

N60478.AR.001705  
NWS EARLE  
5090.3a

GEOPROBE INVESTIGATION SOUTH OF BUILDING C-50 NWS EARLE NJ  
3/14/2001  
FOSTER WHEELER ENVIRONMENTAL CORPORATION

**GEOPROBE INVESTIGATION  
SOUTH OF BUILDING C-50**

**NAVAL WEAPONS STATION - EARLE**

*Issued:*

March 14, 2001

*Prepared for:*

Naval Facilities Engineering Command  
10 Industrial Highway  
Lester, PA 19113

*Prepared by:*

Foster Wheeler Environmental Corporation  
2300 Lincoln Highway  
One Oxford Valley - Suite 200  
Langhorne, PA 19047 - 1829

REMEDIAL ACTION CONTRACT N62472-99-D-032  
CONTRACT TASK ORDER NO. 0034

<u>Revision</u>	<u>Date</u>	<u>Prepared By:</u>	<u>Approved By:</u>	<u>Pages Affected</u>
0	March 13, 2001	M. Heffron	J. Irely	N/A

A

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SOUTH OF BUILDING C-50**

**NAVAL WEAPONS STATION - EARLE  
COLTS NECK, NEW JERSEY**

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**APPENDIX**

**APPENDIX A: LABORATORY ANALYTICAL DATA**

## 1.0 INTRODUCTION

Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) was contracted by the Northern Division, Naval Facilities Engineering Command (Northern Division) to conduct site remediation and clean up activities at Naval Weapons Station (NWS) Earle located in Colts Neck, New Jersey. The remediation activities were conducted adjacent to the southern side of Building C-50, and included the excavation of soils and then a soil investigation to further delineate petroleum contaminated soils. This Remedial Report is being submitted to satisfy the post-construction submittal requirements included in paragraph 3.1.1, Pre-and Post Construction Documentation of the Statement of Services for Task Order No. 0034, under Remedial Action Contract No. N62472-99-D-0032.

## 1.2 PROJECT OBJECTIVES

The objective of this geoprobe investigation was to determine the extent of the total petroleum hydrocarbon (TPH) soil contamination adjacent to an existing excavation, south of Building C-50 at NWS-Earle. The laboratory analytical results of the soil borings were to be used to determine the extent of the excavation in order to remove the TPH contaminated soils south of Building C-50 to concentrations less than the NJDEP Residential Cleanup Criteria (10,000 ppm) and less than the required polyaromatic hydrocarbon (PAH) limits.

## 2.0 PROJECT LOCATION AND DESCRIPTION

NWS-Earle is located in east-central Monmouth County in the town of Colts Neck, New Jersey. Figure 2-1 depicts the Regional Site Map. Building C-50 is located in the Mainside portion of NWS-Earle. The site is located on the southern side of the building bordering an access driveway just off Coral Road. The excavation area is bordered by the building wall, a small concrete retaining wall, and a street curb. Figure 2-2 depicts Building C-50 and the work site location.

## 2.1 SITE CONDITIONS

The Area of Concern (AOC) is at a lubricating oil delivery pipe outside building C-50. The pipe extended from outside the southern wall of Building C-50, into a below-grade concrete containment sump, and then above grade to a concrete and grass area. The pipe fittings within the sump were loose and leaking lubricating oil. The soil surrounding the concrete area appeared to be contaminated by the lubricating oil. The lube oil was released into the soil as a result of below grade leaky pipe fittings contained in the sump. The sump did not have the ability to contain liquid since evidence of contaminated soil was present on the opposite side of a common retainer wall, adjacent to the sump area.

The spill area was encumbered by several underground utilities. Electric, communication and gas lines were present within the excavation area, making it necessary to perform the majority of the excavation by hand. A Dig-Safe permit was obtained and the underground utilities were marked-out by base services prior to any excavation work.

### 3.0 SUMMARY OF SITE ACTIVITIES

The project objective was to remove petroleum-contaminated soil which was in exceedance of the New Jersey Department of Environmental Protection (NJDEP) residential cleanup criteria. The soil removal required the completion of several tasks. The initial task included the demolition and removal of concrete walls and concrete pads in the excavation area. The source of the leak, a suspected leaking pipe, was removed and replaced with a new above-grade pipe. Also, the surrounding concrete pad and pipe sump were removed and disposed of. The contaminated soil under the concrete pad, and surrounding the sump was then exposed. The second task included the hand excavation of the soil and sampling of the soil for compliance with the NJDEP residential cleanup criteria. The third task was to include site restoration activities, and has not been completed to date.

Approximately 20 yds<sup>3</sup> of soil was removed during the initial excavation activities from December 7 to December 19, 2000. Due numerous underground utilities in this area, the area was excavated by hand. Confirmatory soil samples were obtained and analyzed for total petroleum hydrocarbons (TPH) after the initial excavation. Table 1 provides a summary of the analytical results of the first round of confirmatory soil samples. A review of the analytical results determined that four of the sidewall samples still had a concentration greater than the NJDEP Cleanup Criteria (10,000 ppm). Appendix A contains the laboratory analytical data.

A change request was issued by Foster Wheeler and approved by the Navy to conduct additional excavation and sampling activities to remove the additional soil. An additional 20 yds<sup>3</sup> of soil was excavated from the area south of Building C-50 from January 19 to January 24, 2001. A second round of confirmatory soil samples were obtained from the extended excavation on January 24, 2001. A review of the laboratory analysis determined that all five of the confirmatory soil samples were above the NJDEP Cleanup Criteria for TPH. Table 1 summarizes the TPH results of the confirmatory soil samples.

Foster Wheeler initiated a geoprobe investigation of the area prior to additional excavation activities. The geoprobe investigation was conducted to accurately delineate the petroleum contaminated soils in the area without additional excavation work because of numerous utilities and structures in the area. The area to the west of the excavation had a line of transformers on poles, the area to the east had a concrete retaining wall, and the area to the south had a concrete roadway. It was also determined that a former underground storage tank (UST) was located to the south of our excavation, but was previously removed.

A geoprobe<sup>®</sup> investigation was conducted on February 27 and February 28, 2001 by S<sub>2</sub>C<sub>2</sub> Inc. A total of twenty five soil borings were advanced to a depth of approximately 9 feet below grade in order to collect soil samples for laboratory analysis of TPH. Groundwater was encountered at approximately 9-feet below grade. A direct-push rig was used to collect soil samples from the surface, down to the top of the water table. A photo-ionization meter (PID) was used to screen the soil samples to determine the soil interval to be analyzed by the laboratory. If no elevated PID readings were detected, the soil immediately above the water was sampled for laboratory

analysis. A review of the analytical results of the soil samples collected during this investigation determined that none of the soil samples were above the NJDEP Cleanup Criteria for TPH. Table 2 summarizes the TPH results of the soil samples collected during the geoprobe® investigation. Appendix A contains the laboratory analytical data.

#### 4.0 CONCLUSIONS

Based upon a review of the site conditions and a review of the analytical results to date, it is recommended that the remainder of the site soils be excavated south to the soil boring locations with TPH concentrations below the NJDEP Cleanup Criteria. The sloped sides on the eastern and western corners of the excavation will be excavated vertically to remove the remainder of the soil from the sides of the excavation. The excavation was sloped in order to allow entry into the excavation by personnel for hand excavation around the utility lines.

The existing data from the boring to the south can be used for the excavation confirmatory soil samples to the south, and a new sample can be obtained from the sidewall to the west, with the backhoe bucket, once this side of the excavation is cut.

The TPH analysis for the three soil samples (C50SS03-01, C50SS04-01, and C50SS07-01) collected from the soil borings to the south of the excavation can be used for the confirmatory samples to the south. New soil samples should be obtained from the sidewall to the west and east, with the backhoe bucket, once the sloped sides of the excavation are shear cut. Since the source of the petroleum contamination was lubricating oil, N.J.A.C 7:26E 2.1 cites that some (TPH > 100 ppm or highest TPH concentration) of the confirmatory soil samples require polycyclic aromatic hydrocarbons (PAH) analysis in addition to the TPH analysis.

The additional excavation work, which is away from the underground utilities, will be conducted using the backhoe. No personnel shall enter the excavation since the sloped sides of the excavation will be shear cut and the depth of the excavation is greater than 6 feet.

It will also be necessary to install a new guy wire to the transformer pole assembly to the west of the excavation. The transformer pole assembly consists of several transformers on a wooden platform between two telephone poles. It will be necessary to remove an existing guy wire to the transformer pole assembly to complete the excavation. A new guy wire will be installed down into the excavation to ensure the structure is stabilized during the removal of the existing guy wire and excavation work. In accordance to NWS-Earle personnel, Foster Wheeler will work with base personnel to shut down power to the transformers, and then use an auger truck to advance the stake and install the guy wire.

**TABLE 1**  
**Confirmatory Soil Sample**  
**Analytical Data - TPH**  
**Naval Weapons Station Earle**  
**South of Building C-50**

Sample I.D.	Date Collected	TPH Detection Limit (ppm)	TPH Concentration (ppm)	NJDEP Cleanup Criteria (ppm)
<b>1st Round</b>				
C50SS01	12/19/2000	40	17,000	10,000
C50SS02	12/19/2000	40	27,000	10,000
C50SS03	12/19/2000	40	78,000	10,000
C50SS04	12/19/2000	40	4,000	10,000
C50SS05	12/19/2000	40	10,000	10,000
C50SS06	12/19/2000	40	300	10,000
<b>2nd Round</b>				
C50SS07	1/24/2001	40	22,000	10,000
C50SS08	1/24/2001	40	76,000	10,000
C50SS09	1/24/2001	40	40,000	10,000
C50SS10	1/24/2001	40	11,000	10,000
C50SS11	1/24/2001	40	14,000	10,000

**Notes:**

Samples were analyzed for TPH using EPA Method 418.1

DUP - Duplication

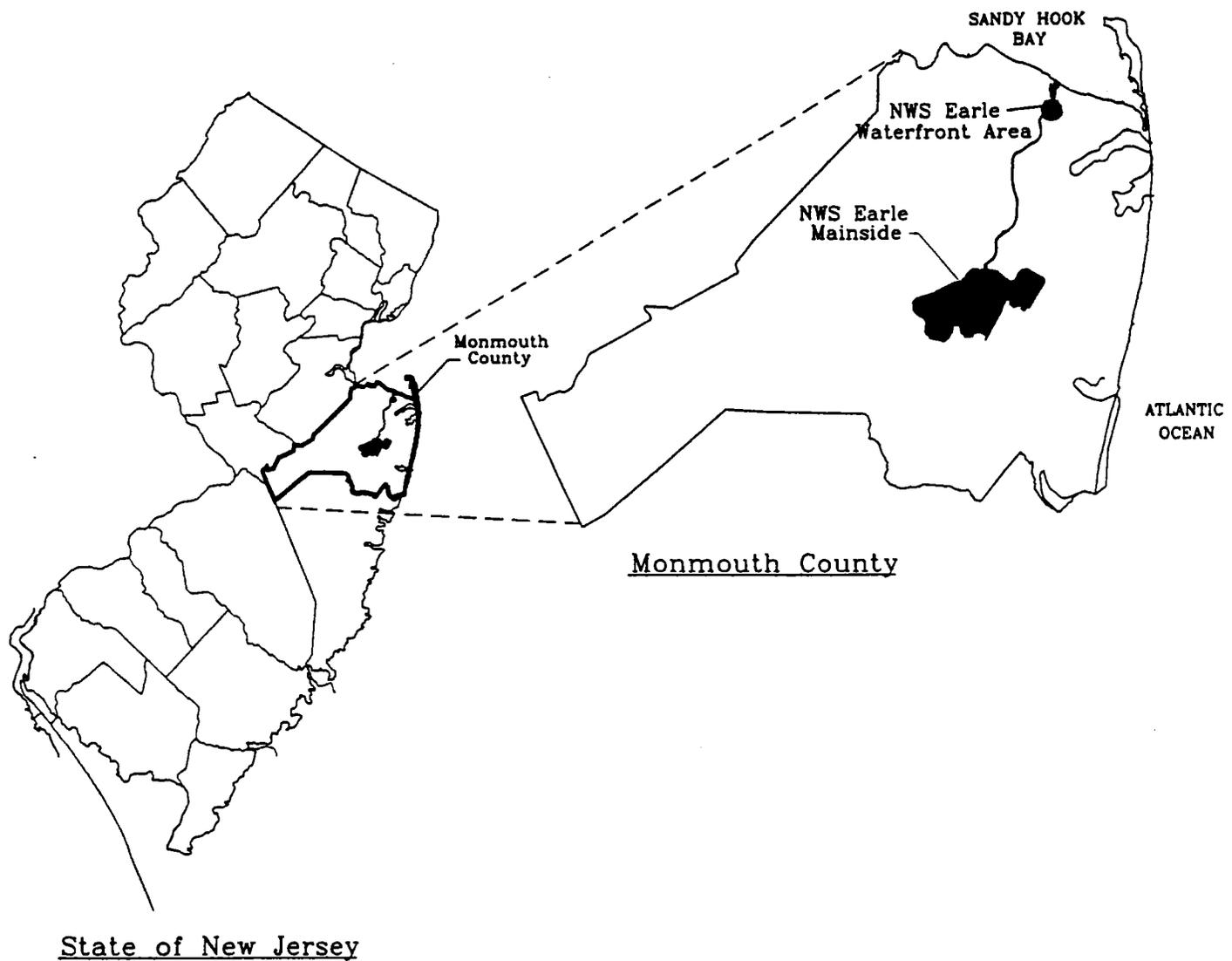
**TABLE 2**  
**Geoprobe Investigation**  
**Analytical Data - TPH**  
**Naval Weapons Station Earle**  
**South of Building C-50**

Sample I.D.	Date Collected	TPH Detection Limit (ppm)	TPH Concentration (ppm)	NJDEP Cleanup Criteria (ppm)
C-50SS01-01	2/27/2001	40	<48	10,000
C-50SS02-01	2/27/2001	40	<48	10,000
C-50SS02-02	2/27/2001	40	280	10,000
C-50SS03-01	2/27/2001	40	<46	10,000
C-50SS04-01	2/27/2001	40	<47	10,000
C-50SS05-01	2/27/2001	40	<47	10,000
C-50SS06-01	2/27/2001	40	58	10,000
C-50SS07-01	2/27/2001	40	<47	10,000
C-50SS08-01	2/27/2001	40	<47	10,000
C-50SS09-01	2/27/2001	40	<48	10,000
C-50SS10-01	2/27/2001	40	<51	10,000
C-50SS11-01	2/27/2001	40	<47	10,000
C-50SS12-01	2/27/2001	40	150	10,000
C-50SS13-01	2/27/2001	40	1,700	10,000
C-50SS14-01	2/27/2001	40	<47	10,000
C-50SS15-01	2/27/2001	40	3,600	10,000
C-50SS16-01	2/28/2001	40	300	10,000
C-50SS17-01	2/28/2001	40	78	10,000
C-50SS18-01	2/28/2001	40	<46	10,000
C-50SS19-01	2/28/2001	40	<47	10,000
C-50SS20-01	2/28/2001	40	6,300	10,000
C-50SS21-01	2/28/2001	40	110	10,000
C-50SS22-01	2/28/2001	40	530	10,000
C-50SS23-01	2/28/2001	40	620	10,000
C-50SS24-01	2/28/2001	40	57	10,000
C-50SS25-01	2/28/2001	40	<48	10,000
C-50SS17_010DUP	2/28/2001	40	<48	10,000

**Notes:**

Samples were analyzed for TPH using EPA Method 418.1

DUP - Duplication



State of New Jersey

NOT TO SCALE

U.S. Navy RAC  
NWS-Earle, Colts Neck, N.J.

Figure 2-1  
Regional Site Map

 FOSTER WHEELER ENVIRONMENTAL CORPORATION



BUILDING C-50

AREA OF EXCAVATION

Coral Road

30 0 30 60

Approximate scale in feet



Legend

 Area of excavation

NWS Earle, Colts Neck, NJ  
Building C-50 Soil Removal

Figure 2-2  
Site Layout

FOSTER WHEELER ENVIRONMENTAL CORPORATION

00781HBIY



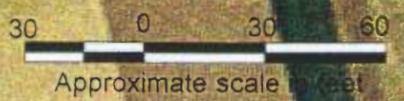
**BUILDING C-50**

- C50SS07
- C50SS25
- C50SS23
- C50SS08
- C50SS04
- C50SS03
- C50SS05
- C50SS10
- C50SS02
- C50SS11
- C50SS06
- C50SS01
- C50SS09
- C50SS14
- C50SS19
- C50SS13
- C50SS12
- C50SS18
- C50SS24
- C50SS17
- C50SS16
- C50SS22
- C50SS15
- C50SS21
- C50SS20

Legend

- Soil boring location
- ▨ Area of excavation

Coral Road



NWS Earle, Colts Neck, NJ  
 Building C-50 Soil Removal

Figure 3-1  
 Soil Boring Locations

FOSTER WHEELER ENVIRONMENTAL CORPORATION

APPENDIX A  
LABORATORY ANALYTICAL DATA

**DATA PACKAGE FOR  
GENERAL CHEMISTRY****PROJECT NAME: NAVAL WEAPONS ST. EARLE****FOSTER WHEELER ENVIRONMENTAL  
2300 LINCOLN HIGHWAY EAST  
1 OXFORD VALLEY SUITE 200  
LANGHORNE, PA 19047  
(215) 702-4015****CHEMTECH PROJECT#: L2576NJ  
ATTENTION: MIKE HEFFRON**

# CHEMTECH

## CHAIN OF CUSTODY RECORD

110 Route 4  
 Englewood, NJ 07631  
 (201) 567-6868  
 Fax (201) 567-1333

205 Campus Plaza 1  
 Edison, NJ 08837  
 (732) 225-4111  
 Fax (732) 225-4110

CHEMTECH JOB NO.: L2576115

CHEMTECH QUOTE NO.:

CLIENT INFORMATION		PROJECT INFORMATION		BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>FOSTER WHEELER ENV Co</u>		PROJECT NAME: <u>NAVAL WEAPONS ST. EARLE</u>		BILL TO: <u>FOSTER WHEELER</u> PO #: <u>031174</u>	
ADDRESS: <u>2300 LINCOLN HIGHWAY EAST</u> <u>1 OXFORD VALLEY SUITE 200</u>		PROJECT NO.: <u>C-50; SOIL CLEANUP</u>		ADDRESS:	
CITY: <u>LANGHORNE</u> STATE: <u>PA</u> ZIP: <u>19047</u>		PROJECT MANAGER: <u>MIKE HEFFRON</u>		CITY: <u>LANGHORNE</u> STATE: <u>PA</u> ZIP:	
ATTENTION: <u>MIKE HEFFRON</u>		LOCATION: <u>COLTS NECK, N.J.</u>		ATTENTION: <u>SONYA</u> PHONE: <u>702-4000</u>	
PHONE: <u>702-4015</u> 215	FAX: <u>702-4045</u> 215	PHONE: <u>702-4015</u> 215	FAX: <u>702-4045</u> 215	ANALYSIS	

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS * HARD COPY: <u>70H</u> DAYS * EDD: <u>TURN AROUND</u> DAYS * * TO BE APPROVED BY CHEMTECH ** NORMAL TURNAROUND TIME - 14 DAYS	<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> NYS ASP "B" <input checked="" type="checkbox"/> NJ REDUCED <input type="checkbox"/> NYS ASP "A" <input type="checkbox"/> NJ CLP <input type="checkbox"/> EDD <input type="checkbox"/> EDD FORMAT: _____

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS * Specify Preservatives A - HCl    B - HNO <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> D - NaOH E - ICE    F - Other	
			COMP	GRAB	DATE	TIME		1	2	3	4	5	6	7	8	9		
			1.	C50 SS001	SOIL	X		X	12-19	1535	1	X						
2.	C50 SS002	"	X	X	12-19	1540	1	X										
3.	C50 SS003	"	X	X	12-19	1550	1	X										
4.	C50 SS004	"	X	X	12-19	1555	1	X										
5.	C50 SS005	"	X	X	12-19	1600	1	X										
6.	C50 SS006	"	X	X	12-19	1610	1	X										
7.																		
8.																		

**SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY**

RELINQUISHED BY SAMPLER:	DATE/TIME: <u>12-20-00</u>	RECEIVED BY:	Conditions of bottles or coolers at receipt: <input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <input checked="" type="checkbox"/> Temp. of Cooler <u>4.0C</u>
1. <u>RICH GOLDBECK</u>		1. <u>[Signature]</u>	Comments: <u>SEE ATTACHED SAMPLING PROTOCOL</u> <u>CONTACT MIKE H. AFTER TPA RESULTS</u> <u>CHAIN OF CUSTODY #123246</u>
RELINQUISHED BY:	DATE/TIME: <u>12/21/00</u>	RECEIVED BY:	
2. <u>[Signature]</u>		2. <u>[Signature]</u>	
RELINQUISHED BY:	DATE/TIME: <u>12-21-00 10:18</u>	RECEIVED FOR LAB BY:	Page <u>1</u> of <u>1</u> Shipment Complete: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3. <u>[Signature]</u>		3. <u>[Signature]</u>	

COVER PAGE

Order L2576

ProjectID: NAVAL WEAPONS STATIO

CustomerName Foster Wheeler Environmental Corp.

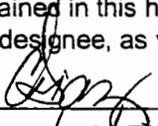
LAB SAMPLE NO.

L2576-01  
L2576-02  
L2576-03  
L2576-04  
L2576-05  
L2576-06

CLIENT SAMPLE NO

C50SS001  
C50SS002  
C50SS003  
C50SS004  
C50SS005  
C50SS006

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature:  Name: Carol B. Sizoo  
Date: 12/28/00 Title: QA/QC

CLIENT: Foster Wheeler Environmental Corp.

LAB RECEIVING #: L2576

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 418.1

Matrix: Solid  
Unit: mg/Kg

Analyzed: 12/26/00  
Analyst: JAYSHREE

	Lab Sample ID:	L2576-01	L2576-02	L2576-03	L2576-04	Detection Limit
<b>COMPOUNDS:</b>	Client Sample ID:	Method Blank	C50SS001	C50SS002	C50SS003	C50SS004
	D.F.:		1	1	1	1
Total Petroleum Hydrocarbon	<40.0	17000	27000	78000	4000	40

	Lab Sample ID:	L2576-05	L2576-06	Detection Limit
<b>COMPOUNDS:</b>	Client Sample ID:	Method Blank	C50SS005	C50SS006
	D.F.:		1	1
Total Petroleum Hydrocarbon	<40.0	10000	300	40

110 Route 4  
Englewood, New Jersey 07631  
Phone: 201.568.7400 Fax: 201.567.3231

205 Campus Plaza 1  
Edison, NJ 08837  
Phone: 732.225.4111 **00012** 732.225.4110

CLIENT: Foster Wheeler Environmental Corp.

LAB RECEIVING #: L2576

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 160.3

Matrix: Solid Analyzed: 12/21/00  
Unit: % Analyst: PRAMIT

COMPOUNDS:	Lab Sample ID:	L2576-01	L2576-02	L2576-03	L2576-04	Detection Limit
	Client Sample ID: Method Blank	C50SS001	C50SS002	C50SS003	C50SS004	
	D.F.:	1	1	1	1	
Percent Solids		86.2	85.8	89.2	82.6	

COMPOUNDS:	Lab Sample ID:	L2576-05	L2576-06	Detection Limit
	Client Sample ID: Method Blank	C50SS005	C50SS006	
	D.F.:	1	1	
Percent Solids		83.9	85.0	

110 Route 4  
Englewood, New Jersey 07631  
Phone: 201.568.7400 Fax: 201.567.3231

205 Campus Plaza 1  
Edison, NJ 08837  
Phone: 732.225.4111 Fax: 732.225.4110

0001

**ANALYTICAL RESULTS  
SUMMARY****PROJECT NAME: NAVAL WEAPONS ST. EARLE****FOSTER WHEELER ENVIRONMENTAL  
2300 LINCOLN HIGHWAY EAST  
1 OXFORD VALLEY SUITE 200  
LANGHORNE, PA 19047  
(215) 702-4015****CHEMTECH PROJECT#: L2576NJ  
ATTENTION: MIKE HEFFRON**

# CHEMTECH

## CHAIN OF CUSTODY RECORD

110 Route 4  
Englewood, NJ 07631  
(201) 567-6868  
Fax (201) 567-1333

205 Campus Plaza 1  
Edison, NJ 08837  
(732) 225-4111  
Fax (732) 225-4110

CHEMTECH JOB NO. 23598100

CHEMTECH QUOTE NO.

MAR 26 2001 17:54

CLIENT INFORMATION		PROJECT INFORMATION		BILLING INFORMATION	
REPORT TO BE SENT TO:					
COMPANY: <u>FWENC</u>		PROJECT NAME: <u>NWS Earle (Billing C-50)</u>		BILL TO:	PO #:
ADDRESS: <u>2300 Lincoln Hwy East</u>		PROJECT NO.:		ADDRESS:	
CITY: <u>Lanshorne</u> STATE: <u>PA</u> ZIP:		PROJECT MANAGER: <u>Mike Heffron</u>		CITY:	STATE: ZIP:
ATTENTION: <u>Mike Heffron</u>		LOCATION:		ATTENTION:	PHONE:
PHONE: <u>215-702-4015</u> FAX: <u>215-702-4045</u>		PHONE:	FAX:		

DATA TURNAROUND INFORMATION	DATA DELIVERABLE INFORMATION
FAX: _____ DAYS *	<input type="checkbox"/> RESULTS ONLY
HARD COPY: <u>14</u> DAYS *	<input type="checkbox"/> USEPA CLP
EDD: _____ DAYS *	<input type="checkbox"/> RESULTS + QC
* TO BE APPROVED BY CHEMTECH	<input type="checkbox"/> NJ ASP "B"
** NORMAL TURNAROUND TIME - 14 DAYS	<input checked="" type="checkbox"/> NJ REDUCED
	<input type="checkbox"/> NJ CLP
	<input checked="" type="checkbox"/> EDD
	<input type="checkbox"/> EDD FORMAT: _____

1 TPH Method 418.1

ANALYSIS								
1	2	3	4	5	6	7	8	9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A - HCl B - HNO <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> D - NaOH E - ICE F - Other		
			COMP	GRAB	DATE	TIME		E	1	2	3	4	5	6	7	8		9	
1	01 C-50SS01-01	Soil		X	3/27/01	0755	1	X											
2	02 C-50SS02-01					0820													
3	03 C-50SS02-02					0840													
4	04 C-50SS03-01					0900													
5	05 C-50SS04-01					0940													
6	06 C-50SS05-01					1015													
7	07 C-50SS06-01					1035													
8	08 C-50SS07-01					1130													

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Jan C. Ford</u>	DATE/TIME: <u>3/1/01</u>	RECEIVED BY: 1. <u>Valerie Dunne</u>	Conditions of bottles or coolers at receipt: <input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <input checked="" type="checkbox"/> Temp. of Cooler <u>40</u> Comments:
RELINQUISHED BY: 2. <u>Valerie Dunne</u>	DATE/TIME: <u>3/2/01 16:30</u>	RECEIVED BY: 2. <u>H</u>	
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.	

Page 1 of 4 Shipment Complete: Yes  No



# CHEMTECH

## CHAIN OF CUSTODY RECORD

MAR 26 2001 17:55

110 Route 4  
Englewood, NJ 07631  
(201) 567-6868  
Fax (201) 567-1333

205 Campus Plaza 1  
Edison, NJ 08837  
(732) 225-4111  
Fax (732) 225-4110

CHEMTECH JOB NO. 2557814  
CHEMTECH QUOTE NO.

CLIENT INFORMATION			PROJECT INFORMATION			BILLING INFORMATION													
REPORT TO BE SENT TO:																			
COMPANY: <u>FWENC</u>			PROJECT NAME: <u>NWS Earle (Building C-60)</u>			BILL TO: _____ PO # _____													
ADDRESS: <u>2300 Lincoln Hwy East, One Oxford Valley Suite 200</u>			PROJECT NO.:			ADDRESS _____													
CITY: <u>Langhorne</u> STATE: <u>PA</u> ZIP _____			PROJECT MANAGER: <u>Mike Heffron</u>			CITY _____ STATE _____ ZIP _____													
ATTENTION: <u>Mike Heffron</u>			LOCATION _____			ATTENTION _____ PHONE _____													
PHONE: <u>215-702-4015</u> FAX: <u>215-702-4045</u>			PHONE: _____ FAX _____																
DATA TURNAROUND INFORMATION			DATA DELIVERABLE INFORMATION			ANALYSIS													
FAX: _____ DAYS * HARD COPY: <u>2</u> _____ DAYS * EDD: <u>14</u> _____ DAYS *			<input type="checkbox"/> RESULTS ONLY <input type="checkbox"/> USEPA CLP <input type="checkbox"/> RESULTS + QC <input type="checkbox"/> NYS ASP "B" <input checked="" type="checkbox"/> NJ REDUCED <input type="checkbox"/> NYS ASP "A" <input type="checkbox"/> NJ CLP <input checked="" type="checkbox"/> EDD <input type="checkbox"/> EDD FORMAT _____			<div style="transform: rotate(-45deg); font-weight: bold; font-size: 1.2em;">TPH Method 418.1</div> <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="width: 20px;">1</td><td style="width: 20px;">2</td><td style="width: 20px;">3</td><td style="width: 20px;">4</td><td style="width: 20px;">5</td><td style="width: 20px;">6</td><td style="width: 20px;">7</td><td style="width: 20px;">8</td><td style="width: 20px;">9</td> </tr> </table>			1	2	3	4	5	6	7	8	9		
1	2	3	4	5	6				7	8	9								
* TO BE APPROVED BY CHEMTECH ** NORMAL TURNAROUND TIME - 14 DAYS																			
CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A - HCl      B - HNO <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> D - NaOH E - ICE      F - Other		
			COMP	GRAB	DATE	TIME		E	1	2	3	4	5	6	7	8		9	
1	17 C-50SS16-01	Soil		X	2-28	0805	1	X											
2	18 C-50SS17-01					0825		X											
3	19 C-50SS18-01					0855		X											
4	20 C-50SS19-01					0930		X											
5	21 C-50SS20-01					1000		X											
6	22 C-50SS21-01					1025		X											
7	23 C-50SS22-01					1100		X											
8	24 C-50SS23-01					1135		X											
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY																			
RELINQUISHED BY SAMPLER		DATE/TIME		RECEIVED BY		Conditions of bottles or coolers at receipt: <input checked="" type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Temp. of Cooler <u>4.0 C</u>													
1. <u>John C. Z...</u>		<u>3/1/01</u>		1. <u>Valerie D...</u>		Comments:													
RELINQUISHED BY		DATE/TIME		RECEIVED BY															
2. <u>Valerie D...</u>		<u>3/2/01 16:30</u>		2. <u>JA 3/2/01 16:30</u>															
RELINQUISHED BY:		DATE/TIME		RECEIVED FOR LAB BY:															
3.				3.															
Page <u>3</u> of <u>4</u>						Shipment Complete: Yes <input checked="" type="checkbox"/> No _____													

PAGE 04

# CHEMTECH

## CHAIN OF CUSTODY RECORD

110 Route 4  
 Englewood, NJ 07631  
 (201) 567-6868  
 Fax (201) 567-1333

205 Campus Plaza 1  
 Edison, NJ 08837  
 (732) 225-4111  
 Fax (732) 225-4110

CHEMTECH JOB NO. L3398N

CHEMTECH QUOTE NO.

MAR 06 2001 17:55

### CLIENT INFORMATION

### PROJECT INFORMATION

### BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: FWENC  
 ADDRESS: 2300 Lincoln Hwy East  
One Oxford Valley, Suite 200  
 CITY: Lanham STATE: PA ZIP: \_\_\_\_\_  
 ATTENTION: Mike Heffron  
 PHONE: 215-702-4015 FAX: 215-702-4045

PROJECT NAME: NWS Earle (Building C-50)  
 PROJECT NO.: \_\_\_\_\_  
 PROJECT MANAGER: Mike Heffron  
 LOCATION: \_\_\_\_\_  
 PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

BILL TO: \_\_\_\_\_ PO #: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 ATTENTION: \_\_\_\_\_ PHONE: \_\_\_\_\_

### DATA TURNAROUND INFORMATION

### DATA DELIVERABLE INFORMATION

FAX: 2 DAYS \*  
 HARD COPY: 14 DAYS \*  
 EDD: \_\_\_\_\_ DAYS \*  
 \* TO BE APPROVED BY CHEMTECH  
 \*\* NORMAL TURNAROUND TIME - 14 DAYS

RESULTS ONLY       USEPA CLP  
 RESULTS + QC       NYS ASP "B"  
 NJ REDUCED       NYS ASP "A"  
 NJ CLP       EDD  
 EDD FORMAT: \_\_\_\_\_

ANALYSIS

1 2 3 4 5 6 7 8 9

TPH Method 418.1

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		- SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A - HCl    B - HNO <sub>3</sub> C - H <sub>2</sub> SO <sub>4</sub> D - NaOH E - ICE    F - Other			
			COMP	GRAB	DATE	TIME		E	1	2	3	4	5	6	7	8		9		
1 25	C-805524-01	Soil		X	2/26/01	1255	1	X												
2 26	C-505525-01	↓		↓	↓	1315	1	X												
3 27	C-505517-01-DUP	↓		↓	↓	0825	1	X												
4																				
5																				
6																				
7																				
8																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>J. C. Z...</u>	DATE/TIME: <u>3/1/01</u>	RECEIVED BY: 1. <u>Valerie Dun</u>	Conditions of bottles or coolers at receipt: <input checked="" type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Temp. of Cooler <u>4.0°C</u> Comments:
RELINQUISHED BY: 2. <u>Valerie Dun</u>	DATE/TIME: <u>3/2/01 16:30</u>	RECEIVED BY: 2. <u>H</u> <u>3/2/01 16:30</u>	
RELINQUISHED BY: 3.	DATE/TIME:	RECEIVED FOR LAB BY: 3.	

Page 4 of 4      Shipment Complete: Yes  No

PAGE.05



# LABORATORY REPORT

CLIENT: Foster Wheeler Environmental Corp.

LAB RECEIVING #: L3398

ATTN: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 160.3

Matrix: Solid  
Unit: %

Analyzed: 3/5/01  
Analyst: PRAMIT

COMPOUNDS:	Lab Sample ID:	L3398-01	L3398-02	L3398-03	L3398-04	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS01-01	C-50SS02-01	C-50SS02-02	C-50SS03-01	Limit
	D.F.:	1	1	1	1	
		83.6	83.8	86.6	85.0	
COMPOUNDS:	Lab Sample ID:	L3398-05	L3398-06	L3398-07	L3398-08	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS04-01	C-50SS05-01	C-50SS06-01	C-50SS07-01	Limit
	D.F.:	1	1	1	1	
		83.2	84.3	83.6	85.9	
COMPOUNDS:	Lab Sample ID:	L3398-09	L3398-10	L3398-11	L3398-12	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS08-01	C-50SS09-01	C-50SS10-01	C-50SS11-01	Limit
	D.F.:	1	1	1	1	
		84.6	83.4	78.4	84.3	
COMPOUNDS:	Lab Sample ID:	L3398-13	L3398-14	L3398-15	L3398-16	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS12-01	C-50SS13-01	C-50SS14-01	C-50SS15-01	Limit
	D.F.:	1	1	1	1	
		84.9	79.8	84.4	83.3	

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205 Campus Plaza 1  
 Edison, NJ 08837  
 Phone: 732 225 4111 Fax: 732 225 4110

NYSDOH Certification No 10624

NYSDOH Certification No 11376  
NJDEP Certification No. 12013



# LABORATORY REPORT

CLIENT: Foster Wheeler Environmental Corp

LAB RECEIVING #: L3398

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 160 3

Matrix:  
Unit:

Solid  
%

Analyzed:  
Analyst:

3/5/01  
PRAMIT

COMPOUNDS:	Lab Sample ID:	L3398-17	L3398-18	L3398-19	L3398-20	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS16-01	C-50SS17-01	C-50SS18-01	C-50SS19-01	Limit
	D.F.:	1	1	1	1	
		86.7	82.6	86.9	84.9	

COMPOUNDS:	Lab Sample ID:	L3398-21	L3398-22	L3398-23	L3398-24	Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS20-01	C-50SS21-01	C-50SS22-01	C-50SS23-01	Limit
	D.F.:	1	1	1	1	
		84.1	87.0	80.7	79.7	

COMPOUNDS:	Lab Sample ID:	L3398-25	L3398-26	L3398-27		Detection
Percent Solids	Client Sample ID: Method Blank	C-50SS24-01	C-50SS25-01	C-50SS17-01-DU		Limit
	D.F.:	1	1	1		
		84.0	83.5	82.5		

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NYSDOH Certification No. 10624

NYSDOH Certification No. 11376  
NJDEP Certification No. 12013



# LABORATORY REPORT

CLIENT: Foster Wheeler Environmental Corp

LAB RECEIVING #: L3398

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 418 1

Matrix: Solid  
Unit: mg/Kg

Analyzed: 3/6/01  
Analyst: JAYSHREE

COMPOUNDS:	Lab Sample ID:		L3398-01	L3398-02	L3398-03	L3398-04	Detection Limit
	Client Sample ID:	Method Blank	C-50SS01-01	C-50SS02-01	C-50SS02-02	C-50SS03-01	
Total Petroleum Hydrocarbon	D.F.:	<40	1	1	1	1	40
			<48	<48	280	<47	

COMPOUNDS:	Lab Sample ID:		L3398-05	L3398-06	L3398-07	Detection Limit
	Client Sample ID:	Method Blank	C-50SS04-01	C-50SS05-01	C-50SS05-01	
Total Petroleum Hydrocarbon	D.F.:	<40	1	1	1	40
			<48	<47	58	

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Edison, NJ 08837  
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NYSDOH Certification No 10624

NYSDOH Certification No 11376  
NJDEP Certification No. 12013



# LABORATORY REPORT

CLIENT: Foster Wheeler Environmental Corp

LAB RECEIVING #: L3398

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 418 1

Matrix:  
Unit:

Solid  
mg/Kg

Analyzed:  
Analyst:

3/6/01  
TRIPATHI

COMPOUNDS:	Lab Sample ID:	Client Sample ID:	D.F.:	L3398-08 C-50SS07-01	L3398-09 C-50SS08-01	L3398-10 C-50SS09-01	L3398-11 C-50SS10-01	Detection Limit
Total Petroleum Hydrocarbon	Method Blank			1	1	1	1	40
				<47	<47	<48	<51	

COMPOUNDS:	Lab Sample ID:	Client Sample ID:	D.F.:	L3398-12 C-50SS11-01	L3398-13 C-50SS12-01	L3398-14 C-50SS13-01	L3398-15 C-50SS14-01	Detection Limit
Total Petroleum Hydrocarbon	Method Blank			1	1	1	1	40
				<47	150	1700	<47	

COMPOUNDS:	Lab Sample ID:	Client Sample ID:	D.F.:	L3398-16 C-50SS15-01	L3398-17 C-50SS16-01	L3398-18 C-50SS17-01	L3398-19 C-50SS18-01	Detection Limit
Total Petroleum Hydrocarbon	Method Blank			1	1	1	1	40
				3600	300	78	<46	

COMPOUNDS:	Lab Sample ID:	Client Sample ID:	D.F.:	L3398-20 C-50SS19-01	L3398-21 C-50SS20-01	L3398-22 C-50SS21-01	L3398-23 C-50SS22-01	Detection Limit
Total Petroleum Hydrocarbon	Method Blank			1	1	1	1	40
				<47	6300	110	530	

110 Route 4  
Englewood, New Jersey 07631  
Phone: 201.568.7400 Fax: 201.567.3231

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Edison, NJ 08837  
Phone: 732.225.4111 Fax: 732.225.4110

NYSDOH Certification No 10624

NYSDOH Certification No. 11375  
NJDEP Certification No. 12D13

CLIENT: Foster Wheeler Environmental Corp.

LAB RECEIVING #: L3398

ATTN.: MIKE HEFFRON

NAVAL WEAPONS STATIONS EARLE

Analysis Meth.: 418 1

Matrix: Solid  
Unit: mg/Kg

Analyzed: 3/6/01  
Analyst: TRIPATHI

COMPOUNDS:	Lab Sample ID:	L3398-24	L3398-25	L3398-26	L3398-27	Detection Limit
	Client Sample ID: Method Blank	C-50SS23-01	C-50SS24-01	C-50SS25-01	C-50SS17-01-DU	
	D.F:	1	1	1	1	
Total Petroleum Hydrocarbon	<40	620	57	<48	<48	40

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NYSDOH Certification No 10624

NYSDOH Certification No 11376  
NJDEP Certification No 12013

TABULATED ANALYTICAL REPORT  
QUALITATIVE GC FINGERPRINT BY 8015

CLIENT: FOSTER WHEELER  
CLIENT PROJECT : NAVAL WEAPONS  
REPORT DATE 3/6/01  
PROJECT RECEIVED DATE : 3/2/01  
ANALYSIS DATE 3/6/01  
EXT. DATE: 3/5/01  
MATRIX: WATER  
LAB PROJECT: L3398

CLIENT ID  
C-5OSS12-01

FILE ID  
BA2471.D

LAB ID  
L3398-13

FUEL TYPE  
C

**COMMENTS:**

FT: FUEL TYPE  
MDL= METHOD DETECTION LIMIT  
A=GASOLINE  
B= KERSOENE WITH SOME UNKNOWN FUEL OIL  
C= #2 FUEL OIL  
D= #4 FUEL OIL  
E= NO CALIBRATED FUEL TYPE DETECTED  
F=KEROSENE  
H= #6 FUEL OIL  
P= CLIENT KNOWN FUEL PRODUCT  
KW KEROSENE WEATHERED  
PI= PAINT THINNER  
MS= MINERAL SPIRITS

< = LESS THAN  
J= 10 W LUBRICATING OIL  
K= 20 W LUBRICATING OIL  
L= 30W LUBRICATING OIL  
M= 40 W LUBRICATING OIL  
CW= #2 FUEL OIL WEATHERED  
DW= #4 FUEL OIL WEATHERED  
HW= #6 FUEL OIL, WEATHERED  
ND = NOT DETECTED (CONC)  
CS = CLIENT STANDARD  
N = JET FUEL STANDARD  
S= DIESEL  
CT=COAL TAR