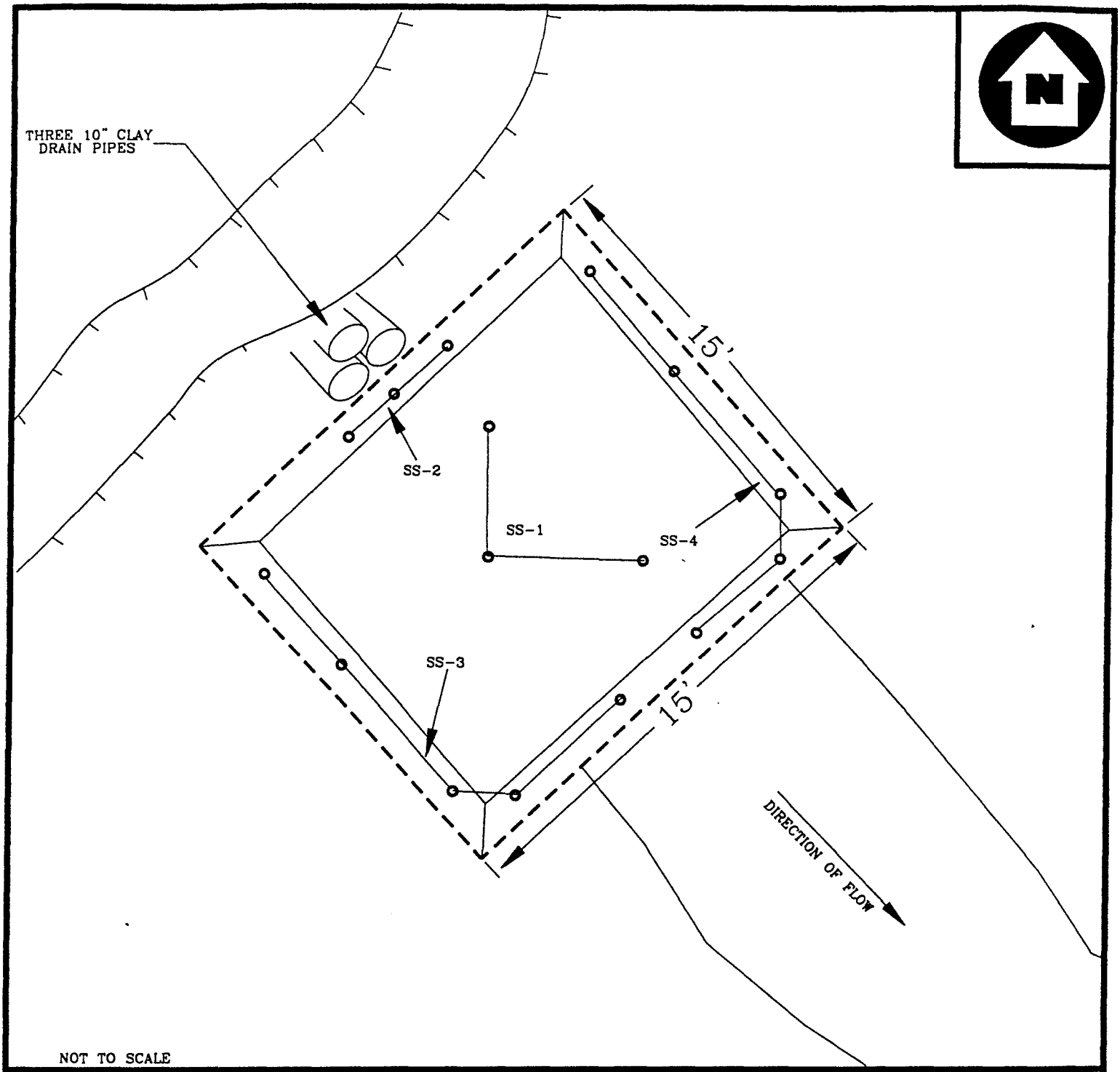
Based on findings identified during the ABB-ES *SI* and previous investigations, WESTON arrived at the System No. 6 Outfall in February 1997 to perform a time-critical removal action of associated contaminated soils. Initial removal operations conducted by WESTON included excavation of a 15' x 15' area, to a maximum depth of 2 feet below ground surface (bgs), at the outfall location; field analytical screening of the excavation limits; and collection of soil samples from the excavation limits for confirmatory laboratory analyses, respectively.

3.2 FIELD SCREENING ANALYSIS

After excavation of the initial limits, WESTON collected a total of four composite samples from the sidewalls and floor of the excavation area (FS-1, FS-2, FS-3, and FS-4) for field screen analysis using non-dispersive infra-red (NDIR) analysis (Figure 3-1). The sidewall samples were collected at depths between 1 to 2 feet bgs. The floor sample was collected at 2 feet bgs.

All field screen samples were screened with a photoionization detector (PID) prior to being screened by NDIR analysis. All headspace readings are presented as concentrations above ambient background concentrations which were determined using statistical calculations from readings collected at various locations in the vicinity of the site. None of the samples exhibited headspace readings above the background concentration.

All field screen samples were compared to the removal objective clean-up goal of 500 ppm for TPH, as specified in the WESTON *Action Memorandum*. Field screen results indicated TPH concentrations ranging from 66 to 271 ppm. Table 3-1 presents the sample locations, the depths at which they were collected and NDIR field screen results.



LEGEND

- LIMITS OF EXCAVATION
- CONTOUR INTERVAL 10 FT
- COMPOSITE SOIL SAMPLE LOCATION

FIELD SCREEN SAMPLE LOCATIONS
SOIL DRAIN SYSTEM NO. 6 OUTFALL
DEVENS, MASSACHUSETTS

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 3-1

Table 3-1

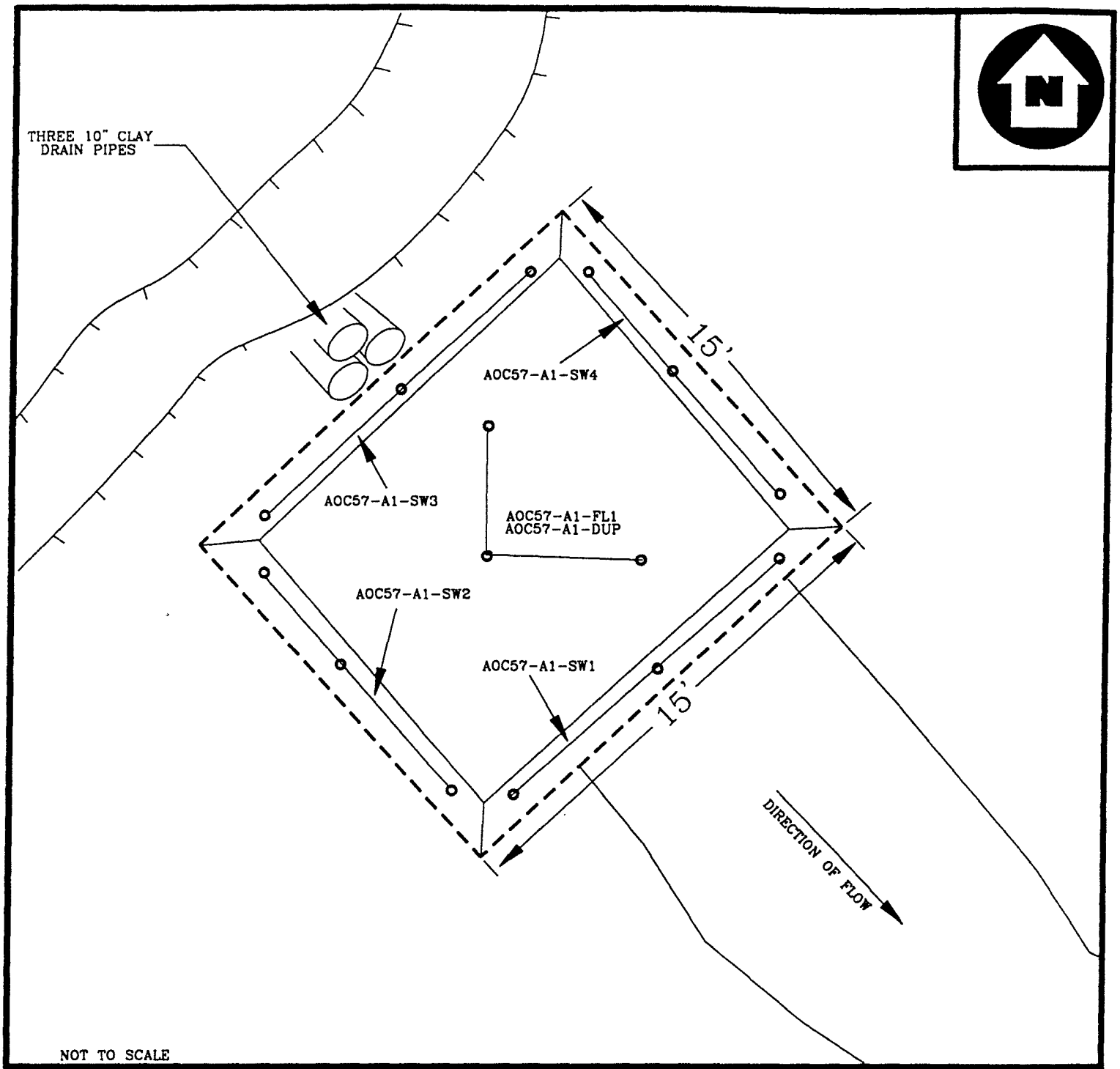
NDIR Field Screen Results
Composite Samples Collected by WESTON on February 11, 1997

Sample Identification	Composite Sample Locations	Depth (feet bgs)	TPH Concentration (ppm)
FS-1	floor	2	166
FS-2	beneath outfall	1-2	66
FS-3	northeast and southwest walls	1-2	271
FS-4	northeast and southeast walls	1-2	94

TPH = total petroleum hydrocarbons
bgs = below ground surface
ppm = parts per million

3.3 CONFIRMATORY LABORATORY ANALYSIS

On February 13, 1997, WESTON collected a total of six confirmatory soil samples, including a duplicate, from the sidewalls and bottom of the excavation (AOC57-A1-SW1; SW2; SW3; SW4; FL1; and DUP) (Figure 3-2). The soil samples were submitted to Alpha Analytical Laboratories for analysis for standard Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) using the Massachusetts Department of Environmental Protection (MADEP) method. The soil samples were also sent to Katahdin Analytical Services for Priority Pollutant Metals. Analytical results were compared to the MADEP MCP S-1/GW-2 regulatory action levels. A summary of confirmatory samples collected is presented in Table 3-2.



LEGEND

- LIMITS OF EXCAVATION
- CONTOUR INTERVAL 10 FT
- COMPOSITE SOIL SAMPLE LOCATIONS

FEBRUARY 13, 1997 CONFIRMATORY SAMPLE LOCATIONS
SOIL DRAIN SYSTEM NO. 6 OUTFALL
DEVENS, MASSACHUSETTS

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 3-2

Table 3-2

Sample Summary
Composite Soil Samples Collected by WESTON on February 13, 1997

Sample Identification	Sample Location	Depth (feet bgs)
AOC57-A1-SW1	east wall of excavation	1 - 2
AOC57-A1-SW2	south wall of excavation	1 - 2
AOC57-A1-SW3	west wall of excavation beneath drain pipes	1 - 2
AOC57-A1-SW4	north wall of excavation	1 - 2
AOC57-A1-FL1	floor of excavation	2
AOC57-A1-DUP	duplicate of AOC57-A1-FL1	2

bgs = below ground surface

Laboratory analysis indicated elevated concentrations of polyaromatic hydrocarbons (PAHs) above the S-1/GW-1 standards in composite samples collected from three of the sidewalls; AOC57-A1-SW1; SW2; and SW4. The highest PAH ratio of concentration detected to applicable action level (MCP S-1/GW-1 standard) was benzo(a)pyrene. The concentration and action level were 8.15 ppm and 0.7 ppm, respectively. In addition an elevated EPH concentration of the C_{10} - C_{22} aromatic fraction was detected at 532 ppm to exceed the MCP S-1/GW-1 standard of 200 ppm in sidewall sample AOC57-A1-SW2. No concentrations were detected above MCP S-1/GW-1 action levels in either of the floor samples. Table 3-3 is a summary of compounds and elements detected through confirmatory laboratory analyses of WESTON soil samples which are compared to current MCP Method 1 S-1/GW-1 regulatory guidelines.

Table 3-3

Summary of Analytical Results Above Regulatory Levels
Composite Soil Samples Collected by WESTON on February 11, 1997

Sample Identification	Compound	Concentration (ppm)	MCP S-1/GW-1 Regulatory Level (ppm)
AOC57-A1-SW1	**PAHs**		
	Benzo(a)anthracene	2.36	0.7
	Benzo(b)fluoranthene	4.4	0.7
	Benzo(a)pyrene	2.11	0.7
	Indeno(1,2,3-cd)pyrene	1.75	0.7
AOC57-A1-SW2	**EPH**		
	C_{10}-C_{22} Aromatics	532	200
	PAHs		
	Benzo(a)anthracene	7.53	0.7
	Benzo(a)pyrene	8.15	0.7
	Chrysene	10.7	7
	Dibenzo(a,h)anthracene	2.47	0.7
	Indeno(1,2,3-cd)pyrene	6.0	0.7
AOC57-A1-SW4	**PAHs**		
	Benzo(a)anthracene	3.07	0.7
	Benzo(b)fluoranthene	6.69	0.7
	Benzo(a)pyrene	3.44	0.7
	Dibenzo(a,h)anthracene	1.13	0.7
	Indeno(1,2,3-cd)pyrene	3.02	0.7

ppm = parts per million
MCP = Massachusetts Contingency Plan
PAHs = polyaromatic hydrocarbons
EPH = extractable petroleum hydrocarbons

Based on confirmatory results from the initial sampling round, which indicated elevated PAH and EPH concentrations in excess of the allowable MCP S-1/GW-1 standards, it was decided to perform additional excavation along the contaminated sidewalls. An additional three feet was

removed from the sidewalls perpendicular to the outfall pipes. Approximately seven feet was further excavated from the wall opposite the outfall pipes. The maximum depth of excavation was three feet bgs.

On March 17, 1997, WESTON collected three additional confirmatory composite samples (AOC57-A1-SW1/B; SW2/B; and SW4/B) from the sidewalls (Figure 3-3). Samples AOC57-A1-SW1/B and SW4/B were submitted to OHM Analytical Services for SVOCs using EPA Method 8270. Sample AOC57-A1-SW2/B was submitted to Alpha Analytical Laboratories for EPH analysis based on the elevated C_{10} - C_{22} aromatic fraction detected along the sidewall during the initial sampling round. A summary of confirmatory samples collected is presented in Table 3-4.

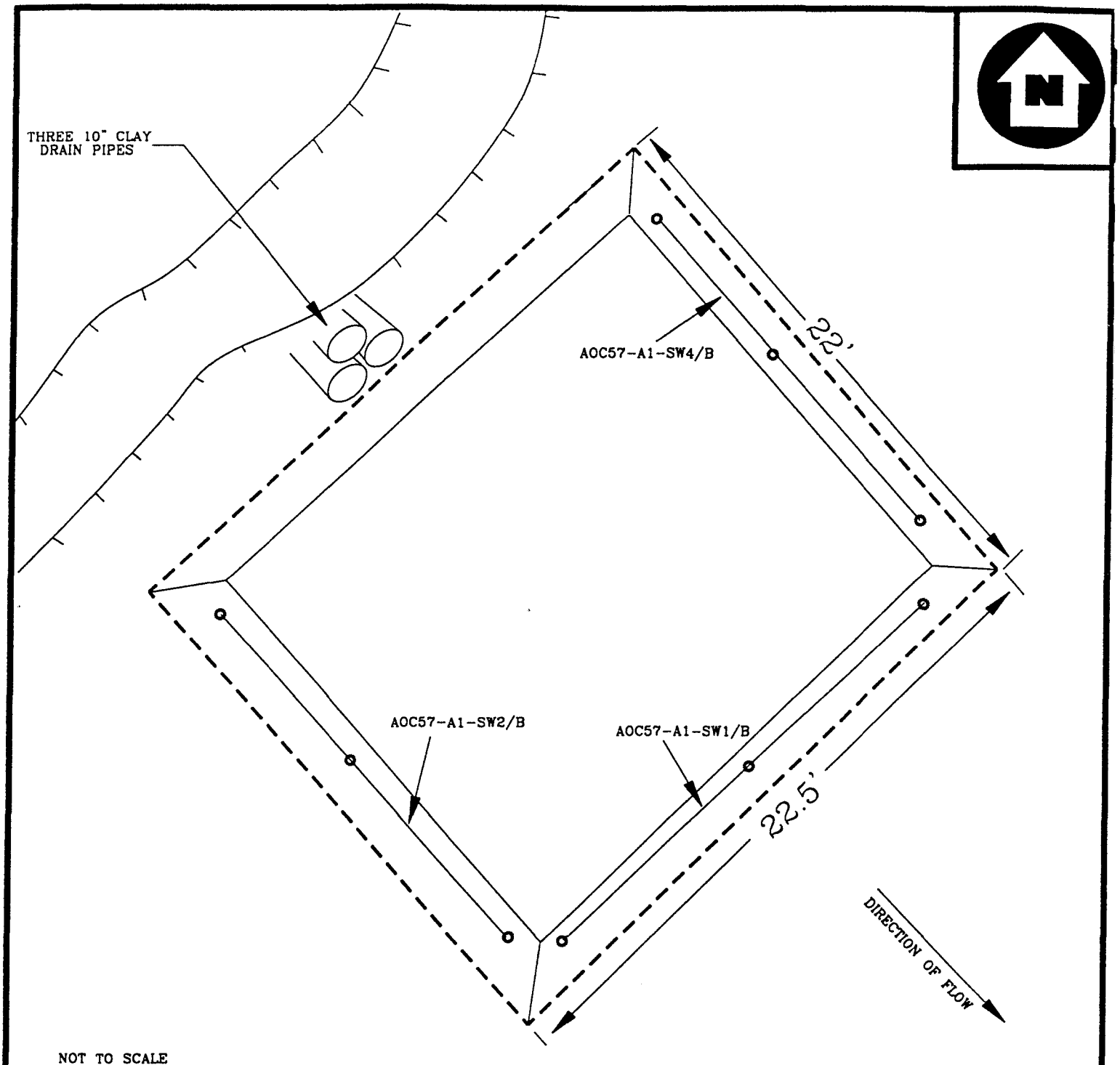
Table 3-4

Sample Summary
Composite Soil Samples Collected by WESTON on March 17, 1997

Sample Identification	Sample Location	Depth (feet bgs)
AOC57-A1-SW1/B	east wall of excavation	0 - 3
AOC57-A1-SW2/B	south wall of excavation	3
AOC57-A1-SW4/B	north wall of excavation	0 - 3

bgs = below ground surface

Confirmatory analytical results for the second round of sampling indicated elevated PAH concentrations in sidewalls AOC57-A1-SW1/B and SW4/B. A total of ten PAH contaminants exceeded the applicable MCP S-1/GW-1 standards in each of the two sample locations. The highest concentrations were detected in sample AOC57-A1-SW1/B, located downstream of the outfall pipes. No SVOCs or EPH fractions were detected above the MCP S-1/GW-1 cleanup standards in sample AOC57-A1-SW2/B. Table 3-5 is a summary of compounds and elements detected through confirmatory laboratory analyses of WESTON soil samples which are compared to current MCP Method 1 S-1/GW-1 regulatory guidelines.



LEGEND

- LIMITS OF EXCAVATION
- CONTOUR INTERVAL 10 FT
- COMPOSITE SOIL SAMPLE LOCATIONS

MARCH 17, 1997 CONFIRMATORY SAMPLE LOCATIONS
SOIL DRAIN SYSTEM NO. 6 OUTFALL
DEVENS, MASSACHUSETTS

WESTON MANAGERS DESIGNERS/CONSULTANTS

FIGURE 3-3

Table 3-5

Summary of Analytical Results Above Regulatory Levels Composite Soil Samples Collected by WESTON on March 17, 1997

Sample Identification	Compound	Concentration (ppm)	MCP S-1/GW-1 Regulatory Level (ppm)
AOC57-A1-SW1	**PAHs**		
	Benzo(a)anthracene	2.0	0.7
	Benzo(b)fluoranthene	2.8	0.7
	Benzo(a)pyrene	2.4	0.7
	Indeno(1,2,3-cd)pyrene	1.8	0.7
AOC57-A1-SW4	**PAHs**		
	Benzo(a)anthracene	5.1	0.7
	Benzo(a)pyrene	6.1	0.7
	Benzo(b)fluoranthene	6.1	0.7
	Indeno(1,2,3-cd)pyrene	4.7	0.7

ppm = parts per million
MCP = Massachusetts Contingency Plan
PAHs = polyaromatic hydrocarbons

3.4 WASTE CHARACTERIZATION ANALYSIS

In all, approximately 25 cubic yards of suspect contaminated soils were generated during the WESTON time-critical removal action. As specified in the WESTON FSAP, one composite sample was to be collected per 100 cubic yards of contaminated stockpiled soil generated. One composite waste characterization sample was submitted to OHM Remediation Services Corporation for analysis for VOCs using EPA Method 8260; SVOCs using EPA Method 8100; PCBs using EPA Method 8080; TPH using EPA Method 418.1; total RCRA metals using EPA Methods 6010A and 7471A; total RCRA characteristics.

Analytical waste characterization results indicated individual elevated SVOC concentrations of PAHs above regulatory actions levels. However, all total concentrations detected are below the allowable contaminant levels for soil reuse at lined landfills, as specified in the MADEP, Bureau

of Waste Site Cleanup, Interim Policy #BWP-94-037. These soils are currently stockpiled at the Soil Storage Facility at Building 202 and will be disposed and/or treated with petroleum contaminated soils currently stockpiled in Cell D of the Soil Storage Facility. Table 3-1 is a summary of total contaminant concentrations, detected through waste characterization analyses of stockpiled soils generated at the System No. 6 Outfall, in comparison to MADEP landfill reuse and disposal criteria.

Table 3-6

Summary of Waste Characterization Analytical Results
Stockpile Soil Samples Collected by WESTON on June 16, 1997

Contaminant	Reuse Levels (ppm)	Stockpile Soil Results (ppm)
Total Arsenic	40	14.2
Total Cadmium	80	0.84
Total Chromium	1,000	21.1
Total Lead	2,000	75.7
Total Mercury	10	<0.009
TPH	5,000	220
Total PCBs	<2	<0.18
Total SVOCs	100	18.77
Total VOCs	10	0.323
TCLP	None	ND*

ppm = parts per million
TPH = total petroleum hydrocarbons
PCBs = polychlorinated biphenyls
PAHs = polyaromatic hydrocarbons
VOCs = volatile organic oompunds
TCLP = toxicity characteristic leachate procedure
* = below TCLP regulated toxicants and hazardous concentrations.

4. COMPARISON TO BACKGROUND STUDIES

To assess the nature and regulatory context of the elevated PAH concentrations at the System No. 6 Outfall, a comparison has been made with concentrations of PAHs detected in sediment samples at the System No. 6 outfall with sediment samples collected at eight other storm drain outfalls which also drain into Cold Spring Brook. The objective of this comparison is to provide sufficient evidence that PAHs detected in soil samples collected at the System No. 6 Outfall are consistent with the past uses of properties which formerly and/or currently drain into the outfall, and are not the result of the documented fuel oil spill. Figure 4-1 presents the locations of sediment samples collected at the eight other storm drain outfalls in addition to sample locations along Cold Spring Brook.

In general, elevated PAH concentrations, above the MCP S-1/GW-1 regulatory action levels, exist along the drainage pathway downstream of the System No. 6 Outfall. As mentioned previously, the background history of this outfall includes a fuel oil spill that was released to the outfall in 1978; however, it should be noted that PAHs are also byproducts of combustion and are common constituents in runoff from paved, trafficked areas. Other sources of PAHs consist of coal tar and wood treating residues (Bradley et al). As indicated in the background history of the site, the System No. 6 Outfall collects runoff from Buildings 3712 and 3713, an area that includes paved vehicle storage and parking areas and a portion of unpaved railroad track. These areas would be considered likely sources of PAHs in runoff to Storm Drain 6. The other Storm Drain outfalls along Barnum Road areas also accept similar types of runoff. Given these potential sources at the site, it is reasonable to compare the concentrations detected at the System No. 6 Outfall with background concentrations at other outfalls at Devens.

Between 1992 and 1994, a total of 26 sediment samples were collected from the nine outfall locations and downstream pathways associated with Cold Spring Brook, including the System No. 6 Outfall. Because PAHs are generally found in groups, it was conservatively assumed that if one PAH was detected in a sample, other compounds in that class might also be present in that sample. Therefore, if one PAH was detected in a sample, all undetected PAHs were assigned a proxy concentration equal to one half the standard quantitation limit (SQL). If a sample had no

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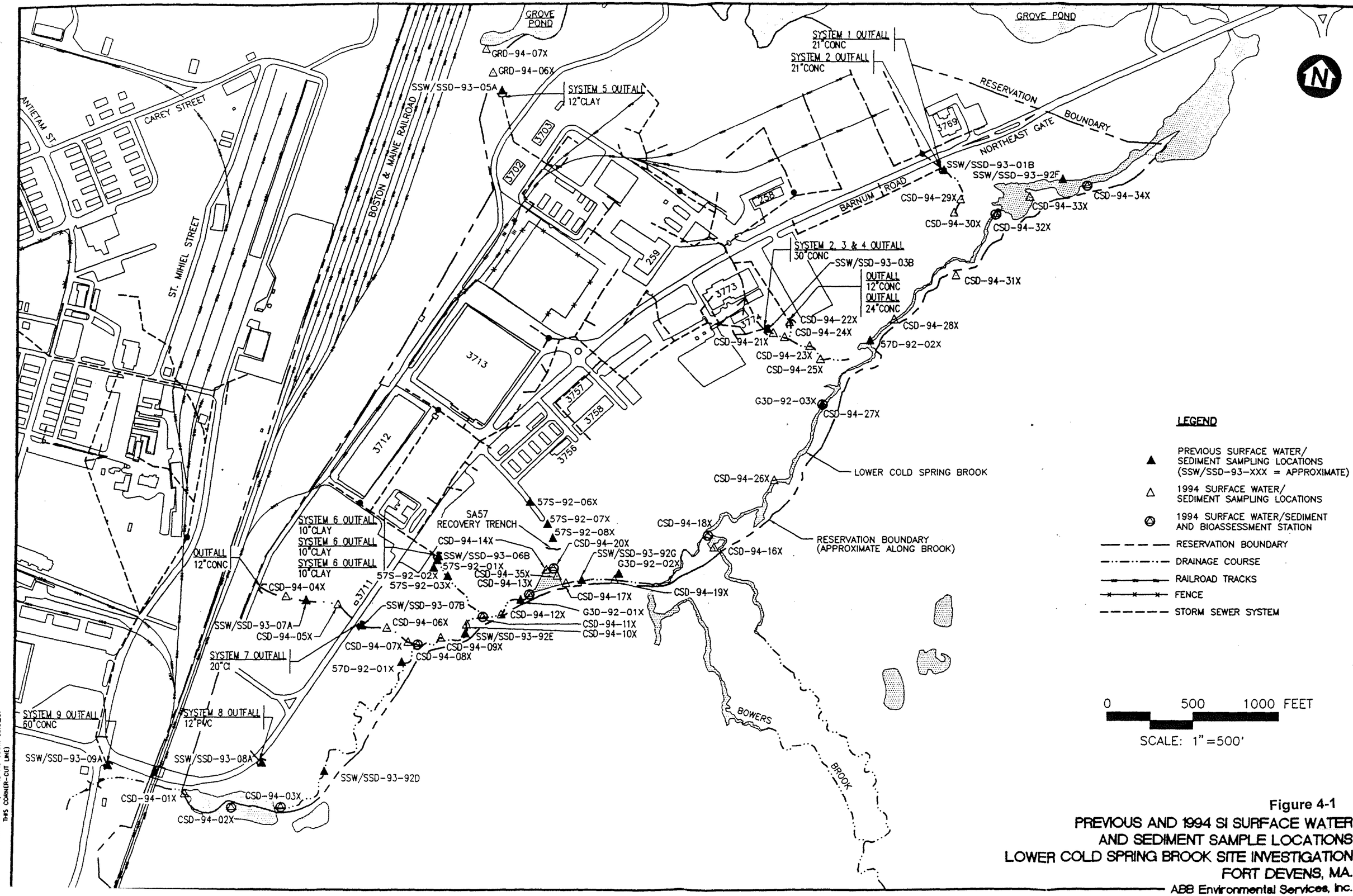

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Figure 4-1
PREVIOUS AND 1994 SI SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS
LOWER COLD SPRING BROOK SITE INVESTIGATION
FORT DEVENS, MA.

detected PAH, no PAH was assumed to be present in the sample, and a concentration of zero was used for all non-detects (Bradley et al).

Table 4-1

Comparison of PAH Concentrations in Sediment Samples in Storm Drain Pathways along Cold Spring Brook

Analyte	System No 6 MeanConc. (mg/kg)	Combined Outfall Mean Conc. (mg/kg)
Naphthalene	ND	0.25*
Acenaphthylene	ND	3.43
Acenaphthene	ND	0.9*
Fluorene	ND	0.67
Phenanthrene	5.9	15.76
Anthracene	ND	0.73
Fluoranthene	9.85	11.08
Pyrene	7.75	13.83
Benzo(a)anthracene	3.55	4.67
Chrysene	4.85	7.05
Benzo(b)fluoranthene	4.45	5.11
Benzo(k)fluoranthene	4.1	4.46
Benzo(a)pyrene	4.25	3.95
Indeno(1,2,3-cd)pyrene	3.25	5.63*
Dibenzo(a,h)anthracene	ND	3.62*
Benzo(g,h,i)perylene	3.05	2.41
2-Methylnaphthalene	NA	2.52*
Total PAH	51.0	86.07
Total cPAH	24.45	34.49

mg/kg = milligrams per kilogram, analogous to parts per million (ppm).
ND = Not Detected
* Analyte was not reported at all outfall locations and given arithmetic mean is the total concentration for that analyte divided by the number of storm drains at which the analyte was reported.

Based on the data presented in Table 4-1, a comparison of the arithmetic mean concentration of the PAHs, and more specifically the carcinogenic PAHs (cPAHs), indicates that the concentrations in sediments at the System No. 6 Outfall are consistent with concentrations at various outfalls along Cold Spring Brook at Devens.

The current analytical data strongly indicates that fuel oil related contamination at the outfall was successfully removed, and that what soil/sediment at the outfall are PAHs that are likely related to runoff from paved, trafficked areas. Based on the information provided, this type of PAH contamination which cannot feasibly be eliminated from runoff from asphalt paved areas, is specifically exempted from MCP requirements due to its relative ubiquity at these types of outfalls.

5. CONCLUSIONS

Elevated PAH concentrations, above the MCP S-1/GW-1 Method 1 Standards, exist along the drainage pathway downstream of the Storm Drain No. 6 Outfall. Background history of this outfall indicates that a fuel oil spill was released to the outfall in 1978; however, the PAHs observed are also byproducts of combustion and are commonly observed in runoff from paved areas which are heavily trafficked and/or used for vehicle storage. Other sources of PAHs consist of coal tar and wood treating residues. As indicated in the background history of the site, the Storm Drain No. 6 Outfall collects runoff from Buildings 3712 and 3713, an area that includes paved vehicle storage areas and a portion of unpaved railroad track. Both of these areas would be considered likely sources of PAHs in runoff.

Based on the data presented in Table 4-1, a comparison of the arithmetic mean concentration of the PAHs, and more specifically the cPAHs, indicates that the types and concentrations of PAHs in sediments at the Storm Drain No. 6 Outfall are consistent with concentrations at various outfalls along Cold Spring Brook. The current analytical data therefore strongly indicates that fuel oil related contamination at the outfall was successfully removed, and that what remain in soil/sediment at the outfall are PAHs that are likely related to runoff from paved, trafficked areas along Barnum Road. Based on the information provided, this type of PAH contamination which cannot feasibly be eliminated from runoff from asphalt paved areas, is specifically exempted from MCP requirements due to its relative ubiquity at these types of outfalls.

Based on the data provided in this report from the removal action and the conclusions derived from comparison of PAH data as discussed above, no further action is recommended for Study Area 57, Area 1, Storm Drain System No. 6 Outfall. This Removal Action Report will be incorporated into the Record of Decision for Study Area 57, Areas 2 & 3.

6. REFERENCES

WESTON (Roy F. Weston, Inc.). 1996. *Contaminated Soil Removal - Phase II, Study Area 57, Area 1, Storm Drain System No. 6 Outfall, Scope of Work.* September.

WESTON (Roy F. Weston, Inc.). 1996. *Contaminated Soil Removal - Phase II, Study Area 57, Area 1, Storm Drain System No. 6 Outfall, Action Memorandum.* October.

WESTON (Roy F. Weston, Inc.). 1996. *Contaminated Soil Removal - Phase II, Study Area 57, Area 1, Storm Drain System No. 6 Outfall, Field Sampling and Analysis Plan Addendum.* October.

MADEP (Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup). 1997. *The Massachusetts Contingency Plan, 310 CMR 40.000.* Revised May 8.

ABB (ABB Environmental Services, Inc.). 1995. Lower Cold Spring Brook Site Investigation. April.

ADL (Arthur D. Little, Inc.). 1994. Final Storm Sewer System Evaluation (AREE 70) Report. June.

Bradley et al. *Background Levels of Polycyclic Aromatic Hydrocarbons (PAH) and Selected Metals in New England Urban Soils.* 1994.

ATTACHMENT A

CONFIRMATORY SOIL ANALYTICAL RESULTS

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ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: Roy F. Weston, Inc.

Address: 88 Pine Street
Fort Devens, MA 01433

Attn: Tom Abdella

Project Number: 03886-118-004

Site: Fort Devens, MA

Laboratory Job Number: L9701107

Invoice Number: 2173

Date Received: 13-FEB-97

Date Reported: 19-FEB-97

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9701107-01	AOC57-A1-SW1	Storm Drain #6
L9701107-02	AOC57-A1-SW2	Storm Drain #6
L9701107-03	AOC57-A1-SW3	Storm Drain #6
L9701107-04	AOC57-A1-SW4	Storm Drain #6
L9701107-05	AOC57-A1-FL1	Storm Drain #6
L9701107-06	AOC57-A1-DUP	Storm Drain #6
L9701107-07	AOC57-TB1	Storm Drain #6

Authorized by: James R. Roth

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-01
AOC57-A1-SW1
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	87.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		14-Feb	DB
C5-C8 Aliphatics	11500	ug/kg	200.					
C9-C12 Aliphatics	1380	ug/kg	200.					
C9-C10 Aromatics	575.	ug/kg	200.					
VPH, Total	13800	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	102.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9701107-01
AOC57-A1-SW1

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	96100	ug/kg	5000					
EPH, Total	96100	ug/kg	5000					
---	-							
Acenaphthene	ND	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	985.	ug/kg	700.					
Benzo(a)anthracene	2360	ug/kg	700.	J				
Benzo(a)pyrene	2110	ug/kg	700.	J				
Benzo(b)fluoranthene	4400	ug/kg	700.	J				
Benzo(ghi)perylene	1860	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	3150	ug/kg	700.					
Dibenzo(a,h)anthracene	ND	ug/kg	700.					
Fluoranthene	8240	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	1750	ug/kg	700.	J				
Naphthalene	ND	ug/kg	700.					
Phenanthrene	5290	ug/kg	700.					
Pyrene	5840	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	91.0	%						
o-Terphenyl	236.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-02
AOC57-A1-SW2
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	86.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		14-Feb	DB
C5-C8 Aliphatics	15100	ug/kg	200.					
C9-C12 Aliphatics	3020	ug/kg	200.					
C9-C10 Aromatics	965.	ug/kg	200.					
VPH, Total	18600	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	100.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9701107-02
AOC57-A1-SW2

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	29300	ug/kg	5000					
C10-C22 Aromatics	532000	ug/kg	5000					
EPH, Total	561000	ug/kg	5000					
---	-							
Acenaphthene	879.	ug/kg	700.					
Acenaphthylene	1080	ug/kg	700.					
Anthracene	3200	ug/kg	700.					
Benzo(a)anthracene	7530	ug/kg	700.					
Benzo(a)pyrene	8150	ug/kg	700.					
Benzo(b)fluoranthene	15600	ug/kg	700.					
Benzo(ghi)perylene	5620	ug/kg	700.					
Benzo(k)fluoranthene	1670	ug/kg	700.					
Chrysene	10700	ug/kg	700.					
Dibenzo(a,h)anthracene	2470	ug/kg	700.					
Fluoranthene	27100	ug/kg	700.					
Fluorene	1730	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	6000	ug/kg	700.					
Naphthalene	814.	ug/kg	700.					
Phenanthrene	19100	ug/kg	700.					
Pyrene	23500	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	82.0	%						
o-Terphenyl	315.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-03
AOC57-A1-SW3
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	95.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		14-Feb	DE
C5-C8 Aliphatics	10100	ug/kg	200.					
C9-C12 Aliphatics	211.	ug/kg	200.					
C9-C10 Aromatics	295.	ug/kg	200.					
VPH, Total	10500	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	95.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9701107-03
AOC57-A1-SW3

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	ND	ug/kg	5000					
EPH, Total	ND	ug/kg	5000					
Acenaphthene	ND	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	ND	ug/kg	700.					
Benzo(a)anthracene	ND	ug/kg	700.					
Benzo(a)pyrene	ND	ug/kg	700.					
Benzo(b)fluoranthene	ND	ug/kg	700.					
Benzo(ghi)perylene	ND	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	ND	ug/kg	700.					
Dibenzo(a,h)anthracene	ND	ug/kg	700.					
Fluoranthene	ND	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	700.					
Naphthalene	ND	ug/kg	700.					
Phenanthrene	ND	ug/kg	700.					
Pyrene	ND	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	86.0	%						
o-Terphenyl	141.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: Roy F. Weston, Inc.
Address: 88 Pine Street
Fort Devens, MA 01433
Attn: Dave Crispo
Project Number:
Site: Fort Devens

Laboratory Job Number: L9701277
Invoice Number: 2371
Date Received: 19-FEB-97
Date Reported: 26-FEB-97
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9701277-01	ADC57-A1-FL1	Storm Drain #6
L9701277-02	ADC57-A1-DUP	Storm Drain #6

Authorized by:

Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-04
AOC57-A1-SW4
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	88.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		14-Feb	DB
C5-C8 Aliphatics	14800	ug/kg	200.					
C9-C12 Aliphatics	3640	ug/kg	200.					
C9-C10 Aromatics	807.	ug/kg	200.					
VPH, Total	19300	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	105.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L9701107-04
AOC57-A1-SW4

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	148000	ug/kg	5000					
EPH, Total	148000	ug/kg	5000					
----------	-							
Acenaphthene	ND	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	951.	ug/kg	700.					
Benzo(a)anthracene	3070	ug/kg	700.	J	J			
Benzo(a)pyrene	3440	ug/kg	700.	J	J			
Benzo(b)fluoranthene	6690	ug/kg	700.	J				
Benzo(ghi)perylene	3160	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	4610	ug/kg	700.					
Dibenzo(a,h)anthracene	1130	ug/kg	700.	J	J			
Fluoranthene	9940	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	3020	ug/kg	700.	J	J			
Naphthalene	ND	ug/kg	700.					
Phenanthrene	5090	ug/kg	700.					
Pyrene	7560	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	76.0	%						
o-Terphenyl	232.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701277-01
ADC57-A1-FL1
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 19-FEB-97
Date Reported : 26-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		20-Feb	DB
C5-C8 Aliphatics	3860	ug/kg	200.					
C9-C12 Aliphatics	2410	ug/kg	200.					
C9-C10 Aromatics	386.	ug/kg	200.					
VPH, Total	6630	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	106.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-05
AOC57-A1-FL1
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B		14-Feb	ST
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	ND	ug/kg	5000					
EPH, Total	ND	ug/kg	5000					
----------	-							
Acenaphthene	ND	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	ND	ug/kg	700.					
Benzo(a)anthracene	ND	ug/kg	700.					
Benzo(a)pyrene	ND	ug/kg	700.					
Benzo(b)fluoranthene	ND	ug/kg	700.					
Benzo(ghi)perylene	ND	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	ND	ug/kg	700.					
Dibenzo(a,h)anthracene	ND	ug/kg	700.					
Fluoranthene	ND	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	700.					
Naphthalene	ND	ug/kg	700.					
Phenanthrene	ND	ug/kg	700.					
Pyrene	ND	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	75.0	%						
o-Terphenyl	165.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701277-02
ADC57-A1-DUP
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 19-FEB-97
Date Reported : 26-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		20-Feb	DB
C5-C8 Aliphatics	3370	ug/kg	200.					
C9-C12 Aliphatics	711.	ug/kg	200.					
C9-C10 Aromatics	ND	ug/kg	200.					
VPH, Total	4100	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	97.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-06
AOC57-A1-DUP
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial,1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B		14-Feb	ST
Extractable Petroleum Hydrocarbon				40	Draft 1.0	14-Feb	15-Feb	DB
C9-C18 Aliphatics	ND	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	ND	ug/kg	5000					
EPH, Total	ND	ug/kg	5000					
----------	-							
Acenaphthene	ND	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	ND	ug/kg	700.					
Benzo(a)anthracene	ND	ug/kg	700.					
Benzo(a)pyrene	ND	ug/kg	700.					
Benzo(b)fluoranthene	ND	ug/kg	700.					
Benzo(ghi)perylene	ND	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	ND	ug/kg	700.					
Dibenzo(a,h)anthracene	ND	ug/kg	700.					
Fluoranthene	ND	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	700.					
Naphthalene	ND	ug/kg	700.					
Phenanthrene	ND	ug/kg	700.					
Pyrene	ND	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	79.0	%						
o-Terphenyl	131.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701107-07
AOC57-TB1
Sample Matrix: SOIL

Date Collected: 12-FEB-97
Date Received : 13-FEB-97
Date Reported : 19-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Volatile Petroleum Hydrocarbon Only				39	Draft 1.0		14-Feb	DB
C5-C8 Aliphatics	10000	ug/kg	200.					
C9-C12 Aliphatics	ND	ug/kg	200.					
C9-C10 Aromatics	300.	ug/kg	200.					
VPH, Total	10000	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	97.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9701107

Parameter	Value 1	Value 2	RPD	Units
Solids, Total	DUPLICATE for sample(s) 01-06			
	95.	95.	0	%

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9701107

Parameter	MS %	MSD %	RPD
Volatile Petroleum Hydrocarbon-Spike Recovery MS/MSD for sample(s) 01-04,07			
2-Methylpentane	80	83	4
Toluene	120	104	14
1,2,4-Trimethylbenzene	115	112	3
SURROGATE RECOVERY			
2,5-Dibromotoluene	121	122	1

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

39. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Draft 1.0, Massachusetts Department of Environmental Protection, 1995.

40. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), Draft 1.0, Massachusetts Department of Environmental Protection, 1995.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

P. 17/17

ALPHA
Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 60563
Sheet 1 of 1

Company Name:	Project Number:	Project Name/Location:	Date Received in Lab:	Date Due:
ROY F. WESTON, INC.	02886-118-004-4490-00 P.O. Number:	FORT DEVENS, MA / STORM DRAIN #6	2/13	~~2/18~~ 1972/19 RUSH

Company Address:	Phone Number: / FAX No.:	Project Manager:	Alpha Job Number: (Lab use only)
Bldg 3701, BARNUM ROAD, DEVENS MA 01433	508-772-7190 / 508-772-7251	TOM ABDELLA / DAVE CRISPO	970 1107

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other _____ X2 = Other _____

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
1107-1	AOC57-A1-SW1	1A 1G	S		X				X		2-13-97	0931	EPH DELUXE, STANDARD VPH (TS)
2	AOC57-A1-SW2	1A 1G	S		X				X		2-13-97	0940	EPH DELUXE, STANDARD VPH
3	AOC57-A1-SW3	1A 1G	S		X				X		2-13-97	0952	EPH DELUXE, STANDARD VPH
4	AOC57-A1-SW4	1A 1G	S		X				X		2-13-97	1008	EPH DELUXE, STANDARD VPH
5	AOC57-A1-FL1	1A 1G	S		X				X		2-13-97	1012	EPH DELUXE
6	AOC57-A1-DUP	1A 1G	S		X				X	*BD	2-13-97	1012	EPH DELUXE
7	AOC57TB1	1A	-		X				X	*BD	2-12-97	-	STANDARD VPH M/C

Sampler's Signature	Affiliation	Date	Time
William P. Dal	R.F. WESTON	2-13-97	1200

ADDITIONAL COMMENTS:
* 3 DAY TAT

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	William P. Dal	Shelly Lance	2/13/97	1230
2	Shelly Lance	Kim Lefebvre	2-13-97	1230
3	Kim Lefebvre	Dave Crispo	2/13/97	1510
4				

FEB-19-97 WED 04:07 PM

Form No. QOP/06-03

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9701277

Parameter	MS %	MSD %	RPD
Volatile Petroleum Hydrocarbon-Spike Recovery MS/MSD for sample(s) 01-02			
2-Methylpentane	101	94	7
Toluene	97	97	0
1,2,4-Trimethylbenzene	100	98	2
SURROGATE RECOVERY			
2,5-Dibromotoluene	110	90	20

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

39. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Draft 1.0, Massachusetts Department of Environmental Protection, 1995.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

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We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

2371

MAR-03-97 MON 09:09 AM

ALPHA Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 69141

Sheet ___ of ___

Company Name:	Project Number:	Project Name/Location:	Date Received in Lab:	Date Due:
Roy f weston	03886-118-004-4420-02 P.O. Number:	Fort Devens Storm Drain #6	2/26	2/27

Company Address:	Phone Number: FAX No.:	Project Manager:	Alpha Job Number: (Lab use only)
		Dave Crispo.	9701277

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other ___ X2 = Other ___

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
1277.1	ADC57-A1-FL1	16	S						1		2/13	1012	VPH TS = 83
.2	ADC57-A1-Dup	↓	↓						1		↓	↓	↓ ↓ ↓

Sampler's Signature	Affiliation	Date	Time

ADDITIONAL COMMENTS:

Relog of 1107.5 + .6

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	Cronnson		2/19/97	5:00
2				
3				
4				

Form No. QOP/06-03

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: Roy F. Weston, Inc.

Address: 88 Pine Street
Fort Devens, MA 01433

Attn: Dave Crispo

Project Number:

Site: Fort Devens

Laboratory Job Number: L9701277

Invoice Number: 2371

Date Received: 19-FEB-97

Date Reported: 26-FEB-97

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9701277-01	ADC57-A1-FL1	Storm Drain #6
L9701277-02	ADC57-A1-DUP	Storm Drain #6

Authorized by:

Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701277-01
ADC57-A1-FL1
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 19-FEB-97
Date Reported : 26-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	I
Solids, Total	83.	%	0.10	3	2540B		14-Feb	S
Volatile Petroleum Hydrocarbon	Only			39	Draft 1.0		20-Feb	DB
C5-C8 Aliphatics	3860	ug/kg	200.					
C9-C12 Aliphatics	2410	ug/kg	200.					
C9-C10 Aromatics	386.	ug/kg	200.					
VPH, Total	6630	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	106.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701277-02
ADC57-A1-DUP
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 19-FEB-97
Date Reported : 26-FEB-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	83.	%	0.10	3	2540B		14-Feb	ST
Volatile Petroleum Hydrocarbon	Only			39	Draft 1.0		20-Feb	DB
C5-C8 Aliphatics	3370	ug/kg	200.					
C9-C12 Aliphatics	711.	ug/kg	200.					
C9-C10 Aromatics	ND	ug/kg	200.					
VPH, Total	4100	ug/kg	200.					
SURROGATE RECOVERY								
2,5-Dibromotoluene	97.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L9701277

Parameter	MS %	MSD %	RPD
Volatile Petroleum Hydrocarbon-Spike Recovery MS/MSD for sample(s) 01-02			
2-Methylpentane	101	94	7
Toluene	97	97	0
1,2,4-Trimethylbenzene	100	98	2
SURROGATE RECOVERY			
2,5-Dibromotoluene	110	90	20

REFERENCES

3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

39. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Draft 1.0, Massachusetts Department of Environmental Protection, 1995.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

2371

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508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. [redacted]
Sheet ____ of ____

Company Name:	Project Number:	Project Name / Location:	Date Received in Lab:	Date Due:
Roy f weston	03886-118-004-4420-00 P.O. Number:	fort Devens Storm Main #6	2/26	2/27

Company Address:	Phone Number: FAX No.:	Project Manager:	Alpha Job Number: (Lab use only)
		Dave CrisPO.	9701277

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, L F = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab# (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
1277.1	ADC57-A1-FL1	16	S						1		2/13	1012	VPH TS = 83
.2	ADC57-A1 Dup	1	1						1		1	1	1 1 1.

Sampler's Signature	Affiliation	Date	Time

ADDITIONAL COMMENTS:

Relog of 1107.5 + .6

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	Cronsun		2/19/97	5:00
2				
3				
4				

Form No. OOP/06-93

ALPHA
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Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 6[illegible]

Sheet 1 of 1

Company Name:	Project Number:	Project Name / Location:	Date Received in Lab:	Date Due:
ROY F. WESTON, INC.	02886-118-004-4420-00 P.O. Number:	FORT DEVENS, MA / STORM DRAIN #6	2/13	~~2/18~~ 1972/19

Company Address:	Phone Number:	Project Manager:	Alpha Job Number: (Lab use only)
Bldg 3701, BARNUM ROAD, DEVENS MA 01433	508-772-7190 508-772-7251 FAX No.:	TOM ABDELLA / DAVE CRISPO	970 1107

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, L F = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
1107-1	ADC57-A1-SW1	1A 1G	S		X				X		2-13-97	0931	EPH DELUXE, STANDARD VPH (TS)
2	ADC57-A1-SW2	1A 1G	S		X				X		2-13-97	0940	EPH DELUXE, STANDARD VPH
3	ADC57-A1-SW3	1A 1G	S		X				X		2-13-97	0952	EPH DELUXE, STANDARD VPH
4	ADC57-A1-SW4	1A 1G	S		X				X		2-13-97	1008	EPH DELUXE, STANDARD VPH
5	ADC57-A1-FL1	1A 1G	S		X				X		2-13-97	1012	EPH DELUXE
6	ADC57-A1-DUP	1A 1G	S		X				X	X80	2-13-97	1012	EPH DELUXE
7	ADC57 TB1	1A	—		X				X	X80	2-12-97	—	STANDARD VPH M/C

Sampler's Signature	Affiliation	Date	Time
William P. Dal	R.F. WESTON	2-13-97	1200

ADDITIONAL COMMENTS:
* 3 DAY TAT

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	William P. Dal	[signature]	2/13/97	1230
2	[signature]	[signature]	2-13-97	1730
3	[signature]	[signature]	2/13/97	1510
4				

Form No. QOP/06-03

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: Roy F. Weston, Inc.
Address: 88 Pine Street
Fort Devens, MA 01433
Attn: Tom Abdella
Project Number: 03886-118-004
Site: Storm Drain #6

Laboratory Job Number: L9701555
Invoice Number: 2547
Date Received: 03-MAR-97
Date Reported: 04-MAR-97
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9701555-01	AOC57-A1-SW1	Fort Devens, MA
L9701555-02	AOC57-A1-SW4	Fort Devens, MA

Authorized by:

Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701555-01
AOC57-A1-SW1
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 03-MAR-97
Date Reported : 04-MAR-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1J

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	87.	%	0.10	3	2540B		14-Feb	ST
Polynuclear Aromatics by GC/MS				1	8270	03-Mar	04-Mar	DB
Acenaphthene	440	ug/kg	280					
2-Chloronaphthalene	ND	ug/kg	300					
Fluoranthene	9500	ug/kg	280					
Naphthalene	240	ug/kg	200					
Benzo(a)anthracene	3000	ug/kg	320	J				
Benzo(a)pyrene	700	ug/kg	380					
Benzo(b)fluoranthene	2700	ug/kg	360	J				
Benzo(k)fluoranthene	3400	ug/kg	360					
Chrysene	3600	ug/kg	320					
Acenaphthylene	430	ug/kg	260					
Anthracene	1400	ug/kg	240					
Benzo(ghi)perylene	1400	ug/kg	500					
Fluorene	ND	ug/kg	280					
Phenanthrene	5800	ug/kg	260					
Dibenzo(a,h)anthracene	530	ug/kg	400					
Indeno(1,2,3-cd)pyrene	1800	ug/kg	480	J				
Pyrene	6500	ug/kg	280					
1-Methylnaphthalene	ND	ug/kg	700					
2-Methylnaphthalene	250	ug/kg	180					
SURROGATE RECOVERY								
Nitrobenzene-d5	115.	%						
2-Fluorobiphenyl	103.	%						
4-Terphenyl-d14	120.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701555-02
AOC57-A1-SW4
Sample Matrix: SOIL

Date Collected: 13-FEB-97
Date Received : 03-MAR-97
Date Reported : 04-MAR-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1J

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	88.	%	0.10	3	2540B		14-Feb	ST
Polynuclear Aromatics by GC/MS				1	8270	03-Mar	04-Mar	DB
Acenaphthene	ND	ug/kg	280					
2-Chloronaphthalene	ND	ug/kg	300					
Fluoranthene	13000	ug/kg	280					
Naphthalene	290	ug/kg	220					
Benzo(a)anthracene	5400	ug/kg	320 J					
Benzo(a)pyrene	1600	ug/kg	380 J					
Benzo(b)fluoranthene	5800	ug/kg	360 J					
Benzo(k)fluoranthene	6200	ug/kg	360					
Chrysene	6500	ug/kg	320					
Acenaphthylene	1100	ug/kg	260					
Anthracene	1600	ug/kg	240					
Benzo(ghi)perylene	3100	ug/kg	500					
Fluorene	ND	ug/kg	280					
Phenanthrene	5200	ug/kg	260					
Dibenzo(a,h)anthracene	1200	ug/kg	480 J					
Indeno(1,2,3-cd)pyrene	4100	ug/kg	480 J					
Pyrene	10000	ug/kg	280					
1-Methylnaphthalene	ND	ug/kg	700					
2-Methylnaphthalene	ND	ug/kg	180					
SURROGATE RECOVERY								
Nitrobenzene-d5	110.	%						
2-Fluorobiphenyl	96.0	%						
4-Terphenyl-d14	109.	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

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We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

2547

ALPHA
Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 74390
Sheet ____ of ____

Company Name:	Project Number: / P.O. Number:	Project Name / Location:	Date Received in Lab:	Date Due:
Roy F. Weston - FD			3/3	3/4

Company Address:	Phone Number: / FAX No.:	Project Manager:	Alpha Job Number: (Lab use only)
		TOM Abdella	9701555

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, LF = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling: Date	Time	Analysis Requested
1555 .1	AOC57-A1-SW1	1 G	S								2/13	09:31	PAH confirm TJ = 87 %
1555 .2	AOC57-A1-SW4	↓	↓								2/13	10:05	↓ 88 %

Sampler's Signature	Affiliation	Date	Time

ADDITIONAL COMMENTS:
Re109 Ub 1107. 1
9.4

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1		C. Bliss	3/3/97	12:25
2				
3				
4				

Form No. QOF/06-03

MAR-04-97 TUE 04:14 PM

P. 06/07

2173

ALPHA Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 97[illegible]

Sheet 1 of 1

Company Name:	Project Number:	Project Name/Location:	Date Received in Lab:	Date Due:
ROY F. WESTON, INC.	03886-118-004-4420-00 P.O. Number:	FORT DEVENS, MA / STORM DRAIN #6	2/13	~~2/18~~ 1/97 2/19

Company Address:	Phone Number:	Project Manager:	Alpha Job Number: (Lab use only)
Bldg 3701, BARNUM ROAD, DEVENS MA 01433	508-772-7190 508-772-7251 FAX No.:	TOM ABDELLA / DAVE CRISPO	970 1107

Container Codes: P = Plastic V = VoA C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other: X2 = Other:

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling: Date	Time	Analysis Requested
1107-1	ADC57-A1-SW1	1A 1G	S		X				X		2-13-97	0913	EPH DELUXE, STANDARD VPH (TS)
2	ADC57-A1-SW2	1A 1G	S		X				X		2-13-97	0940	EPH DELUXE, STANDARD VPH
3	ADC57-A1-SW3	1A 1G	S		X				X		2-13-97	0952	EPH DELUXE, STANDARD VPH
4	ADC57-A1-SW4	1A 1G	S		X				X		2-13-97	1008	EPH DELUXE, STANDARD VPH
5	ADC57-A1-FL1	1A 1G	S		X				X		2-13-97	1012	EPH DELUXE
6	ADC57-A1-DUP	1A 1G	S		X				X	*	2-13-97	1012	EPH DELUXE
7	ADC57TB1	1A	-		X				X	*	2-13-97	-	STANDARD VPH N/C

Sampler's Signature	Affiliation	Date	Time
William P. Del	R.T. WESTON	2-13-97	1200

ADDITIONAL COMMENTS:
* 3 DAY TAT

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	William P. Del	[signature]	2/13/97	1230
2	[signature]	[signature]	2-13-97	1730
3	[signature]	[signature]	2/13/97	1510
4				

Form No. QOP/06-03

MAR-04-97 TUE 04:14 PM

P.07/07

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

CERTIFICATE OF ANALYSIS

Client: Roy F. Weston, Inc.
Address: 88 Pine Street
Fort Devens, MA 01433
Attn: Tom Abdella
Project Number:
Site: Ft. Devens

Laboratory Job Number: L9701987
Invoice Number: 3041
Date Received: 17-MAR-97
Date Reported: 21-MAR-97
Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9701987-01	AOC-57-A1-SW2/B	Storm Drain #6

Authorized by: _____

James R. Roth, PhD - Laboratory Manager

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L9701987-01
AOC-57-A1-SW2/B
Sample Matrix: SOIL

Date Collected: 17-MAR-97
Date Received : 17-MAR-97
Date Reported : 21-MAR-97

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1 Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP	DATES ANALYSIS	ID
Solids, Total	81.	%	0.10	3	2540B		19-Mar	ST
Extractable Petroleum Hydrocarbon				40	Draft 1.0	18-Mar	21-Mar	DB
C9-C18 Aliphatics	10200	ug/kg	5000					
C19-C36 Aliphatics	ND	ug/kg	5000					
C10-C22 Aromatics	ND	ug/kg	5000					
EPH, Total	10200	ug/kg	5000					
----------	-							
Acenaphthene	5420	ug/kg	700.					
Acenaphthylene	ND	ug/kg	700.					
Anthracene	ND	ug/kg	700.					
Benzo(a)anthracene	ND	ug/kg	700.					
Benzo(a)pyrene	ND	ug/kg	700.					
Benzo(b)fluoranthene	ND	ug/kg	700.					
Benzo(ghi)perylene	ND	ug/kg	700.					
Benzo(k)fluoranthene	ND	ug/kg	700.					
Chrysene	ND	ug/kg	700.					
Dibenzo(a,h)anthracene	ND	ug/kg	700.					
Fluoranthene	ND	ug/kg	700.					
Fluorene	ND	ug/kg	700.					
Indeno(1,2,3-c,d)pyrene	ND	ug/kg	700.					
Naphthalene	ND	ug/kg	700.					
Phenanthrene	ND	ug/kg	700.					
Pyrene	ND	ug/kg	700.					
2-Methylnaphthalene	ND	ug/kg	700.					
SURROGATE RECOVERY								
Chloro-octadecane	69.0	%						
o-Terphenyl	71.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L9701987

Parameter	Value 1	Value 2	RPD	Units
Solids, Total	DUPLICATE for sample(s) 01			
	92.	90.	2	%

REFERENCES

3. Standard Methods for Examination of Water and Waste Water. APHA-AWWA-WPCF. 17th Edition. 1989.

40. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), Draft 1.0, Massachusetts Department of Environmental Protection, 1995.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.

METHOD Method number by which analysis was performed.

ID Initials of the analyst.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

3641

ALPHA
Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 72189
Sheet 1 of 1

Company Name: Roy F Weston Inc	Project Number: 03656-118-0041-41100 P.O. Number:	Project Name / Location: FT Devens Storm Drain #6	Date Received in Lab: 3/17	Date Due: RUSH 3/21
Company Address: Building 3701 Barnum Road Devens MA 01433	Phone Number: (508) 772-1190 FAX No.: 508-772-7251	Project Manager: Tom Abdella Contact Dave Crispe	Alpha Job Number: (Lab use only) 9701987	

Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other

MATRIX / SOURCE CODES: MW = Monitoring Well, RO = Runoff, O = Outfall, W = Well, L F = Landfill, L = Lake/Pond/Ocean, I = Influent, E = Effluent, DW = Drinking Water, R = River Stream, S = Soil, SG = Sludge, B = Bottom Sediment, X1 = Other, X2 = Other

ALPHA Lab # (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers): Unpres.	Ice	Nitric	Sulfuric	HCl	Other	Solubles - F.F.	Sampling Date	Sampling Time	Analysis Requested
1987.1	FOC57-A1-SW2/B	1 402 G	S								2/17/97	1440	EPH Deluxe (TS)

Sampler's Signature	Affiliation	Date	Time
Robert E Osborne	RFW	3/17/97	1600

ADDITIONAL COMMENTS:
5 day Turn

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	Robert E Osborne	DR Miller	3/17/97	1635
2	DR Miller	[illegible]	3/17/97	1715
3				
4				

Form No. COP/06-03

DATA SUMMARY REPORT

DATE: 03/20/97

PAGE: 1

Company: ROY F. WESTON, INC.

Sample Point ID:		**57-A1-SW4B**	**57-A1-SW1B**
Lab Sample Number:		JQ8536	JQ8537
Sample Date:		03/17/97	03/17/97
Facility Code:		300595C	300595C
CV10 Wet Chemistry			
Solids, Total	%	79.8	86.4
MS17 GCMS PP PAH			
Acenaphthene	mg/kg	<1.2	<1.9
Acenaphthylene	mg/kg	<1.2	<1.9
Anthracene	mg/kg	<1.2	<1.9
Benzo(a)anthracene	mg/kg	2.0	5.1
Benzo(b)fluoranthene	mg/kg	2.8	6.1
Benzo(k)fluoranthene	mg/kg	2.4	5.8
Benzo(ghi)perylene	mg/kg	1.7	4.4
Benzo(a)pyrene	mg/kg	2.4	6.1
Chrysene	mg/kg	2.8	6.9
Dibenzo(a,h)anthracene	mg/kg	<1.2	<1.9
Fluoranthene	mg/kg	5.7	14
Fluorene	mg/kg	<1.2	<1.9
Indeno(1,2,3-cd)pyrene	mg/kg	1.8	4.7
Naphthalene	mg/kg	<1.2	<1.9
Phenanthrene	mg/kg	3.6	8.2
Pyrene	mg/kg	4.5	11

Post-it® Fax Note 7671

To Bill Dale		Date 3/20	# of pages ▶ 8
Co./Dept. Weston		From Glenn Krieric	
Phone #		Co. OHM MO	
Fax # 508 772 7251		Phone # 419 424 4938	
		Fax #	

BLANK SUMMARY REPORT

DATE: 03/20/97

Company: ROY F. WESTON, INC.

PAGE: 1

QC Batch #:		Q2C70421
MS17 GCMS PP PAH		
Acenaphthene	mg/kg	<.33
Acenaphthylene	mg/kg	<.33
Anthracene	mg/kg	<.33
Benzo(a)anthracene	mg/kg	<.33
Benzo(b)fluoranthene	mg/kg	<.33
Benzo(k)fluoranthene	mg/kg	<.33
Benzo(ghi)perylene	mg/kg	<.33
Benzo(a)pyrene	mg/kg	<.33
Chrysene	mg/kg	<.33
Dibenzo(a,h)anthracene	mg/kg	<.33
Fluoranthene	mg/kg	<.33
Fluorene	mg/kg	<.33
Indeno(1,2,3-cd)pyrene	mg/kg	<.33
Naphthalene	mg/kg	<.33
Phenanthrene	mg/kg	<.33
Pyrene	mg/kg	<.33

SAMPLE INFORMATION SUMMARY

Sample Id	Lab Id	Sample Date	Matrix	Method	QC Batch #	Prep Date	Analysis Date	Hold Met	Dry Wgt	Run #	Analyst
57-A1-SW4B	JQ8536	03/17/97	Solid Solid	8270 D2216	Q2C70421	03/18/97	03/19/97 03/18/97	Yes N/A	Yes N/A	B05912	Bigelow K. Powell J.
57-A1-SW1B	JQ8537	03/17/97	Solid Solid	8270 D2216	Q2C70421	03/18/97	03/19/97 03/18/97	Yes N/A	Yes N/A	B05915	Bigelow K. Powell J.

SUMMARY OF ANALYTICAL METHODOLOGY

Joblink # 622324

REFERENCE		TITLE
8270	SW-846	GC/MS for Semivolatile Organics

QUALITY ASSURANCE REPORT

Joblink: 622324

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
1,2,4,5-Tetrachlorobenzene	mg/kg	0	3.67	2.37	65	63-110L	57-A1-SW4B	0	4.58	3.48	76	30-130L	4.52	3.71	82	8	0-20L	Q2C70421	98L 100M
1,2,4-Trichlorobenzene	mg/kg	0	3.33	2.38	71	53-110L 44-142M	57-A1-SW4B	0	4.16	3.41	82	37-115L 44-142M	4.11	3.61	88	7	0-25L		
1,2-Dichlorobenzene	mg/kg	0	3.33	2.42	73	47-110L 32-129M	57-A1-SW4B	0	4.16	3.43	82	21-117L 32-129M	4.11	3.64	89	8	0-36L		
1,3-Dichlorobenzene	mg/kg	0	3.33	2.38	71	49-110L 1-172M	57-A1-SW4B	0	4.16	3.16	76	20-114L 1-172M	4.11	3.38	82	8	0-28L		
1,4-Dichlorobenzene	mg/kg	0	3.33	2.39	72	51-110L 20-124M	57-A1-SW4B	0	4.16	3.23	78	32-112L 20-124M	4.11	3.45	84	7	0-28L		
1-Methylnaphthalene	mg/kg	0	3.37	2.65	79	30-130L	57-A1-SW4B	.113	4.20	3.95	91	30-130L	4.15	4.23	99	8	0-20L		
2,4,5-Trichlorophenol	mg/kg	0	3.33	2.64	79	62-110L	57-A1-SW4B	0	4.16	3.63	87	46-115L	4.11	3.91	95	9	0-29L		
2,4,6-Trichlorophenol	mg/kg	0	5.00	3.73	75	54-110L 37-144M	57-A1-SW4B	0	6.24	5.30	85	38-110L 37-144M	6.16	5.62	91	7	0-37L		
2,4-Dichlorophenol	mg/kg	0	5.00	3.70	74	50-110L	57-A1-SW4B	0	6.24	5.50	88	49-110L	6.16	5.87	95	8	0-29L		
2,4-Dimethylphenol	mg/kg	0	5.00	3.14	63	40-110L 32-119M	57-A1-SW4B	0	6.24	5.67	91	37-116L 32-119M	6.16	5.94	96	5	0-26L		
2,4-Dinitrophenol	mg/kg	0	5.00	2.77	55	23-130L 1-191M	57-A1-SW4B	0	6.24	4.38	70	16-140L 1-191M	6.16	4.30	70	0	0-42L		
2,4-Dinitrotoluene	mg/kg	0	3.33	2.71	81	66-110L 39-139M	57-A1-SW4B	0	4.16	3.40	82	44-110L 39-139M	4.11	3.59	87	6	0-24L		
2,6-Dinitrotoluene	mg/kg	0	3.33	2.79	84	62-110L 50-158M	57-A1-SW4B	0	4.16	3.71	89	50-110L 50-158M	4.11	3.94	96	8	0-26L		
2-Chloronaphthalene	mg/kg	0	3.33	2.53	76	56-110L 60-118M	57-A1-SW4B	0	4.16	3.68	88	49-110L 60-118M	4.11	3.87	94	7	0-29L		
2-Chlorophenol	mg/kg	0	5.00	3.23	65	48-110L 23-134M	57-A1-SW4B	0	6.24	5.43	87	37-110L 23-134M	6.16	5.69	92	6	0-29L		
2-Ethoxyethanol	mg/kg	0	3.33	2.46	74	37-110L	57-A1-SW4B	0	4.16	2.60	63	30-130L	4.11	2.67	65	3	0-20L		
2-Methylnaphthalene	mg/kg	0	3.33	2.45	74	51-110L	57-A1-SW4B	.119	4.16	3.72	87	31-123L	4.11	3.99	94	8	0-30L		
2-Methylphenol	mg/kg	0	3.33	2.57	77	50-110L	57-A1-SW4B	0	4.16	3.82	92	46-119L	4.11	3.87	94	2	0-27L		
2-Nitroaniline	mg/kg	0	3.33	2.67	80	30-130L	57-A1-SW4B	0	4.16	3.72	89	30-130L	4.11	3.89	95	7	0-20L		
2-Nitrophenol	mg/kg	0	5.00	3.60	72	46-110L 29-182M	57-A1-SW4B	0	6.24	5.28	85	25-110L 29-182M	6.16	5.72	93	9	0-34L		
3,3'-Dichlorobenzidine	mg/kg	0	3.33	1.47	44	33-110L 1-262M	57-A1-SW4B	0	4.16	.455	11 L	14-110L 1-262M	4.11	.725	18	48 L	0-29L		
3-Nitroaniline	mg/kg	0	3.33	1.40	42	29-110L	57-A1-SW4B	0	4.16	2.02	49	23-110L	4.11	2.40	58	17	0-30L		
4,6-Dinitro-o-cresol	mg/kg	0	5.00	3.67	73	39-128L	57-A1-SW4B	0	6.24	4.32	69	19-127L	6.16	4.40	71	3	0-32L		
4-Bromophenyl phenyl ether	mg/kg	0	3.33	2.91	87	60-110L 53-127M	57-A1-SW4B	0	4.16	3.85	93	55-110L 53-127M	4.11	4.04	98	5	0-28L		
4-Chloroaniline	mg/kg	0	3.33	.977	29	17-110L	57-A1-SW4B	0	4.16	1.20	29	10-116L	4.11	1.47	36	22	0-42L		
4-Chlorophenyl phenyl ether	mg/kg	0	3.33	2.62	79	58-110L 25-158M	57-A1-SW4B	0	4.16	3.73	90	54-110L 25-158M	4.11	3.92	95	5	0-28L		

QUALITY ASSURANCE REPORT

Joblink: 622324

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
4-Methylphenol	mg/kg	0	3.33	2.57	77	52-110L	57-A1-SW4B	0	4.16	3.85	93	47-116L	4.11	4.06	99	6	0-22L		
4-Nitroaniline	mg/kg	0	3.33	2.45	74	55-123L	57-A1-SW4B	0	4.16	2.32	56	31-123L	4.11	2.90	71	24	0-32L		
4-Nitrophenol	mg/kg	0	5.00	4.40	88	63-114L 1-132M	57-A1-SW4B	0	6.24	5.96	96	45-131L 1-132M	6.16	6.26	102	6	0-26L		
Acenaphthene	mg/kg	0	3.33	2.53	76	56-110L 47-145M	57-A1-SW4B	.0970	4.16	3.67	86	44-119L 47-145M	4.11	3.87	92	7	0-21L		
Acenaphthylene	mg/kg	0	3.33	2.51	75	52-110L 33-145M	57-A1-SW4B	.442	4.16	4.15	89	47-114L 33-145M	4.11	4.41	97	9	0-30L		
Aniline	mg/kg	0	3.33	1.95	59	28-110L	57-A1-SW4B	0	4.16	1.56	38	11-110L	4.11	1.85	45	17	0-35L		
Anthracene	mg/kg	0	3.33	2.71	81	53-110L 27-133M	57-A1-SW4B	.467	4.16	4.21	90	53-110L 27-133M	4.11	4.33	94	4	0-33L		
Benzidine	mg/kg	0	3.33	.597	18	10-110L	57-A1-SW4B	0	4.16	0	0 L	30-130L							
Benzo(a)anthracene	mg/kg	0	3.33	2.68	80	62-110L 33-143M	57-A1-SW4B	1.97	4.16	5.68	89	49-113L 33-143M	4.11	5.74	92	3	0-37L		
Benzo(a)pyrene	mg/kg	0	3.33	2.74	82	56-110L 17-163M	57-A1-SW4B	2.41	4.16	6.13	89	47-110L 17-163M	4.11	6.21	92	3	0-30L		
Benzo(b)fluoranthene	mg/kg	0	3.33	2.77	83	62-110L 24-159M	57-A1-SW4B	2.79	4.16	6.34	85	56-111L 24-159M	4.11	6.40	88	3	0-34L		
Benzo(ghi)perylene	mg/kg	0	3.33	2.75	83	47-110L 1-219M	57-A1-SW4B	1.73	4.16	4.95	77	13-110L 1-219M	4.11	5.14	83	7	0-28L		
Benzo(k)fluoranthene	mg/kg	0	3.33	2.66	80	58-110L 11-162M	57-A1-SW4B	2.39	4.16	6.34	95	45-119L 11-162M	4.11	6.43	98	3	0-35L		
Benzoic acid	mg/kg	0	3.33	2.70	81	16-118L	57-A1-SW4B	0	4.16	4.27	103	14-148L	4.11	4.52	110	7	0-35L		
Benzyl alcohol	mg/kg	0	3.33	2.59	78	45-110L	57-A1-SW4B	0	4.16	3.72	89	35-110L	4.11	3.96	96	8	0-35L		
Butyl benzyl phthalate	mg/kg	0	3.33	2.73	82	62-110L 1-152M	57-A1-SW4B	0	4.16	3.53	85	60-110L 1-152M	4.11	3.80	92	8	0-25L		
Carbazole	mg/kg	0	3.33	2.78	83	62-110L	57-A1-SW4B	.507	4.16	4.20	89	51-126L	4.11	4.39	94	5	0-25L		
Chrysene	mg/kg	0	3.33	2.65	80	62-110L 17-168M	57-A1-SW4B	2.84	4.16	6.49	88	44-114L 17-168M	4.11	6.53	90	2	0-30L		
Cyclohexanone	mg/kg	0	3.33	2.07	62	11-110L	57-A1-SW4B	0	4.16	2.79	67	10-110L	4.11	2.96	72	7	0-35L		
Di-n-butyl phthalate	mg/kg	0	3.33	2.82	85	53-110L 1-118M	57-A1-SW4B	0	4.16	3.78	91	38-119L 1-118M	4.11	4.02	98	7	0-33L		
Di-n-octyl phthalate	mg/kg	0	3.33	2.71	81	60-110L 4-146M	57-A1-SW4B	0	4.16	3.77	91	49-138L 4-146M	4.11	4.10	100	9	0-23L		
Dibenzo(a,h)anthracene	mg/kg	0	3.33	2.58	77	54-110L 1-227M	57-A1-SW4B	.503	4.16	3.73	78	18-113L 1-227M	4.11	4.03	86	10	0-28L		
Dibenzofuran	mg/kg	0	3.33	2.52	76	59-110L	57-A1-SW4B	.163	4.16	3.83	88	47-116L	4.11	3.98	93	6	0-30L		
Diethyl phthalate	mg/kg	0	3.33	2.80	84	62-110L 1-114M	57-A1-SW4B	0	4.16	3.76	90	59-110L 1-114M	4.11	3.94	96	6	0-22L		
Dimethyl phthalate	mg/kg	0	3.33	2.77	83	63-110L 1-112M	57-A1-SW4B	0	4.16	3.61	87	55-110L 1-112M	4.11	3.82	93	7	0-24L		
Fluoranthene	mg/kg	0	3.33	2.64	79	59-110L 26-137M	57-A1-SW4B	5.70	4.16	9.88	100	45-112L 26-137M	4.11	9.42	91	9	0-29L		

QUALITY ASSURANCE REPORT

Joblink: 622324

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
Fluorene	mg/kg	0	3.33	2.60	78	56-110L 59-121M	57-A1-SW4B	.322	4.16	4.17	93	50-110L 59-121M	4.11	4.29	97	4	0-30L		
Hexachlorobenzene	mg/kg	0	3.33	2.72	82	61-110L 1-152M	57-A1-SW4B	0	4.16	3.41	82	47-110L 1-152M	4.11	3.75	91	10	0-18L		
Hexachlorobutadiene	mg/kg	0	3.33	2.15	65	49-110L 24-116M	57-A1-SW4B	0	4.16	3.15	76	27-110L 24-116M	4.11	3.33	81	6	0-32L		
Hexachlorocyclopentadiene	mg/kg	0	3.33	1.78	53	10-110L	57-A1-SW4B	0	4.16	1.34	32	30-130L	4.11	1.28	31	3	0-20L		
Hexachloroethane	mg/kg	0	3.33	2.32	70	47-110L 40-113M	57-A1-SW4B	0	4.16	3.25	78	30-110L 40-113M	4.11	3.35	82	5	0-30L		
Indeno(1,2,3-cd)pyrene	mg/kg	0	3.33	2.78	83	54-110L 1-171M	57-A1-SW4B	1.84	4.16	5.76	94	20-110L 1-171M	4.11	5.87	98	4	0-32L		
Isophorone	mg/kg	0	3.33	2.47	74	59-110L 21-196M	57-A1-SW4B	0	4.16	3.57	86	51-110L	4.11	3.75	91	6	0-23L		
N-Nitrosodi-n-butylamine	mg/kg	0	3.37	2.77	82	30-130L	57-A1-SW4B	0	4.20	3.91	93	30-130L	4.15	4.13	100	7	0-20L		
N-Nitrosodi-n-propylamine	mg/kg	0	3.33	3.02	91	58-110L 1-230M	57-A1-SW4B	0	4.16	3.65	88	50-110L 1-230M	4.11	4.03	98	11	0-26L		
N-Nitrosodiethylamine	mg/kg	0	3.40	2.67	79	30-130L	57-A1-SW4B	0	4.25	3.51	83	30-130L	4.19	3.67	88	6	0-20L		
N-Nitrosodimethylamine	mg/kg	0	3.33	2.31	69	44-110L	57-A1-SW4B	0	4.16	2.80	67	27-110L	4.11	3.08	75	11	0-29L		
N-Nitrosodiphenylamine	mg/kg	0	3.33	2.64	79	60-110L	57-A1-SW4B	0	4.16	3.38	81	52-116L	4.11	3.61	88	8	0-22L		
N-Nitrosopyrrolidine	mg/kg	0	3.40	2.68	79	30-130L	57-A1-SW4B	0	4.25	3.96	93	30-130L	4.19	4.18	100	7	0-20L		
Naphthalene	mg/kg	0	3.33	2.38	71	51-110L 21-133M	57-A1-SW4B	.189	4.16	3.85	88	30-120L 21-133M	4.11	4.03	93	6	0-30L		
Nitrobenzene	mg/kg	0	3.33	2.45	74	49-110L 35-180M	57-A1-SW4B	0	4.16	3.67	88	38-110L 35-180M	4.11	3.87	94	7	0-29L		
Pentachlorophenol	mg/kg	0	5.00	4.67	93	47-128L 14-176M	57-A1-SW4B	0	6.24	5.58	89	30-133L 14-176M	6.16	5.97	97	9	0-31L		
Phenanthrene	mg/kg	0	3.33	2.68	80	59-110L 54-120M	57-A1-SW4B	3.65	4.16	7.58	94	36-127L 54-120M	4.11	7.01	82	14	0-25L		
Phenol	mg/kg	0	5.00	3.21	64	48-110L 5-112M	57-A1-SW4B	0	6.24	5.56	89	36-114L 5-112M	6.16	5.84	95	7	0-25L		
Pyrene	mg/kg	0	3.33	2.67	80	63-110L 52-115M	57-A1-SW4B	4.52	4.16	8.41	94	50-124L 52-115M	4.11	8.22	90	4	0-28L		
Pyridine	mg/kg	0	3.40	1.93	57	18-110L	57-A1-SW4B	0	4.25	2.51	59	18-110L	4.19	2.63	63	7	0-32L		
ɔis(2-Chloroethoxy)methane	mg/kg	0	3.33	2.41	72	53-110L 33-184M	57-A1-SW4B	0	4.16	3.61	87	45-110L 33-184M	4.11	3.78	92	6	0-30L		
ɔis(2-Chloroethyl) ether	mg/kg	0	3.33	2.46	74	42-110L 12-158M	57-A1-SW4B	0	4.16	3.45	83	15-110L 12-158M	4.11	3.69	90	8	0-24L		
ɔis(2-Chloroisopropyl)ether	mg/kg	0	3.33	2.53	76	48-110L 36-166M	57-A1-SW4B	0	4.16	3.63	87	37-110L 36-166M	4.11	3.87	94	8	0-35L		
ɔis(2-Ethylhexyl)phthalate	mg/kg	0	3.33	2.74	82	50-115L 8-158M	57-A1-SW4B	0	4.16	3.70	89	46-130L 8-158M	4.11	3.92	95	7	0-29L		
ɔ-Toluidine	mg/kg	0	3.33	1.85	56	30-130L	57-A1-SW4B	0	4.16	.974	23 L	30-130L	4.11	1.48	36	44 L	0-20L		
ɔ-Chloro-m-cresol	mg/kg	0	5.00	3.90	78	57-110L 22-147M	57-A1-SW4B	0	6.24	5.61	90	52-110L 22-147M	6.16	5.93	96	6	0-22L		

QUALITY ASSURANCE DATA

SURROGATE SUMMARY REPORT

SURROGATE ID	A159	B732	A121	A884	A158	B142	B449	F076
QC BATCH: Q2C70421 **Solid (Semi-Volatile organics by MS)**								
SAMPLE ID								
57-A1-SW1B	84	98	90	89	88	110	89	83
57-A1-SW4B	79	90	85	83	83	101	84	80
57-A1-SW4B MD	88	95	92	93	92	109	90	88
57-A1-SW4B MS	82	90	86	88	85	101	86	82
METHOD BLK	71	76	81	79	76	98	73	82
METHOD SPK	71	68	86	76	73	96	66	74
QC LIMITS	(25-121)	(24-113)	(19-122)	(23-120)	(30-115)	(18-137)	(20-130)	(20-130)

SURROGATE ID

A159 = 2-Fluorophenol
B732 = Phenol-D6
A121 = 2,4,6-Tribromophenol
A884 = Nitrobenzene-D5
A158 = 2-Fluorobiphenyl
B142 = Terphenyl-D14
B449 = 2-Chlorophenol-D4
F076 = 1,2-Dichlorobenzene-D4

* Values outside of method quality control limits
D Sample was diluted, however, some surrogates may be reported if results were observed.

It is 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).

OHM Remediation Services Corp.

CHAIN-OF-CUSTODY RECORD

LAB COPY
Form 0019
Field Technical Services
Rev. 08/89

187312

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

PROJECT NAME: Roy F. Weston Inc	PROJECT LOCATION: Ft Devens MA / Building 3701 Barnum Road Devens MA 01433		
PROJ. NO.	PROJECT CONTACT: Dave Crispo	PROJECT TELEPHONE NO.: (508) 772-7190	
CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR: Tom Abdella		

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) SVOC's 3540/3620 *	REMARKS
1	AOC-57-A1-SW4B	3/17/97	1220	✓		Soil 4oz glass	1	X	
2	AOC-57-A1-SW1B	3/17/97	1500	✓		Soil 4oz glass	1	X	
3									
4									
5									
6									
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1	Robert Ottava	Fed Ex	3/17/97	1600
2					
3					
4					

REMARKS
* PAH Compound List
3 day Turnaround

SAMPLER'S SIGNATURE
Robert Ottava

Katahdin
ANALYTICAL SERVICES

March 4, 1997

Mr. Dave Crispo
Roy F. Weston
PO Box 425
Ayer, Ma. 01432

RE: Katahdin Lab Number: WN0370
Project ID: Ft. Devens
Project Manager: Ms. Lil Pepin
Sample Receipt Date: February 17, 1997

Dear Mr. Crispo:

Please find enclosed the following information:

* Report of Analysis
* Quality Control Data Summary
* Confirmation
* Chain of Custody

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. This cover letter is an integral part of the ROA.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

Sincerely,

KATAHDIN ANALYTICAL SERVICES

Deborah J. Nadeau
Authorized Signature

3.4.97
Date

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-1
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW1	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	16.4	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	15.2	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	110.	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	140.	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	11.4	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	34.4	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

LJO/ejnajc(dw)
NB17ICS1
CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Karahdin ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-1
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW1	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	84.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by JF

03/03/97

LJO/ejnajc(dw)

CC: 603/228-1334*JOHN LOVELY
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7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-2
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW2	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	13.0	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	30.5	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	87.3	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	258.	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	12.4	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	55.9	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

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(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

LJO/ejnajc(dw)
NB17ICS1
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ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

340 County Road No. 5
P.O. Box 720, Westbrook, ME 04098
Tel: (207) 874-2400 Fax: (207) 775-4029

210 West Road No. 5, Portsmouth, NH 03801
Tel: (603) 431-5777 Fax: (603) 436-3356

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-2
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW2	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	86.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

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(1) Sample Preparation on 02/17/97 by JF

03/03/97

LJO/ejnajc(dw)

CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-3
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW3	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	17.0	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	19.8	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	19.1	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	10.1	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	25.6	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	29.8	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

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(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

LJO/ejnajc(dw)
NB17ICS1
CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-3
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW3	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	94.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by JF

03/03/97

LJO/ejnajc(dw)

CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-4
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-SW4	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	10.3	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	13.2	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	24.2	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	60.3	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	13.9	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	34.2	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

LJO/ejnajc(dw)
NB17ICS1
CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-4
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
AOC57-A1-SW4	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	88.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by JF

03/03/97

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CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-5
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-FL1	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	16.3	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	12.0	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	39.5	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	12.5	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	7.49	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	21.0	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

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(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

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ROY F. WESTON, INC.
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CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-5
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
AOC57-A1-FL1	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	84.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by JF

03/03/97

LJO/ejnajc(dw)

CC: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-6
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
AOC57-A1-DUP	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Antimony, Total	<0.8	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Arsenic, Total	19.4	mg/kgdrywt	1.0	0.8	6010/200.7	02/18/97	EM	1
Beryllium, Total	<0.50	mg/kgdrywt	1.0	0.50	6010/200.7	02/18/97	EM	1
Cadmium, Total	<1.00	mg/kgdrywt	1.0	1.00	6010/200.7	02/18/97	EM	1
Chromium, Total	13.1	mg/kgdrywt	1.0	1.50	6010/200.7	02/18/97	EM	1
Copper, Total	34.3	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1
Lead, Total	9.17	mg/kgdrywt	1.0	0.5	6010/200.7	02/18/97	EM	1
Mercury, Total	<0.1	µg/gdrywt	1.0	0.1	7471	02/18/97	PC	2
Nickel, Total	10.2	mg/kgdrywt	1.0	4.00	6010/200.7	02/18/97	EM	1
Selenium, Total	<1.0	mg/kgdrywt	1.0	1.0	6010/200.7	02/18/97	EM	1
Silver, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Thallium, Total	<1.5	mg/kgdrywt	1.0	1.5	6010/200.7	02/18/97	EM	1
Zinc, Total	22.8	mg/kgdrywt	1.0	2.50	6010/200.7	02/18/97	EM	1

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(1) Sample Preparation on 02/17/97 by MB using 3050
(2) Sample Preparation on 02/18/97 by PLC using 7471

03/03/97

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Katahdin
ANALYTICAL SERVICES

CLIENT: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

Lab Number : WN-0370-6
Report Date: 03/03/97
PO No. : 03886-118-004-4420-00
Project : FT DEVONS

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED	DATE RECEIVED
AOC57-A1-DUP	Solid	CLIENT	02/13/97	02/17/97

PARAMETER	RESULT	UNITS	DF	*PQL	METHOD	ANALYZED	BY	NOTES
Solids-Total Residue (TS)	84.	wt %	1.0	0.10	CLP/CIP SOW	02/18/97	JF	1

* PQL (Practical Quantitation Level) represents laboratory reporting limits and may not reflect sample-specific reporting limits. Sample-specific limits are indicated by results annotated with '<' values.
(1) Sample Preparation on 02/17/97 by JF

03/03/97

LJO/ejnajc(dw)

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ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991

Katahdin
ANALYTICAL SERVICES

PREPARATION BLANK REPORT

Sample ID: PBSNB17ICS1 **Batch ID:** NB17ICS1 **Units:** mg/kgdrywt

Client: [illegible] **Work Order:** [illegible]

Element Name	Result	Flag	PQL	File
ALUMINUM	4	J	10.0	A021897
ANTIMONY	0.2	U	0.800	A021897
ARSENIC	0.2	U	0.800	A021897
BARIUM	0.06	J	0.500	A021897
BERYLLIUM	0.01	U	0.500	A021897
BORON	0.7	J	10.0	A021897
CADMIUM	0.03	U	1.00	A021897
CALCIUM	0.8	U	5.00	A021897
CHROMIUM	0.09	J	1.50	A021897
COBALT	0.08	U	3.00	A021897
COPPER	0.1	U	2.50	A021897
LEAD	0.1	U	0.500	A021897
MAGNESIUM	0.6	U	5.00	A021897
MANGANESE	0.03	J	0.500	A021897
MOLYBDENUM	0.08	U	10.0	A021897
NICKEL	0.08	U	4.00	A021897
SELENIUM	0.3	U	1.00	A021897
SILVER	0.1	U	1.50	A021897
STRONTIUM	0.007	U	10.0	A021897
THALLIUM	0.4	U	1.50	A021897
TIN	1.8	J	10.0	A021897
TITANIUM	0.07	J	1.50	A021897
VANADIUM	0.06	U	2.50	A021897
ZINC	0.34	J	2.50	A021897

U The analyte was not detected in the sample at a level greater than the instrument detection limit.

J The analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the laboratory's Practical Quantitation Level.

H The analyte was detected in the sample at a concentration greater than the laboratory's acceptance limit.

Katahdin
ANALYTICAL SERVICES

LABORATORY CONTROL SAMPLE REPORT

Sample ID: LCSSNB17ICS1 **Batch ID:** NB17ICS1 **Units:** mg/kgdrywt

Client: [illegible] **Work Order:** [illegible]

Element Name	True Value	Result	% REC	Flag	Limits		File
ALUMINUM	6990	7960	113.9%		4150	9830	A021897
ANTIMONY	35.0	42.3	120.9%		3.20	66.8	A021897
ARSENIC	164	173	105.5%		115	212	A021897
BARIUM	439	469	106.8%		321	557	A021897
BERYLLIUM	97.8	102	104.3%		75.1	121	A021897
BORON	82.5	79.8	96.7%		53.0	112	A021897
CADMIUM	112	118	105.4%		82.1	143	A021897
CALCIUM	2620	2790	106.5%		1880	3360	A021897
CHROMIUM	96.2	108	112.3%		73.5	119	A021897
COBALT	83.6	95.0	113.6%		63.6	104	A021897
COPPER	140	148	105.7%		110	169	A021897
IRON	17000	20400	120.0%		6940	27100	A021897
LEAD	96.1	101	105.1%		70.6	122	A021897
MAGNESIUM	1750	1940	110.9%		1240	2260	A021897
MANGANESE	314	354	112.7%		250	379	A021897
MOLYBDENUM	84.7	97.3	114.9%		62.1	107	A021897
NICKEL	72.0	80.4	111.7%		53.6	90.3	A021897
SELENIUM	68.9	66.2	96.1%		49.2	88.6	A021897
SILVER	82.5	88.1	106.8%		60.9	104	A021897
STRONTIUM	133	138	103.8%		74.7	190	A021897
THALLIUM	86.0	89.6	104.2%		40.9	131	A021897
TIN	86.3	102	118.2%		52.6	120	A021897
TITANIUM	350	560	160.0%	H	179	521	A021897
VANADIUM	96.7	113	116.9%		60.7	133	A021897
ZINC	276	296	107.2%		204	349	A021897

Katahdin Analytical Services, Inc.
Elements Section

MERCURY

Client:	Roy F Weston
Method:	7470
Work Order:	WN0370

Preparation Blank Soil (P B S)

Prep. Date	Analysis Date	QC Batch ID	Measured Conc. (ug/Kg)	Acceptance Limit (ug/Kg)	Notes
18-Feb-97	18-Feb-97	NB18HGS1	<0.100	0.100	

Laboratory Control Sample Soil (LCSS)

Prep. Date	Analysis Date	QC Batch ID	Measured Conc. (ug/g)	Ref. Value (ug/g)	Calculated Rec. %	Control Limits (%)
18-Feb-97	18-Feb-97	NB18HGS1	2.58	2.60	99%	1.19-4.00

Notes: 1) Blank acceptance limits are equivalent ot PQL's unless otherwise indicated.
2) Random low level contamination is indicated for this parameter. (if notated)
3) See cover letter for additional information. (if notated)

Katahdin
ANALYTICAL SERVICES

MATRIX SPIKE / DUPLICATE QC SUMMARY

Sample ID: WN0370-005

Symbol	Sample Result	Duplicate Result	RPD %	Spike True Value	Spike Result	Percent Recovery	Notes
Ag	<1.5	<1.5	NC	4.1	3.3	80.5 %	
As	16.3	17.7	8.24	164	170	93.7 %	
Be	<0.50	<0.50	NC	4.10	3.92	88.8 %	
Cd	<1.00	<1.00	NC	4.10	4.13	95.4 %	
Cr	12.0	11.0	8.70	16.4	37.0	152 % H	I
Cu	39.5	40.6	2.75	20.5	56.5	82.9 %	
Ni	7.49	7.52	0.400	41.0	48.2	99.3 %	
Pb	12.5	12.0	4.08	41.0	50.6	92.9 %	
Sb	<0.8	<0.8	NC	41.0	21.6	52.7 % L	I
Se	<1.0	<1.0	NC	164	138	84.0 %	
Tl	<1.5	<1.5	NC	164	152	92.7 %	
Zn	21.0	22.4	6.45	41.0	62.6	101 %	

Katahdin Analytical Services, Inc.

Quality Control Report

Duplicate & Matrix Spike Footnotes

RPD = Relative percent difference, which is the absolute value of the difference between two duplicate results divided by the mean concentration then multiplied by 100%.

NA = Not applicable.

NC = Relative percent difference cannot be calculated for sample results less than the PQL.

DATA QUALITY COMMENTS:
Results of all quality control measurements are within the laboratory or contract specified acceptance range except as noted. The acceptance range for RPD measurements is 0-20%. The acceptance range for matrix spike recoveries is 75-125%). The laboratory does not use the sample duplicate and matrix spike acceptance ranges as acceptance criteria for a specific analysis. Sample duplicate and matrix spike data are used to evaluate method performance in the environmental sample matrix only. Please refer to LCS data for assessment of quality control for each parameter.

1. Matrix spike recovery is outside the laboratory's specified acceptance range indicating potential sample matrix interference and potential bias of reported value for this parameter.

2. Matrix spike recovery is outside the laboratory specified acceptance range. The spike concentration for this parameter is significantly below the sample concentration and cannot be distinguished from the sample's analytical signal.

3. Matrix spike analysis cannot be quantified due to severe matrix interferences.

4. Precision of replicate analysis as measured by RPD is outside the laboratory's acceptance range for this parameter. Sample homogeneity may be a factor.

5. Because of the large uncertainty (i.e., 33% or greater) associated with measurements made near the detection level, There is no acceptance range for relative percent difference.

KATAHDIN ANALYTICAL SERVICES, INCORPORATED
New England-ME Laboratory (207) 874-2400
CONFIRMATION

ORDER NO WN-0370

Project Manager: Lil Pepin
ORDER DATE: 02/17/97
PHONE: 508/772-7190
FAX: 508/772-7251
DUE: 20 FEB

REPORT TO: DAVE CRISPO
ROY F WESTON
P.O. BOX 425
AYER, MA 01432

INVOICE: ACCOUNTS PAYABLE
ROY F. WESTON, INC.
1 WESTON WAY
WEST CHESTER, PA 19380-1499

PO: 03886-118-004-4420-00

PROJECT: FT DEVONS

SAMPLED BY: CLIENT DELIVERED BY: FED EX DISPOSE: AFTER 19 MAR

ITEM	LOG NUMBER	SAMPLE DESCRIPTION	SAMPLED DATE/TIME	RECEIVED	MATRIX
1	WN0370-1	AOC57-A1-SW1	13 FEB 0931	17 FEB	SL
	WN0370-2	AOC57-A1-SW2	13 FEB 0940		
	WN0370-3	AOC57-A1-SW3	13 FEB 0952		
	WN0370-4	AOC57-A1-SW4	13 FEB 1008		
	WN0370-5	AOC57-A1-FL1	13 FEB 1012		
	WN0370-6	AOC57-A1-DUP	13 FEB 1012		

DETERMINATION	METHOD	QTY	PRICE	AMOUNT
Solids-Total Residue (TS)	CLP/CIP SO	6	0.00	0.00
Priority Pollutant Metals, Total		6	225.00	1350.00
TOTALS		6	225.00	1350.00

ORDER NOTE: QC-II
3DY TAT
Prices include RUSH surcharges

REPORT COPY: 603/228-1334*JOHN LOVELY
ROY F. WESTON, INC.
7 EAGLE SQUARE
CONCORD, NH 03301-4991
PHONE: 603/228-1334
FAX: 603/228-3440

INVOICE: With Report

TOTAL ORDER AMOUNT $1,350.00
This is NOT an Invoice

AJC/LP/SM/WEST.AJC(dw)
02-19Please contact KATAHDIN ANALYTICAL SERVICES promptly if you have any questi

LP 2/19/97

LW0370

WESTON Analytics Use Only

Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Client Roy F. Weston Inc
Est. Final Proj. Sampling Date —
Work Order # 03886 11B 004 4420 00
Project Contact/Phone # Dave Crispo/508-772-7140
AD Project Manager TOM ABDELLA
QC II Del — TAT 3DAY
Date Rec'd ______ Date Due ______
Account # ______

Refrigerator #
#/Type Container: Liquid ___ Solid 1/G
Volume: Liquid ___ Solid 90z
Preservatives

ANALYSIS REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN, Metals PPL

MATRIX CODES:
S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN	Metals PPL
	AOC57-A1-SW1			S	2-13-97	0931							X
	AOC57-A1-SW2			S	2-13-97	0940							X
	AOC57-A1-SW3			S	2-13-97	0952							X
	AOC57-A1-SW4			S	2-13-97	1003							X
	AOC57-A1-FL1			S	2-13-97	1012							X
	AOC57-A1-Dup			S	2-13-97	1012							X

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
* Preserved @ 4°C
* Temperature blank included
* Call w/ any problems

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # ______
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[signature]	Fed Ex	2/14/97	12:00		[signature]	2/17/97	11:00

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RFW 21-21-001/A-7/91 ____ L372 ____ L373 ____ L375 ____ L377 ____ L378 Ref# ______ Cooler# ______ 381-596a

0000020

KATAHDIN ANALYTICAL SERVICES, INC.
SAMPLE RECEIPT CONDITION REPORT

Tel. (207)874-2400
FAX (207)775-4029

LAB# W40370
PAGE: 1 OF 1
COOLER: 1 OF 1
COC# —
SDG# —
CASE# —

CLIENT: Weston

PROJECT:

DATE/TIME RECEIVED: 8/17/97 1010
DELIVERED BY: FedEx
RECEIVED BY: SM
LIMS ENTRY BY: SM
LIMS REVIEW BY/PM: JC

	YES	NO	EXCEPTIONS	COMMENTS	RESOLUTION
1. CUSTODY SEALS PRESENT/INTACT	☑	☐	☐		
2. CHAIN OF CUSTODY PRESENT IN THIS COOLER	☑	☐	☐		
3. CHAIN OF CUSTODY SIGNED BY CLIENT	☑	☐	☐		
4. CHAIN OF CUSTODY MATCHES SAMPLES	☑	☐	☐		
5. SAMPLES RECEIVED AT 2°-6°C Ice/Ice Packs Present? (Y) or N	☑	☐	☐	2.8°C	
6. TEMPATURE BLANKS PRESENT	☑	☐	☐		
7. VOLATILES FREE OF HEAD SPACE	☐	☐	☑	NA	
8. TRIP BLANK PRESENT IN THIS COOLER	☐	☐	☑	↓	
9. PROPER SAMPLE CONTAINERS AND VOLUME	☑	☐	☐		
10. SAMPLES WITHIN HOLD TIME UPON RECEIPT	☑	☐	☐		
11. SAMPLES PROPERLY PRESERVED	☑	☐	☐		
12. CORRECTIVE ACTION REPORT FILED	☐	☑			

13. ANALYTICAL PROGRAMS (circle one) COMMERCIAL CLP EPA-CLP NYASP NJISRA HAZWRAP NEESA AFCEE OTHER: _____

LOG-IN NOTES:

0000021

ATTACHMENT B

WASTE CHARACTERIZATION ANALYTICAL RESULTS

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OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

ANALYTICAL DIVISION

Laboratory Analysis

Report(s) #622799

Client: Roy F. Weston, Inc.
Devens, MA

Attn: David Crispo

Project: 300595C (sample No. 57-WC-01)

Date Samples Received: June 17, 1997
Date Order Received: June 17, 1997
Date Data Due: June 23, 1997
Date Data Reported: June 25, 1997

Reviewed and Approved by: Joseph A. Hnatow
Joseph A. Hnatow, Laboratory Manager

Date: *July 8, 1997*

PROJECT NARRATIVE

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

- The sample temperature upon receipt (4°C) was within the temperature acceptability range of 2°C to 6°C.

- All solid sample results are reported on a "dry weight" basis except RCRA Characteristics. The RCRA Characteristics results are reported on an as received basis.

- J values reported for all samples in batch #Q2C70846 (Semi-volatiles) as per client request. Reported results below stated detection limit should be viewed as semi-quantitative only.

- Note any comments at the bottom of the tables in appendices B and C.

- Sample #57-WC-01 was analyzed by GC/MS method 8270B due to severe matrix interferences with the FID.

- Matrix spike and duplicate recoveries for batch #Q2C70846 (Semi-volatiles) are not available due to matrix interferences. Batch acceptance is based on method spike recoveries that are within QC limits.

- Some method spike and matrix spike recoveries were outside laboratory QC limits for batches #D1V6147 (Volatiles) and #Q2D6138 (Volatiles). However, method QC limits were not exceeded. This should be considered when evaluating the data.

- Two matrix spike recoveries were outside method QC limits for batch #D2M9810 (Metals). However, laboratory QC limits were not exceeded. This should be considered when evaluating the data.

- Due to high levels of target analytes present in the unspiked sample, matrix spike recoveries are not available and/or outside QC limits for batch #Q2T70848 (TPH). Batch acceptance is based on method spike recoveries that are within QC limits.

The following relate to the timeliness and completeness of the analytical data reported:

- Data was reported to Mr. David Crispo on Wednesday, June 25, 1997, at Roy F. Weston, Inc., Devens, Massachusetts. The following parameters were not reported within the required time frame:

PARAMETER	REASON FOR DELAY
Semivolatile Organics GC/MS	Matrix and laboratory capacity.

SAMPLE INFORMATION SUMMARY

Sample Id	Lab Id	Sample Date	Matrix	Method	QC Batch #	Prep Date	Analysis Date	Hold Met	Dry Wgt	Run #	Analyst
57-WC-01	JR3759	06/16/97	Solid	8270B	Q2C70846	06/18/97	06/24/97	Yes	Yes	B07412	Bigelow K.
			Solid	8270B	Q2C70846	06/18/97	06/25/97	Yes	Yes	B07422	Bigelow K.
			Solid	1020A			06/19/97	Yes	N/A		Klopp L.
			Solid	418.1	Q2T70848	06/19/97	06/24/97	Yes	Yes	IR9870	Lucy R.
			Solid	6010A	Q2M9810	06/18/97	06/18/97	Yes	Yes	IM3600	DeLong W.
			Solid	7471A	Q2G9813	06/18/97	06/18/97	Yes	Yes	I85046	Smith D.
			Solid	8080A	Q2P70847	06/17/97	06/18/97	Yes	Yes	UF6018	Knapke J.
			Solid	8260A	Q2D6138	06/22/97	06/23/97	Yes	Yes	C15725	Lucy R.
			Solid	9010A/7.3	Q2I6251	06/19/97	06/19/97	Yes	No	I85079	Klopp L.
			Solid	9030A/7.3	Q2I6252	06/19/97	06/19/97	Yes	No	I85073	Klopp L.
			Solid	9045C			06/19/97	N/A	N/A		Klopp L.
			Solid	D2216			06/17/97	N/A	N/A		Crawford M.

SAMPLE INFORMATION SUMMARY

Sample Id	Lab Id	Sample Date	Matrix	Method	QC Batch #	Prep Date	Analysis Date	Hold Met	Dry Wgt	Run #	Analyst
TB-01/1	JR3760	06/16/97	Aqueous	8260A	Q1V6147	06/23/97	06/23/97	Yes	N/A	C15741	Lucy R.

APPENDIX A

DATA SUMMARY REPORT

DATA SUMMARY REPORT

DATE: 07/07/97

Company: ROY F. WESTON, INC.

PAGE: 1

Sample Point ID:		57-WC-01							
Lab Sample Number:		JR3759							
Sample Date:		06/16/97							
Facility Code:		300595							
CV10 Wet Chemistry									
Flash Point, Seta Flash	Deg C	>93							
Solids, Total	%	92.6							
pH (Electrode)	std	5.78							
Reactive Cyanide	mg/kg	<10.0							
Reactive Sulfide	mg/kg	<25.0							
GS13 GC PP PCB's									
Aroclor 1016	mg/kg	<.18							
Aroclor 1221	mg/kg	<.18							
Aroclor 1232	mg/kg	<.18							
Aroclor 1242	mg/kg	<.18							
Aroclor 1248	mg/kg	<.18							
Aroclor 1254	mg/kg	<.18							
Aroclor 1260	mg/kg	<.18							
IR00 TPHC by IR									
Petroleum Hydrocarbons (IR)	mg/kg	220							
ME50 Total RCRA Metals									
Arsenic	mg/kg	14.2							
Barium	mg/kg	19.2							
Cadmium	mg/kg	.84							
Chromium	mg/kg	21.1							
Lead	mg/kg	75.7							
Mercury	mg/kg	<.009							
Selenium	mg/kg	<7.9							
Silver	mg/kg	.61 J							
MS17 GCMS PP PAH									
Acenaphthene	mg/kg	.078 J							
Acenaphthylene	mg/kg	.33 J							
Anthracene	mg/kg	.34 J							
Benzo(a)anthracene	mg/kg	1.3							
Benzo(b)fluoranthene	mg/kg	1.7							
Benzo(k)fluoranthene	mg/kg	1.8							
Benzo(ghi)perylene	mg/kg	.47							
Benzo(a)pyrene	mg/kg	1.6							
Chrysene	mg/kg	1.8							
Dibenzo(a,h)anthracene	mg/kg	.19 J							

DATA SUMMARY REPORT

DATE: 07/07/97

Company: ROY F. WESTON, INC.

PAGE: 2

Sample Point ID:		57-WC-01							
Lab Sample Number:		JR3759							
Sample Date:		06/16/97							
Facility Code:		300595							
MS17 GCMS PP PAH									
Fluoranthene	mg/kg	3.4							
Fluorene	mg/kg	.18 J							
Indeno(1,2,3-cd)pyrene	mg/kg	.60							
Naphthalene	mg/kg	.13 J							
Phenanthrene	mg/kg	1.9							
Pyrene	mg/kg	2.8							
1-Methylnaphthalene	mg/kg	.070 J							
2-Methylnaphthalene	mg/kg	.082 J							
MV25 GCMS 8260 Volatiles									
1,1,1,2-Tetrachloroethane	mg/kg	<.65							
1,1,1-Trichloroethane	mg/kg	<.65							
1,1,2,2-Tetrachloroethane	mg/kg	<.65							
1,1,2-Trichloroethane	mg/kg	<.65							
1,1-Dichloroethane	mg/kg	<.65							
1,1-Dichloroethene	mg/kg	<.65							
1,1-Dichloropropene	mg/kg	<.65							
1,2,3-Trichlorobenzene	mg/kg	<.65							
1,2,3-Trichloropropane	mg/kg	<.65							
1,2,4-Trichlorobenzene	mg/kg	<.65							
1,2,4-Trimethylbenzene	mg/kg	<.65							
1,2-Dibromo-3-chloropropane	mg/kg	<.65							
1,2-Dichlorobenzene	mg/kg	<.65							
1,2-Dichloroethane	mg/kg	<.65							
1,2-Dichloroethene (total)	mg/kg	<.65							
1,2-Dichloropropane	mg/kg	<.65							
1,2-Trans-dichloroethylene	mg/kg	<.65							
1,2-cis-Dichloroethylene	mg/kg	<.65							
1,3,5-Trimethylbenzene	mg/kg	<.65							
1,3-Dichlorobenzene	mg/kg	<.65							
1,3-Dichloropropane	mg/kg	<.65							
1,4-Dichlorobenzene	mg/kg	<.65							
2,2-Dichloropropane	mg/kg	<.65							
4-Isopropyltoluene	mg/kg	<.65							
Acetone	mg/kg	<1.3							
Benzene	mg/kg	<.65							
Bromobenzene	mg/kg	<.65							
Bromochloromethane	mg/kg	<.65							
Bromodichloromethane	mg/kg	<.65							
Bromoform	mg/kg	<.65							

DATA SUMMARY REPORT

DATE: 07/07/97

Company: ROY F. WESTON, INC.

PAGE: 3

Sample Point ID:		57-WC-01						
Lab Sample Number:		JR3759						
Sample Date:		06/16/97						
Facility Code:		300595						
MV25 GCMS 8260 Volatiles								
Bromomethane	mg/kg	<.65						
Carbon tetrachloride	mg/kg	<.65						
Chlorobenzene	mg/kg	<.65						
Chloroethane	mg/kg	<.65						
Chloroform	mg/kg	<.65						
Chloromethane	mg/kg	<.65						
Dibromochloromethane	mg/kg	<.65						
Dibromomethane	mg/kg	<.65						
Dichlorodifluoromethane	mg/kg	<.65						
Ethylbenzene	mg/kg	<.65						
Ethylene dibromide	mg/kg	<.65						
Hexachlorobutadiene	mg/kg	<.65						
Isopropylbenzene	mg/kg	<.65						
Methylene chloride	mg/kg	.15 J						
Naphthalene	mg/kg	.096 J						
Styrene	mg/kg	<.65						
Tetrachloroethene	mg/kg	<.65						
Toluene	mg/kg	<.65						
Trichloroethene	mg/kg	.077 J						
Trichlorofluoromethane	mg/kg	<.65						
Vinyl chloride	mg/kg	<.65						
Xylenes	mg/kg	<.65						
n-Butylbenzene	mg/kg	<.65						
n-Propylbenzene	mg/kg	<.65						
o-Chlorotoluene	mg/kg	<.65						
p-Chlorotoluene	mg/kg	<.65						
sec-Butylbenzene	mg/kg	<.65						
tert-Butylbenzene	mg/kg	<.65						

DATA SUMMARY REPORT

DATE: 07/07/97

Company: ROY F. WESTON, INC.

Sample Point ID:		TB-01/1							
Lab Sample Number:		JR3760							
Sample Date:		06/16/97							
Facility Code:		300595							
MV25 GCMS 8260 Volatiles									
1,1,1,2-Tetrachloroethane	mg/L	<.005							
1,1,1-Trichloroethane	mg/L	<.005							
1,1,2,2-Tetrachloroethane	mg/L	<.005							
1,1,2-Trichloroethane	mg/L	<.005							
1,1-Dichloroethane	mg/L	<.005							
1,1-Dichloroethene	mg/L	<.005							
1,1-Dichloropropene	mg/L	<.005							
1,2,3-Trichlorobenzene	mg/L	<.005							
1,2,3-Trichloropropane	mg/L	<.005							
1,2,4-Trichlorobenzene	mg/L	<.005							
1,2,4-Trimethylbenzene	mg/L	<.005							
1,2-Dibromo-3-chloropropane	mg/L	<.005							
1,2-Dichlorobenzene	mg/L	<.005							
1,2-Dichloroethane	mg/L	<.005							
1,2-Dichloroethene (total)	mg/L	<.005							
1,2-Dichloropropane	mg/L	<.005							
1,2-Trans-dichloroethylene	mg/L	<.005							
1,2-cis-Dichloroethylene	mg/L	<.005							
1,3,5-Trimethylbenzene	mg/L	<.005							
1,3-Dichlorobenzene	mg/L	<.005							
1,3-Dichloropropane	mg/L	<.005							
1,4-Dichlorobenzene	mg/L	<.005							
2,2-Dichloropropane	mg/L	<.005							
4-Isopropyltoluene	mg/L	<.005							
Acetone	mg/L	<.010							
Benzene	mg/L	<.005							
Bromobenzene	mg/L	<.005							
Bromochloromethane	mg/L	<.005							
Bromodichloromethane	mg/L	<.005							
Bromoform	mg/L	<.005							
Bromomethane	mg/L	<.005							
Carbon tetrachloride	mg/L	<.005							
Chlorobenzene	mg/L	<.005							
Chloroethane	mg/L	<.005							
Chloroform	mg/L	<.005							
Chloromethane	mg/L	<.005							
Dibromochloromethane	mg/L	<.005							
Dibromomethane	mg/L	<.005							
Dichlorodifluoromethane	mg/L	<.005							
Ethylbenzene	mg/L	<.005							

DATA SUMMARY REPORT

DATE: 07/07/97

Company: ROY F. WESTON, INC.

Sample Point ID:		TB-01/1						
Lab Sample Number:		JR3760						
Sample Date:		06/16/97						
Facility Code:		300595						
MV25 GCMS 8260 Volatiles								
Ethylene dibromide	mg/L	<.005						
Hexachlorobutadiene	mg/L	<.005						
Isopropylbenzene	mg/L	<.005						
Methylene chloride	mg/L	<.005						
Naphthalene	mg/L	<.005						
Styrene	mg/L	<.005						
Tetrachloroethene	mg/L	<.005						
Toluene	mg/L	<.005						
Trichloroethene	mg/L	<.005						
Trichlorofluoromethane	mg/L	<.005						
Vinyl chloride	mg/L	<.005						
Xylenes	mg/L	<.005						
n-Butylbenzene	mg/L	<.005						
n-Propylbenzene	mg/L	<.005						
o-Chlorotoluene	mg/L	<.005						
p-Chlorotoluene	mg/L	<.005						
sec-Butylbenzene	mg/L	<.005						
tert-Butylbenzene	mg/L	<.005						

APPENDIX B

QUANTITATIVE RESULTS

CV10 Wet Chemistry

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds		Sample Results	Detection Limits	Blank Results	Batch Number
Reactive Cyanide	mg/kg	ND	10.0	ND	Q2I6251
Reactive Sulfide	mg/kg	ND	25.0	ND	Q2I6252
Solids, Total	%	92.6	.100	-	
pH (Electrode)	std	5.78	-	-	
Flash Point, Seta Flash	Deg C	>93	-	-	

ME50 Total RCRA Metals

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	**Sample Results** mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Arsenic	14.2	7.94	ND	Q2M9810
Barium	19.2	1.06	ND	Q2M9810
Cadmium	.841	.529	ND	Q2M9810
Chromium	21.1	1.06	ND	Q2M9810
Lead	75.7	7.94	ND	Q2M9810
Mercury	ND	.009	ND	Q2G9813
Selenium	ND	7.94	ND	Q2M9810
Silver	ND	1.06	ND	Q2M9810

GS13 GC PP PCB's

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	**Sample Results** mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Aroclor 1016	ND	.179	ND	Q2P70847
Aroclor 1221	ND	.179	ND	Q2P70847
Aroclor 1232	ND	.179	ND	Q2P70847
Aroclor 1242	ND	.179	ND	Q2P70847
Aroclor 1248	ND	.179	ND	Q2P70847
Aroclor 1254	ND	.179	ND	Q2P70847
Aroclor 1260	ND	.179	ND	Q2P70847

IR00 TPHC by IR

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	**Sample Results** mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Petroleum Hydrocarbons (IR)	218	35.5	ND	Q2T70848

MS17 GCMS PP PAH

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	**Sample Results** mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Acenaphthene	.078	.356	ND	Q2C70846
Acenaphthylene	.331	.356	ND	Q2C70846
Anthracene	.339	.356	ND	Q2C70846
Benzo(a)anthracene	1.31	.356	ND	Q2C70846
Benzo(b)fluoranthene	1.68	1.07	ND	Q2C70846
Benzo(k)fluoranthene	1.83	1.07	ND	Q2C70846
Benzo(ghi)perylene	.470	.356	ND	Q2C70846
Benzo(a)pyrene	1.59	.356	ND	Q2C70846
Chrysene	1.83	.356	ND	Q2C70846
Dibenzo(a,h)anthracene	.191	.356	ND	Q2C70846
Fluoranthene	3.40	.356	ND	Q2C70846
Fluorene	.184	.356	ND	Q2C70846
Indeno(1,2,3-cd)pyrene	.602	.356	ND	Q2C70846
Naphthalene	.127	.356	ND	Q2C70846
Phenanthrene	1.86	.356	ND	Q2C70846
Pyrene	2.84	.356	ND	Q2C70846
2-Methylnaphthalene	.082	.356	ND	Q2C70846
1-Methylnaphthalene	.070	.356	ND	Q2C70846

MV25 GCMS 8260 Volatiles

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	Sample Results mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
1,1,1,2-Tetrachloroethane	ND	.654	ND	Q2D6138
1,1,1-Trichloroethane	ND	.654	ND	Q2D6138
1,1,2,2-Tetrachloroethane	ND	.654	ND	Q2D6138
1,1,2-Trichloroethane	ND	.654	ND	Q2D6138
1,1-Dichloroethane	ND	.654	ND	Q2D6138
1,1-Dichloroethene	ND	.654	ND	Q2D6138
1,2,3-Trichlorobenzene	ND	.654	ND	Q2D6138
1,2,3-Trichloropropane	ND	.654	ND	Q2D6138
1,2,4-Trichlorobenzene	ND	.654	ND	Q2D6138
1,2,4-Trimethylbenzene	ND	.654	ND	Q2D6138
1,2-cis-Dichloroethylene	ND	.654	ND	Q2D6138
1,2-Dibromo-3-chloropropane	ND	.654	ND	Q2D6138
1,2-Dichlorobenzene	ND	.654	ND	Q2D6138
1,2-Dichloroethane	ND	.654	ND	Q2D6138
1,2-Dichloropropane	ND	.654	ND	Q2D6138
1,2-Trans-dichloroethylene	ND	.654	ND	Q2D6138
1,3,5-Trimethylbenzene	ND	.654	ND	Q2D6138
1,3-Dichlorobenzene	ND	.654	ND	Q2D6138
1,3-Dichloropropane	ND	.654	ND	Q2D6138
1,4-Dichlorobenzene	ND	.654	ND	Q2D6138
Acetone	ND	1.31	ND	Q2D6138
Benzene	ND	.654	ND	Q2D6138
Bromobenzene	ND	.654	ND	Q2D6138
Bromochloromethane	ND	.654	ND	Q2D6138
Bromoform	ND	.654	ND	Q2D6138
Bromomethane	ND	.654	ND	Q2D6138
Carbon tetrachloride	ND	.654	ND	Q2D6138
Chlorobenzene	ND	.654	ND	Q2D6138
Chloroethane	ND	.654	ND	Q2D6138
Chloroform	ND	.654	ND	Q2D6138
Chloromethane	ND	.654	ND	Q2D6138
Dibromochloromethane	ND	.654	ND	Q2D6138
Dibromomethane	ND	.654	ND	Q2D6138
Dichlorodifluoromethane	ND	.654	ND	Q2D6138
Ethylbenzene	ND	.654	ND	Q2D6138
Ethylene dibromide	ND	.654	ND	Q2D6138
Hexachlorobutadiene	ND	.654	ND	Q2D6138
Isopropylbenzene	ND	.654	ND	Q2D6138
Methylene chloride	.145	.654	.235	Q2D6138
n-Butylbenzene	ND	.654	ND	Q2D6138
n-Propylbenzene	ND	.654	ND	Q2D6138
Naphthalene	.096	.654	ND	Q2D6138
o-Chlorotoluene	ND	.654	ND	Q2D6138
p-Chlorotoluene	ND	.654	ND	Q2D6138
sec-Butylbenzene	ND	.654	ND	Q2D6138
Styrene	ND	.654	ND	Q2D6138
tert-Butylbenzene	ND	.654	ND	Q2D6138
Tetrachloroethene	ND	.654	ND	Q2D6138
Toluene	ND	.654	ND	Q2D6138
Trichloroethene	.077	.654	ND	Q2D6138

MV25 GCMS 8260 Volatiles

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	57-WC-01	JR3759

Compounds	**Sample Results** mg/kg	Detection Limits mg/kg	Blank Results mg/kg	Batch Number
Trichlorofluoromethane	ND	.654	ND	Q2D6138
Vinyl chloride	ND	.654	ND	Q2D6138
Xylenes	ND	.654	ND	Q2D6138
1,1-Dichloropropene	ND	.654	ND	Q2D6138
2,2-Dichloropropane	ND	.654	ND	Q2D6138
Bromodichloromethane	ND	.654	ND	Q2D6138
1,2-Dichloroethene (total)	ND	.654	ND	Q2D6138
4-Isopropyltoluene	ND	.654	ND	Q2D6138

These reporting limits are higher than usual due to matrix interferences.

MV25 GCMS 8260 Volatiles

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	TB-01/1	JR3760

Compounds	**Sample Results** mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
1,1,1,2-Tetrachloroethane	ND	.005	ND	Q1V6147
1,1,1-Trichloroethane	ND	.005	ND	Q1V6147
1,1,2,2-Tetrachloroethane	ND	.005	ND	Q1V6147
1,1,2-Trichloroethane	ND	.005	ND	Q1V6147
1,1-Dichloroethane	ND	.005	ND	Q1V6147
1,1-Dichloroethene	ND	.005	ND	Q1V6147
1,2,3-Trichlorobenzene	ND	.005	ND	Q1V6147
1,2,3-Trichloropropane	ND	.005	ND	Q1V6147
1,2,4-Trichlorobenzene	ND	.005	ND	Q1V6147
1,2,4-Trimethylbenzene	ND	.005	ND	Q1V6147
1,2-cis-Dichloroethylene	ND	.005	ND	Q1V6147
1,2-Dibromo-3-chloropropane	ND	.005	ND	Q1V6147
1,2-Dichlorobenzene	ND	.005	ND	Q1V6147
1,2-Dichloroethane	ND	.005	ND	Q1V6147
1,2-Dichloropropane	ND	.005	ND	Q1V6147
1,2-Trans-dichloroethylene	ND	.005	ND	Q1V6147
1,3,5-Trimethylbenzene	ND	.005	ND	Q1V6147
1,3-Dichlorobenzene	ND	.005	ND	Q1V6147
1,3-Dichloropropane	ND	.005	ND	Q1V6147
1,4-Dichlorobenzene	ND	.005	ND	Q1V6147
Acetone	ND	.010	ND	Q1V6147
Benzene	ND	.005	ND	Q1V6147
Bromobenzene	ND	.005	ND	Q1V6147
Bromochloromethane	ND	.005	ND	Q1V6147
Bromoform	ND	.005	ND	Q1V6147
Bromomethane	ND	.005	ND	Q1V6147
Carbon tetrachloride	ND	.005	ND	Q1V6147
Chlorobenzene	ND	.005	ND	Q1V6147
Chloroethane	ND	.005	ND	Q1V6147
Chloroform	ND	.005	ND	Q1V6147
Chloromethane	ND	.005	ND	Q1V6147
Dibromochloromethane	ND	.005	ND	Q1V6147
Dibromomethane	ND	.005	ND	Q1V6147
Dichlorodifluoromethane	ND	.005	ND	Q1V6147
Ethylbenzene	ND	.005	ND	Q1V6147
Ethylene dibromide	ND	.005	ND	Q1V6147
Hexachlorobutadiene	ND	.005	ND	Q1V6147
Isopropylbenzene	ND	.005	ND	Q1V6147
Methylene chloride	ND	.005	ND	Q1V6147
n-Butylbenzene	ND	.005	ND	Q1V6147
n-Propylbenzene	ND	.005	ND	Q1V6147
Naphthalene	ND	.005	ND	Q1V6147
o-Chlorotoluene	ND	.005	ND	Q1V6147
p-Chlorotoluene	ND	.005	ND	Q1V6147
sec-Butylbenzene	ND	.005	ND	Q1V6147
Styrene	ND	.005	ND	Q1V6147
tert-Butylbenzene	ND	.005	ND	Q1V6147
Tetrachloroethene	ND	.005	ND	Q1V6147
Toluene	ND	.005	ND	Q1V6147
Trichloroethene	ND	.005	ND	Q1V6147

MV25 GCMS 8260 Volatiles

Company Name	Facility	Sample Point	Lab Sample No.
ROY F. WESTON, INC.	300595	TB-01/1	JR3760

Compounds	**Sample Results** mg/L	Detection Limits mg/L	Blank Results mg/L	Batch Number
Trichlorofluoromethane	ND	.005	ND	Q1V6147
Vinyl chloride	ND	.005	ND	Q1V6147
Xylenes	ND	.005	ND	Q1V6147
1,1-Dichloropropene	ND	.005	ND	Q1V6147
2,2-Dichloropropane	ND	.005	ND	Q1V6147
Bromodichloromethane	ND	.005	ND	Q1V6147
1,2-Dichloroethene (total)	ND	.005	ND	Q1V6147
4-Isopropyltoluene	ND	.005	ND	Q1V6147

APPENDIX C

QUALITY ASSURANCE DATA

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
1,1,1,2-Tetrachloroethane	mg/l	0	.0500	.0574	115L	87-114L	TB-002	0	.0500	.0602	120L	89-113L	.0500	.0601	120L	0	0-10L	Q1V6147	71L
1,1,1-Trichloroethane	mg/l	0	.0500	.0535	107	83-116L 52-162M	TB-002	0	.0500	.0555	111	85-113L 52-162M	.0500	.0546	109	2	0-14L		100M
1,1,2,2-Tetrachloroethane	mg/l	0	.0500	.0484	97	78-121L 46-157M	TB-002	0	.0500	.0490	98	82-123L 46-157M	.0500	.0487	97	1	0-11L		
1,1,2-Trichloroethane	mg/l	0	.0500	.0512	102	90-112L 52-150M	TB-002	0	.0500	.0532	106	86-113L 52-150M	.0500	.0540	108	2	0-10L		
1,1,2-Trichlorotrifluoroethane	mg/l	0	.0502	.0515	103	78-117L	TB-002	0	.0502	.0565	113L	82-111L	.0502	.0539	107	5	0-13L		
1,1-Dichloroethane	mg/l	0	.0500	.0555	111L	88-110L 59-155M	TB-002	0	.0500	.0582	116L	83-110L 59-155M	.0500	.0571	114L	2	0-10L		
1,1-Dichloroethene	mg/l	0	.0500	.0485	97	84-115L 1-234M	TB-002	0	.0500	.0514	103	84-114L 1-234M	.0500	.0502	100	3	0-10L		
1,1-Dichloropropene	mg/l	0	.0500	.0544	109	84-113L	TB-002	0	.0500	.0564	113	85-114L	.0500	.0564	113	0	0-18L		
1,2,3-Trichlorobenzene	mg/l	0	.0500	.0519	104	87-115L	TB-002	0	.0500	.0580	116L	85-115L	.0500	.0594	119L	3	0-13L		
1,2,3-Trichloropropane	mg/l	0	.0500	.0541	108	85-115L	TB-002	0	.0500	.0540	108	83-119L 84-120M	.0500	.0545	109	.9	0-11L		
1,2,4-Trichlorobenzene	mg/l	0	.0500	.0546	109	90-113L	TB-002	0	.0500	.0590	118L	85-114L	.0500	.0600	120L	2	0-15L		
1,2,4-Trimethylbenzene	mg/l	0	.0500	.0535	107	91-113L	TB-002	0	.0500	.0557	111	87-114L	.0500	.0550	110	.9	0-10L		
1,2-Dibromo-3-chloropropane	mg/l	0	.0500	.0518	104	82-117L	TB-002	0	.0500	.0529	106	79-125L	.0500	.0533	107	.9	0-19L		
1,2-Dichlorobenzene	mg/l	0	.0500	.0519	104	90-111L 18-190M	TB-002	0	.0500	.0532	106	86-114L 18-190M	.0500	.0537	107	.9	0-10L		
1,2-Dichloroethane	mg/l	0	.0500	.0515	103	80-117L 49-155M	TB-002	0	.0500	.0516	103	86-115L 49-155M	.0500	.0531	106	3	0-10L		
1,2-Dichloroethene (total)	mg/l	0	.100	.106	106	88-110L 54-156M	TB-002	0	.100	.109	109	87-110L 54-156M	.100	.107	107	2	0-10L		
1,2-Dichloropropane	mg/l	0	.0500	.0538	108	89-110L 1-210M	TB-002	0	.0500	.0556	111L	88-110L 1-210M	.0500	.0559	112L	.9	0-10L		
1,2-Trans-dichloroethylene	mg/l	0	.0500	.0544	109	86-112L 54-156M	TB-002	0	.0500	.0564	113L	88-110L 54-156M	.0500	.0546	109	4	0-10L		
1,2-cis-Dichloroethylene	mg/l	0	.0500	.0512	102	90-110L	TB-002	0	.0500	.0530	106	86-111L	.0500	.0528	106	0	0-10L		
1,3,5-Trimethylbenzene	mg/l	0	.0500	.0527	105	91-111L	TB-002	0	.0500	.0555	111	86-114L	.0500	.0546	109	2	0-10L		
1,3-Dichlorobenzene	mg/l	0	.0500	.0535	107	92-111L 59-156M	TB-002	0	.0500	.0552	110	86-113L 59-156M	.0500	.0552	110	0	0-10L		
1,3-Dichloropropane	mg/l	0	.0500	.0548	110	88-111L	TB-002	0	.0500	.0563	113L	89-110L	.0500	.0565	113L	0	0-10L		
1,4-Dichlorobenzene	mg/l	0	.0500	.0568	114L	91-110L 18-190M	TB-002	0	.0500	.0586	117L	86-115L 18-190M	.0500	.0586	117L	0	0-10L		
2,2-Dichloropropane	mg/l	0	.0500	.0536	107	75-110L	TB-002	0	.0500	.0560	112	72-112L	.0500	.0557	111	.9	0-12L		
2-Butanone	mg/l	0	.0500	.0478	96	72-116L	TB-002	0	.0500	.0484	97	75-119L	.0500	.0481	96	1	0-15L		
2-Chloroethylvinyl ether	mg/l	0	.0500	.0502	100	74-117L 1-305M	TB-002	0	.0500	.00158	3 L	68-110L 1-305M	.0500	.00105	2 L	40 L	0-19L		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
2-Hexanone	mg/l	0	.0500	.0457	91	75-116L	TB-002	0	.0500	.0482	96	75-126L	.0500	.0471	94	2	0-19L		
4-Isopropyltoluene	mg/l	0	.0500	.0538	108	89-114L	TB-002	0	.0500	.0565	113	85-114L	.0500	.0567	113	0	0-10L		
4-Methyl-2-pentanone	mg/l	0	.0500	.0508	102	84-113L	TB-002	0	.0500	.0526	105	79-121L	.0500	.0522	104	1	0-17L		
Acetone	mg/l	0	.0500	.0471	94	51-125L	TB-002	0	.0500	.0471	94	61-115L	.0500	.0507	101	7	0-17L		
Acrolein	mg/l	0	.255	.218	85	10-135L	TB-002	0	.255	.237	93	10-150L	.255	.209	82	13	0-17L		
Acrylonitrile	mg/l	0	.0500	.0511	102	85-116L	TB-002	0	.0500	.0514	103	86-122L	.0500	.0496	99	4	0-17L		
Benzene	mg/l	0	.0500	.0569	114L	85-113L 37-151M	TB-002	0	.0500	.0566	113L	90-110L 37-151M	.0500	.0582	116L	3	0-10L		
Bromobenzene	mg/l	0	.0500	.0520	104	91-110L	TB-002	0	.0500	.0538	108	90-110L	.0500	.0534	107	.9	0-10L		
Bromodichloromethane	mg/l	0	.0500	.0536	107	82-115L 35-155M	TB-002	0	.0500	.0566	113	85-113L 35-155M	.0500	.0552	110	3	0-10L		
Bromoform	mg/l	0	.0500	.0578	116	83-119L 45-169M	TB-002	0	.0500	.0604	121	80-121L 45-169M	.0500	.0593	119	2	0-14L		
Bromomethane	mg/l	0	.0500	.0587	117	88-119L 1-242M	TB-002	0	.0500	.0580	116	84-119L 1-242M	.0500	.0593	119	3	0-14L		
Carbon disulfide	mg/l	0	.0500	.0624	125L	84-110L	TB-002	0	.0500	.0652	130L	79-110L	.0500	.0640	128L	2	0-11L		
Carbon tetrachloride	mg/l	0	.0500	.0557	111	82-118L 70-140M	TB-002	0	.0500	.0655	131L	82-117L 70-140M	.0500	.0591	118L	10	0-23L		
Chlorobenzene	mg/l	0	.0500	.0545	109	88-110L 37-160M	TB-002	0	.0500	.0572	114L	86-113L 37-160M	.0500	.0565	113	.9	0-18L		
Chloroethane	mg/l	0	.0500	.0772	154L	83-119L	TB-002	0	.0500	.0726	145L	79-119L	.0500	.0822	164L	12	0-13L		
Chloroform	mg/l	0	.0500	.0520	104	89-110L 51-138M	TB-002	0	.0500	.0537	107	89-110L 51-138M	.0500	.0538	108	.9	0-10L		
Chloromethane	mg/l	0	.0500	.0577	115L	71-112L 1-273M	TB-002	0	.0500	.0617	123L	69-114L 1-273M	.0500	.0587	117L	5	0-14L		
Dibromochloromethane	mg/l	0	.0500	.0556	111	83-118L 53-149M	TB-002	0	.0500	.0583	117	83-117L 53-149M	.0500	.0582	116	.9	0-11L		
Dibromomethane	mg/l	0	.0500	.0514	103	90-113L	TB-002	0	.0500	.0530	106	86-115L	.0500	.0532	106	0	0-10L		
Dichlorodifluoromethane	mg/l	0	.0500	.0594	119L	70-113L	TB-002	0	.0500	.0632	126L	74-110L	.0500	.0604	121L	4	0-13L		
Ethyl acetate	mg/l	0	.100	.0894	89	38-110L	TB-002	0	.100	.0926	93	36-110L	.100	.0825	83	11	0-11L		
Ethyl ether	mg/l	0	.0501	.0522	104	78-116L	TB-002	0	.0501	.0536	107	82-121L	.0501	.0525	105	2	0-12L		
Ethylbenzene	mg/l	0	.0500	.0577	115L	92-110L 37-162M	TB-002	0	.0500	.0604	121L	85-113L 37-162M	.0500	.0598	120L	.8	0-10L		
Ethylene dibromide	mg/l	0	.0500	.0513	103	87-113L	TB-002	0	.0500	.0529	106	87-115L	.0500	.0535	107	.9	0-11L		
Hexachlorobutadiene	mg/l	0	.0500	.0567	113	86-120L	TB-002	0	.0500	.0588	118L	81-117L	.0500	.0612	122L	3	0-11L		
Isobutanol	mg/l	0	.506	.579	114	30-130L	TB-002	0	.506	.549	108	30-130L	.506	.598	118	9	0-20L		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
Isopropylbenzene	mg/l	0	.0500	.0590	118L	88-115L	TB-002	0	.0500	.0620	124L	86-115L	.0500	.0606	121L	2	0-10L		
Methylene chloride	mg/l	.00158	.0500	.0539	105	74-112L 1-221M	TB-002	.00161	.0500	.0575	112L	74-110L 1-221M	.0500	.0556	108	4	0-11L		
Naphthalene	mg/l	7.-04	.0500	.0504	99	82-117L	TB-002	0	.0500	.0549	110	80-120L	.0500	.0556	111	.9	0-19L		
Styrene	mg/l	0	.0500	.0583	117L	92-110L	TB-002	0	.0500	.0608	122L	89-110L	.0500	.0603	121L	.8	0-10L		
Tetrachloroethene	mg/l	0	.0500	.0540	108	90-110L 64-148M	TB-002	0	.0500	.0574	115L	87-112L 64-148M	.0500	.0574	115L	0	0-10L		
Toluene	mg/l	0	.0500	.0578	116L	85-112L 47-150M	TB-002	0	.0500	.0605	121L	84-115L 47-150M	.0500	.0604	121L	0	0-15L		
Trichloroethene	mg/l	0	.0500	.0527	105	84-118L 71-157M	TB-002	0	.0500	.0557	111L	88-110L 71-157M	.0500	.0553	111L	0	0-10L		
Trichlorofluoromethane	mg/l	0	.0500	.0570	114	81-121L 17-181M	TB-002	0	.0500	.0585	117	81-118L 17-181M	.0500	.0594	119L	2	0-11L		
Vinyl chloride	mg/l	0	.0500	.0579	116L	78-111L 1-251M	TB-002	0	.0500	.0616	123L	73-116L 1-251M	.0500	.0572	114	8	0-12L		
Xylenes	mg/l	0	.150	.174	116L	93-110L	TB-002	0	.150	.183	122L	90-110L	.150	.182	121L	.8	0-10L		
cis-1,3-Dichloropropene	mg/l	0	.0500	.0573	115L	84-113L 1-227M	TB-002	0	.0500	.0603	121L	82-110L 1-227M	.0500	.0598	120L	.8	0-10L		
n-Butylbenzene	mg/l	0	.0500	.0537	107	90-111L	TB-002	0	.0500	.0566	113L	83-112L	.0500	.0569	114L	.9	0-10L		
n-Propylbenzene	mg/l	0	.0500	.0530	106	89-110L	TB-002	0	.0500	.0557	111	87-111L	.0500	.0550	110	.9	0-10L		
o-Chlorotoluene	mg/l	0	.0500	.0554	111	88-111L	TB-002	0	.0500	.0578	116L	85-112L	.0500	.0571	114L	2	0-10L		
o-Xylene	mg/l	0	.0500	.0569	114L	92-110L	TB-002	0	.0500	.0597	119L	90-110L	.0500	.0596	119L	0	0-10L		
p-Chlorotoluene	mg/l	0	.0500	.0543	109	91-110L	TB-002	0	.0500	.0568	114L	87-110L	.0500	.0559	112L	2	0-10L		
sec-Butylbenzene	mg/l	0	.0500	.0544	109	89-111L	TB-002	0	.0500	.0571	114L	86-112L	.0500	.0569	114L	0	0-10L		
tert-Butylbenzene	mg/l	0	.0500	.0528	106	91-112L	TB-002	0	.0500	.0548	110	88-114L	.0500	.0548	110	0	0-10L		
trans-1,3-Dichloropropene	mg/l	0	.0500	.0553	111	85-113L 17-183M	TB-002	0	.0500	.0581	116L	83-110L 17-183M	.0500	.0579	116L	0	0-10L		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
1-Methylnaphthalene	mg/kg	0	.667	.573	86	52-110L												Q2C70846	100L
2-Methylnaphthalene	mg/kg	0	.707	.567	80	56-110L													100M
Acenaphthene	mg/kg	0	.667	.513	77	65-110L 47-145M													
Acenaphthylene	mg/kg	0	.667	.537	81	52-110L 33-145M													
Anthracene	mg/kg	0	.667	.537	81	65-110L 27-133M													
Benzo(a)anthracene	mg/kg	0	.667	.533	80	65-110L 33-143M													
Benzo(a)pyrene	mg/kg	0	.667	.507	76	61-110L 17-163M													
Benzo(b)fluoranthene	mg/kg	0	.667	.507	76	66-110L 24-159M													
Benzo(ghi)perylene	mg/kg	0	.667	.483	72	68-110L 1-219M													
Benzo(k)fluoranthene	mg/kg	0	.667	.563	84	66-110L 11-162M													
Chrysene	mg/kg	0	.667	.580	87	76-110L 17-168M													
Dibenzo(a,h)anthracene	mg/kg	0	.667	.507	76	69-110L 1-227M													
Fluoranthene	mg/kg	0	.667	.567	85	67-110L 26-137M													
Fluorene	mg/kg	0	.667	.557	84	62-110L 59-121M													
Indeno(1,2,3-cd)pyrene	mg/kg	0	.667	.483	72	66-110L 1-171M													
Naphthalene	mg/kg	0	.667	.567	85	53-110L 21-133M													
Phenanthrene	mg/kg	0	.667	.560	84	66-110L 54-120M													
Pyrene	mg/kg	0	.667	.553	83	72-110L 52-115M													
1,1,1,2-Tetrachloroethane	mg/kg	0	6.25	7.09	113	84-113L	18-WW-001	0	7.70	8.33	108	89-112L	7.42	7.84	106	2	0-11L	Q2D6138	76L
1,1,1-Trichloroethane	mg/kg	0	6.25	6.23	100	85-111L 52-162M	18-WW-001	0	7.70	6.71	87	85-117L 52-162M	7.42	6.71	90	3	0-11L		100M
1,1,2,2-Tetrachloroethane	mg/kg	0	6.25	6.19	99	78-115L 46-157M	18-WW-001	0	7.70	6.87	89	68-143L 46-157M	7.42	8.01	108	19	0-25L		
1,1,2-Trichloroethane	mg/kg	0	6.25	6.23	100	84-113L 52-150M	18-WW-001	0	7.70	7.57	98	84-110L 52-150M	7.42	7.06	95	3	0-15L		
1,1,2-Trichlorotrifluoroethane	mg/kg	0	6.28	5.56	89	77-120L	18-WW-001	0	7.73	4.03	52 L	70-129L	7.45	4.57	61 L	16	0-16L		
1,1-Dichloroethane	mg/kg	0	6.25	6.33	101	86-114L 59-155M	18-WW-001	0	7.70	6.68	87 L	91-118L 59-155M	7.42	6.62	89 L	2	0-13L		
1,1-Dichloroethene	mg/kg	0	6.25	5.21	83 L	85-114L 1-234M	18-WW-001	0	7.70	3.80	49 L	89-118L 1-234M	7.42	4.42	60 L	20 L	0-15L		
1,1-Dichloropropene	mg/kg	0	6.25	6.01	96	80-113L	18-WW-001	0	7.70	6.37	83	73-117L	7.42	6.53	88	6	0-14L		

QUALITY ASSURANCE REPORT

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Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
1,2,3-Trichlorobenzene	mg/kg	0	6.25	6.76	108	81-112L	18-WW-001	0	7.70	6.90	90	27-114L	7.42	8.50	115L	24	0-28L		
1,2,3-Trichloropropane	mg/kg	0	6.25	6.28	100	76-120L	18-WW-001	0	7.70	7.03	91	74-140L	7.42	8.22	111	20	0-26L		
1,2,4-Trichlorobenzene	mg/kg	0	6.25	7.00	112	82-112L	18-WW-001	0	7.70	7.39	96	30-114L	7.42	8.95	121L	23	0-24L		
1,2,4-Trimethylbenzene	mg/kg	0	6.25	6.63	106	87-110L	18-WW-001	3.51	7.70	11.0	97	68-132L	7.42	12.8	125	25 L	0-16L		
1,2-Dibromo-3-chloropropane	mg/kg	0	6.25	5.95	95	72-116L	18-WW-001	0	7.70	6.45	84	59-134L	7.42	7.76	105	22	0-35L		
1,2-Dichlorobenzene	mg/kg	0	6.25	6.55	105	87-112L 18-190M	18-WW-001	0	7.70	7.27	94	62-120L 18-190M	7.42	8.83	119	23 L	0-16L		
1,2-Dichloroethane	mg/kg	0	6.25	5.83	93	82-116L 49-155M	18-WW-001	0	7.70	6.60	86	85-114L 49-155M	7.42	6.63	89	3	0-15L		
1,2-Dichloroethene (total)	mg/kg	0	12.5	11.9	95	86-110L 54-156M	18-WW-001	0	15.4	12.0	78 L	82-110L	14.8	12.5	84	7	0-10L		
1,2-Dichloropropane	mg/kg	0	6.25	6.61	106	84-116L 1-210M	18-WW-001	0	7.70	7.68	100	91-112L 1-210M	7.42	7.36	99	1	0-13L		
1,2-Trans-dichloroethylene	mg/kg	0	6.25	5.96	95	86-112L 54-156M	18-WW-001	0	7.70	5.48	71 L	87-117L 54-156M	7.42	5.79	78 L	9	0-13L		
1,2-cis-Dichloroethylene	mg/kg	0	6.25	5.98	96	85-112L	18-WW-001	0	7.70	6.56	85 L	87-115L	7.42	6.69	90	6	0-12L		
1,3,5-Trimethylbenzene	mg/kg	0	6.25	6.63	106	87-111L	18-WW-001	2.13	7.70	8.62	84	74-127L	7.42	10.1	107	24 L	0-16L		
1,3-Dichlorobenzene	mg/kg	0	6.25	6.65	106	88-110L 59-156M	18-WW-001	0	7.70	7.43	96	64-118L 59-156M	7.42	8.76	118	21 L	0-16L		
1,3-Dichloropropane	mg/kg	0	6.25	6.49	104	86-110L	18-WW-001	0	7.70	7.60	99	82-132L	7.42	7.24	98	1	0-15L		
1,4-Dichlorobenzene	mg/kg	0	6.25	6.78	108	87-110L 18-190M	18-WW-001	0	7.70	7.54	98	64-117L 18-190M	7.42	8.89	120L	20 L	0-14L		
2,2-Dichloropropane	mg/kg	0	6.25	6.35	102	82-113L	18-WW-001	0	7.70	6.51	85	81-125L	7.42	6.60	89	5	0-18L		
2-Butanone	mg/kg	0	6.25	6.33	101	56-120L	18-WW-001	0	7.70	7.19	93	62-142L	7.42	6.31	85	9	0-28L		
2-Chloroethylvinyl ether	mg/kg	0	6.25	6.39	102	71-118L 1-305M	18-WW-001	0	7.70	7.53	98	72-118L 1-305M	7.42	7.18	97	1	0-19L		
2-Hexanone	mg/kg	0	6.25	5.63	90	53-132L	18-WW-001	0	7.70	6.63	86	55-150L	7.42	6.34	85	1	0-30L		
4-Isopropyltoluene	mg/kg	0	6.25	6.79	109	83-115L	18-WW-001	.649	7.70	8.28	99	57-130L	7.42	9.69	122	21 L	0-15L		
4-Methyl-2-pentanone	mg/kg	0	6.25	6.05	97	76-118L	18-WW-001	0	7.70	7.00	91	74-128L	7.42	6.50	88	3	0-23L		
Acetone	mg/kg	0	6.25	5.21	83	47-141L	18-WW-001	0	7.70	6.53	85	41-150L	7.42	5.94	80	6	0-35L		
Acrolein	mg/kg	0	31.9	1.57	5 L	64-130L	18-WW-001	0	39.3	2.26	6 L	17-150L	37.8	2.15	6 L	0	0-37L		
Acrylonitrile	mg/kg	0	6.25	5.81	93	78-117L	18-WW-001	0	7.70	6.23	81	78-126L	7.42	6.19	83	2	0-19L		
Benzene	mg/kg	0	6.25	6.00	96	81-117L 37-151M	18-WW-001	0	7.70	6.71	87	81-119L 37-151M	7.42	6.89	93	7	0-14L		
Bromobenzene	mg/kg	0	6.25	6.53	104	87-110L	18-WW-001	0	7.70	7.31	95	74-135L	7.42	8.59	116	20 L	0-11L		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
Bromodichloromethane	mg/kg	0	6.25	6.61	106	84-111L 35-155M	18-WW-001	0	7.70	7.73	100	85-110L 35-155M	7.42	7.27	98	2	0-13L		
Bromoform	mg/kg	0	6.25	6.65	106	73-114L 45-169M	18-WW-001	0	7.70	7.79	101	67-110L 45-169M	7.42	7.03	95	6	0-20L		
Bromomethane	mg/kg	0	6.25	2.70	43 L	87-115L 1-242M	18-WW-001	0	7.70	1.32	17 L	86-126L 1-242M	7.42	1.80	24 L	34 L	0-16L		
Carbon disulfide	mg/kg	0	6.25	4.67	75 L	80-111L	18-WW-001	0	7.70	2.62	34 L	65-125L	7.42	3.53	48 L	34 L	0-21L		
Carbon tetrachloride	mg/kg	0	6.25	7.04	113	77-117L 70-140M	18-WW-001	0	7.70	7.57	98	74-116L 70-140M	7.42	6.89	93	5	0-15L		
Chlorobenzene	mg/kg	0	6.25	6.79	109	89-110L 37-160M	18-WW-001	0	7.70	7.96	103	89-110L 37-160M	7.42	7.42	100	3	0-9 L		
Chloroethane	mg/kg	0	6.25	2.13	34 L	82-117L	18-WW-001	0	7.70	.511	7 L	88-128L	7.42	.276	4 L	55 L	0-17L		
Chloroform	mg/kg	0	6.25	6.08	97	86-113L 51-138M	18-WW-001	0	7.70	6.96	90	88-117L 51-138M	7.42	6.86	92	2	0-13L		
Chloromethane	mg/kg	0	6.25	1.73	28 L	75-121L 1-273M	18-WW-001	0	7.70	.269	3 L	81-142L 1-273M	7.42	.650	9 L	100L	0-25L		
Dibromochloromethane	mg/kg	0	6.25	6.61	106	79-113L 53-149M	18-WW-001	0	7.70	7.79	101	76-112L 53-149M	7.42	7.17	97	4	0-14L		
Dibromomethane	mg/kg	0	6.25	6.23	100	86-115L	18-WW-001	0	7.70	7.31	95	87-112L	7.42	6.87	93	2	0-15L		
Dichlorodifluoromethane	mg/kg	0	6.25	.383	6 L	78-117L	18-WW-001	0	7.70	.0229	NVR*	87-123L	7.42	.0567	NVR*		0-15L		
Ethyl acetate	mg/kg	0	13.0	11.1	85	71-113L	18-WW-001	0	16.0	12.7	79	26-136L	15.4	12.3	80	1	0-35L		
Ethyl ether	mg/kg	0	6.26	5.28	84	81-116L	18-WW-001	0	7.71	5.54	72 L	89-121L	7.44	5.49	74 L	3	0-18L		
Ethylbenzene	mg/kg	0	6.25	6.78	108	88-110L 37-162M	18-WW-001	.207	7.70	8.13	103	84-112L 37-162M	7.42	7.70	101	2	0-8 L		
Ethylene dibromide	mg/kg	0	6.25	6.44	103	83-113L	18-WW-001	0	7.70	7.54	98	77-111L	7.42	7.02	95	3	0-15L		
Hexachlorobutadiene	mg/kg	0	6.25	7.44	119	75-121L	18-WW-001	0	7.70	8.16	106	20-122L	7.42	9.50	128L	19	0-33L		
Isobutanol	mg/kg	0	62.7	60.5	96	30-130L	18-WW-001	0	77.3	73.0	94	30-130L	74.5	76.6	103	9	0-20L		
Isopropylbenzene	mg/kg	0	6.25	6.53	104	86-112L	18-WW-001	.200	7.70	7.50	95	70-140L	7.42	8.92	118	22 L	0-12L		
Methylene chloride	mg/kg	.235	6.25	5.84	90	81-119L 1-221M	18-WW-001	.378	7.70	5.85	71 L	82-123L 1-221M	7.42	5.91	75 L	5	0-14L		
Naphthalene	mg/kg	0	6.25	6.25	100	82-112L	18-WW-001	3.32	7.70	9.84	85	40-119L	7.42	11.7	113	28	0-29L		
Styrene	mg/kg	0	6.25	6.80	109	85-114L	18-WW-001	0	7.70	8.04	104	77-110L	7.42	8.21	111L	7	0-11L		
Tetrachloroethene	mg/kg	0	6.25	6.54	105	86-112L 64-148M	18-WW-001	0	7.70	7.50	97	77-116L 64-148M	7.42	7.27	98	1	0-14L		
Toluene	mg/kg	0	6.25	6.59	105	85-110L 47-150M	18-WW-001	0	7.70	7.54	98	84-115L 47-150M	7.42	7.41	100	2	0-12L		
Trichloroethene	mg/kg	0	6.25	6.45	103	85-114L 71-157M	18-WW-001	.120	7.70	7.34	94	84-111L 71-157M	7.42	6.95	92	2	0-13L		
Trichlorofluoromethane	mg/kg	0	6.25	2.93	47 L	87-114L 17-181M	18-WW-001	0	7.70	1.60	21 L	84-124L 17-181M	7.42	2.17	29 L	32 L	0-16L		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
Vinyl chloride	mg/kg	0	6.25	2.42	39 L	80-115L 1-251M	18-WW-001	0	7.70	.460	6 L	87-124L 1-251M	7.42	.938	13 L	74 L	0-15L		
Xylenes	mg/kg	0	18.8	20.5	109	89-110L	18-WW-001	1.06	23.1	25.2	105	83-115L	22.3	23.3	100	5	0-10L		
cis-1,3-Dichloropropene	mg/kg	0	6.25	6.55	105	83-112L 1-227M	18-WW-001	0	7.70	7.64	99	78-110L 1-227M	7.42	7.14	96	3	0-11L		
n-Butylbenzene	mg/kg	0	6.25	6.85	110	80-117L	18-WW-001	0	7.70	8.97	116	51-121L	7.42	10.7	144L	22 L	0-20L		
n-Propylbenzene	mg/kg	0	6.25	6.69	107	84-113L	18-WW-001	.448	7.70	7.94	97	68-132L	7.42	9.26	119	20 L	0-15L		
o-Chlorotoluene	mg/kg	0	6.25	6.59	105	86-111L	18-WW-001	0	7.70	7.60	99	71-134L	7.42	9.01	121	20 L	0-11L		
p-Chlorotoluene	mg/kg	0	6.25	6.75	108	86-112L	18-WW-001	0	7.70	7.65	99	74-126L	7.42	9.20	124	22 L	0-16L		
sec-Butylbenzene	mg/kg	0	6.25	6.76	108	81-116L	18-WW-001	.515	7.70	8.30	101	58-128L	7.42	9.62	123	20 L	0-15L		
tert-Butylbenzene	mg/kg	0	6.25	6.75	108	61-125L	18-WW-001	0	7.70	7.96	103	47-139L	7.42	9.36	126	20 L	0-13L		
trans-1,3-Dichloropropene	mg/kg	0	6.25	6.40	102	77-113L 17-183M	18-WW-001	0	7.70	7.45	97	69-110L 17-183M	7.42	7.17	97	0	0-16L		
Aroclor 1260	mg/kg	0	.865	.810	94	74-110L 8-127M	3539-WC-02	0	.874	.851	97	48-110L 8-127M	.883	.903	102	5	0-39L	Q2P70847	100L 100M
Petroleum Hydrocarbons (IR)	mg/kg	1.88	66.8	65.3	95	77-106L	3539-WC-01	524	68.9	306	0 L	60-111L	69.6	301	0 L	2	0-20C	Q2T70848	50L

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		METHOD SPIKE					MATRIX SPIKE						SPIKE DUPLICATE					% COMPLETE	
		Blank Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Spiked Sample Id.	Unspk Conc.	Added Conc.	Spiked Conc.	% Rec.	Rec. Limits	Added Conc.	Spiked Conc.	% Rec.	RPD	RPD Limit	Batch #	%
Mercury	mg/kg	0	.250	.264	106	79-117L 85-115M	57-WC-01	0	.270	.288	107	63-116L 75-125M	.267	.280	105	3	0-13C 0-20M	Q2G9813	100L 100M
Reactive Cyanide	mg/kg	0	956	41.0	4	1-10 L												Q2I6251	100L
Reactive Sulfide	mg/kg	0	1310	400	31	17-60 L												Q2I6252	100L
Arsenic	mg/kg	0	202	192	95	90-110L 75-125M	57-WC-01	14.2	214	217	95	84-109L 80-120M	216	215	93	.9	0-17C 0-20M	Q2M9810	96L 85M
Barium	mg/kg	0	201	189	94	90-110L 75-125M	57-WC-01	19.2	213	220	94	62-120L 80-120M	215	216	92	2	0-17C 0-20M		
Cadmium	mg/kg	0	5.02	4.76	95	90-110L 75-125M	57-WC-01	.841	5.31	5.92	96	63-120L 80-120M	5.36	5.88	94	.7	0-22C 0-20M		
Chromium	mg/kg	0	20.1	18.9	94	90-110L 75-125M	57-WC-01	21.1	21.3	34.1	61 M	61-123L 80-120M	21.5	33.0	55 M	3	0-32C 0-20M		
Lead	mg/kg	0	49.9	47.9	96	90-110L 75-125M	57-WC-01	75.7	52.8	114	73 M	56-122L 80-120M	53.4	115	74 M	.9	0-20C 0-20M		
Selenium	mg/kg	0	200	188	94	88-110L 75-125M	57-WC-01	0	212	204	96	73-105L 80-120M	214	201	94	1	0-17C 0-20M		
Silver	mg/kg	0	5.04	5.39	107	85-110L 75-125M	57-WC-01	.611	5.33	5.70	95	58-114L 80-120M	5.38	5.74	95	.7	0-31C 0-20M		

QUALITY ASSURANCE REPORT

Joblink: 622799

Compound(s)		SAMPLE DUPLICATE					POST SPIKE						ICP SERIAL DILUTION					
		Sample Id.	Sample Conc.	Dup. Conc.	RPD	RPD Limit	Spiked Sample Id.	Unspk Conc. mg/l	Added Conc. mg/l	Spiked Conc. mg/l	% Rec.	Rec. Limits	Sample Id.	Sample Conc. mg/l	Dil. Conc. mg/l	% Diff	Limit	Batch #
Mercury	mg/kg	57-WC-01	-.0126	-8.-03														Q2G9813
Arsenic	mg/kg	57-WC-01	14.2	15.9	2	7.9M							57-WC-01	.134	.212	58		Q2M9810
Barium	mg/kg	57-WC-01	19.2	17.6	9	0-20M							57-WC-01	.181	.205	13		Q2M9810
Cadmium	mg/kg	57-WC-01	.841	.781	.060	.53M							57-WC-01	.00794	.00790	.5		Q2M9810
Chromium	mg/kg	57-WC-01	21.1	13.6	43 M	0-20M							57-WC-01	.199	.191	4		Q2M9810
Lead	mg/kg	57-WC-01	75.7	63.3	18	0-20M							57-WC-01	.715	.740	3		Q2M9810
Selenium	mg/kg	57-WC-01	-.988	-4.48									57-WC-01	-9.-03	-.0550			Q2M9810
Silver	mg/kg	57-WC-01	.611	.426	.61								57-WC-01	.00577	.0131	100		Q2M9810

QUALITY ASSURANCE DATA
SURROGATE SUMMARY REPORT

SURROGATE ID	A158	# OUT
QC BATCH: Q2C70846 **Solid (Semi-Volatile organics by MS)**		
SAMPLE ID		
3539-WC-01	109	0
3539-WC-02	105	0
57-WC-01	98	0
METHOD BLK	83	0
METHOD SPK	88	0
QC LIMITS	(43-116)	

SURROGATE ID	A047	B185	B668	# OUT
QC BATCH: Q2D6138 **Solid (Volatile organics by MS)**				
SAMPLE ID				
18-WW-001 MD	94	97	113	0
18-WW-001 MS	86	98	93	0
3539-WC-01	82	99	106	0
3539-WC-02	87	100	107	0
57-WC-01	92	99	98	0
METHOD BLK	83	97	99	0
METHOD SPK	91	105	103	0
QC LIMITS	(80-120)	(81-117)	(74-121)	

SURROGATE ID	F048	F096	# OUT
QC BATCH: Q2P70847 **Solid (Pesticide compounds by GC)**			
SAMPLE ID			
3539-WC-01	81	67	0
3539-WC-02	85	81	0
3539-WC-02 MD	88	83	0
3539-WC-02 MS	83	80	0
57-WC-01	89	91	0
METHOD BLK	79	88	0
METHOD SPK	81	84	0
QC LIMITS	(46-131)	(43-125)	

SURROGATE ID

A047 = 1,2-Dichloroethane-D4
B185 = Toluene-D8
B668 = Bromofluorobenzene
A158 = 2-Fluorobiphenyl
F048 = Decachlorobiphenyl (PCB)
A047 = 1,2-Dichloroethane-D4
B185 = Toluene-D8
B668 = Bromofluorobenzene
F096 = 2,4,5,6-TCMX (PCB)

* Values outside of method quality control limits
D Sample was diluted, however, some surrogates may be reported if results were observed.

It is 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).

QUALITY ASSURANCE DATA

SURROGATE SUMMARY REPORT

SURROGATE ID	A047	B185	B668	# OUT
QC BATCH: Q1V6147 **Aqueous (Volatile organics by MS)**				
SAMPLE ID				
METHOD BLK	91	102	102	0
METHOD SPK	106	107	99	0
TB-002 MD	108	108	103	0
TB-002 MS	102	108	102	0
TB-01/1	97	107	107	0
TB-01/2	102	106	107	0
QC LIMITS	(80-120)	(88-110)	(86-115)	

SURROGATE ID

A047 = 1,2-Dichloroethane-D4
B185 = Toluene-D8
B668 = Bromofluorobenzene
A158 = 2-Fluorobiphenyl
F048 = Decachlorobiphenyl (PCB)
A047 = 1,2-Dichloroethane-D4
B185 = Toluene-D8
B668 = Bromofluorobenzene
F096 = 2,4,5,6-TCMX (PCB)

* Values outside of method quality control limits
D Sample was diluted, however, some surrogates may be reported if results were observed.

It is 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).

SUMMARY OF ANALYTICAL METHODOLOGY

Reference		Title
1020A	SW-846	Setaflash Closed-Cup Method for Determining Ignitability
418.1	MCAWW	Petroleum Hydrocarbons, Total Recoverable
6010A	SW-846	Inductively Coupled Plasma Atomic Emission Spectroscopy
7471A	SW-846	Mercury in Solid Waste (Manual Cold-Vapor Technique)
8080A	SW-846	Organochlorine Pesticides and/or PCBs
8270B	SW-846	Polynuclear Aromatic Hydrocarbons
8260A	SW-846	GC/MS for Volatile Organics
9010/7.3	SW-846	Test Method to Determine HCN Released from Wastes
9030A/7.3	SW-846	Test Method to Determine HS Released from Wastes
9045C	SW-846	Soil and Waste pH

METHODOLOGY REFERENCES

ASTM	*American Society for Testing and Materials*, 1985, edition.
MCAWW	*Methods for Chemical Analysis of Water and Wastes*, April 1979 and Update #1 March 1983.
CLP	USEPA Contract Laboratory Program, Document #OLMO3.0, update August 1994 #OLMO3.1 and Document #ILMO4.0.
EPA-500	*USEPA Methods for the Determination of Organic Compounds in Drinking Water*, EPA-600/4-88/039 July 1991 and Supplement II (EPA/600/R-92-129) August 1992.
EPA-600	*USEPA Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, 40CFR, 136, APP.A. July 1992.
NIOSH	*National Institute for Occupational Safety and Health*, 3rd edition, 1984.
SMEWW	*Standard Methods for the Examination of Water and Wastewater*, 18th edition, 1992.
STOA	*Spot Tests In Organic Analysis*, 7th edition, 1966.
SW-846	*Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, 3rd edition, Updates I and II, September 1986 to January 1995.
(1)	This method was modified to incorporate the use of Boron Trifluoride (BF3) as the derivatizing reagent according to Method 6640 in *SMEWW*, 18th edition, 1992.
Title 22	Waste Extraction Test, Title 22, Section 66261.126 Appendix 2 of the California Administrative Code, May 1991.
LUFT	*California Leaking Underground Fuel Tank Field Manual*, October 1989.

LABORATORY CERTIFICATIONS

STATE	AGENCY	NUMBER
Alabama	ADEM	40830
Alaska	AKDEC	N/A
California	CADOH	1178
Colorado	CODOH	OH113
Connecticut	CTDPH & AS	PH-0154
Delaware	DEHSS	OH113
Florida	FLHRS	E87537
Iowa	IADNR	129
Kansas	KSDHE	E-10202
Louisiana	LADOHH	92-10
Maryland	MDDHMH	210
Massachusetts	MADEP	M-OH113
New Hampshire	NHDES	2490
New Jersey	NJDEP	74603
New York	NYDOH	10712
North Carolina	NCDEM	392
Ohio	OHEPA	OH113
Oklahoma	OKDEQ	9216
Pennsylvania	PADER	68-450
Rhode Island	RIDOH	214/142
South Carolina	SCDEHNR	92002
Tennessee	TNDOH/TNDEC	2978
Utah	UTDOH	E-288
Virginia	VADGS	00011
Washington	WADOE	C154
Wisconsin	WIDNR	999037160

Validated by:

- o US Army Corps of Engineers ..... Chemical Analysis in Various Matrices

Approvals:

- o USDA ..... Permit for Importing Soils
- o Florida DEP ..... Quality Assurance Plan #930034
- o Naval Facilities Engineering Service Center ..... Chemical Analysis in Various Matrices

REPORT KEY

%	=	Percent
<	=	Less than
>	=	Greater than
µm/cm	=	MicroMho per centimeter
µg/kg	=	Microgram per kilogram (ppb)
µg/L	=	Microgram per liter (ppb)
µg/SMP	=	Microgram per sample (Tedlar Bag)
µg/smp	=	Microgram per sample
µg/W	=	Microgram per wipe
BTU/lb	=	British Thermal Units per pound
CV	=	Conventionals
Deg. C	=	Degrees Celsius
DRO	=	Diesel Range Organics
EP TOX	=	Extraction Procedure Toxicity
GC	=	Gas Chromatography Instrument
GC/MS	=	Gas Chromatography/Mass Spectrometer Instrument
gm/cc	=	Grams per cubic centimeter
GRO	=	Gasoline Range Organics
IR	=	Infrared Spectrophotometric
J	=	Estimated value due to calculated result < detection limit or result is from GC/MS library search
L	=	Laboratory
M	=	Method
mg/kg	=	Milligram per kilogram (ppm)
mg/L	=	Milligram per liter (ppm)
mg/m^3	=	Milligram per cubic meter
mg/SMP	=	Milligram per sample
mg/W	=	Milligram per wipe
n/a	=	Not applicable
ND	=	Not detected at or above stated detection limit
ng/SMP	=	Nanogram per sample
NVR	=	Not a valid recovery
PCB	=	Polychlorinated Biphenyls (PCBs)
pCi/l	=	Picocurie per liter
ppb	=	Parts per billion
ppm	=	Parts per million
RCRA	=	Resource Conservation and Recovery Act
SOW	=	Statement of Work
std	=	Result is relative to standard pH units
TCLP	=	Toxicity Characteristic Leaching Procedure
Unk	=	Unknown

APPENDIX D
SAMPLE RECEIPT DOCUMENTATION

Katahdin ANALYTICAL SERVICES
340 County Road No. 5
P.O. Box 720
Westbrook, ME 04098
Tel: (207) 874-2400

CHAIN of CUSTODY

* PLEASE PRINT IN PEN

Client	Contact	Phone #	Fax #
ROY F. WESTON, INC.	DAVID CRISPO	(508) 772-7690	(508) 772-7251

Address	City	State	Zip Code
	AYER	MA	01432-0425

P.O. # 425 Proj. Name/No. SA57 - AREA-1

Bill (if different than above) Address

Sample (Print/Sign) 03886-118-004-0210-00 Copies To:

LAB USE ONLY WORK ORDER #:

KATAHDIN PROJECT MANAGER

REMARKS:

SHIPPING INFO: ☑ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: 426290570 5

TEMP°C 4 ☑ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date/Time coll'd	Matrix	Filt. Y/N	No. of Cntrs.	VOC 8260	TOTAL RCRA METALS 6010A/7000A	TOTAL RCRA CHAR.	PCBs 8082	TPH 418.1	SVOCs 8100				
✓	57-WC-01	6/16/97/1300	S	N	4	2-40ml	1-4oz	1L	1L	1L	1L				
✓	TB-01	6/16/97/	A	N	2	2-40ml									
✓	TEMP BLANK	6/16/97/			1										
		/													
		/													
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		/													
		/													

COMMENTS 5-DAY TAT

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
	6/16/97 1700				
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

"SAMPLE RECEIPT FORM"

Weston

Project: 300595

Tote____ Box____ Bucket____ COC #: _____

Cooler #: ✓ COC #: _____

Cooler #: _____ COC #: _____

Cooler #: _____ COC #: _____

Use other side of this form to note further details concerning check-in problems and to specify and describe any action(s) regarding the resolution(s) of problem(s).

1) Have designated person initial here to acknowledge receipt of sample(s): DJ (date) 6/17/97

2) Were sample custody seals on outside of cooler? If Yes, how many & where? ✓ yes ___ no

[2] front [1] back [___] right side [___] left side 3 of 3 intact

seal date: 6/16/97 name: DAVID CRISPO

3) Were custody papers sealed in a plastic bag & taped inside to the lid? ___ yes ___ no

4) Were custody papers filled out properly (ink, signed, etc.)? ___ yes ___ no

5) Samples came via: [___] A/B [✓] FED EXP [___] UPS [___] H/D [___] other

Attach & enter air bill or invoice number here: 426298570 5

6) Describe packing: [___] sorbent [___] bubble pk [___] paper [___] cardboard [___] rags [___] none
[___] vermiculite [___] foam [___] peanuts [___] tyvek [___] other: _____

7) Temperature = 4 [___] no ice (Lab Acceptance Range = 2 to 6°C) ✓ yes ___ no
Blk w/ Probe ✓ Smp w/ IR ___ Cooler w/ Probe___

8) Were all bottles sealed in separate plastic bags? ___ yes ✓ no

9) Did all bottles arrive unbroken & in good condition? ✓ yes ___ no

10) Were Custody Seals on sample jar lids? If YES, were they intact upon arrival?
Seal Date: _____ Name: _____ ___ yes ✓ no

11) Labels complete? ✓ yes ___ no

12) Samples/Labels agree with custody papers? If NO, list on other side. ✓ yes ___ no

[___] Matrix on COC and Jar don't agree

13) Correct containers? ✓ yes ___ no

14) Were preservatives used when required? ✓ yes ___ no

15) Was a sufficient amount of sample sent for tests indicated? ✓ yes ___ no

16) Bubbles in VOA vials? If YES, list samples on other side. ___ N/A ___ yes ✓ no

17) Result of residual chlorine test performed. ___ NEG ___ POS

pH Range:

[___] Metals 0 to 2 [___] Sulfide > 9 [___] COD < 2 [___] _____

[___] Oil & Grease 0 to 2 [___] Hardness < 2 [___] TOC < 2

[___] Cyanide > 12 [___] Phenols < 2 [___] Residual Chlorine Test [___] Health Warnings Listed