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CONTRACT NO. N62472-94-D-0398	DELIVERY ORDER # 0013	ACTIVITY LOCATION Newport, Rhode Island
PROJECT TITLE: Tank Farm 4 at NETC		
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ITEM NO.	SUBMITTAL DESCRIPTION	PREPARED/ SUBMITTED BY	APPROVED	DISAPPROVED	REMARKS
29b	SD-18, Records; Final Tank 38 Closure Assessment Report	M Miller			

FINAL
TANK 38 CLOSURE ASSESSMENT REPORT
TANK FARM 4

NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND

REMEDIAL ACTION CONTRACT (RAC)
CONTRACT NO. N62472-94-D-0398
DELIVERY ORDER NO. 0013

Submitted to:
Northern Division
Environmental Branch, Code 18
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19113-2090

Submitted by:
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One Oxford Valley, Suite 200
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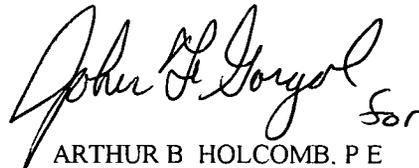
JANUARY 1999 (R1)

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I	Chain-Of-Custody Form
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1.0 SITE BACKGROUND

1.1 INTRODUCTION

Foster Wheeler Environmental Corporation, prepared this Tank 38 Closure Assessment Report summarizing the investigation and closure activities conducted at Tank 38, located at Tank Farm 4 at the Naval Education and Training Center (NETC) in Newport, Rhode Island. Foster Wheeler Environmental Corporation is under contract to the Navy to carry out closure activities at Tank 38. This Assessment has been written by Foster Wheeler Environmental Corporation to satisfy the Rhode Island Department of Environmental Management (RIDEM) Regulation DEM-DWM-UST05-93 Section 15.10, as detailed by the July 1992 RIDEM guidance document entitled: Department of Environmental Management UST Closure Assessment Guidelines. This report was prepared at the request of the United States Navy, Northern Division (NORTHDIV) of the Naval Facilities Engineering Command (NAVFAC) under Delivery Order No. 0013 of the Remedial Action Contract N62472-94-D-0398.

The primary objective of this Assessment is to provide sufficient evidence to conclude whether or not a leak or a release has occurred from Tank 38 and to provide documentation necessary to complete a permanent underground storage tank (UST) closure, consistent with RIDEM regulations. The Assessment objectives were met by providing the field screening data of the soil samples collected during excavation activities and an inspection of Tank 38 after the cleaning was completed and using this data to determine if oil stored in Tank 38 has impacted the environment.

B&R Environmental (as Halliburton NUS Corporation) conducted a preliminary assessment of Tank Farm 4 between October 1994 and March 1995, to evaluate the impacts of past activities on soil and groundwater in the immediate vicinity of selected on-site facilities, including twelve large USTs. That information serves as the supporting documentation necessary to complete permanent closures of the 12 USTs evaluated in the assessment, and provides general information about Tank Farm 4 for this report.

This section presents background information concerning Tank 38, including site location, site description, site history, and construction details of structures pertinent to this investigation. A summary of the site geology is also presented in this section. Finally, the technical approach and the investigation and analytical methods are discussed.

1.2 LOCATION

Tank 38 is located in Tank Farm 4 of NETC Newport, which is located in the Towns of Newport, Middletown, and Portsmouth, Rhode Island, approximately 25 miles southeast of Providence (Figure 1-1). Tank Farm 4 is situated at the northern portion of NETC-Newport, in Portsmouth (Figure 1-2). Tank 38 is located in the northern portion of Tank Farm 4 (Figure 1-3).

Tank Farm 4 is bordered by the Defense Highway to the north/northwest; Norman's Brook to the southwest; residential property to the southeast; and undeveloped woodlands to the north/northeast.

1.3 SITE DESCRIPTION

Tank Farm 4 is accessed from Defense Highway; it occupies approximately 90 acres and contains 12 USTs numbered 37 through 48. These tanks were used to store virgin heavy fuel oil (no. 6 bunker oil). Several tanks were reportedly also used to store no.2 heating oil during the mid-1970s. Access to Tank Farm 4 is unrestricted. An unsecured gate is drawn across the entrance. A paved road leads into the tank farm, passing between the tanks in a loop.

On-site structures include the remnants of a building and a decommissioned electrical substation. Ground elevations across Tank Farm 4 range between 46 feet and 111 feet above mean low water level (mlw). Topography gradually slopes to the west/southwest, toward Narragansett Bay. The central portion of the

tank farm is vegetated with tall grass, dense brush, and trees. Dense brush and woodlands cover the perimeter areas of the tank farm. Brush at each tank has been cleared from work areas.

1.4 SITE HISTORY

In 1941, the U. S. Navy began construction of five tank farms at NETC to store fuel oils and other petroleum products to supply warships. Tank Farm 4 was used to store fuel oil from World War II until it was abandoned in the mid-1970s. For a brief period, from 1974 to 1978, three to four unidentified tanks were reportedly leased to Northeast Petroleum to store No. 2 heating oil. At the end of the lease period Northeast did not require the storage capacity and terminated the lease agreement. Northeast reportedly cleaned the tanks. Tank Farm 4 was not used for petroleum storage thereafter.

As a result of amendments to underground petroleum storage facilities regulations enacted by the State of Rhode Island in 1992, tanks used to store fuel oil also became subject to closure requirements. The Navy has filed an application with RIDEM to permanently close the tanks at Tank Farm 4 (see Appendix A)

1.5 PREVIOUS INVESTIGATIONS

B&R Environmental (as Halliburton NUS Corporation) conducted a preliminary assessment of Tank Farm 4 between October 1994 and March 1995, to evaluate the impacts of past site activities on soil and groundwater in the immediate vicinity of selected on site facilities, including twelve large USTs. This assessment report was the first investigation focusing on potential impacts to soil and groundwater from releases from the on-site USTs.

Previous investigation conducted at Tank Farm 4 from 1982 to 1992 focused on the reported disposal of tank bottom sludges at the tank farms. Prior investigations are mentioned here for historical information purposes only.

An initial Assessment Study (IAS) was conducted by Envirodyne Engineers, Inc. in 1982 and 1983. Loureiro Engineering Associates conducted a Confirmation Study (CS) between 1983 and 1986. Results of the CS led to the conduct of a Phase 1 Remedial Investigation (RI) as part of the Department of Defense Installation Restoration (IR) Program. The RI included multi-media environmental sampling and analysis.

1.6 SUMMARY OF TANK 38 CONSTRUCTION

Tank 38 has a capacity of 60,000 barrels (standard petroleum), or approximately 2.5 million gallons. This tank was constructed in place, of reinforced concrete. Concrete in tank walls and roof has a nominal thickness of 12-inches, while the tank floor has a nominal thickness of 14-inches. Floor and wall joints were caulked at the time of construction. The outside diameter of the tank is 119 feet; the side measures 36 feet from the bottom of the footing to the top of the roof.

The Tank 38 construction sequence began by stripping the soil overburden, and then blasting and excavating between 10 and 30 feet of bedrock to create a steep walled bedrock "socket" in which the tank was built. The tank bottom was then placed 10 to 30 feet below the original bedrock surface as described in the following paragraph. Following tank completion, the annular space between the tank wall and the bedrock was backfilled with crushed bedrock and other locally derived material. Coarse to fine grained material were used, resulting in a general graded backfill with coarse bedrock at the bottom, and finer bedrock at the top. After backfill operations were completed, the tank top was covered with similar fill material.

The tank floor lies on a flat bedrock surface that has been leveled by filling depressions with cement. A 12-inch diameter reinforced concrete perforated drainpipe is embedded in gravel surrounding the base of the tank. Groundwater that infiltrates the pipe can be pumped out of the system, thus managing the water table elevation and limiting buoyant forces on the tank. The drain system is termed a ring-drain.

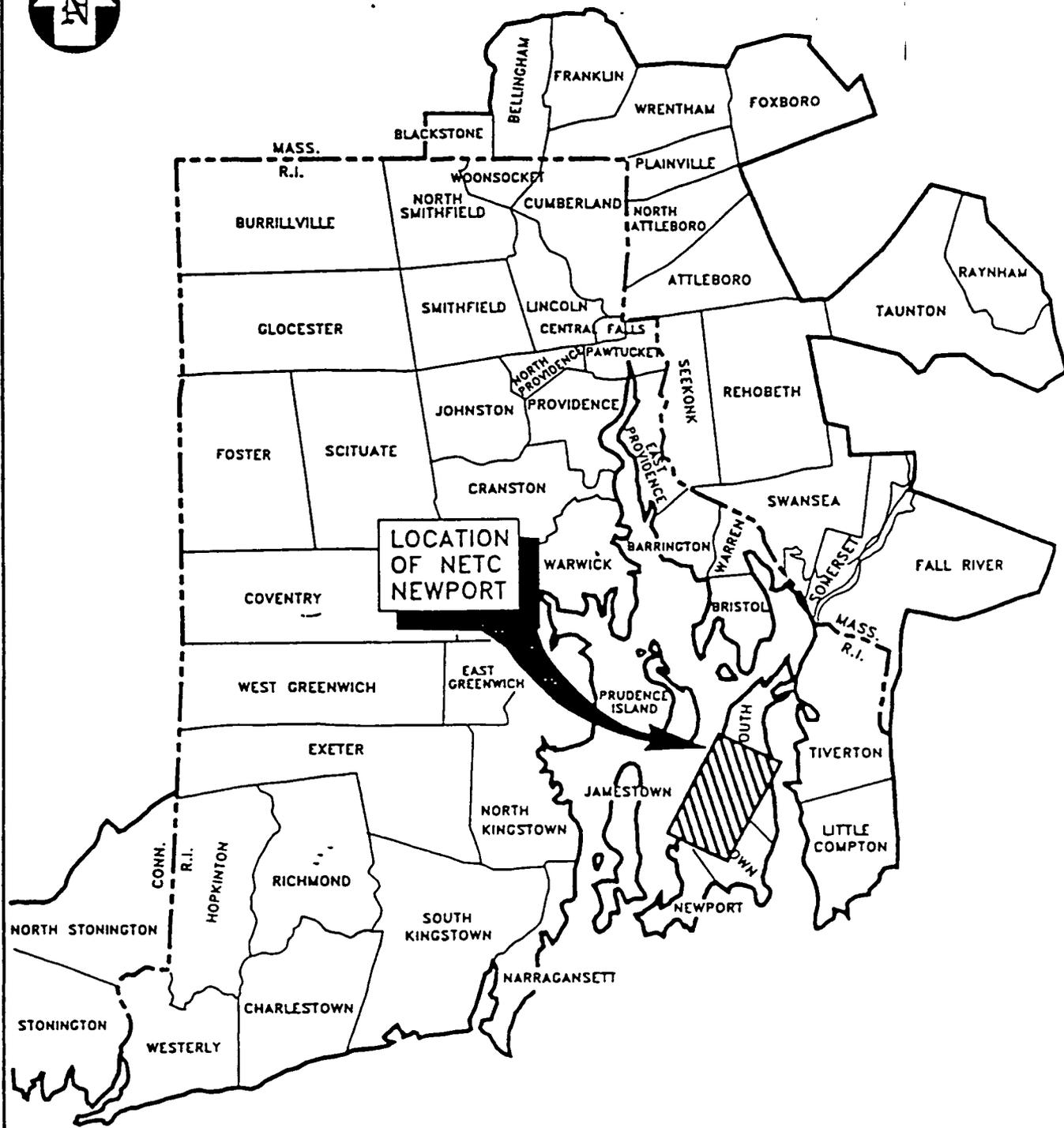
1.7 UNDERGROUND UTILITIES

Underground utilities consist of water, electricity, and telephone service. The exact location of the utilities could not be confirmed by base Digsafe services. Also, the existence of the telephone network shown on base maps could not be confirmed.

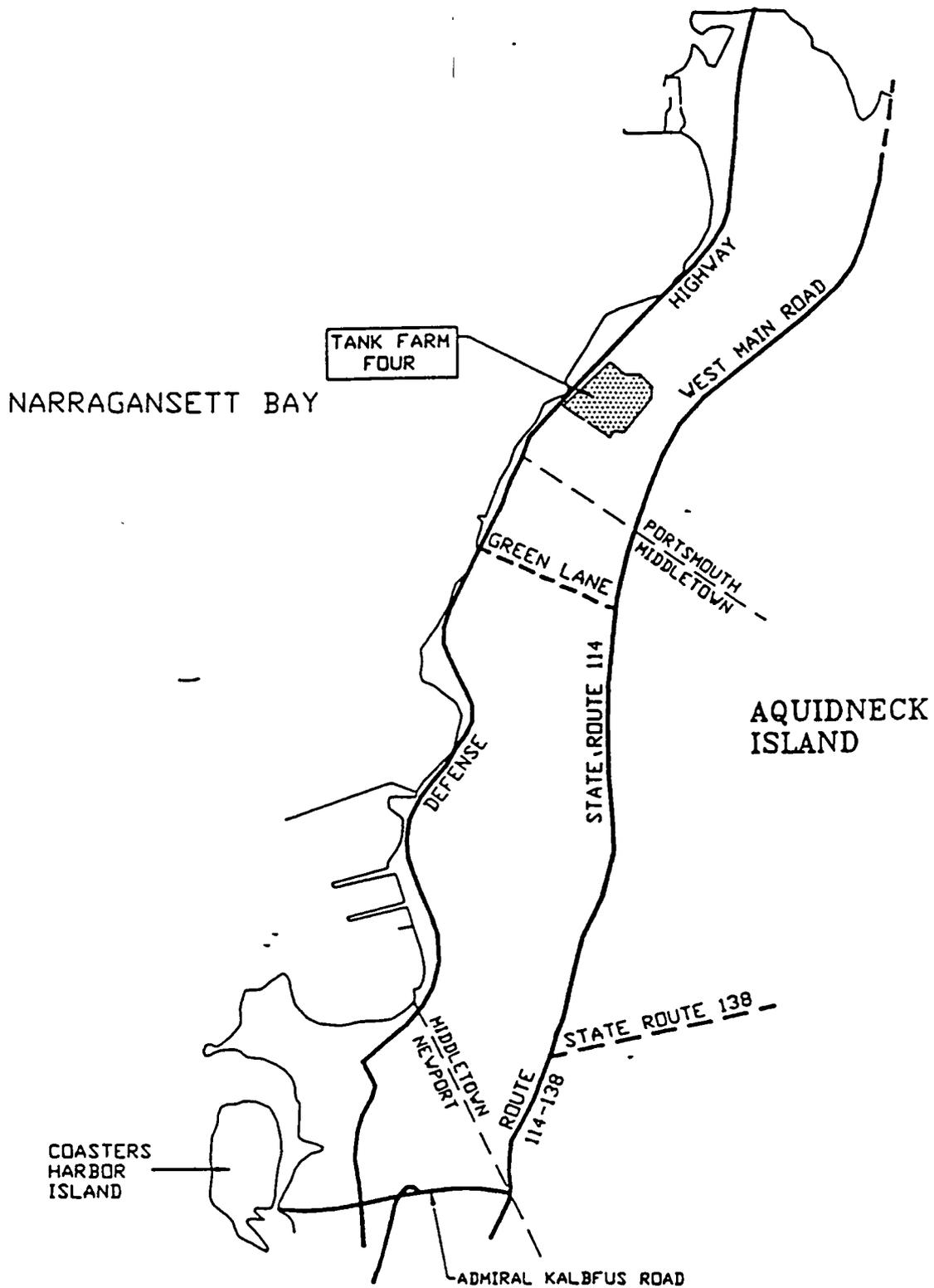
The utility lines to Tank 38 are insulated direct burial cable and are buried 5 to 7 feet below ground surface. Consequently, these utilities would be located above the ground water table and therefore would not act as a preferential migration pathway.

1.8 GEOLOGY

The NETC site, including Tank Farm 4, is located in the southeastern portion of Narragansett Basin. The basin is underlain by Pennsylvanian age non-marine sedimentary and metamorphic rocks, including the Rhode Island Formation. Bedrock at the site is reported to be a weathered shale; phyllites were also observed at borehole refusals. Overburden material consists of unconsolidated glacial sediments ranging from gravel to silt, as well as glacial till. Soil thickness at the tank farm is variable, and is estimated to be no more than 45 feet thick. Soil descriptions from preliminary Closure Assessment investigations indicate the presence of extensive fill materials in the vicinity of the tank because of the widespread disturbance of native soils during tank construction



NETC LOCATION		FIGURE 1-1	
NETC - NEWPORT, RI			
TANK 38 CLOSURE ASSESSMENT REPORT			
DRAWN BY	R.C. DEWSNAP	REV.:	0
CHECKED BY	J. FORRELL	DATE:	21 NOV 95
SCALE		PROJECT NO.:	4643 CTO #196
		Brown & Root Environmental A Division of Halliburton NUS Corporation 55 Joseph Road Wilmington, MA 01887 (508)658-7899	



TANK FARM 4 LOCATION
NETC - NEWPORT, RI
TANK 38 CLOSURE ASSESSMENT REPORT

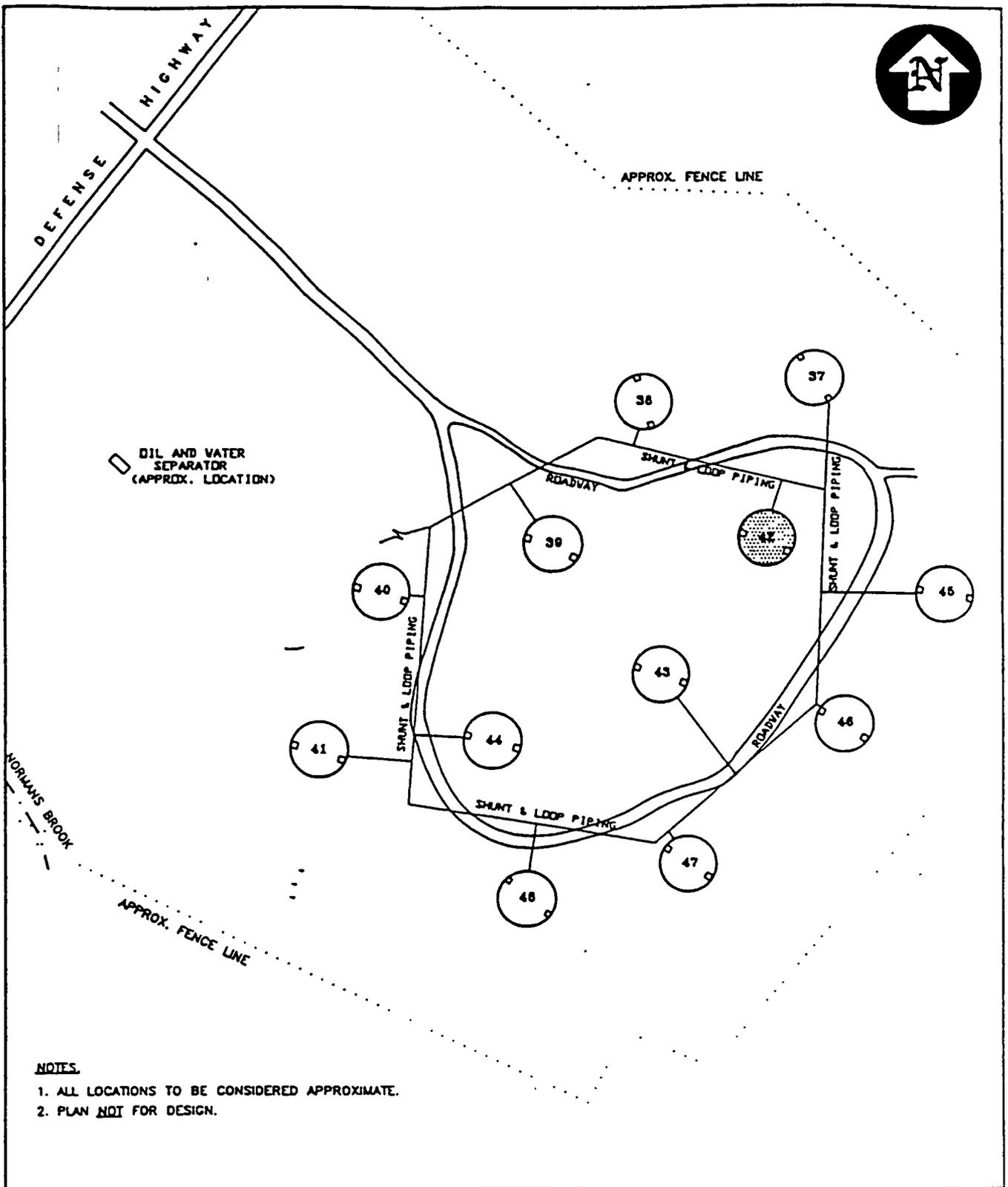
FIGURE 1-2



Brown & Root Environmental

A Division of Halliburton NUS Corporation
 55 Joseph Road, Wilmington, MA 01887 (508)658-7899

DRAWN BY:	R.G. DEWSNAP	REV.:	0
CHECKED BY:	J. FORRELLI	DATE:	21 NOV 95
SCALE:	APPROX. 4800 FT.	PROJECT NO.:	4643 CTO #196:



NOTES.

1. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.
2. PLAN NOT FOR DESIGN.

TANK FARM 4		FIGURE 1-3	
NETC - NEWPORT, RI			
TANK 38 CLOSURE ASSESSMENT REPORT		Brown & Root Environmental	
DRAWN BY:	R. DEWSNAP	REV.:	0
CHECKED BY:	J. FORRELLI	DATE:	07 DEC 95
SCALE:	1" = 300 FT. (APPROX.)	PROJECT NO.:	4643 CTO #196
		<i>A Division of Halliburton NUS Corporation</i> 55 Joseph Road Wilmington, MA 01887 (508)638-7899	

2.0 CLOSURE ACTIONS

2.1 MOBILIZATION

Foster Wheeler Environmental Corporation was retained by the Navy to conduct tank closure activities at Tank Farm 4. Following the submittal of all pre-construction documents, Foster Wheeler Environmental Corporation commenced mobilization activities at Tank Farm 4 on May 20, 1996. Consistent with the tank closure work plan and specification, a support zone was set up, the site was cleared and grubbed, and temporary fencing was erected to encompass each tank work area.

Tank specific closure activities began on June 3, 1996, by excavating and exposing of the tank tops. Two entry ports (7 feet by 9 feet and 9 feet by 13 feet) were subsequently cut and removed from each tank top to provide access to the tank interior for personnel and equipment. Tank access lid excavation and access port cutting activities were completed by July 10, 1996. Subsequent to tank lid excavation activities, the soil cover for the pump room chamber associated with each tank was excavated and the chamber's lid was exposed.

Tank gauging was conducted by Foster Wheeler Environmental Corporation in June of 1996. For tank gauging activities, the total overall depth of liquids in each tank was measured. The liquid phase was assumed to be oil/water/sludge and an attempt was made to determine the thickness, or depth, of each phase of material. Volume estimates for Tank 38 are presented below.

<u>PHASE</u>	<u>VOLUME(gallons)</u>
Oil	26,100
Water	2,047,470
Sludge	0
Total	2,073,357

A sample of the oil and sludge layer was analyzed for off-site disposal characterization purposes. The analytical results for the oil and sludge layer are included In Appendix B.

2.2 SOIL EXCAVATION

During excavation activities conducted to expose the tank tops and pump chamber, all soils were visually observed and screened using a flame-ionization detector (FID). The Foster Wheeler Environmental Corporation soil management plan for Tank Farm 4 activities states that all soils having a FID reading of less than 10 ppm are considered non-impacted and will be reused on site. None of the excavated soils registered FID readings greater than 10 ppm and will be reused in accordance with the soil management plan.

2.3 TANK CONTENTS REMOVAL AND STORAGE

Tank contents removal activities began on August 21, 1996 and were completed by September 5, 1996. The water phase was pumped from the tank directly into Tank 43 for treatment and discharge to the POTW. When all water was removed the oil/sludge layer was pumped to 21,000 gallon above ground frac tanks. The oil/sludge was pumped onto transporters and disposed of off site at an approved facility. Refer to Appendix C for disposal Bill of Ladings. All wastewater generated during the tank cleaning was also pumped to Tank 43, including groundwater generated by ring drain pumping operations.

2.4 TANK CLEANING

Tank 38 interior surface cleaning operations commenced on September 20, 1996. The cleaning method employed consisted of a presoak with heated fuel oil and a heated caustic wash. The caustic wash unit had operating temperatures up to 180 degrees Fahrenheit, operating nozzle pressures up to 300 psi with a flow rate of 300 gpm. Caustic vendor information may be found in Appendix D. Pump room 38 cleaning operations consisted of flushing the interior pipe and removal of the pipe. Once the pipe was removed the cleaning process began. The cleaning method consisted of washing the surface with high pressure hot water utilizing a diluted water based industrial degreaser. Degreaser vendor information may be found in Appendix D.

2.5 PIPING, EQUIPMENT, AND DEBRIS REMOVAL

During Tank 38 surface cleaning operations, all piping and equipment was dismantled and decontaminated with high pressure hot water. All decontaminated, salvageable materials were sent to an approved scrap yard. All other debris, including spent personal protective equipment from tank cleaning operations, is currently being disposed of off site at an approved disposal facility. Manifests for shipments to the facility are included in Appendix E.

2.6 TANK CLOSURE

On October 18, 1996, prior to tank inspection (see section 3.2) and after the pipes were cleaned and dismantled, blind flanges were installed at the pipes entrances into the tank. Three pipe entrances were identified and blind flanged. These entrances are identified as follows:

One 16-inch line extending from the bottom of the pump room into the bottom of the tank

One 6-inch line extending from the bottom of the pump room into the bottom of the tank

One 10-inch line extending from the top of the pump room into the top of the tank

All blind flanges were installed on the tank's exterior side, within the pump room, and tank ballasting was completed.

2.7 TANK DEMOLITION

15 test pits were excavated around the perimeter of Tank 38 to insure that the fill material on the tank top and around the perimeter of the tank was not contaminated. The test pits were equally spaced around the perimeter of the tank and excavated to the tank top. The results of the composite sample TP-TK38 was analyzed for VOC's, SVOC's, RCRA 8 Metals and TPH. The results for sample TP-TK38 are included as Appendix J. The tank had 15 feet of clean sand placed into the bottom and on 1-21-98 at 1315 the tank top was imploded. The remaining hole was backfilled with off-site borrow material. A copy of the blast report is included as Appendix K.

3.0 TANK CONDITION

3.1 STRUCTURAL INSPECTION

On October 18, 1996, Mark Gouveia of Foster Wheeler Environmental Corporation inspected the tank's interior to assess the structural integrity of the tank. During the inspection several small cracks were identified (less than 1/8 inch wide) on the tank floor. The columns appeared in good condition. A crack was found in the sump of this tank, the crack was less than 1/4 inch wide and 3 inches long. Documentation regarding the inspection may be found in Appendix F.

3.2 CLOSURE INSPECTION

Tank 38 was formally inspected on October 21, 1996. Participating in the inspection were:

RIDEM

Paul Kulpa - Division of Site Remediation

NETC

Ray Roberge - Code 40E, Environmental

Foster Wheeler Environmental

Jon Cary - Site Manager

Roger Beauregard - Site Quality Control

During the inspection, all participants entered the tank's interior and viewed the cleaning surfaces. At the post inspection meeting, all participants agreed that the interior surface cleaning results were satisfactory.

3.3 PIPING INSPECTION

On March 7, 1997, an inspection was conducted for all pipe runs extending into the tank's interior from the pump room. Three pipe runs, each approximately ten feet long, were identified and inspected. The piping was inspected for cleanliness and the condition of each pipe run was noted.

Participating in the inspection were:

Mark Gouveia, Foster Wheeler Environmental- Site Engineer

Roger Beauregard, Foster Wheeler Environmental- Site QA/QC

Inspection observations are as follows:

One 10-inch pipe, located at the top of the pump room was identified and inspected. The pipe interior was clean and in good condition. No scaling, cracks, or holes were observed.

One 16-inch pipe, located at the bottom of the pump room was identified and inspected. The pipe interior was clean and in good condition. No scaling, or holes were observed.

One 6-inch pipe, located at the bottom of the pump room was identified and inspected. The pipe interior was clean and in good condition. No scaling, or holes were observed.

3.4 PUMP ROOM INSPECTION

On March 7, 1997 an inspection of the pump room was conducted for cleanness and over all condition of the walls and floors of the pump room.

Participating in the inspection are as follows:

Mark Gouveia, Foster Wheeler Environmental- Site Engineer

Roger Beauregard, Foster Wheeler Environmental- Site QA/QC

Jon Cary, Foster Wheeler Environmental- Site Manager

During the inspection all participants entered the pump room and viewed the clean surfaces. At the completion of the inspection all participants agreed that the pump room was clean and in good condition.

4.0 DESCRIPTION OF SOIL CONDITIONS SURROUNDING TANK 38

Drilling activities conducted as part of the Preliminary Closure Assessment were completed at Tank 38 on November 17, 1994 (HNUS 1995). At soil boring B-38, continuous split-barrel sampling was conducted from 26 feet below the ground surface (bgs) to refusal, at approximately 39 feet. The boring was completed as groundwater monitoring well MW-125.

The upper 26 feet of the boring was not examined. Soil sampling was initiated at 26 feet based on information suggesting that the water table was approximately this deep. It was presumed that petroleum releases above the water table would migrate vertically downward and be detected in soil and groundwater.

A generalized description of the subsurface follows. The interval from 26 to 34 feet bgs is comprised of sandy coarse gravel with silt. From 28 to 30 feet bgs coarse gravelly sand with silt was observed. The sandy gravel layer at 32 to 34 feet bgs, is heavily impacted by petroleum. A lower interval of fine sand with gravel was visually free of petroleum. This interval exhibited only petroleum odors. From 36 to approximately 37 feet bgs, a coarse, angular to subangular gravel layer was noted. This interval was also visually not impacted by petroleum. Heavily impacted, dark-grey, metamorphic rock was encountered at approximately 39 feet bgs. Bedrock reportedly consists of gray, highly weathered to competent, slightly metamorphosed shale with quartz lenses. Tank Farm 4-B-38 was not advanced into bedrock. Boring logs and soil descriptions are presented in Appendix G.

5.0 SOIL SAMPLE ANALYTICAL DATA SUMMARY

Consistent with the usage of Tank 38 as storage for virgin No. 6 fuel oil, the Preliminary Closure Assessment investigation at this UST focused on evaluating soils and groundwater for the presence of petroleum components. Soil samples were visually inspected for the presence of petroleum, screened for the presence of petroleum with PIDs and FIDs (as well as an Ensys Petro Risc petroleum field screening immunoassay kit), and subjected to laboratory analysis. Visibly stained soils were not field screened for TPH (using the immunoassay method) because the TPH concentration would exceed the 100 ppm standard, the highest concentration of TPH that could be detected by the screening analysis.

The following section describes the analytical data findings of the investigation activities conducted at this location. Subsurface soils were collected and sent to laboratories to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbon (TPH) extractables, and eight RCRA metals.

From boring B-38 two subsurface soil samples were taken for laboratory analysis. Samples B382628 and B383234 were collected from depths of 26 to 28 feet bgs, and 32 to 34 feet bgs, respectively. They consisted of sandy gravel with silt. The latter sample was saturated with petroleum. The MW-125 groundwater sample was collected from the midpoint of the well screen, approximately 36 feet bgs. Immiscible oil droplets were observed during groundwater sample collection.

Positive laboratory analytical results are reported in Table 5-1 and presented on figure 5-2. The averaged value of duplicate samples is reported in the summary table. In instances when samples have been reanalyzed the maximum detected concentration of each compound or metal is reported. Laboratory analytical results are presented in Appendix H. Results for groundwater are discussed in greater detail in section 6.0.

5.1 VOLATILE ORGANIC COMPOUNDS (VOCs)

No detection limits were exceeded in subsurface sample B382628. 2-butanone was detected at a concentration of 12 microgram per kilogram in sample B383234. 2-butanone is also known as methyl ethyl ketone and is a common industrial solvent.

TABLE 5-1
POSITIVE CONTAMINANT DETECTION IN SOIL AND GROUNDWATER
TANK 38 CLOSURE ASSESSMENT REPORT
NETC NEWPORT, RHODE ISLAND

TABLE 3-2
 POSITIVE CONTAMINANT DETECTIONS IN SOIL AND GROUNDWATER
 TANK 38 SUMMARY
 PRELIMINARY CLOSURE ASSESSMENT REPORT
 TANK FARMS 4 & 5
 NETC - NEWPORT, RHODE ISLAND

W5295063F

3-12

MEDIA	BORING NO. OR WELL NO.	DEPTH OR SCREEN INTERVAL	CONTAMINANT	CONCENTRATION	REGULATORY STANDARD(S)	EXCEEDS STANDARD(S) (YES/NO)
Soil	B38	26-28	Bis(2-ethylhexyl)phthalate	74 µg/kg	None	N/A
Soil	B38	26-28	Arsenic	12.2 mg/kg	None	N/A
Soil	B38	26-28	Barium	12.1 mg/kg	None	N/A
Soil	B38	26-28	Cadmium	2.5 mg/kg	None	N/A
Soil	B38	26-28	Chromium	13.7 mg/kg	None	N/A
Soil	B38	26-28	Lead	10.5 mg/kg	150 ppm (3) 400 ppm (4)	No
Soil	B38	32-34	2-Butanone	12 µg/kg	None	N/A
Soil	B38	32-34	Fluorene	40 µg/kg	None	N/A
Soil	B38	32-34	Arsenic	16.35 mg/kg	None	N/A
Soil	B38	32-34	Barium	10.8 mg/kg	None	N/A
Soil	B38	32-34	Cadmium	2.95 mg/kg	None	N/A
Soil	B38	32-34	Chromium	8.9 mg/kg	None	N/A
Soil	B38	32-34	Lead	8.05 mg/kg	150 ppm (3) 400 ppm (4)	No
Groundwater	MW125	33-38	1,1,2,2-Tetrachloroethane	1 µg/L	None	N/A
Groundwater	MW125	33-38	Fluorene	20 µg/L	None	N/A
Groundwater	MW125	33-38	Phenanthrene	48 µg/L	None	N/A
Groundwater	MW125	33-38	Pyrene	28 µg/L	None	N/A
Groundwater	MW125	33-38	Chrysene	23 µg/L	0.2 µg/L (1)	Yes

**TABLE 3-2 (CONTINUED)
 POSITIVE CONTAMINANT DETECTIONS IN SOIL AND GROUNDWATER
 TANK 38 SUMMARY
 PRELIMINARY CLOSURE ASSESSMENT REPORT
 TANK FARMS 4 & 5, NETC - NEWPORT, RHODE ISLAND
 PAGE 2**

Legend:

**ppm-parts per million
 µg/L-micrograms per liter
 mg/kg-milligrams per kilogram
 µg/kg-micrograms per kilogram
 N/A-N t Applicable**

Notes:

- 1) **U.S. EPA Drinking Water Regulations and Health Advisories, EPA 822-R-94-001, May 1994.**
- 2) **State of Rhode Island Department of Environmental Management, Rules No. 12-100-006, Rule and Regulations for Groundwater Quality, Section 10, July 1993.**
- 3) **Rhode Island Department of Health - Environmental Lead Program, [R23-24.6-PB], Rules and Regulations for Lead Poisoning Prevention, February 1992 (with amendments).**
- 4) **OSWER Directive 9355.4-12- Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities.**
- 5) **40 CFR Part 264 - Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart F, Sections 264.92 - 264.94, July 1991.**
- 6) **State of Rhode Island criteria established for clean-up of TPH in non-sensitive environmental areas.**

MW125 was installed in boring location B38.

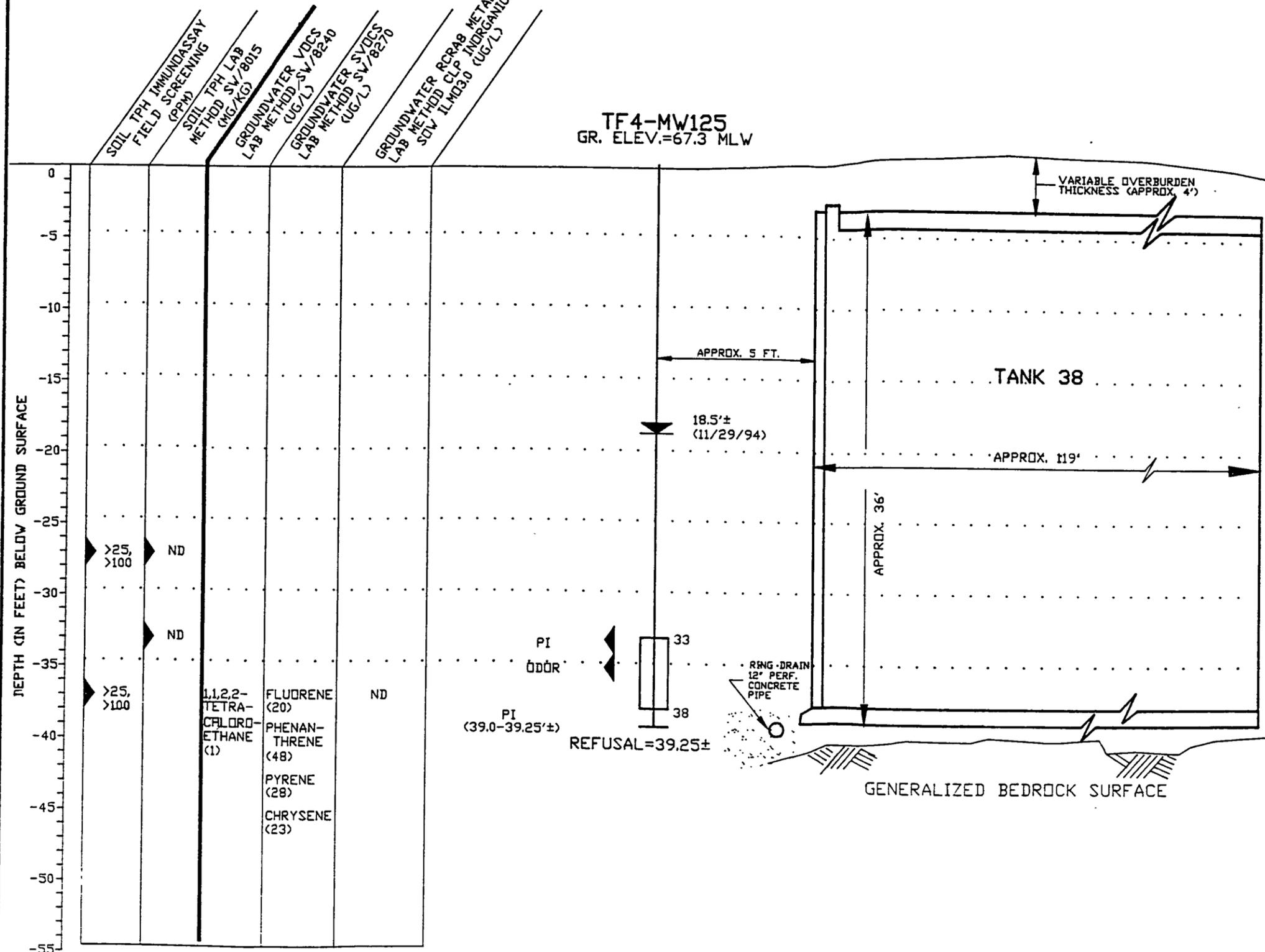
Sample valves were averaged with applicable duplicates.

- **In cases where samples were reanalyzed, the maximum detected concentration was reported.**
- **For comparative purposes only, mg/kg unit designations and ppm unit designations were considered to be equivalent.**
- **For comparative purposes only, Regulatory Standard unit designations have been converted to the unit of the detected contaminant. Regulatory Standards are typically expressed in milligrams per liter (mg/l).**

**FIGURE 5-1
TANK 38 DATA SHEET
TANK 38 CLOSURE ASSESSMENT REPORT
NETC NEWPORT, RHODE ISLAND**

ANALYTICAL RESULTS

TF4-MW125
GR. ELEV.=67.3 MLW



LEGEND

- WATER TABLE (FEET BELOW GROUND SURFACE)
- MONITORING WELL SCREEN DEPTH (FEET BELOW GROUND SURFACE)
- UG/L MICROGRAMS PER LITER
- PPM PARTS PER MILLION
- MG/KG MILLIGRAMS PER KILOGRAM
- MG/L MILLIGRAMS PER LITER
- TPH TOTAL PETROLEUM HYDROCARBON
- VOCS VOLATILE ORGANIC COMPOUNDS
- SVOCS SEMI-VOLATILE ORGANIC COMPOUNDS
- TF4 TANK FARM 4
- MW101 GROUNDWATER MONITORING WELL NO.
- MLW MEAN LOW WATER
- ND NOT DETECTED
- PI PETROLEUM IMPACTED MEDIA

DATA SHEET - TANK 38	
NETC-NEWPORT, RI	
PRELIMINARY CLOSURE ASSESSMENT REPORT	
DRAWN BY: R.G. DEWSNAP	REV.: 1
CHECKED BY: J.B. HOLDEN	DATE: 5 JUN 95
SCALE: 1" = 8' (APPROX.)	FILE NO: C:\DWC\NETC\FIG 3-2

FIGURE 3-2

Halliburton NUS CORPORATION
55 Jonsain Road Wilmington, MA 01887
(508)658-7899

5.2 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs)

Bis (2-ethylhexyl) phthalate was detected in sample B382628, at concentrations of 74 micrograms per kilogram. Phthalates are typically used as plasticizers in the manufacturing of PVC and other plastic (Howard 1989; Sittig 1981) including plastics used in analytical laboratories.

Fluorene was detected in sample B383234, at a concentration of 40 milligram per kilogram. This compound is a polynuclear aromatic hydrocarbon (PAH) typically derived from coal tar. It is also a common chemical identified in fuel oil.

5.3 RCRA METALS

Arsenic, barium, cadmium, chromium, and lead were detected in both of the subsurface soil samples collected from B-38. Concentrations of these metals ranging from 2.5 to 16.35 mg/kg were reported. The source of these metals has not been evaluated. However, metals are not typically associated with storage of virgin fuel oil.

5.4 TOTAL PETROLEUM HYDROCARBONS (TPH)

TPH concentrations were below the detection limits in both of the subsurface soil samples selected for laboratory analysis. Although petroleum was not detected by laboratory analysis, soil sample B383234 was heavily impacted. Heavy staining and the occurrence of residual petroleum was noted during advancement of the borehole.

Subsurface soil samples B382628 and B383234 were field screened for TPH . These samples were collected from 26 to 28 feet, and 32 to 34 feet bgs, respectively. Results indicated the presence of TPH above 25ppm and 100ppm in both of the samples.

6.0 SITE GROUNDWATER DESCRIPTION

Water levels in Tank Farm 4 monitoring wells were measured to a hundredth-of-a-foot accuracy using an electronic measuring device. The relative elevation of each monitoring well was determined by a land surveyor registered in the State of Rhode Island, and the depth of the water table was established using measurements made from November 2 to 29, 1994. From these data, groundwater flow direction was characterized and a water table map (Figure 6-1) was created for Tank Farm 4. Groundwater generally flows west-southwest toward Narragansett Bay and is slightly affected by Norman's Brook.

MW-125 is approximately 5 feet from the perimeter of Tank 38 and was installed slightly crossgradient to the tank. It is assumed that petroleum resulting from a release would accumulate in the ring drain. A well installed in the ring drain would therefore serve as a monitoring point for a release of petroleum product from this tank. The MW-125 well screen was set 33 to 38 feet bgs to correspond with the estimated depth of the ring drain, based on available information, the ring drain typically extends from the bedrock surface to a point approximately 1 to 2 feet above the tank bottom. Refusal was interpreted as the bedrock surface. Therefore the ring drain was estimated to be approximately 37 feet bgs. The well boring log is presented in Appendix G.

The depth to groundwater table was 10.81 feet bgs on May 10, 1996. Seasonal and precipitation effects on groundwater levels have not been evaluated at the site. Therefore, this single measurement may not be representative of the actual groundwater table.

Groundwater samples were collected from MW-125 and were analyzed for VOC's, SVOC's, and the eight RCRA metals. The results of these are summarized below and presented in Table 5-1 and Appendix H.

6.1 VOLATILE ORGANIC COMPOUNDS (VOC's)

1,1,2,2-Tetrachloroethane was detected at a concentration of 1 microgram per liter in the groundwater sample collected from MW-125. This is a common industrial solvent.

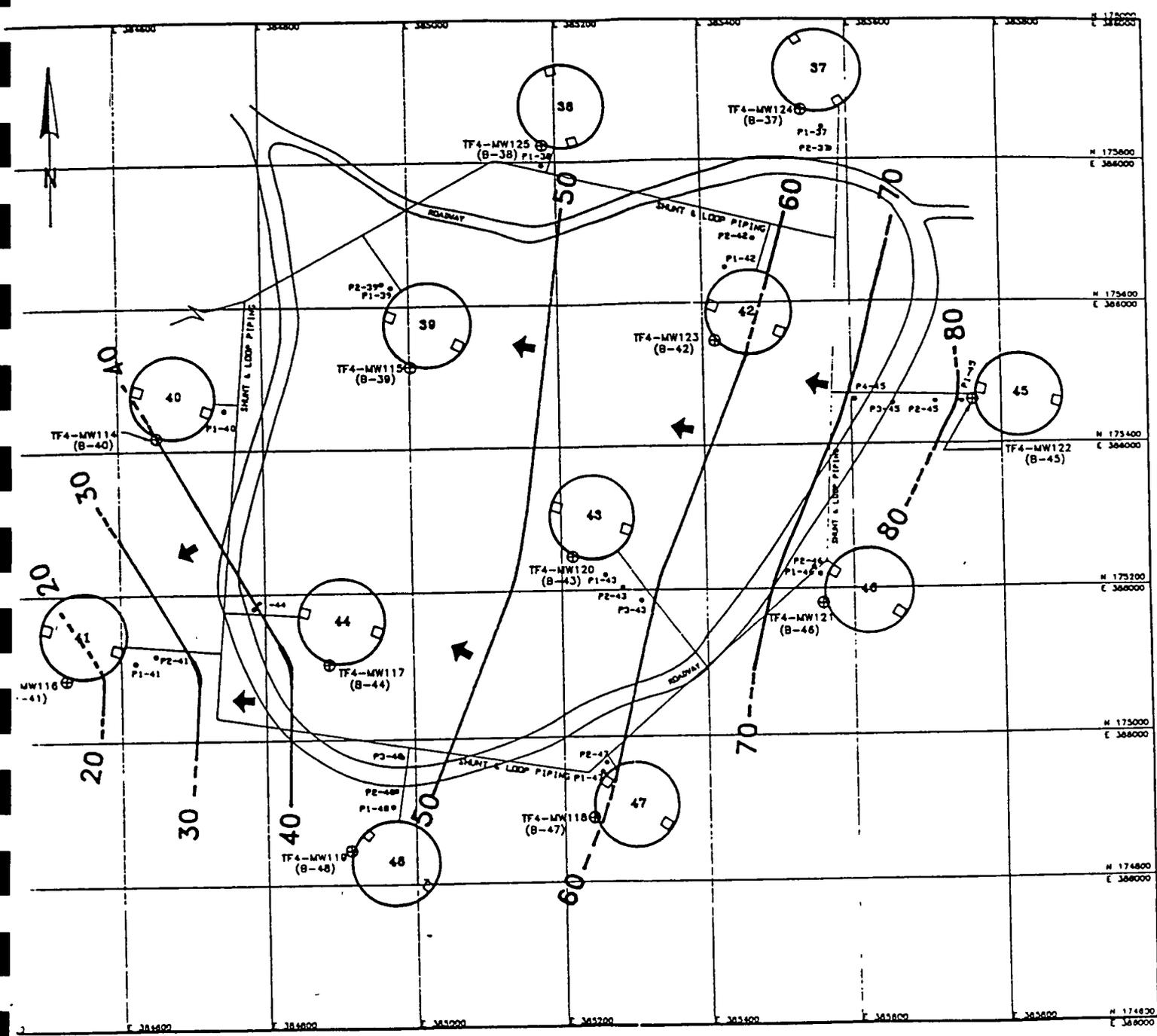
6.2 SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC's)

Fluorene, phenanthrene, pyrene, and chrysene were detected in concentrations ranging from 20 to 48 microgram per liter in the MW-125 groundwater sample. All PAH's are constituents of heavy fuel oils.

6.3 RCRA METALS

Metal concentrations were below detection limits in the groundwater sample collected from MW-125.

FIGURE 6-1
TANK FARM 4 GROUNDWATER CONTOURS
TANK 38 CLOSURE ASSESSMENT REPORT
NETC NEWPORT, RHODE ISLAND



TANK FARM 4

MONITORING WELLS AT TANK FARM #4	
NETC-NEWPORT, RI	
TANK 38 CLOSURE ASSESSMENT REPORT	
DRAWN BY	R G. DEWSNAP
CHECKED BY	K. JALKUT
SCALE:	1" = 200'
REV:	0
DATE:	5 JUN 95
FILE NO.:	C:\DWG\NETC\TNK_FM4.DWG

FIGURE 2-1

Halliburton NUS CORPORATION
 55 Janspin Road
 Wilmington, MA 01897
 (508)658-7899

7.0 ANALYTICAL SAMPLE COLLECTION AND HANDLING

Soil and groundwater samples were collected and analyzed to Naval Facilities Engineering Services Center requirements. All environmental samples collected as part of this tank closure were stored and shipped in accordance with the chain-of-custody procedures outlined in the Foster Wheeler Environmental Corporation's Quality Assurance/Quality Control Plan.

Sample chain-of-custody forms are presented in Appendix I. Sample analyses were conducted by Ceimic Laboratories of Narragansett, Rhode Island and Nytest Environmental of Port Washington, New York. Analytical results are presented in Appendix H.

8.0 SITE WELLHEAD PROTECTION STATUS

Tank 38 is not within a designated wellhead protection area.

9.0 SITE GROUNDWATER CLASSIFICATION AND USE

The groundwater beneath Tank 38 is classified by RIDEM as "GA". GA classified groundwater is primarily located in recreational or agricultural areas and in areas of sources of potable water. Groundwater classified as GA is categorized as or presumed to be suitable as drinking water without treatment.

Tank Farm 4 and all land hydraulically downgradient of the tank farm is owned by the federal government. A review of Newport Water Department records by HNUS in March 1995 indicates that no private or public potable water wells are located on or in the vicinity of the site.

10.0 POTENTIAL RECEPTORS

The potential receptor of a release from Tank 38 is Narragansett Bay. Tank Farm 4 groundwater generally flows west-southwest toward Narragansett Bay and shallow groundwater in the southern portion of the site may flow toward Norman's Brook. Petroleum dissolved in and migrating with groundwater may discharge to both of these surface waters. No private wells or basements that could be affected by a release from Tank Farm 4 are known to exist (see section 9.0).

11.0 FINDINGS AND CONCLUSIONS

11.1 FINDINGS

Tank 38 has been emptied of its contents, cleaned, demolished, and backfilled. This tank has passed both the Navy structural integrity inspection and RIDEM post-closure inspection for completeness of oil removal. Following the inspections the tank was demolished and backfilled to final closure.

Petroleum saturated soils were observed at 32 to 34 feet bgs and immiscible oil droplets were observed in the groundwater samples. Subsequent analyses of soil samples indicated the petroleum was No. 6 fuel oil.

Laboratory analytical results of the site soils and groundwater collected immediately adjacent to Tank 38 were evaluated with respect to one or more of the following regulatory standards:

Rhode Island Department of Health Lead Poisoning Prevention Standard

U.S. EPA Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities

Rhode Island Department of Environmental Management (RIDEM) Groundwater Quality Standard and Preventative Action Limits

U.S. EPA Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs)

RCRA Groundwater Protection Standard.

Rhode Island Department of Environmental Management (RIDEM) Action Levels for TPH in Soils

The Rhode Island Department of Health "lead-free" standard (1992) for soil was used in the evaluation of the detected lead result in subsurface soil samples B382628 and B383234. This standard, 150 milligram per kilogram, is designed for the protection of children in a residential setting. Because anticipated future land use of Tank Farm 4 is not for residential purposes, this standard is used for comparative purposes only. The U.S. EPA guidance (1994a) for CERCLA Sites and RCRA Corrective Action Facilities was also used to evaluate the detected lead result. This directive recommends a 400 ppm screening level for lead in soil designated for residential land use. For the primary reason stipulated above, this guidance is also used for comparative purposes only. The B382628 and B383234 soil concentrations (10.5 mg/kg and 8.05 mg/kg) do not exceed either of these standards.

All of the TPH sample concentrations were below the detection limits for the subsurface soil samples. Where detected, VOC, SVOC, and metals soil concentrations were below applicable standards. However, heavy staining of soils encountered during the drilling program indicate a release has occurred.

The chrysene sample concentration in MW-125 groundwater sample was evaluated with respect to SDWA MCLs (U.S. EPA 1994b). The federal regulatory standard for this analyte in groundwater is 0.2 micrograms/liter. Chrysene was detected at a concentration of 23.0 micrograms/liter. This concentration exceeds the federal standard. However, groundwater in the Tank Farm is not utilized for potable purposes.

Groundwater beneath Tank Farm 4 has been assigned a "GA" classification, which identifies it as a groundwater resource that is suitable for drinking water use (RIDEM1993). When available, RIDEM GA Groundwater Standards are used for comparison. In cases where RIDEM has not established standards, SDWA "MCL's for Chemicals Detected in Groundwater" are used for comparison.

11.2 CONCLUSIONS

Based on an evaluation of the above data, a petroleum release did occur at Tank 38, identified as No. 6 fuel oil. The presence of petroleum saturated soil at depth, from 32 to 34 feet bgs adjacent to the tank and immiscible oil droplets in groundwater samples in the vicinity of the tank, indicate that leaks of fuel oil from the tank have likely occurred.

Heavier oils like No. 6 fuel oil are less soluble and will tend to migrate through the aquifer as free product, but are relatively immobile due to high viscosity and low solubility. Groundwater is probably not a significant migration pathway for heavy fuel oil compounds released from the tank.

A site investigation should be conducted in accordance with RI UST regulations.

REFERENCES

REFERENCES

Halliburton NUS Corporation, 1995b. "Preliminary Closure Assessment Report of Tank Farms 4 and 5, Naval Education and Training Center, Newport Rhode Island" March 1995.

Halliburton NUS Corporation, "Site Investigation Report Tanks 38, 42, 45, and 48 Tank Farm 4, Naval Education and Training Center, Newport Rhode Island" February 1996.

Rhode Island Department of Environmental Management, 1992. "UST Closure Assessment Guidelines"

Brown and Root Environmental "Tank 42 Closure Assessment Report Tank Farm 4, Naval Education and Training Center, Newport, Rhode Island" December 1995.

Rhode Island Department of Environmental Management, 1993. "Rules and Regulations for Groundwater Quality", Rule No. 12-100-006

Rhode Island Department of Health, 1992. "Rules and Regulations for Lead Poisoning Prevention, R23-24.6-PB"

U.S. EPA, 1994b. "Drinking Water Regulations and Health Advisories", EPA 822-R-94-001

APPENDIX A
PERMANENT CLOSURE APPLICATION FOR UNDERGROUND STORAGE FACILITIES

PERMANENT CLOSURE APPLICATION FOR UNDERGROUND STORAGE FACILITIES

A: Date of application: Original 2/18/94 Re-Application 5/29/96

B: UST Facility I.D.: 15007

(Note : If the tank (s) listed below are not registered with DEM, a registration fee of \$35.00 per tank must be submitted along with this application.)

C: Proposed date of tank closure: 10 June 96 (Revised Date)

D: Facility Name: Tank Farm 4
Street Address: NETC PWD Bldg 1, 1 Simonpietri Drive
City/Town: Newport, RI 02841

E: Tank Owner: J.C. Wyman, Capt, CEC, USN
Street Address: NETC PWD Bldg 1, 1 Simonpietri Drive
City/Town/State: Newport, RI 02841
Contact Person: Raymond Roberge
Telephone Number: 841-3735

F: Property Owner: Same
Street Address: _____
City/Town/State: _____

G: FIRM/CONTRACTOR TO PERFORM TANK CLOSURE WORK

Name: Foster Wheeler Environmental Corperation
Address: 2300 Lincoln Highway, East One Oxford Valley, Suite 200, Langhorn, PA 19047
Contact Person: John Holwell, Project Manager
Phone Number: (617) 457-8234

H: FIRM/CONTRACTOR TO PERFORM TANK CLOSURE ASSESSMENT (check one)

Professional Engineer Certified Professional Geologist

Other; A statement of qualifications must be submitted with this application.

Name: Foster Wheeler Environmental Corperation
Address: 2300 Lincoln Highway East One Oxford Valley, Suite 200 Langhorn, PA 19047
Contact Person: Michael Zizza
Phone Number: (617)457-8245

I. DESCRIPTION OF TANKS TO BE CLOSED

TANK NO.	AGE	DATE LAST USED	VOLUME	CONSTRUCTION MATERIAL	STORED MATERIAL
037	48	79	2,500,000	Concrete	#6 Fuel Oil
038	48	79	2,500,000	Concrete	#6 Fuel Oil
039	48	79	2,500,000	Concrete	#6 Fuel Oil
040	48	79	2,500,000	Concrete	#6 Fuel Oil
041	48	79	2,500,000	Concrete	#6 Fuel Oil
042	48	79	2,500,000	Concrete	#6 Fuel Oil
043	48	79	2,500,000	Concrete	#6 Fuel Oil

(If there are more tanks being closed please list on attachment)

J. FEES:

Closure: NUMBER OF TANKS 7 X \$75.00 PER TANK = 525

Registration: NUMBER OF TANKS _____ X \$35.00 PER TANK = _____

K. Have these tanks ever held non-petroleum, hazardous materials

_____ YES x NO

If yes, then list materials: _____

L. After the closure(s) have been completed on the aforementioned tanks, will there be any underground storage tanks remaining in existence at this facility? _____ YES x NO

Will any new UST(s) be installed on the site?

_____ YES x NO

CLOSURE PROCEDURE (SELECT ONE):

1. _____ Precision test and fill with iner material.

(Section 15.12).

Material used for filling tank: _____

NOTE: APPROVED PRECISION TEST METHOD MUST BE CONDUCTED BY A LICENSED TESTER AND RESULTS MUST BE SUBMITTED TO DEM PRIOR TO FILLING THE TANK IN PLACE.

2. x Excavate, clean, and dispose (Section 15.11)

(Note: Tanks to be demolished and left in place following tank cleaning.)

a. Specify method of tank cleaning: Power Wash

I. DESCRIPTION OF TANKS TO BE CLOSED

TANK NO.	AGE	DATE LAST USED	VOLUME	CONSTRUCTION MATERIAL	STORED MATERIAL
044	48	79	2,500,000	Concrete	#6 Fuel Oil
045	48	79	2,500,000	Concrete	#6 Fuel Oil
046	48	79	2,500,000	Concrete	#6 Fuel Oil
047	48	79	2,500,000	Concrete	#6 Fuel Oil
048	48	79	2,500,000	Concrete	#6 Fuel Oil

(If there are more tanks being closed please list on attachment)

J. FEES:

Closure: NUMBER OF TANKS 5 X \$75.00 PER TANK = 375

Registration: NUMBER OF TANKS _____ X \$35.00 PER TANK = _____

b. Specify method of disposing of tank sludge or waste generated by cleaning process. List name of waste hauler. Tank sludges will be characterized and disposed of accordingly. Hauler yet to be determined. Cleaning wastes will be treated on site in water treatment facility.

c. Specify whether cleaning will take place:
on site x off-site _____

i. If off-site, indicate location of final tank cleaning
Firm/Address: _____

ii. Indicate firm which will transport tank(s) to site indicated in c(i) above:
Firm/Address: N/A _____

NOTE: FIRMS TRANSPORTING TANK SLUDGE AND WASTE OR TANKS WHICH REQUIRE FURTHER CLEANING MUST BE PERMITTED BY DEM (DIVISION OF AIR & HAZARDOUS MATERIALS) AS HAZARDOUS WASTE TRANSPORTERS.

D. Will tanks(s) be...
rendered unfit for use and disposed of x or reused _____?
(Note: Tanks to be demolished and left in place following tank cleaning.)

NOTE: REUSE OF A TANK IN THE GROUND REQUIRES COMPLIANCE WITH SECTION 12.03 OF STATE UST REGULATIONS.

Location for final tank(s) disposal:

Tanks to be left in place
following partial demolition

If tank is to be reused, specify:

Proposed use: _____

Name/Address of intended user: _____

CERTIFICATION BY TANK OWNER

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel property gather and evaluate the infomation submitted. Based on my inquiry of the person or persons who manage the syst m, or those persons directly responsible for gathering the information, the information, submitted is, to the best of my knowledge and belief, true, accurate, and completed. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME OF OWNER: (Please print) J.C. Wyman, Capt. CEC, USN
SIGNATURE: _____
TITLE Director for Public Works
ADDRESS: NETC, PWD, Bldg 1, 1 Simonpietri Dr, Newport, RI 02841
TELEPHONE: 841-3841

NOTIFICATION OF LOCAL FIRE DEPARTMENT

The authorization signature of the local fire department below indicates that the local fire officials have been notified that you are planning to close an underground storage tank at the above location. YOU MUST NOTIFY THE LOCAL FIRE DEPARTMENT OF THE EXACT CLOSURE DATE AFTER YOU HAVE CONFIRMED THIS DATE WITH DEM.

_____	_____
Authorized Local Fire Department Representative	Date
_____	_____
NETC Fire Department Name of Local Fire Department	841-2225 Telephone Number

This signature dose not serve as notice to the town, dose not guarantee town approval, and dose not relieve you of your obligations to other applicable town officials. Any violation, deficiency or requirement which may have been overlooked is also subject to correction under the provision of any applicable code.

DEM
DIVISION OF BUSINESS AFFAIRS

A. NO. OF TANKS _____ X 75.00 = _____

B. NO. OF TANKS _____ X 35.00 = _____

TOTAL FEE = _____ (A) + _____ (B) = _____

FULL PAYMENT RECEIVED ON _____ (DATE)

SUPPLEMENT TO THE PERMANENT CLOSURE APPLICATION FOR USTs

This supplement must accompany all Permanent Closure Applications for USTs (as revised 2/93 and earlier) received by the Rhode Island Department of Environmental Management on or after August 25, 1993.

FACILITY NAME: Tank Farm 4

FACILITY ADDRESS: NETC, PWD Bldg 1
1 Simompietri Drive
Newport, RI 02841

PROPOSED CLOSURE DATE: 10 June 96

FACILITY REGISTRATION #: 15007

* Please note that the UST registration fee has increased to \$50.00 per tank. Payment of all unregistered tanks must be submitted with this application.

1. Has a check in the total amount of \$50.00 per unregistered tank been submitted with this application? N/A
(Previously submitted with original application)
2. In the space provided below, please draw an informal sketch of the location of each UST to be permanently closed. Number each tank to coincide with the tank numbers on your UST registration form.

(See attached site plan)

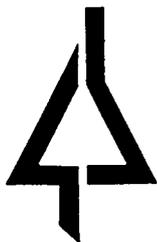
(Note: for questions 3-7 please refer to Tank Farm 4 Work Plan)

3. Describe the method to be used to empty the tank(s) prior to excavation. _____
4. Describe the method to be used to remove the tank from excavation. _____
5. Describe the method(s) to be used to properly and safely vent the tank(s) and properly make openings in the tank(s).

* NOTE: Appropriate venting must be carried out both before the cutting of any tank and before off-site transport of any tank which has not been completely cleaned per Rule 15.11(c) of the UST Regs.

6. Describe the instruments used to verify that the tank(s) have been properly vented. _____
7. Describe how any residues remaining in the tank(s) will be managed. _____

APPENDIX B
DATA FOR TANK CONTENTS



R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Foster Wheeler -TK4
Attn: Mr. Mark Gouveia
4000 T Defense Highway
Portsmouth, RI 02871

DATE RECEIVED: 09/04/96
DATE REPORTED: 09/06/96
P.O. NUMBER:
INVOICE NUMBER: A5346/B

DESCRIPTION: One (1) wastewater sample collected 9/04/96

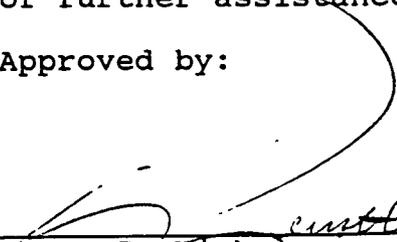
Subject sample has been analyzed by our laboratory with the following results:

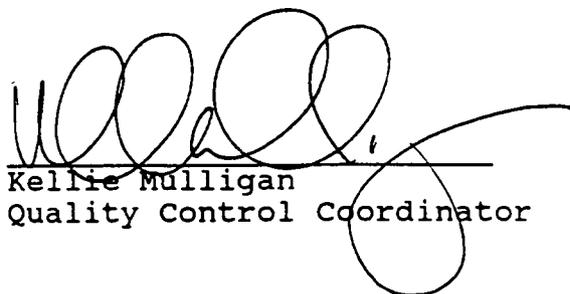
PARAMETER	TANK 38
Flash Point	>200°F
BTU	17,235 btu/gal
Bulk Water & Sediment	16 %
Total Halogenation	<0.14 %
Sulfur	1.67 %

Reference: Guidelines Establishing Testing Procedures for the Analysis of Pollutants, 40CFR, Part 136, Revised Through July 1, 1991

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by:


James E. Mich
Vice President


Kellie Mulligan
Quality Control Coordinator

fwe:kah

VOLATILE ORGANICS ANALYSIS DATA SHEET

38SLG

Lab Name: NYTEST ENV INC

Contract: 9622627

Lab Code: NYTEST

Case No.: 28473

SAS No.:

SDG No.: TANK2

Matrix: (soil/water) WATER

Lab Sample ID: 2847311

Sample wt/vol: 1.0 (g/mL) ML

Lab File ID: P1744.D

Level: (low/med) LOW

Date Received: 07/25/96

% Moisture: not dec. _____

Date Analyzed: 08/02/96

Column: (pack/cap) CAP

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (mg/L or mg/Kg) MG/L	Q
75-01-4	Vinyl Chloride	0.05	U
75-35-4	1,1-Dichloroethene	0.05	U
67-66-3	Chloroform	0.05	U
107-06-2	1,2-Dichloroethane	0.05	U
78-93-3	2-Butanone	0.05	U
56-23-5	Carbon Tetrachloride	0.05	U
79-01-6	Trichloroethene	0.05	U
71-43-2	Benzene	0.05	U
127-18-4	Tetrachloroethene	0.05	U
108-90-7	Chlorobenzene	0.05	U

FORM I VOA

TCLP

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

38SLG

Lab Name: NYTEST ENV INC

Contract: 9622627

Lab Code: NYTEST

Case No.: 28473

SAS No.:

SDG No.: 28473

Matrix: (soil/water) WATER

Lab Sample ID: 2847311

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: R1961.D

Level: (low/med) LOW

Date Received: 07/25/96

% Moisture: not dec. 0 dec.

Date Extracted: 07/30/96

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 08/03/96

GPC Cleanup: (Y/N) N pH: 5.0

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (mg/L or mg/Kg) MG/L	Q
---------	----------	--	---

95-48-7-----	2-Methylphenol	0.01	U
-----	3+4-Methylphenol	0.02	U
121-14-2-----	2,4-Dinitrotoluene	0.01	U
118-74-1-----	Hexachlorobenzene	0.01	U
87-68-3-----	Hexachlorobutadiene	0.01	U
67-72-1-----	Hexachloroethane	0.01	U
98-95-3-----	Nitrobenzene	0.01	U
87-86-5-----	Pentachlorophenol	0.05	U
110-86-1-----	Pyridine	0.01	U
95-95-4-----	2,4,5-Trichlorophenol	0.01	U
88-06-2-----	2,4,6-Trichlorophenol	0.01	U
106-46-7-----	1,4-Dichlorobenzene	0.01	U

REPORT OF ANALYSIS

Log in No.: 28473

We find as follows:

Sample Identification

Parameter(s)

	Ignitability degrees F	Reactivity S ppm	Reactivity Cn ppm
2847301 40OIL	>212	1.0 U	1.0 U
2847302 39OIL	>212	1.0 U	1.0 U
2847303 39SLG	>212	1.0 U	1.0 U
2847304 41OIL	>212	1.0 U	1.0 U
2847305 47OIL	>212	1.0 U	1.0 U
2847306 47SLG	>212	1.0 U	1.0 U
2847307 46OIL	>212	1.0 U	1.0 U
2847308 46SLG	>212	1.0 U	1.0 U
2847309 38OIL	>212	1.0 U	1.0 U
2847310 37OIL	>212	1.0 U	1.0 U
2847311 38SLG	>212	1.0 U	1.0 U
2847312 44OIL	>212	1.0 U	1.0 U
2847313 44SLG	>212	1.0 U	1.0 U
2847314 37SLG	>212	1.0 U	1.0 U
Method blank	NA	1.0 U	1.0 U

NA = Not Applicable

U = below method blank / method detection limit

TCLP PEST - FORM 1
NYTEST ENVIRONMENTAL INC

TCLP PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX WATER SAMPLE ID 38SLG
CONC' LEVEL LOW LAB SAMPLE ID. 2847311
EXTRACTION DATE 08/01/96 DIL FACTOR 1 00
ANALYSIS DATE 08/15/96 % MOISTURE NA

CMFD #	CAS Number	TCLP PESTICIDE COMPOUNDS	MG/L
1	57-74-9	Chlordane	0.00050 U
2	70-20-8	Endrin	0.00010 U
3	76-44-8/1024-57-3	Heptachlor & Heptachlor Epoxide	0.00005 U
4	58-89-9	gamma-BHC (Lindane)	0.00005 U
5	72-43-5	Methoxychlor	0.00050 U
6	8001-35-2	Toxaphene	0.00500 U

PCB - FORM 1
NYTEST ENVIRONMENTAL INC

TCL PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX	MISC	SAMPLE ID	38SLG
CONC. LEVEL	MED	LAB SAMPLE ID.	2847311
EXTRACTION DATE	07/29/96	DIL FACTOR.	1.00
ANALYSIS DATE	08/06/96	% MOISTURE.NA	

CMPD #	CAS Number	PCB COMPOUND	UG/L
1	12674-11-2	Aroclor-1016	1.0 U
2	11104-28-2	Aroclor-1221	1.0 U
3	11141-16-5	Aroclor-1232	1.0 U
4	53469-21-9	Aroclor-1242	1.0 U
5	12672-29-6	Aroclor-1248	1.0 U
6	11097-69-1	Aroclor-1254	1.0 U
7	11096-82-5	Aroclor-1260	1.0 U

TCLP HERB - FORM 1
NYTEST ENVIRONMENTAL INC

TCLP HERBICIDES ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX, WATER SAMPLE ID. 38SLG
CONC LEVEL LOW LAB SAMPLE ID. 2847311
EXTRACTION DATE 07/30/96 DIL FACTOR 100
ANALYSIS DATE 08/09/96 MOISTURE NA

CMPD #	CAS Number	TCLP HERBICIDE COMPOUNDS	MG/L
1	94-75-7	2,4-D	0.01 U
2	93-71-1	2,4,5-TP (Silvex)	0.001 U

REPORT OF ANALYSIS

Log in No.: 28473

We find as follows:

<u>Sample Identification</u>	<u>Parameter(s)</u>		
	Ignitability degrees F	Reactivity S ppm	Reactivity Cn ppm
2847301 40OIL	>212	1.0 U	1.0 U
2847302 39OIL	>212	1.0 U	1.0 U
2847303 39SLG	>212	1.0 U	1.0 U
2847304 41OIL	>212	1.0 U	1.0 U
2847305 47OIL	>212	1.0 U	1.0 U
2847306 47SLG	>212	1.0 U	1.0 U
2847307 46OIL	>212	1.0 U	1.0 U
2847308 46SLG	>212	1.0 U	1.0 U
2847309 38OIL	>212	1.0 U	1.0 U
2847310 37OIL	>212	1.0 U	1.0 U
2847311 38SLG	>212	1.0 U	1.0 U
2847312 44OIL	>212	1.0 U	1.0 U
2847313 44SLG	>212	1.0 U	1.0 U
2847314 37SLG	>212	1.0 U	1.0 U
Method blank	NA	1.0 U	1.0 U

NA = Not Applicable

U = below method blank / method detection limit

PCB - FORM 1
NYTEST ENVIRONMENTAL, INC

TCL PCB ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX MISC SAMPLE ID. J001L
CONC. LEVEL: MED LAB SAMPLE ID. 2847309
EXTRACTION DATE. 07/29/96 DIL FACTOR 1.00
ANALYSIS DATE 08/06/96 % MOISTURE:NA

UG/L

CMPD #	CAS Number	PCB COMPOUND	
1	12674-11-2	Aroclor-1016	1.0 U
2	11104-28-2	Aroclor-1221	1.0 U
3	11141-16-5	Aroclor-1232	1.0 U
4	53469-21-9	Aroclor-1242	1.0 U
5	12672-29-6	Aroclor-1248	1.0 U
6	11097-69-1	Aroclor-1254	1.0 U
7	11096-82-5	Aroclor-1260	1.0 U

TCLP PPST - FORM 3
NYTEST ENVIRONMENTAL INC

TCLP PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX WATER SAMPLE ID 380IL
CONC LEVEL LOW LAB SAMPLE ID 2847309
EXTRACTION DATE 08/01/96 DIL FACTOR 1 00
ANALYSIS DATE 08/15/96 % MOISTURE NA

COMPD #	CAS Number	TCLP PESTICIDE COMPOUNDS	MG/L
1	57-74-9	Chlordane	0.00050 U
2	70-20-8	Endrin	0.00028
3	76-44-8/1024-57-3	Heptachlor & Heptachlor Epoxide	0.00010
4	58-89-9	gamma-BHC (Lindane)	0.00007
5	72-13-5	Methoxychlor	0.00050 U
6	8001-35-2	Toxaphene	0.00500 U

TCLP HERB - FORM 1
NYTEST ENVIRONMENTAL INC.

TCLP HERBICIDES ORGANICS ANALYSIS DATA SHEET

SAMPLE MATRIX	WATER	SAMPLE ID	30071
CONC LEVEL	LOW	LAB SAMPLE ID	2847309
EXTRACTION DATE	07/30/96	DIL FACTOR	1.00
ANALYSIS DATE	08/09/96	MOISTURE	NA

CMFD #	CAS Number	TCLP HERBICIDE COMPOUNDS	MG/L
1	94-75-7	2,4-D	0.01 U
2	93-71-1	2,4,5-TP (Silvex)	0.001 U

APPENDIX C
DISPOSAL MANIFESTS/BILL-OF-LADINGS

NETC 020

Clean Harbors

STRAIGHT BILL OF LADING

Check One:

Non-Hazardous Material

Hazardous Material

DATE <u>915196</u>		VEHICLE NUMBER: <u>386</u>	
FROM: Shipper <u>NETC Code 40E</u>		TO: Consignee <u>Clean Harbors Env. Services, Inc.</u>	
Street <u>1 Simonpietri Drive</u>		Street <u>37 Rumery Rd.</u>	
City <u>Newport</u> State <u>RI</u>		City <u>S. Portland</u> State <u>ME</u>	
Zip Code <u>02841</u>	US EPA ID Number <u>RI11170024243</u>	Zip Code <u>04100</u>	

Name of Carrier:

J.P. Noonan

US DOT Description: (Include Proper Shipping Name, Hazard Class, and ID Number)

Non-Regulated Liquid (oil)

Total Quantity	Unit Wt/Vol	EMERGENCY NUMBER:
<u>118000</u>	Gal.	1-800-OIL-TANK

WASTE OIL ANALYSIS: (ACTUAL)

LAB # _____

ARSENIC ND PPM.

LEAD ND PPM.

BTU's/LB. _____

CADMIUM ND PPM.

PCB'S ND PPM.

BTU's/GAL. _____

CHROMIUM ND PPM.

TOTAL HALOGENS 500 PPM.

FLASH POINT >200 °F

N.D. = NOT DETECTED

SULFUR _____

WASTE OIL SPECIFICATION: (LIMITS)

ARSENIC 5.0 PPM. MAX.

LEAD 100 PPM. MAX.

CADMIUM 2.0 PPM. MAX.

PCB'S N.D. PPM. MAX.

CHROMIUM 10.0 PPM. MAX.

TOTAL HALOGENS 1,000 PPM. MAX.

FLASH POINT >100 °F

Shipper's Signature <u>[Signature]</u>	Consignee Signature	Transporter's Signature
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COMMENTS.

Tank # 38

Virgin # 6

WJSTL 021

Clean Harbors

STRAIGHT BILL OF LADING

Check One:
 Non-Hazardous Material
 Hazardous Material

DATE <u>9 1 5 1 9 6</u>		VEHICLE NUMBER: <u>680</u>	
FROM: Shipper <u>NETC Code 40 E</u>		TO: Consignee <u>Clean Harbors Env. Services, Inc.</u>	
Street <u>1 Simonpietri Drive</u>		Street <u>37 Rumery Rd.</u>	
City <u>Newport</u> State <u>RI</u>		City <u>S. Portland</u> State <u>ME.</u>	
Zip Code <u>02841</u>	US EPA ID Number <u>RI11170024243</u>	Zip Code <u>04106</u>	

Name of Carrier:
♦ J.P. Noonan

US DOT Description: (Include Proper Shipping Name, Hazard Class, and ID Number)
Non-Regulated Liquid (oil)

Total Quantity	Unit Wt/Vol	EMERGENCY NUMBER:
<u>1 1 6.5 0 0</u>	Gal.	1-800-OIL-TANK

WASTE OIL ANALYSIS: (ACTUAL) LAB # _____

ARSENIC <u>ND</u> PPM.	LEAD <u>ND</u> PPM.	BTU's/LB. _____
CADMIUM <u>ND</u> PPM.	PCB'S <u>ND</u> PPM.	BTU's/GAL. _____
CHROMIUM <u>ND</u> PPM.	TOTAL HALOGENS <u>300</u> PPM.	FLASH POINT <u>>200</u> °F
N.D. = NOT DETECTED		SULFUR _____

WASTE OIL SPECIFICATION: (LIMITS)

ARSENIC 5.0 PPM. MAX.	LEAD 100 PPM. MAX.
CADMIUM 2.0 PPM. MAX.	PCB'S N.D. PPM. MAX.
CHROMIUM 10.0 PPM. MAX.	TOTAL HALOGENS 1,000 PPM. MAX.
FLASH POINT <u>>100</u> °F	

Shipper's Signature <u>[Signature]</u>	Consignee Signature <u>[Signature]</u>	Transporter's Signature <u>[Signature]</u>
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COMMENTS:
Tank # 38

Clean Harbors

STRAIGHT BILL OF LADING

Check One:
 Non-Hazardous Material
 Hazardous Material

DATE <u>9 1 5 1 9 6</u>		VEHICLE NUMBER: # <u>3106</u>	
FROM: Shipper <u>NETC Code 46E</u>		TO: Consignee <u>Clean Harbors Env. Services, Inc.</u>	
Street <u>1 Simonpietri Drive</u>		Street <u>37 Rumery Road</u>	
City <u>Newport</u> State <u>RI</u>		City <u>S. Portland</u> State <u>ME.</u>	
Zip Code <u>02841</u>	US EPA ID Number <u>RI11170024243</u>	Zip Code <u>04106</u>	

Name of Carrier:
◆ Clean Harbors, Inc. MC152120

US DOT Description: (Include Proper Shipping Name, Hazard Class, and ID Number)
Non-Regulated Liquid (oil)

Total Quantity <u>1 1 5 1 0 0</u>	Unit Wt/Vol <u>Gal</u>	EMERGENCY NUMBER: 1-800-OIL-TANK
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WASTE OIL ANALYSIS: (ACTUAL) LAB # _____

ARSENIC <u>ND</u> PPM.	LEAD <u>ND</u> PPM.	BTU's/LB. _____
CADMIUM <u>ND</u> PPM.	PCB'S <u>ND</u> PPM.	BTU's/GAL. _____
CHROMIUM <u>ND</u> PPM.	TOTAL HALOGENS <u>300</u> PPM.	FLASH POINT <u>>200</u> °F
N.D. = NOT DETECTED		SULFUR _____

WASTE OIL SPECIFICATION: (LIMITS)

ARSENIC 5.0 PPM. MAX.	LEAD 100 PPM. MAX.
CADMIUM 2.0 PPM. MAX.	PCB'S N.D. PPM. MAX.
CHROMIUM 10.0 PPM. MAX.	TOTAL HALOGENS 1,000 PPM. MAX.
FLASH POINT <u>>100</u> °F	

Shipper's Signature <u>[Signature]</u> <small>FOR THE NAVY</small>	Consignee Signature	Transporter's Signature <u>[Signature]</u>
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COMMENTS
Tank #38

CleanHarbors

STRAIGHT BILL OF LADING

Check One:
 Non-Hazardous Material
 Hazardous Material

DATE <u>9/5/96</u>		VEHICLE NUMBER: <u>Trailer # TKB-939</u>	
FROM: Shipper NETC Code <u>40E</u>		TO: Consignee <u>Clean Harbors Env. Services</u>	
Street <u>1 Simonpietri Drive</u>		Street <u>37 Rumery Rd</u>	
City <u>Newport</u> State <u>RI</u>		City <u>S. Portland</u> State <u>ME</u>	
Zip Code <u>02841</u>	US EPA ID Number <u>RI 11170024243</u>	Zip Code <u>04106</u>	

Name of Carrier:
 J.P. Noonan

US DOT Description: (Include Proper Shipping Name, Hazard Class, and ID Number)

NON-Regulated Liquid (oil)

Total Quantity	Unit Wt/Vol	EMERGENCY NUMBER:
<u>116500</u>	Gal.	1-800-OIL-TANK

WASTE OIL ANALYSIS: (ACTUAL)

ARSENIC <u>ND</u> PPM.	LEAD <u>ND</u> PPM.	BTU's/LB. _____
CADMIUM <u>ND</u> PPM.	PCB'S <u>ND</u> PPM.	BTU's/GAL. _____
CHROMIUM <u>ND</u> PPM.	TOTAL HALOGENS <u>300</u> PPM.	FLASH POINT <u>>200</u> °F
N.D. = NOT DETECTED		SULFUR _____

WASTE OIL SPECIFICATION: (LIMITS)

ARSENIC 5.0 PPM. MAX.	LEAD 100 PPM. MAX.
CADMIUM 2.0 PPM. MAX.	PCB'S N.D. PPM. MAX.
CHROMIUM 10.0 PPM. MAX.	TOTAL HALOGENS 1,000 PPM. MAX.
	FLASH POINT <u>>100</u> °F

Shipper's Signature <u>[Signature]</u>	Consignee Signature <u>[Signature]</u>	Transporter's Signature <u>[Signature]</u>
---	---	---

COMMENTS.

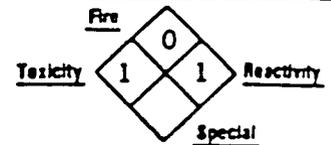
TANK # 38

APPENDIX D
DEGREASER/VENDOR INFORMATION



"Maintenance
Chemicals
For Your
Environment"

HAZARD RATING
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
* = CHRONIC
HEALTH HAZARD - SEE SECTION V



MATERIAL SAFETY DATA SHEET

(Essentially Similar to Form OSHA 20)

SECTION I

REVISED: 06-15-87

CHEMICAL NAME AND SYNONYMS N/A		TRADE NAME AND SYNONYMS ENVIRO 2000S	
CHEMICAL FAMILY Detergent		FORMULA Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL	CAS #	%	TLV (units)
Sodium Hydroxide	1310-73-2		2 mg/m ³ 200 mg/m ³ IDLH

SECTION III - PHYSICAL DATA

BOILING POINT (°F)	216°F	SPECIFIC GRAVITY (H ₂ O = 1)	1.04
VAPOR PRESSURE (mm Hg)	NIL	PERCENT VOLATILE BY VOLUME (%)	94
VAPOR DENSITY (AIR = 1)	NOT EST.	EVAPORATION RATE (_____ = 1)	1
SOLUBILITY IN WATER	COMPLETE	pH	12.0
APPEARANCE AND ODOR Clear red liquid / minimal odor.			

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	Boils without flashing.	FLAMMABLE LIMITS	LeI N/A	UeI N/A
EXTINGUISHING MEDIA Use carbon dioxide, alcohol foam, dry chemicals in areas where chemicals stored.				
SPECIAL FIRE FIGHTING PROCEDURES Aqueous solutions of product are alkaline.				
UNUSUAL FIRE AND EXPLOSION HAZARDS None.				

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	See Section II.
EFFECTS OF OVEREXPOSURE <u>Inhalation:</u> Airborne concentrations of mist or spray may cause irritation of upper respiratory tract, nose and throat, hemolysis, hemoglobinuria. <u>Skin:</u> Dermatitis may result from repeated or prolonged exposure due to defatting of tissue. <u>Eye:</u> Product is destructive to eye tissue. May cause severe irritation. <u>Ingestion:</u> Product can cause irritation of mouth, throat, esophagus and stomach.	
EMERGENCY AND FIRST AID PROCEDURES <u>Eyes:</u> Irrigate immediately with running water for at least 15 minutes. Seek medical attention if irritation persists. <u>Skin:</u> Flush with soap and water immediately. Remove impervious clothing immediately when skin is wet or contaminated. Seek medical attention if irritation persists. <u>Inhalation:</u> If person exposed to large amounts of mist or vapor, move the exposed person to fresh air at once and perform artificial respiration. <u>Ingestion:</u> If ingested, seek medical attention immediately. Give large quantities of water.	
DO NOT INDUCE VOMITING	
FOR MEDICAL EMERGENCY CALL COLLECT (713) 734-1656	

SECTION VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
Acids, organic halogens, reactive metals such as zinc, tin, aluminum, leather and wool.			
HAZARDOUS DECOMPOSITION PRODUCTS			
None.			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
<p><u>Small Spill</u>: Mop or wipe up or absorb on sawdust or clay and dispose of in accordance with RCRA Regulations. Flush any residue with water.</p> <p><u>Large Spill</u>: Wear goggles, coveralls, and impervious gloves and boots. Add dry absorbant shovel, or sweep up, and place in a D.O.T. approved container and seal. Flush any residue with water.</p>	
WASTE DISPOSAL METHOD	
Treat and dispose of in accordance with regulations under the RCRA as administered by the USEPA or other appropriate state agency.	

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
Use NIOSH approved respirator for mists and vapors.		
VENTILATION	LOCAL EXHAUST To maintain below TLV guidelines.	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	Rubber or Neoprene	EYE PROTECTION Goggles or Safety Glasses
OTHER PROTECTIVE EQUIPMENT Impervious boots, and coveralls, to minimize skin contact.		

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
Store in cool dry place in original sealed container. Avoid temperatures above 140°F. Avoid freezing conditions.	
OTHER PRECAUTIONS	
Read all directions and cautions on label before use. Keep out of reach of children.	

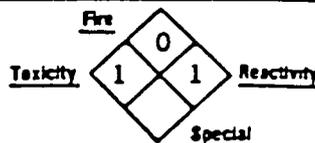
FOR MEDICAL EMERGENCY CALL COLLECT (713) 734-1656

All statements, information and data given are believed to be accurate and reliable as of the data hereof, but are presented without guaranty warranty or responsibility of any kind. Expressed or implied on our part. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other or additional considerations. Information regarding the proper course of treatment in the event of an accident or misuse of this product is properly the domain of the attending physician.



HAZARD RATING

- 4 = EXTREME
- 3 = HIGH
- 2 = MODERATE
- 1 = SLIGHT
- 0 = INSIGNIFICANT
- * = CHRONIC



HEALTH HAZARD - SEE SECTION V

MATERIAL SAFETY DATA SHEET

(Essentially Similar to Form OSHA-20)

SECTION I

REVISED: 06-15-87

CHEMICAL NAME AND SYNONYMS N/A		TRADE NAME AND SYNONYMS ENVIRO 2000S	
CHEMICAL FAMILY Detergent	FORMULA	Proprietary	

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL	CAS #	%	TLV (units)
Sodium Hydroxide	1310-73-2		2 mg/m ³ 200 mg/m ³ IDLH

SECTION III - PHYSICAL DATA

BOILING POINT (°F)	216°F	SPECIFIC GRAVITY (H ₂ O = 1)	1.04
VAPOR PRESSURE (mm Hg)	NIL	PERCENT VOLATILE BY VOLUME (%)	94
VAPOR DENSITY (AIR = 1)	NOT EST.	EVAPORATION RATE (_____ = 1)	1
SOLUBILITY IN WATER	COMPLETE	pH	12.0

APPEARANCE AND ODOR: Clear red liquid / minimal odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	Boils without flashing.	FLAMMABLE LIMITS	LeI N/A	UeI N/A
EXTINGUISHING MEDIA	Use carbon dioxide, alcohol foam, dry chemicals in areas where chemicals stored.			
SPECIAL FIRE FIGHTING PROCEDURES	Aqueous solutions of product are alkaline.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	None.			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	See Section II.
EFFECTS OF OVEREXPOSURE	<p><u>Inhalation:</u> Airborne concentrations of mist or spray may cause irritation of upper respiratory tract, nose and throat, hemolysis, hemoglobinuria.</p> <p><u>Skin:</u> Dermatitis may result from repeated or prolonged exposure due to defatting of tissue.</p> <p><u>Eye:</u> Product is destructive to eye tissue. May cause severe irritation.</p> <p><u>Ingestion:</u> Product can cause irritation of mouth, throat, esophagus and stomach.</p>
EMERGENCY AND FIRST AID PROCEDURES	<p><u>Eyes:</u> Irrigate immediately with running water for at least 15 minutes. Seek medical attention if irritation persists.</p> <p><u>Skin:</u> Flush with soap and water immediately. Remove impervious clothing immediately when skin is wet or contaminated. Seek medical attention if irritation persists.</p> <p><u>Inhalation:</u> If person exposed to large amounts of mist or vapor, move the exposed person to fresh air at once and perform artificial respiration.</p> <p><u>Ingestion:</u> If ingested, seek medical attention immediately. Give large quantities of water.</p>

FOR MEDICAL EMERGENCY CALL COLLECT (713) 734-1656

SECTION VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
Acids, organic halogens, reactive metals such as zinc, tin, aluminum, leather and wool.			
HAZARDOUS DECOMPOSITION PRODUCTS			
None.			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	
<p><u>Small Spill</u>: Mop or wipe up or absorb on sawdust or clay and dispose of in accordance with RCRA Regulations. Flush any residue with water.</p> <p><u>Large Spill</u>: Wear goggles, coveralls, and impervious gloves and boots. Add dry absorbant shovel, or sweep up, and place in a D.O.T. approved container and seal. Flush any residue with water.</p>	
WASTE DISPOSAL METHOD	
Treat and dispose of in accordance with regulations under the RCRA as administered by the USEPA or other appropriate state agency.	

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
Use NIOSH approved respirator for mists and vapors.		
VENTILATION	LOCAL EXHAUST To maintain below TLV guidelines.	SPECIAL
	MECHANICAL (General)	OTHER
PROTECTIVE GLOVES	Rubber or Neoprene	EYE PROTECTION Goggles or Safety Glasses
OTHER PROTECTIVE EQUIPMENT	Impervious boots, and coveralls, to minimize skin contact.	

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING	
Store in cool dry place in original sealed container. Avoid temperatures above 140°F. Avoid freezing conditions.	
OTHER PRECAUTIONS	
Read all directions and cautions on label before use. Keep out of reach of children.	

FOR MEDICAL EMERGENCY CALL COLLECT (713) 734-1656

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Material Safety Data Sheet

QUICK IDENTIFIER (In Plant Common Name)

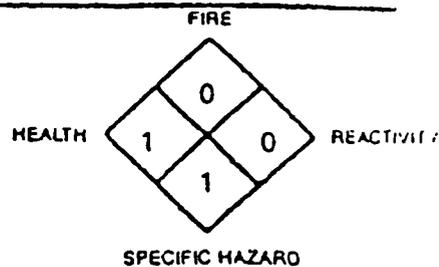
SW 1000

Manufacturer's Name (201) 437-7775
Heritage Labs, Inc.

Address P.O. Box 4141
Bayonne, NJ 07002

Signature of Person Responsible for Preparation
10/10/89 Donald J. Adone

- HAZARD RATING
4 - Extreme
3 - High
2 - Moderate
1 - Slight
0 - Insignificant



See Section (5)

SECTION 1 - IDENTITY

Common Name (used on label) (Trade Name & Synonyms) SW 1000

Chemical Name n.a.

Formula Proprietary

SECTION 2 - HAZARDOUS INGREDIENTS

Principal Hazardous Component(s) (chemical & common name(s))	CAS #	%	ACGIH TLV	Other Limits Recommendations
Sodium metasilicate	6834-93-0	<5%	n.a.	
Isopropanol	67-63-0	<5%	(TWA 400 ppm, STEL 500 ppm)	
Sodium hydroxide	1310-73-2	<1%	(C 2 mg/m ³)	

SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS (Fire & Explosion Data)

Boiling Point	213°F	Specific Gravity (H ₂ O = 1)	1.036	Vapor Pressure (mm Hg)	n.a.
Percent Volatile by Volume (%)	0	Vapor Density (Air = 1)	n.a.	Evaporation Rate (water = 1)	<1%
Solubility in Water	completely	Reactivity in Water	none		
Appearance and Odor	clear liquid / non objectionable odor				

Flash Point	none	Flammable Limits in Air % by Volume	Lower n.a. Upper n.a.	Extinguisher Media	none required	Auto-ignition Temperature	none
Special Fire Fighting Procedures	none			Unusual Fire and Explosion Hazards	none		

SECTION 4 - REACTIVITY DATA

Unstable		Conditions to Avoid	none
Stable	X		

Incompatibility (Materials to Avoid) Only those materials incompatible with water.

Hazardous Decomposition or Byproducts n.a.

Hazardous Polymerization	May Occur		Conditions to Avoid	none
	Will Occur	X		

SECTION 5 - HEALTH HAZARDS

Route(s) of Entry	Inhalation?	unlikely	Skin?	likely	Ingestion?	unlikely
Health Hazards (Acute and Chronic)	Skin irritation may develop if repeated exposure occurs or if it is used for long periods of time. Avoid eye contact.					
Carcinogenicity	None known					
Signs and Symptoms of Exposure	None known					
Emergency and First Aid Procedures	n.a.					
1. Inhalation	Move to more adequate ventilation.					
2. Eyes	Rinse thoroughly with water, if irritation develops -- see physician					
3. Skin	Same as above.					
4. Ingestion	Drink juices, milk or water - consult a physician.					

SECTION 6 - SPECIAL PROTECTION INFORMATION

Respiratory Protection (Specify Type)	n.a. provide proper ventilation.			
Ventilation	Local Exhaust	Mechanical (General)	Special	Other
				Should be adequate.
Protective Gloves	water resistant gloves.		Eye Protection	Goggles or safety glasses.
Other Protective Clothing or Equipment				

SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken in Handling and Storage	Store in temperatures ranging from 30°F to 110°F / 0°-43°C	
Other Precautions	None	
Steps to be Taken in Case Material is Released or Spilled	Hose down with water.	
Waste Disposal Methods	Biodegradable. Refer to applicable regulations. Special disposal may not be required.	

The information on this data sheet represents our current data and best opinion as to the proper use in the handling of this product under normal conditions. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for a particular use. Any use of this product which is not in conformance with this data sheet or which involves using the product in combination with any other product or any other process is the responsibility of the user.

PERMANENT CLOSURE APPLICATION FOR UNDERGROUND STORAGE FACILITIES

A: Date of application: Original 2/18/94 Re-Application 5/29/96

B: UST Facility I.D.: 15007

(Note : If the tank (s) listed below are not registered with DEM, a registration fee of \$35.00 per tank must be submitted along with this application.)

C: Proposed date of tank closure: 10 June 96 (Revised Date)

D: Facility Name: Tank Farm 4
Street Address: NETC PWD Bldg 1, 1 Simonpietri Drive
City/Town: Newport, RI 02841

E: Tank Owner: J.C. Wyman, Capt, CEC, USN
Street Address: NETC PWD Bldg 1, 1 Simonpietri Drive
City/Town/State: Newport, RI 02841
Contact Person: Raymond Roberge
Telephone Number: 841-3735

F: Property Owner: Same
Street Address: _____
City/Town/State: _____

G: FIRM/CONTRACTOR TO PERFORM TANK CLOSURE WORK

Name: Foster Wheeler Environmental Corperation
Address: 2300 Lincoln Highway, East One Oxford Valley, Suite 200, Langhorn, PA 19047
Contact Person: John Holwell, Project Manager
Phone Number: (617) 457-8234

H: FIRM/CONTRACTOR TO PERFORM TANK CLOSURE ASSESSMENT (check one)

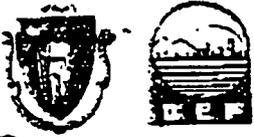
Professional Engineer Certified Professional Geologist

Other; A statement of qualifications must be submitted with this application.

Name: Foster Wheeler Environmental Corperation
Address: 2300 Lincoln Highway East One Oxford Valley, Suite 200 Langhorn, PA 19047
Contact Person: Michael Zizza
Phone Number: (617)457-8245

APPENDIX E
MANIFESTS (DEBRIS DISPOSAL)

PUBLIC WORKS DEPARTMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS MATERIALS
One Winter Street Boston, Massachusetts 02108



FOSTER WHEELER

Please print or type. Fill in designated for use on a (10-12) inch typewriter.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. RI1170024243

Manifest Document No. 50541

2. Page 1 of 1. Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U S Navy N.E.T.C. code 40E
1 Simon Pietri Drive
Newport, RI 02841

A. State manifest Document Number MAJ 640956

4. Generator's Phone 401 841-3735

B. State ID BLDG 42/TFA

5. Transporter 1 Company Name Clean Harbors Env. Services, Inc

6. US EPA ID Number MAD039322250

C. State Trans ID MA 13268

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone 617 849-1800

9. Designated Facility Name and Site Address
Clean Harbors of Braintree Inc
385 Quincy Ave
Braintree, MA 02184

10. US EPA ID Number MAD053452637

E. State Trans ID

F. Transporter's Phone

G. State Facility's ID NOT REQUIRED

H. Facility's Phone 781 849-1807

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)

12. Containers NO 13. Total Quantity 14. Unit Weight 15. Waste No

a. NON DOT REGULATED MATERIAL OILY SOLIDS, NON DOT HAZARDOUS, NONE, NONE

1 CM 10 Y MA01

J. Additional Descriptions for Materials Listed Above (include physical state and hazard code.) (S), (T)

K. Handling Codes for Wastes Listed Above

16. Special Handling Instructions and Additional Information
11a CB041952

IN EMERGENCY, CALL CHES 1-800-645-8265
WO# D185169

CA # 25-112

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name, and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the extent I have determined is economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present or future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best available management method that is suitable to the and that I can afford.

Signature: Job A. Palaya

Signature: Job A. Palaya

Date: 11/19/97

Signature: CHARLIE FREDERICK

Signature: Charlie Frederick

Date: 11/19/97

Signature: [Blank]

Signature: [Blank]

Date: [Blank]

17. Discrepancy Indication State

18. Public Owner or Operator Certification of receipt of hazardous materials covered by this manifest, except as noted in item 17

Signature: [Blank]

Signature: [Blank]

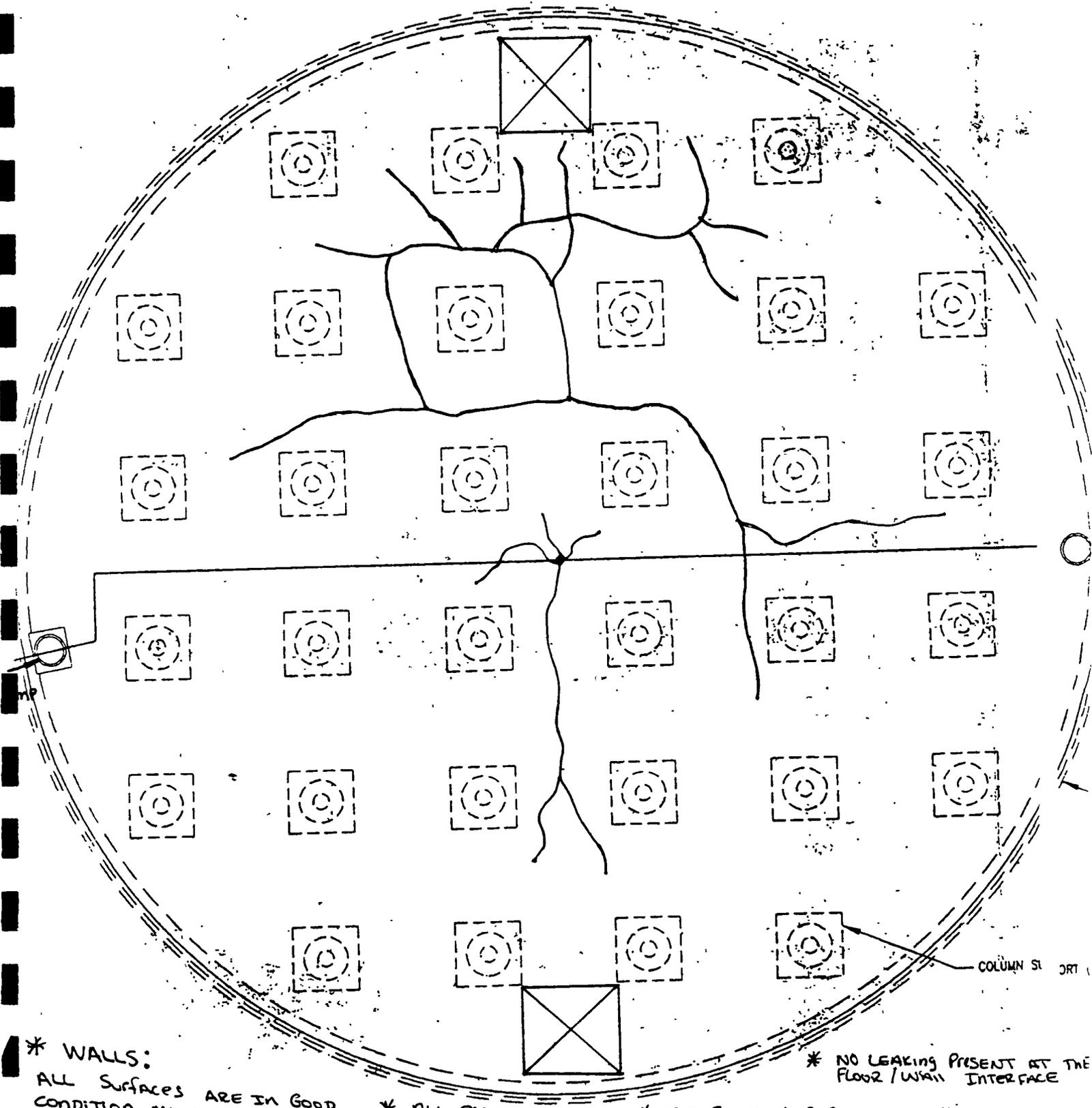
Date: [Blank]

In case of emergency or spill, immediately call the National Response Center (800) 424-8802

MA J 640956 COPY 2: FACILITY FAILS TO DESTINATION STATE

APPENDIX F
STRUCTURAL INSPECTION

TANK 38



*** WALLS:**

ALL SURFACES ARE IN GOOD CONDITION. NO CRACKING OR SPALLING. WALLS ARE DRY AND CLEAN.

* ALL PIPE HAS BEEN REMOVED.

* THE FLOOR HAS CRACKING AS SHOWN ABOVE. THE CRACKS THAT ARE SHOWN HAVE BEEN REPAIRED WITH SILA 123

* NO LEAKING PRESENT AT THE FLOOR / WALL INTERFACE

* ALL LADDERS ARE IN GOOD CONDITION.

*** COLUMNS:**

ALL COLUMNS HAVE NO CRACKING AND ARE CLEAN. ALL COLUMN BOLTS ARE IN GOOD CONDITION.

PLAN VIEW

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 UNDERGROUND STORAGE TANK SECTION
 291 Promenade Street
 Providence, Rhode Island 02908
 (401) 277-2797

UST ID 03644

LUST ID _____

CLOSURE INSPECTION SHEET
 FOR UNDERGROUND STORAGE FACILITIES

On the 21st of OCTOBER, 1996 I, PAUL KULPA
 (date) (inspector)

witnessed the permanent closure of the following underground storage tanks owned/operated by

NETC TANK FARM #4

(owner/operator)

and located at

PORTSMOUTH, R.I.

(address)

TANK ID	VOLUME	STORED MATERIAL	TANK STATUS (F=Filled / R=Removed)
<u>038</u>	<u>2.5 MG</u>	<u>#6 FUEL OIL</u>	<u>F*</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

* TANK TO BE DEMOLISHED

Signature:

L. Daniel Russell

Title:

ENVIRONMENTAL SCIENTIST

Underground Storage Tank Section/Leaking Underground Storage Tank Section
Department of Environmental Management

A closure assessment must be submitted to the Division of Site Remediation, Leaking Underground Storage Tank Section within 30 working days.

NOTE: This is not a document to approve or certify that tanks are safe or clean to transport.

**APPENDIX G
BORING LOGS**

Data Sheet for PETRO RISC[®] SamplePro test

Operator: Gary Glenn

Date: 11/18/94

Location: CTD 143

Sample ID	Low Test Level			High Test Level			Comments
	ΔOD	OD sample	Interpretation	ΔOD	OD sample	Interpretation	
Replicate stds	Standards	<u>25</u> ppm		Standards	<u>100</u> ppm		
SO-TF4-P1-0005-0406	0.07		QC OK	-0.01		QC OK	
SO-TF4-P2-0WS-0406	-0.34		> 25 ppm	-0.22		> 100 ppm	Send to lab
↓ -0608	-0.18		> 25 ppm	0.03		< 100 ppm	Discard
SO-TF4-P1-38-0406	0.05		< 25 ppm	0.06		> 100 ppm	Discard
↓ -0608	0.17		< 25 ppm	-0.05		> 100 ppm	Send to lab
Replicate stds	0.10		QC OK	0.12		QC OK	
SO-TF4-P1-42-0406	-0.15		< 25 ppm	0.30		< 100 ppm	Send to lab
SO-TF4-P1-42-0406 B608	0.07		< 25 ppm	0.49		< 100 ppm	Discard
↓ P2-42-0608	0.22		< 25 ppm	1.36		< 100 ppm	Send to lab
SO-TF4-P2-42-0406	-0.35		> 25 ppm	0.29		< 100 ppm	Discard
↓ -0608	0.12		< 25 ppm	0.32		< 100 ppm	Send to lab
SO-TF4-P2-47-0406	-0.18		> 25 ppm	0.63		< 100 ppm	Discard
↓ -0608	-0.18		> 25 ppm	0.42		< 100 ppm	Discard
SO-TF4-P1-0WS-0406	0.11		< 25 ppm	0.07		> 100 ppm	Send to lab
↓ -0608	0.20		< 25 ppm	0.05		QC OK	
Replicate stds	0.18		QC OK	0.21			QC OK
Replicate stds	0.10		QC OK	0.49		< 100 ppm	
SO-TF4-B-37-3234	-0.39		> 25 ppm	-0.01		> 100 ppm	
↓ -3860	-0.18		> 25 ppm	-0.15		> 100 ppm	
SO-TF4-B-38-2628	-0.00		> 25 ppm	-0.71		> 100 ppm	
↓ -3638	-0.67		> 25 ppm				

APPENDIX H
SOIL AND GROUNDWATER ANALYTICAL RESULTS

DATA QUALIFIERS

J Quantitation is estimated
U Parameter is not detected at the listed detection limit
UJ Parameter is not detected at the estimated detection limit

SAMPLE NUMBER KEY

Field samples collected from both sites, Tank Farms 4 and 5, are assigned a unique field sample tracking number. This numbering system as presented in Appendix C is explained here. Sample numbers are keyed to specific tanks in each tank farm and will consist of a five-segment alphanumeric code that identifies the sample matrix, the site and sample location, sample depth, and the quality control (QC) identifier.

The alphanumeric coding to be used in the sample numbering system is explained in the following diagram and the subsequent definitions:

AA = (Matrix)
TFN-AA-NN = (Sample location, site identifier - borehole/probe - number)
NN = (Sample depth)
A = (QC identifier)

Character type: A = Alpha
N = Numeric

Matrix: SO = Soil
GW = Groundwater

Sample location: Sample locations will be identified by specific tank farm and borehole or groundwater monitoring well number. Two alpha characters will indicate the specific tank farm; a pair of numeric characters will be assigned to correspond with individual tank numbers so that location is identifiable from all other locations of a similar type.

TF-4 = Tank Farm 4
TF-5 = Tank Farm 5
B = Borehole (subsequent monitoring well installation)
P = Probe

Sample identifier: Depth in feet below ground surface representing the top of the interval sample was collected.

QC Identifier: The QC identifier will be assigned only when applicable. The following identifiers will be utilized.

D = Field Duplicate
R = Equipment Rinsate Blank
F = Field Blank
T = Trip Blank

Example: A soil sample collected from 2 to 4 feet below ground surface from a boring located in Tank Farm 4, adjacent to tank number 39 will be numbered:

SO-TF4-B-39-02

CASE NO CTO143

HEIMIC CORPORATION

CL SOIL VOLATILE ORGANICS (ug/Kg)

STATION ID.
LABORATORY ID.

SOTF4B373234	SOTF4B373436	SOTF4B37DUP	SOTF4B382628	SOTF4B463032
940996-17	940996-18	940996-19	940996-20	940996-09
FIELD DUPLICATE PAIR				

ANALYTE	CRQL	MDL/DL							
Chloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Vinyl Chloride	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	10	2	11 U	11 U	11 U	11 U	11 U	13 U	11 U
Ethylene Chloride	10	2	11 U	11 U	19 UJ	11 U	11 U	11 U	11 U
Acetone	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Disulfide	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane (total)	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chloroform	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,1-Trichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Dichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	10	2	11 U	11 U	11 UJ	11 U	11 U	11 U	11 U
Trichloroethene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Benzene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Bromoform	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1-Methyl-2-Pentane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
2-Hexane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Tetrachloroethene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Toluene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	2 J
Styrene	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
Xylenes (total)	10	2	11 U	11 U	11 U	11 U	11 U	11 U	11 U
DILUTION FACTOR:			1	1	1	1	1	1	1
% SOLIDS			87	88	89	88	88	89	91

CASE NO CTO143

CEIMIC CORPORATION

TCCL SOIL VOLATILE ORGANICS (ug/Kg)

STATION ID:
LABORATORY ID.

SOTF438DUP
940996-22

SOTF4B383234
940996-21

SOTF4B423234
940996-23

SOTF4B423638
940996-24

SOTF4B453234
940996-25

FIELD DUPLICATE PAIR

ANALYTE	CRQL	MDL/IDL							
Chl romethane	10	2	12 U	60 U	11 U	57 U	59 U		
Bromomethane	10	2	12 U	60 U	11 U	57 U	59 U		
Vinyl Chloride	10	2	12 U	60 U	11 U	57 U	59 U		
Chloroethane	10	2	12 U	60 U	11 U	57 U	59 U		
Methylene Chloride	10	2	21 U	60 UJ	11 U	57 U	59 U		
Aceton	10	2	12 U	60 U	11 U	57 U	59 U		
Carbon Disulfide	10	2	12 U	60 U	11 U	57 U	59 U		
1,1-Dichloro thene	10	2	12 U	60 U	11 U	57 U	59 U		
1,1-Dichloroethane	10	2	12 U	60 U	11 U	57 U	59 U		
1,2-Dichlor ethen (total)	10	2	12 U	60 U	11 U	57 U	59 U		
Chlor form	10	2	12 U	60 U	11 U	57 U	59 U		
1,2-Dichlor ethan	10	2	12 U	12 J	11 U	57 U	59 U		
2-Butanone	10	2	12 UJ	60 U	11 U	57 U	59 U		
1,1,1-Trichlor ethane	10	2	12 U	60 U	11 U	57 U	59 U		
Carbon Tetrachloride	10	2	12 U	60 U	11 U	57 U	59 U		
Bromodichlor methane	10	2	12 U	60 U	11 U	57 U	59 U		
1,2-Dichlor propan	10	2	12 U	60 U	11 U	57 U	59 U		
cis-1,3-Dichloropropene	10	2	12 U	60 U	11 U	57 U	59 U		
Trichloroethen	10	2	12 U	60 U	11 U	57 U	59 U		
Dibromochloromethane	10	2	12 U	60 U	11 U	57 U	59 U		
1,1,2-Trichloroethane	10	2	12 U	60 U	11 U	57 U	59 U		
Benzene	10	2	12 U	60 U	11 U	57 U	59 U		
trans-1,3-Dichl ropropene	10	2	12 U	60 U	11 U	57 U	59 U		
Bromoform	10	2	12 U	60 U	11 U	57 U	59 U		
4-Methyl-2-Pentan ne	10	2	12 U	60 U	11 U	57 U	59 U		
2-Hexanone	10	2	12 U	60 U	11 U	57 U	59 U		
Tetrachlor eth ne	10	2	12 U	60 U	11 U	57 U	59 U		
1,1,2,2-Tetrachloroethane	10	2	12 U	60 U	11 U	57 U	59 U		
Tolu ne	10	2	12 U	60 U	11 U	57 U	59 U		
Chlor b nzene	10	2	12 U	60 U	11 U	57 U	59 U		
Ethylbenzene	10	2	12 U	60 U	11 U	57 U	59 U		
Styrene	10	2	12 U	60 U	11 U	57 U	59 U		
Xylen (total)	10	2	12 U	60 U	11 U	57 U	59 U		
DILUTION FACTOR:			1	5	1	5	5		
% SOLIDS			86	84	90	87	85		

CASE NO CTO143

CEIMIC CORPORATION

TCL AQUEOUS VOLATILE ORGANICS (ug/L)

STATION ID.			GWTF4MW123	GWTF4MW124	GWTF4MW125	GWTF4TB1	GWTF5MW100
LABORATORY ID:			941038-11	941038-03	941038-12	941038-04	941038-14
ANALYTE	CRQL	MDL/IDL					
Chloromethane	10	2	10 U	10 U	10 U	10 U	10 U
Bromomethane	10	2	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10	2	10 U	10 U	10 U	10 U	10 U
Chloroethane	10	2	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10	2	10 U	16 U	50 U	10 U	10 U
Acetone	10	2	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10	2	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10	2	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	2	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	10	2	10 U	10 U	10 U	10 U	10 U
Chloroform	10	2	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10	2	10 U	10 U	10 U	10 U	10 U
2-Butane	10	2	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10	2	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10	2	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10	2	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10	2	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10	2	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10	2	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10	2	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10	2	10 U	10 U	10 U	10 U	10 U
Benzene	10	2	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10	2	10 U	10 U	10 U	10 U	10 U
Bromoform	10	2	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10	2	10 U	10 U	10 U	10 U	10 U
2-Hexane	10	2	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10	2	10 U	10 U	1 J	10 U	10 U
1,1,2,2-Tetrachloroethane	10	2	10 U	10 U	10 U	10 U	10 U
Toluene	10	2	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10	2	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10	2	10 U	10 U	10 U	10 U	10 U
Styrene	10	2	10 U	10 U	10 U	10 U	10 U
Xylenes (total)	10	2	10 U	10 U	10 U	10 U	10 U
DILUTION FACTOR:			1	1	1	1	1

EMIC CORPORATION

CL SOIL SEMI-VOLATILE ORGANICS (ug/kg)

STATION ID.
LABORATORY ID.

SOTF4B373234 SOTF4B373436 SOTF4B37DUP SOTF4B382628 SOTF4B463032
940996-17 940996-18 940996-19 940996-20 940996-09
FIELD DUPLICATE PAIR

ANALYTE	CRQL	MDL/DL	SOTF4B373234 940996-17	SOTF4B373436 940996-18	SOTF4B37DUP 940996-19	SOTF4B382628 940996-20	SOTF4B463032 940996-09
PHENOL	300	30	370 U	380 U	380 U	380 U	370 U
BIS(2-CHLOROETHYL)ETHER	300	30	370 U	380 U	380 U	380 U	370 U
2-CHLOROPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
1,3-DICHLOROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U
1,4-DICHLOROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U
1,2-DICHLOROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U
2-METHYLPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
2,2'-OXYBIS(1-CHLOROPROPANE)	300	30	370 U	380 U	380 U	380 U	370 U
1-METHYLPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
4-NITROSO-DI-n-PROPYLAMINE	300	30	370 U	380 U	380 U	380 U	370 U
HEXACHLOROETHANE	300	30	370 U	380 U	380 U	380 U	370 U
4-NITROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U
SOPHORONE	300	30	370 U	380 U	380 U	380 U	370 U
2-NITROPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
2,4-DIMETHYLPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
BIS(2-CHLOROETHOXY)METHANE	300	30	370 U	380 U	380 U	380 U	370 U
2,4-DICHLOROPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
1,2,4-TRICHLOROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U
1-NAPHTHALENE	300	30	370 U	380 U	380 U	380 U	370 U
1-CHLOROANILINE	300	30	370 U	380 U	380 U	380 U	370 U
HEXACHLOROBUTADIENE	300	30	370 U	380 U	380 U	380 U	370 U
1-CHLORO-3-METHYLPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
2-METHYLNAPHTHALENE	300	30	370 U	380 U	380 U	380 U	370 U
HEXACHLOROCYCLOPENTADIENE	300	30	370 U	380 U	380 U	380 U	370 U
2,4,6-TRICHLOROPHENOL	300	30	370 U	380 U	380 U	380 U	370 U
2,4,5-TRICHLOROPHENOL	800	80	890 U	920 U	910 U	910 U	890 U
2-CHLORONAPHTHALENE	300	30	370 U	380 U	380 U	380 U	370 U
2-NITROANILINE	800	80	890 U	920 U	910 U	910 U	890 U
2-METHYLPHTHALATE	300	30	370 U	380 U	380 U	380 U	370 U
1-NAPHTHYLENE	300	30	370 U	380 U	380 U	380 U	370 U
2,6-DINITROTOLUENE	300	30	370 U	380 U	380 U	380 U	370 U
3-NITROANILINE	800	80	890 U	920 U	910 U	910 U	890 U

SE NO CTO143

IMIC CORPORATION

L SOIL SEMI-VOLATILE ORGANICS (ug/kg)

ATION ID:
BORATORY ID.

SOTF4B373234
940996-17

SOTF4B373436
940996-18

SOTF4B37DUP
940996-19

SOTF4B382628
940996-20

SOTF4B463032
940996-09

FIELD DUPLICATE PAIR

ALYTE	CRQL	MDL/DL							
ENAPHTHENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
-DINITROPHENOL	800	80	890 U	920 U	910 U	910 U	890 U	890 U	890 U
ITROPHENOL	800	80	890 U	920 U	910 U	910 U	890 U	890 U	890 U
ENZOFURAN	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
-DINITROTOLUENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ETHYL PHTHALATE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
CHLOROPHENYL-PHENYL ETHER	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
UORENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ITROANILINE	800	80	890 U	920 U	910 U	910 U	890 U	890 U	890 U
-DINITRO-2-METHYLPHENOL	800	80	890 U	920 U	910 U	910 U	890 U	890 U	890 U
NITROSODIPHENYLAMINE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
BROMOPHENYL-PHENYL ETHER	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
XACHLOROBENZENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
NTACHLOROPHENOL	800	80	890 U	920 U	910 U	910 U	890 U	890 U	890 U
ENANTHRENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ITHRACENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
n-BUTYLPHTHALATE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
UORANTHENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
URBAZOLE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
RENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ITYLBENZYLPHTHALATE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
1-DICHLOROBENZIDINE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ENZO(a)ANTHRACENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
IRYSENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
3(2-ETHYLHEXYL)PHTHALATE	300	30	66 J	380 UJ	39 J	74 J	41 J	41 J	41 J
n-OCTYLPHTHALATE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ENZO(b)FLUORANTHENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ENZO(k)FLUORANTHENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ENZO(a)PYRENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
DENO(1,2,3-cd)PYRENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
BENZO(a,h)ANTHRACENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
ENZO(g,h,i)PERYLENE	300	30	370 U	380 U	380 U	380 U	370 U	370 U	370 U
DILUTION FACTOR			1	1	1	1	1	1	1
SOLIDS			88	86	87	87	89	89	89

CASE NO CTO143

CEMIC CORPORATION

TCI. SOIL SEMI-VOLATILE ORGANICS (ug/kg)

STATION ID	SOTF438DUP	SOTF4B383234	SOTF4B423234	SOTF4B423638	SOTF4B453234		
LABORATORY ID	940996-22	940996-21	940996-23	940996-24	940996-25		
	FIELD DUPLICATE PAIR						
ANALYTE	CRQL	MDL/IDL					
PHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
BIS(2-CHLOROETHYL)ETHER	300	30	380 U	390 U	370 U	1900 U	390 U
2-CHLOROPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
1,3-DICHLOROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U
1,4-DICHLOROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U
1,2-DICHLOROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U
2-METHYLPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
2,2'-OXYBIS(1-CHLOROPROPANE)	300	30	380 U	390 U	370 U	1900 U	390 U
4-METHYLPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
N-NITROSO-DI-n-PROPYLAMINE	300	30	380 U	390 U	370 U	1900 U	390 U
HEXACHLOROETHANE	300	30	380 U	390 U	370 U	1900 U	390 U
NITROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U
ISOPHORONE	300	30	380 U	390 U	370 U	1900 U	390 U
2-NITROPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
2,4-DIMETHYLPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
BIS(2-CHLOROETHOXY)METHANE	300	30	380 U	390 U	370 U	1900 U	390 U
2,4-DICHLOROPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
1,2,4-TRICHLOROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U
NAPHTHALENE	300	30	380 U	390 U	370 U	1900 U	390 U
4-CHLOROANILINE	300	30	380 U	390 U	370 U	1900 U	390 U
HEXACHLOROBUTADIENE	300	30	380 U	390 U	370 U	1900 U	390 U
4-CHLORO-3-METHYLPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
2-METHYLNAPHTHALENE	300	30	380 U	390 U	370 U	1900 U	390 U
HEXACHLOROCYCLOPENTADIENE	300	30	380 U	390 U	370 U	1900 U	390 U
2,4,6-TRICHLOROPHENOL	300	30	380 U	390 U	370 U	1900 U	390 U
2,4,5-TRICHLOROPHENOL	800	80	930 U	940 U	910 U	4600 U	950 U
2-CHLORONAPHTHALENE	300	30	380 U	390 U	370 U	1900 U	390 U
2-NITROANILINE	800	80	930 U	940 U	910 U	4600 U	950 U
DIMETHYLPHTHALATE	300	30	380 U	390 U	370 U	1900 U	390 U
ACENAPHTHYLENE	300	30	380 U	390 U	370 U	1900 U	390 U
2,6-DINITROTOLUENE	300	30	380 U	390 U	370 U	1900 U	390 U
3-NITROANILINE	800	80	930 U	940 U	910 U	4600 U	950 U

CEIMIC CORPORATION

TCL SOIL SEMI-VOLATILE ORGANICS (ug/kg)

STATION ID:
LABORATORY ID:

SOTF438DUP SOTF4B383234 SOTF4B423234 SOTF4B423638 SOTF4B453234
940996-22 940996-21 940996-23 940996-24 940996-25
FIELD DUPLICATE PAIR

ANALYTE	CRQL	MDL/IDL							
ACENAPHTHENE	300	30	380 U	390 U	370 U	1900 U	390 U		
2,4-DINITROPHENOL	800	80	930 U	940 U	910 U	4600 U	950 U		
4-NITROPHENOL	800	80	930 U	940 U	910 U	4600 U	950 U		
DIBENZOFURAN	300	30	380 U	390 U	370 U	1900 U	390 U		
2,4-DINITROTOLUENE	300	30	380 U	390 U	370 U	1900 U	390 U		
DIETHYL PHTHALATE	300	30	380 U	390 U	370 U	1900 U	390 U		
4-CHLOROPHENYL-PHENYL ETHER	300	30	380 U	390 U	370 U	1900 U	390 U		
FLUORENE	300	30	380 UJ	40 J	370 U	1900 U	52 J		
4-NITROANILINE	800	80	930 U	940 U	910 U	4600 U	950 U		
4,6-DINITRO-2-METHYLPHENOL	800	80	930 U	940 U	910 U	4600 U	950 U		
N-NITROSODIPHENYLAMINE	300	30	380 U	390 U	370 U	1900 U	390 U		
4-BROMOPHENYL-PHENYL ETHER	300	30	380 U	390 U	370 U	1900 U	390 U		
HEXACHLOROBENZENE	300	30	380 U	390 U	370 U	1900 U	390 U		
PENTACHLOROPHENOL	800	80	930 U	940 U	910 U	4600 U	950 U		
PHENANTHRENE	300	30	380 U	390 U	370 U	1900 U	130 J		
ANTHRACENE	300	30	380 U	390 U	370 U	1900 U	390 U		
DI-n-BUTYLPHthalate	300	30	380 U	390 U	370 U	1900 U	390 U		
FLUORANTHENE	300	30	380 U	390 U	370 U	1900 U	390 U		
CARBAZOLE	300	30	380 U	390 U	370 U	1900 U	390 U		
PYRENE	300	30	380 U	390 U	370 U	440 J	59 J		
BUTYLBENZYLPHthalate	300	30	380 U	390 U	370 U	1900 U	390 U		
3,3'-DICHLORO BENZIDINE	300	30	380 U	390 U	370 U	1900 U	390 U		
BENZO(a)ANTHRACENE	300	30	380 U	390 U	370 U	1900 U	390 U		
CHRYSENE	300	30	380 U	390 U	93 J	1900 U	830		
BIS(2-ETHYLHEXYL)PHthalate	300	30	380 U	390 U	370 U	1900 U	390 U		
DI-n-OCTYLPHthalate	300	30	380 U	390 U	370 U	1900 U	390 U		
BENZO(b)FLUORANTHENE	300	30	380 U	390 U	370 U	1900 U	390 U		
BENZO(k)FLUORANTHENE	300	30	380 U	390 U	370 U	1900 U	390 U		
BENZO(a)PYRENE	300	30	380 U	390 U	370 U	1900 U	390 U		
INDENO(1,2,3-cd)PYRENE	300	30	380 U	390 U	370 U	1900 U	390 U		
DIBENZO(a,h)ANTHRACENE	300	30	380 U	390 U	370 U	1900 U	390 U		
BENZO(g,h,i)PERYLENE	300	30	380 U	390 U	370 U	1900 U	390 U		
DILUTION FACTOR			1	1	1	5	1		
% SOLIDS			86	85	88	87	83		

CEIMIC CORPORATION

TCL AQUEOUS SEMI-VOLATILE ORGANICS (ug/L)

STATION ID.
LABORATORY ID

GW-TF4-MW123 941038-11 GW-TF4-MW124 941038-03 GW-TF4-MW125 941038-12 GW-TF5-MW100 941038-14 GW-TF5-MW101 941038-05

ANALYTE	CRQL	MDL/IDL	GW-TF4-MW123	GW-TF4-MW124	GW-TF4-MW125	GW-TF5-MW100	GW-TF5-MW101
PHENOL	10	1	10 U	10 U	200 U	10 U	10 U
BIS(2-CHLOROETHYL)ETHER	10	1	10 U	10 U	200 U	10 U	10 U
2-CHLOROPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
1,3-DICHLOROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
1,4-DICHLOROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
1,2-DICHLOROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
2-METHYLPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
2,2'-OXYBIS(1-CHLOROPROPANE)	10	1	10 U	10 U	200 U	10 U	10 U
4-METHYLPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
N-NITROSO-DI-n-PROPYLAMINE	10	1	10 U	10 U	200 U	10 U	10 U
HEXACHLOROETHANE	10	1	10 U	10 U	200 U	10 U	10 U
NITROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
ISOPHORONE	10	1	10 U	10 U	200 U	10 U	10 U
2-NITROPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
2,4-DIMETHYLPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
BIS(2-CHLOROETHOXY)METHANE	10	1	10 U	10 U	200 U	10 U	10 U
2,4-DICHLOROPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
1,2,4-TRICHLOROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
NAPHTHALENE	10	1	10 U	10 U	200 U	10 U	10 U
4-CHLOROANILINE	10	1	10 U	10 U	200 U	10 U	10 U
HEXACHLOROBUTADIENE	10	1	10 U	10 U	200 U	10 U	10 U
4-CHLORO-3-METHYLPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
2-METHYLNAPHTHALENE	10	1	10 U	10 U	200 U	10 U	10 U
HEXACHLOROCYCLOPENTADIENE	10	1	10 U	10 U	200 U	10 U	10 U
2,4,6-TRICHLOROPHENOL	25	25	25 U	25 U	500 U	25 U	25 U
2,4,5-TRICHLOROPHENOL	10	1	10 U	10 U	200 U	10 U	10 U
2-CHLORONAPHTHALENE	25	25	25 U	25 U	500 U	25 U	25 U
2-NITROANILINE	10	1	10 U	10 U	200 U	10 U	10 U
DIMETHYLPHTHALATE	10	1	10 U	10 U	200 U	10 U	10 U
ACENAPHTHYLENE	10	1	10 U	10 U	200 U	10 U	10 U
2,6-DINITROTOLUENE	25	25	25 U	25 U	500 U	25 U	25 U
3-NITROANILINE							

CEIMIC CORPORATION

TCL AQUEOUS SEMI-VOLATILE ORGANICS (ug/L)

STATION ID:
LABORATORY ID.

GW-TF4-MW123	GW-TF4-MW124	GW-TF4-MW125	GW-TF5-MW100	GW-TF5-MW101
941038-11	941038-03	941038-12	941038-14	941038-05

ANALYTE	CRQL	MDL/IDL	GW-TF4-MW123	GW-TF4-MW124	GW-TF4-MW125	GW-TF5-MW100	GW-TF5-MW101
ACENAPHTHENE	10	1	10 U	10 U	200 U	10 U	10 U
2,4-DINITROPHENOL	25	25	25 U	25 U	500 U	25 U	25 U
4-NITROPHENOL	25	25	25 U	25 U	500 U	25 U	25 U
DIBENZOFURAN	10	1	10 U	10 U	200 U	10 U	10 U
2,4-DINITROTOLUENE	10	1	10 U	10 U	200 U	10 U	10 U
DIETHYL PHTHALATE	10	1	10 U	10 U	200 U	10 U	10 U
4-CHLOROPHENYL-PHENYL ETHER	10	1	10 U	10 U	200 U	10 U	10 U
FLUORENE	10	1	10 U	10 U	20 J	10 U	10 U
4-NITROANILINE	25	25	25 U	25 U	500 U	25 U	25 U
4,6-DINITRO-2-METHYLPHENOL	25	25	25 U	25 U	500 U	25 U	25 U
N-NITROSODIPHENYLAMINE	10	1	10 U	10 U	200 U	10 U	10 U
4-BROMOPHENYL-PHENYL ETHER	10	1	10 U	10 U	200 U	10 U	10 U
HEXACHLOROBENZENE	10	1	10 U	10 U	200 U	10 U	10 U
PENTACHLOROPHENOL	25	25	25 U	25 U	500 U	25 U	25 U
PHENANTHRENE	10	1	10 U	10 U	48 J	10 U	10 U
ANTHRACENE	10	1	10 U	10 U	200 U	10 U	10 U
DI-n-BUTYLPHthalate	10	1	10 U	10 U	200 U	10 U	10 U
FLUORANTHENE	10	1	10 U	10 U	200 U	10 U	10 U
CARBAZOLE	10	1	10 U	10 U	200 U	10 U	10 U
PYRENE	10	1	10 U	10 U	28 J	10 U	10 U
BUTYLBENZYLPHthalate	10	1	10 U	10 U	200 U	10 U	10 U
3,3'-DICHLOROBENZIDINE	10	1	10 U	10 U	200 U	10 U	10 U
BENZO(a)ANTHRACENE	10	1	10 U	10 U	200 U	10 U	10 U
CHRYSENE	10	1	10 U	10 U	23 J	10 U	10 U
BIS(2-ETHYLHEXYL)PHthalate	10	1	10 U	10 U	200 U	10 U	10 U
DI-n-OCTYLPHthalate	10	1	10 U	10 U	200 U	10 U	10 U
BENZO(b)FLUORANTHENE	10	1	10 U	10 U	200 U	10 U	10 U
BENZO(k)FLUORANTHENE	10	1	10 U	10 U	200 U	10 U	10 U
BENZO(a)PYRENE	10	1	10 U	10 U	200 U	10 U	10 U
INDENO(1,2,3-cd)PYRENE	10	1	10 U	10 U	200 U	10 U	10 U
DIBENZO(a,h)ANTHRACENE	10	1	10 U	10 U	200 U	10 U	10 U
BENZO(g,h,i)PERYLENE	10	1	10 U	10 U	200 U	10 U	10 U
DILUTION FACTOR.			1	1	20	1	1

ASENO CT0143

EIMIC CORPORATION
OTAL
CRA SOIL METALS (mg/Kg)

STATION ID.
LABORATORY ID

	SOTF4B373234 940996-17	SOTF4B373436 940996-18	SOTF4B37DUP 940996-19	SOTF4B382628 940996-20	SOTF4B463032 940996-09	SOTF4B463840 940996-10
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ANALYTE	CRDL	IDL									
ARSENIC	1	0.2	12.2		12.3		12.9		12.2	10.5	10.8
BARIUM	20	0.1	15.6		7.9		10.3		12.1	2.8	16.1
CADMIUM	0.5	0.3	2.6		2.6		2.7		2.5	2.3	3.2
CHROMIUM	1	0.5	14.1		14.1		15.0		13.7	13.6	15.9
LEAD	0.3	0.1	13.2		9.5		13.3		10.5	7.6	7.1
MERCURY	0.1	0.05	0.09	UJ	0.08	UJ	0.08	UJ	0.09	0.05	0.05
SELENIUM	0.5	0.2	0.16	U	0.15	U	0.18	U	0.16	0.21	0.21
SILVER	1	0.4	0.89	UJ	1.3	U	1.3	U	0.84	1.9	1.8
% SOLIDS			84.4		83.8		84.7		84.6	86	83.7

CASE NO CTO143

CEIMIC CORPORATION
TOTAL
RCRA SOIL METALS (mg/Kg)

STATION ID: LABORATORY ID			SOTF438DUP	SOTF4B383234	SOTF4B423234	SOTF4B423638	SOTF4B453234
			941996-22	941996-21	941996-23	941996-24	941996-25
ANALYTE	CRDL	IDL	FIELD DUPLICATE PAIR				
ARSENIC	1	0.2	14.9	17.8	31.5	11.4	9.0
BARIUM	20	0.3	9.3	12.3	6.0	6.4	14.4
CADMIUM	0.5	0.4	2.8	3.1	4.7	2.8	1.8
CHROMIUM	1	0.7	8.9	8.9	15.9	16.0	11.0
LEAD	0.3	0.1	8.9	7.2	10.6	6.8	8.0
MERCURY	0.1	0.05	0.09 UJ	0.09 UJ	0.08 UJ	0.08 UJ	0.09 UJ
SELENIUM	0.5	0.2	0.15 U	0.19 U	0.19 U	0.19 U	0.18 U
SILVER	1	0.4	1.2 U	1.7 U	2.8 U	1.7 U	0.65 UJ
% SOLIDS			85.1	84.7	84.3	82.9	82

CASE NO CTO143

CEIMIC CORPORATION
TOTAL
RCRA AQUEOUS METALS (ug/L)

STATION ID
LABORATORY ID:

GW-TF4-MW124 GW-TF4-MW125 GW-TF5-MW100 GW-TF5-MW101 GW-TF5-MW103 GW-TF5-DUP2
941038-03 941038-12 941038-14 941038-05 941038-15 941038-13
FIELD DUPLICATE PAIR

ANALYTE	CRDL	IDL							
ARSENIC	10	2	20 U	98 U	96 U	31 UJ	135	144	
BARIUM	200	1	92 U	184 U	119 U	129 U	193 U	203 U	U
CADMIUM	5	3	30 U	30 U	30 U	30 U	30 U	30 U	U
CHROMIUM	10	5	50 U	50 U	50 U	50 U	50 U	50 U	U
LEAD	3	1	16 UJ	1.8 UJ	26 U	10 U	10 U	15 UJ	UJ
MERCURY	0.2	0.1	10 J	0.13 UJ	0.86 J	0.13 UJ	0.14 UJ	0.47 J	J
SELENIUM	5	2	20 U	20 U	20 U	20 U	20 U	20 U	U
SILVER	10	4	4.0 U	40 U	40 U	40 U	40 U	40 U	U

Total Petroleum Hydrocarbons
(Extractables)

EPA Method 8015B
GC/FID Fingerprint

Client: Halliburton NUS

Client Sample ID: SO-TF4-B-38-2628

Laboratory ID: 940996-20

Date Sample Received: 11/15/94

Date Sample Prepared: 11/22/94

Date Sample Analyzed: 12/01/94

Concentration in: mg/kg^T

Target Analyte	Sample Concentration	Method Reporting Limits
Mineral Spirits (Paint Thinner)	ND	.11
JP-4 Jet Fuel	ND	11
Kerosene	ND	11
Jet Fuel A	ND	11
JP-5 Jet Fuel	ND	11
JP-8 Jet Fuel	ND	11
Mineral Oil	ND	11
Naphtha	ND	11
Diesel Fuel	ND	11
Fuel Oil #2	ND	11
Fuel Oil #4	ND	11
Fuel Oil #5	ND	11
Fuel Oil #6	ND	11
Bunker Oil	ND	11
Motor Oil	ND	11
Hydraulic Jack Oil	ND	11
Transmission Fluid	ND	11
Lubricating Oil	ND	11
Compressor Oil	ND	11
Creosote	ND	11
Diesel Range Organics (C10 to C28)	ND	5.7
Residual Range Organics (C28 to C40)	ND	5.7

ND = Not detected

+ = dry weigh basis, solids = 87%

The sample chromatogram was compared to the Target Analytes listed. The reported analyte concentrations are estimated from the most closely matching target analytes.

Reported by: AI

Approved by: HL

335A

Total Petroleum Hydrocarbons
(Extractables)

EPA Method 8015B
GC/FID Fingerprint

Client: Halliburton NUS

Client Sample ID: SO-TF4-38-DUP

Laboratory ID: 940996-22

Date Sample Received: 11/15/94

Date Sample Prepared: 11/22/94

Date Sample Analyzed: 12/01/94

Concentration in: mg/kg⁺

Target Analyte	Sample Concentration	Method Reporting Limits
Mineral Spirits (Paint Thinner)	ND	12
JP-4 Jet Fuel	ND	12
Kerosene	ND	12
Jet Fuel A	ND	12
JP-5 Jet Fuel	ND	12
JP-8 Jet Fuel	ND	12
Mineral Oil	ND	12
Naphtha	ND	12
Diesel Fuel	ND	12
Fuel Oil #2	ND	12
Fuel Oil #4	ND	12
Fuel Oil #5	ND	12
Fuel Oil #6	ND	12
Bunker Oil	ND	12
Motor Oil	ND	12
Hydraulic Jack Oil	ND	12
Transmission Fluid	ND	12
Lubricating Oil	ND	12
Compressor Oil	ND	12
Creosote	ND	12
Diesel Range Organics (C10 to C28)	ND	5.8
Residual Range Organics (C28 to C40)	ND	5.8

ND = Not detected

+ = dry weigh basis, solids = 86%

The sample chromatogram was compared to the Target Analytes listed. The reported analyte concentrations are estimated from the most closely matching target analytes.

Reported by: _____

B

Approved by: _____

HL

**Total Petroleum Hydrocarbons
(Extractables)**

EPA Method 8015B
GC/FID Fingerprint

Client: Halliburton NUS

Client Sample ID: SO-TF4-P1-38-0608

Laboratory ID: 940996-30

Date Sample Received: 11/15/94

Date Sample Prepared: 11/22/94

Date Sample Analyzed: 12/01/94

Concentration in: mg/kg^T

Target Analyte	Sample Concentration	Method Reporting Limits
Mineral Spirits (Paint Thinner)	ND	11
JP-4 Jet Fuel	ND	11
Kerosene	ND	11
Jet Fuel A	ND	11
JP-5 Jet Fuel	ND	11
JP-8 Jet Fuel	ND	11
Mineral Oil	ND	11
Naphtha	ND	11
Diesel Fuel	ND	11
Fuel Oil #2	ND	11
Fuel Oil #4	ND	11
Fuel Oil #5	ND	11
Fuel Oil #6	ND	11
Bunker Oil	ND	11
Motor Oil	ND	11
Hydraulic Jack Oil	ND	11
Transmission Fluid	ND	11
Lubricating Oil	ND	11
Compressor Oil	ND	11
Creosote	ND	11
Diesel Range Organics (C10 to C28)	ND	5.4
Residual Range Organics (C28 to C40)	ND	5.4

ND = Not detected

+ = dry weigh basis, solids = 93%

The sample chromatogram was compared to the Target Analytes listed. The reported analyte concentrations are estimated from the most closely matching target analytes.

Reported by: _____

B

Approved by: _____

HL

APPENDIX I
CHAIN-OF-CUSTODY FORMS



175 Metro Center Boulevard Warwick, Rhode Island 02886-1755
 (401) 732-3400 Fax (401) 732-3499
 1232 East Broadway Road, Suite 210 Tempe, Arizona 85282
 (602) 303-9535 Fax (602) 921-2883

CHAIN-OF-CUSTODY RECORD

Page ___ of ___

REPORT TO							INVOICE TO							LAB REFERENCE #					
COMPANY FOSTER wheeler				PHONE 842-6940			COMPANY FOSTER wheeler				PHONE 842-6940								
NAME MARY Gouveia				FAX 842-6970			NAME				FAX 842-6970								
ADDRESS P.O. Box 4749							ADDRESS P.O. Box 4749							TURNAROUND TIME					
CITY/ST/ZIP MIDDLETOWN RT 02842							CITY/ST/ZIP MIDDLETOWN RT 02842							1 WEEK					
CLIENT PROJECT NAME			CLIENT PROJECT #			CLIENT P O #		REQUESTED ANALYSES							COMMENTS				
TANK FARM # 4			DO # 13F			003195		<i>VOC's</i> <i>SVOC's</i> <i>TPH</i> <i>RCRA 8 METALS</i>											
SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES							COMMENTS			
TPTK 38	7/15/97/1600				x			2	✓	✓	✓	✓							
TPTK 41	7/15/97/1600				x			2	✓	✓	✓	✓							
TK4-T12	/							1	✓										
TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY				DATE/TIME	ADDITIONAL REMARKS:							COOLER TEMP.				
1st	<i>[Signature]</i>	7-15-97	<i>[Signature]</i>				7-15-97/1600												
2nd		/					/												
3rd		/					/												

PROJECT: FOSTER WHEELER ENVIRONMENTAL CORP./ NETC TANK FARM 4						NO. CONTAINERS	ANALYSIS											REMARKS OR SAMPLE LOCATION	PRESERVATION	
SAMPLERS: (Signature)							Volatiles 8260	Semi-Volatiles 8270	PCBs 8080	Priority Pollutant Metals 6010/7000	Ignitability	Reactivity (CN,S)	Corrosivity - pH	TPH (GRO,DRO) 8015	TCLP - Volatiles	TCLP - Metals	T.S.VOC,Pest,Herb P		ICED	SPECIFY CHEMICALS ADDED AND FINAL pH IF KNOWN
SAMPLE NUMBER	MATRIX	DATE	TIME	COMP	GRAB															
TK4-TK40 OIL-1	OIL	7/22	0800	X		1		✓		✓	✓		✓	✓	✓			COMP. MADE OF TANK		
TK4-TK39 OIL-1	OIL	7/22	0845	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK39 SLG-1	Sludge	7/22	0700	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK41 OIL-1	OIL	7/22	0845	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK47 OIL-1	OIL	7/22	1030	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK47 SLG-1	Sludge	7/22	1045	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK46 OIL-1	OIL	7/23	0800	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK46 SLG-1	Sludge	7/23	0830	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK37 OIL-1	OIL	7/23	1440	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK37 SLG-1	Sludge	7/23	1520	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK38 OIL-1	OIL	7/24	0800	X		1		✓		✓	✓		✓	✓	✓					
TK4-TK38 SLG-1	Sludge	7/24	0845	X		1		✓		✓	✓		✓	✓	✓					
Relinquished by: (Signature)		Date/Time		Received by: (Signature)			Relinquished by: (Signature)			Date/Time		Received by: (Signature)								
Relinquished by: (Signature)		Date/Time		Received by: (Signature)			Remarks													
Notes:						TASKS						NETC TANK FARM 4 CHAIN-OF-CUSTODY RECORD								

APPENDIX J
TEST PIT ANALYTICAL RESULTS



Analysis Report: Total Petroleum Hydrocarbons

Client: Foster Wheeler Environmental Corp.
Analysis: Method 418.1
Matrix: Soil
Concentration in: mg/kg, dry weight basis

<u>Lab ID</u>	<u>Client ID</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>% Solid</u>	<u>Analysis Date</u>
D1111-01	TPTK-38	150	23	94	7/21/97
D1111-02	TPTK-41	ND	24	92	7/21/97

QA/QC

Method Blank I0716-B2	ND	22		7/21/97
Lab Control Spike (% Recovery) I0716-LCS2	105			7/21/97



Analysis Report: Semivolatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID: D1111-01
Lab ID: TPTK-38
Analysis: Method 8270

Analysis Date: 7/16/97
Matrix: Soil, 94% solids
Concentration in: ug/kg, dry weight basis
Dilution: 1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Phenol	ND	350
bis(2-Chloroethyl)ether	ND	350
2-Chlorophenol	ND	350
1,3-Dichlorobenzene	ND	350
1,4-Dichlorobenzene	ND	350
1,2-Dichlorobenzene	ND	350
2-Methylphenol	ND	350
2,2'-oxybis(1-Chloropropane)	ND	350
4-Methylphenol	ND	350
n-Nitroso-di-n-propylamine	ND	350
Hexachloroethane	ND	350
Nitrobenzene	ND	350
Isophorone	ND	350
2-Nitrophenol	ND	350
2,4-Dimethylphenol	ND	350
bis(2-Chloroethoxy)methane	ND	350
2,4-Dichlorophenol	ND	350
1,2,4-Trichlorobenzene	ND	350
Naphthalene	ND	350
4-Chloroaniline	ND	350
Hexachlorobutadiene	ND	350
4-Chloro-3-methylphenol	ND	350
2-Methylnaphthalene	ND	350
Hexachlorocyclopentadiene	ND	350
2,4,6-Trichlorophenol	ND	350
2,4,5-Trichlorophenol	ND	890
2-Chloronaphthalene	ND	350
2-Nitroaniline	ND	890
Dimethylphthalate	ND	350
Acenaphthylene	ND	350
2,6-Dinitrotoluene	ND	350
3-Nitroaniline	ND	890
Acenaphthene	ND	350
2,4-Dinitrophenol	ND	890
4-Nitrophenol	ND	890
Dibenzofuran	ND	350
2,4-Dinitrotoluene	ND	350

00

Client ID: D1111-01

Lab ID: TPTK-38

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Diethylphthalate	ND	350
Fluorene	ND	350
4-Chlorophenyl-phenylether	ND	350
4-Nitroaniline	ND	890
4,6-Dinitro-2-methylphenol	ND	890
n-Nitrosodiphenylamine	ND	350
4-Bromophenyl-phenylether	ND	350
Hexachlorobenzene	ND	350
Pentachlorophenol	ND	890
Phenanthrene	47 J	350
Anthracene	ND	350
Di-n-butylphthalate	ND	350
Carbazole	ND	350
Fluoranthene	85 J	350
Pyrene	58 J	350
Butylbenzylphthalate	ND	350
Benzo(a)anthracene	ND	350
Chrysene	ND	350
3,3'-Dichlorobenzidine	ND	350
bis(2-Ethylhexyl)phthalate	ND	350
Di-n-octylphthalate	ND	350
Benzo(b)fluoranthene	ND	350
Benzo(k)fluoranthene	ND	350
Benzo(a)pyrene	ND	350
Indeno(1,2,3-cd)pyrene	ND	350
Dibenz(a,h)anthracene	ND	350
Benzo(g,h,i)perylene	ND	350

QC Batch: S0716-B1

Surrogate Recovery:

2-Fluorophenol	62%
Phenol-d5	62%
2-Chlorophenol-d4	62%
2,4,6-Tribromophenol	77%
1,2-Dichlorobenzene-d4	61%
Nitrobenzene-d5	67%
2-Fluorobiphenyl	72%
p-Terphenyl-d14	67%

ND = Not detected

005



Analysis Report: Volatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID: D1111-01
Lab ID: TPTK-38
Analysis: Method 8260

Analysis Date: 7/16/97
Matrix: Soil, 94% solids
Concentration in: ug/kg, dry weight basis
Dilution: 1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
Carbon disulfide	ND	5
Iodomethane	ND	5
Acetone	7	5
Methylene chloride	ND	5
trans-1,2-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
Vinyl acetate	ND	5
2,2-Dichloropropane	ND	5
cis-1,2-Dichloroethene	ND	5
Methyl ethyl ketone	ND	5
Bromochloromethane	ND	5
Chloroform	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
1,1-Dichloropropene	ND	5
Benzene	ND	5
1,2-Dichloroethane	ND	5
Trichloroethene	ND	5
1,2-Dichloropropane	ND	5
Dibromomethane	ND	5
Bromodichloromethane	ND	5
2-Chloroethyl vinyl ether	ND	5
cis-1,3-Dichloropropene	ND	5
4-Methyl-2-pentanone	ND	5
Toluene	ND	5



Client ID: D1111-01

Lab ID: TPTK-38

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
trans-1,3-Dichloropropene	ND	5
1,1,2-Trichloroethane	ND	5
Tetrachloroethene	ND	5
1,3-Dichloropropane	ND	5
2-Hexanone	ND	5
Dibromochloromethane	ND	5
1,2-Dibromoethane (EDB)	ND	5
Chlorobenzene	ND	5
1,1,1,2-Tetrachloroethane	ND	5
Ethylbenzene	ND	5
Xylenes, total	ND	5
Styrene	ND	5
Bromoform	ND	5
Isopropylbenzene	ND	5
Bromobenzene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
1,2,3-Trichloropropane	ND	5
n-Propylbenzene	ND	5
2-Chlorotoluene	ND	5
4-Chlorotoluene	ND	5
1,3,5-Trimethylbenzene	ND	5
tert-Butylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	5
sec-Butylbenzene	ND	5
1,3-Dichlorobenzene	ND	5
4-Isopropyltoluene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
n-Butylbenzene	ND	5
1,2-Dibromo-3-chloropropane	ND	5
1,2,4-Trichlorobenzene	ND	5
Hexachlorobutadiene	ND	5
1,2,3-Trichlorobenzene	ND	5
MTBE	ND	5
Naphthalene	ND	5

Surrogate Recovery:
 1,2-Dichloroethane-d4
 Toluene-d8
 Bromofluorobenzene

99%
 96%
 85%

QC Batch: V2B0716A

ND = Not detected



Analysis Report: Total Metals

Client: Foster Wheeler Environmental Corp.
Client ID: TPTK-38
Lab ID: D1111-01
Analysis Method: 7471A (Mercury)
6010A (Others)

Matrix: Soil, 94% Solids
Concentration In: mg/kg, dry weight basis
Analysis Date: 7/18/97

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limit</u>
Arsenic	10	1
Barium	18	1
Cadmium	0.6	0.1
Chromium	16	1
Lead	13	1
Mercury	ND	0.3
Selenium	ND	2
Silver	ND	1

QC Batch: 0717PBS1

ND = Not detected



Analysis Report: Semivolatil Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID:
Lab ID: Method Blank, S0716-B1
Analysis: Method 8270

Analysis Date: 7/22/97
Matrix: Soil
Concentration in: ug/kg
Dilution: 10

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
2,2'-oxybis(1-Chloropropane)	ND	330
4-Methylphenol	ND	330
n-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	330
2,4-Dimethylphenol	ND	330
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	830
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	830
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	830
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	830
4-Nitrophenol	ND	830
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330

008



Client ID:

Lab ID: Method Blank, S0716-B1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Diethylphthalate	ND	330
Fluorene	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	830
4,6-Dinitro-2-methylphenol	ND	830
n-Nitrosodiphenylamine	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	830
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Carbazole	ND	330
Fluoranthene	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
Benzo(a)anthracene	ND	330
Chrysene	ND	330
3,3'-Dichlorobenzidine	ND	330
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(k)fluoranthene	ND	330
Benzo(a)pyrene	ND	330
Indeno(1,2,3-cd)pyrene	ND	330
Dibenz(a,h)anthracene	ND	330
Benzo(g,h,i)perylene	ND	330

QC Batch: S0716-B1

Surrogate Recovery:

2-Fluorophenol	64%
Phenol-d5	72%
2-Chlorophenol-d4	64%
2,4,6-Tribromophenol	72%
1,2-Dichlorobenzene-d4	71%
Nitrobenzene-d5	76%
2-Fluorobiphenyl	76%
p-Terphenyl-d14	76%

ND = Not detected

009



Analysis Report: Semivolatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Lab ID: S0716-L1
Analysis: Method 8270

Matrix: Solid
Analysis Date: 7/22/97

<u>Analyte</u>	<u>% Recovery</u>
Phenol	72
2-Chlorophenol	59
1,4-Dichlorobenzene	68
n-Nitroso-di-n-propylamine	73
1,2,4-Trichlorobenzene	89
4-Chloro-3-methylphenol	89
Acenaphthene	72
4-Nitrophenol	76
2,4-Dinitrotoluene	78
Pentachlorophenol	70
Pyrene	71

QC Batch: S0716-B1

010



Analysis Report: Volatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID: D1111-03
Lab ID: TK4-TBS
Analysis: Method 8260

Analysis Date: 7/16/97
Matrix: Aqueous
Concentration in: ug/L
Dilution: 1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
Carbon disulfide	ND	5
Iodomethane	ND	5
Acetone	ND	5
Methylene chloride	ND	5
trans-1,2-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
Vinyl acetate	ND	5
2,2-Dichloropropane	ND	5
cis-1,2-Dichloroethene	ND	5
Methyl ethyl ketone	ND	5
Bromochloromethane	ND	5
Chloroform	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
1,1-Dichloropropene	ND	5
Benzene	ND	5
1,2-Dichloroethane	ND	5
Trichloroethene	ND	5
1,2-Dichloropropane	ND	5
Dibromomethane	ND	5
Bromodichloromethane	ND	5
2-Chloroethyl vinyl ether	ND	5
cis-1,3-Dichloropropene	ND	5
4-Methyl-2-pentanone	ND	5
Toluene	ND	5



Client ID: D1111-03

Lab ID: TK4-TBS

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
trans-1,3-Dichloropropene	ND	5
1,1,2-Trichloroethane	ND	5
Tetrachloroethene	ND	5
1,3-Dichloropropane	ND	5
2-Hexanone	ND	5
Dibromochloromethane	ND	5
1,2-Dibromoethane (EDB)	ND	5
Chlorobenzene	ND	5
1,1,1,2-Tetrachloroethane	ND	5
Ethylbenzene	ND	5
Xylenes, total	ND	5
Styrene	ND	5
Bromoform	ND	5
Isopropylbenzene	ND	5
Bromobenzene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
1,2,3-Trichloropropane	ND	5
n-Propylbenzene	ND	5
2-Chlorotoluene	ND	5
4-Chlorotoluene	ND	5
1,3,5-Trimethylbenzene	ND	5
tert-Butylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	5
sec-Butylbenzene	ND	5
1,3-Dichlorobenzene	ND	5
4-Isopropyltoluene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
n-Butylbenzene	ND	5
1,2-Dibromo-3-chloropropane	ND	5
1,2,4-Trichlorobenzene	ND	5
Hexachlorobutadiene	ND	5
1,2,3-Trichlorobenzene	ND	5
MTBE	ND	5
Naphthalene	ND	5

Surrogate Recovery:

1,2-Dichloroethane-d4	114%
Toluene-d8	109%
Bromofluorobenzene	102%

QC Batch: V2B0716A

ND = Not detected



Analysis Report: Volatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID:
Lab ID: Method Blank, V1B0716A
Analysis: Method 8260

Analysis Date: 7/16/97
Matrix: Aqueous
Concentration in: ug/L
Dilution: 1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
Carbon disulfide	ND	5
Iodomethane	ND	5
Acetone	ND	5
Methylene chloride	ND	5
trans-1,2-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
Vinyl acetate	ND	5
2,2-Dichloropropane	ND	5
cis-1,2-Dichloroethene	ND	5
Methyl ethyl ketone	ND	5
Bromochloromethane	ND	5
Chloroform	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
1,1-Dichloropropene	ND	5
Benzene	ND	5
1,2-Dichloroethane	ND	5
Trichloroethene	ND	5
1,2-Dichloropropane	ND	5
Dibromomethane	ND	5
Bromodichloromethane	ND	5
2-Chloroethyl vinyl ether	ND	5
cis-1,3-Dichloropropene	ND	5
4-Methyl-2-pentanone	ND	5
Toluene	ND	5



Client ID:

Lab ID: Method Blank, V1B0716A

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
trans-1,3-Dichloropropene	ND	5
1,1,2-Trichloroethane	ND	5
Tetrachloroethene	ND	5
1,3-Dichloropropane	ND	5
2-Hexanone	ND	5
Dibromochloromethane	ND	5
1,2-Dibromoethane (EDB)	ND	5
Chlorobenzene	ND	5
1,1,1,2-Tetrachloroethane	ND	5
Ethylbenzene	ND	5
Xylenes, total	ND	5
Styrene	ND	5
Bromoform	ND	5
Isopropylbenzene	ND	5
Bromobenzene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
1,2,3-Trichloropropane	ND	5
n-Propylbenzene	ND	5
2-Chlorotoluene	ND	5
4-Chlorotoluene	ND	5
1,3,5-Trimethylbenzene	ND	5
tert-Butylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	5
sec-Butylbenzene	ND	5
1,3-Dichlorobenzene	ND	5
4-Isopropyltoluene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
n-Butylbenzene	ND	5
1,2-Dibromo-3-chloropropane	ND	5
1,2,4-Trichlorobenzene	ND	5
Hexachlorobutadiene	ND	5
1,2,3-Trichlorobenzene	ND	5
MTBE	ND	5
Naphthalene	ND	5
Surrogate Recovery:		QC Batch: V2B0716A
1,2-Dichloroethane-d4	111%	
Toluene-d8	107%	
Bromofluorobenzene	107%	

ND = Not detected



Analysis Report: Volatile Organic Compounds

Client: Foster Wheeler Environmental Corp.
Client ID:
Lab ID: Method Blank, V2B0716A
Analysis: Method 8260

Analysis Date: 7/16/97
Matrix: Soil
Concentration in: ug/kg, dry weight basis
Dilution: 1

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
Dichlorodifluoromethane	ND	5
Chloromethane	ND	5
Vinyl chloride	ND	5
Bromomethane	ND	5
Chloroethane	ND	5
Trichlorofluoromethane	ND	5
1,1-Dichloroethene	ND	5
Carbon disulfide	ND	5
Iodomethane	ND	5
Acetone	ND	5
Methylene chloride	ND	5
trans-1,2-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
Vinyl acetate	ND	5
2,2-Dichloropropane	ND	5
cis-1,2-Dichloroethene	ND	5
Methyl ethyl ketone	ND	5
Bromochloromethane	ND	5
Chloroform	ND	5
1,1,1-Trichloroethane	ND	5
Carbon tetrachloride	ND	5
1,1-Dichloropropene	ND	5
Benzene	ND	5
1,2-Dichloroethane	ND	5
Trichloroethene	ND	5
1,2-Dichloropropane	ND	5
Dibromomethane	ND	5
Bromodichloromethane	ND	5
2-Chloroethyl vinyl ether	ND	5
cis-1,3-Dichloropropene	ND	5
4-Methyl-2-pentanone	ND	5
Toluene	ND	5

Client ID:

Lab ID: Method Blank, V2B0716A

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limits</u>
trans-1,3-Dichloropropene	ND	5
1,1,2-Trichloroethane	ND	5
Tetrachloroethene	ND	5
1,3-Dichloropropane	ND	5
2-Hexanone	ND	5
Dibromochloromethane	ND	5
1,2-Dibromoethane (EDB)	ND	5
Chlorobenzene	ND	5
1,1,1,2-Tetrachloroethane	ND	5
Ethylbenzene	ND	5
Xylenes, total	ND	5
Styrene	ND	5
Bromoform	ND	5
Isopropylbenzene	ND	5
Bromobenzene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
1,2,3-Trichloropropane	ND	5
n-Propylbenzene	ND	5
2-Chlorotoluene	ND	5
4-Chlorotoluene	ND	5
1,3,5-Trimethylbenzene	ND	5
tert-Butylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	5
sec-Butylbenzene	ND	5
1,3-Dichlorobenzene	ND	5
4-Isopropyltoluene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
n-Butylbenzene	ND	5
1,2-Dibromo-3-chloropropane	ND	5
1,2,4-Trichlorobenzene	ND	5
Hexachlorobutadiene	ND	5
1,2,3-Trichlorobenzene	ND	5
MTBE	ND	5
Naphthalene	ND	5

Surrogate Recovery:

1,2-Dichloroethane-d4	97%
Toluene-d8	100%
Bromofluorobenzene	98%

QC Batch: V2B0716A

ND = Not detected



Analysis Report: Total Metals

Client: Foster Wheeler Environmental Corp.

Client ID:

Lab ID: Prep Blank, 0717PBS1

Analysis Method: 7471A (Mercury)
6010A (Others)

Concentration in: mg/kg

Analysis Date: 7/18/97

<u>Analyte</u>	<u>Results</u>	<u>Reporting Limit</u>
Arsenic	ND	1
Barium	ND	1
Cadmium	ND	0.1
Chromium	ND	1
Lead	ND	1
Mercury	ND	0.3
Selenium	ND	2
Silver	ND	1

QC Batch: 0717PBS1

ND = Not detected



Analysis Report: Total Metals

Client: Foster Wheeler Environmental Corp.

Client ID:

Matrix: Soil

Lab ID: Lab Control Sample, 0717LCSS1

Analysis Method: 7471A (Mercury)
6010A (Others)

Analysis Date: 7/18/97

<u>Analyte</u>	<u>% Recovery</u>
Arsenic	93
Barium	99
Cadmium	89
Chromium	101
Lead	87
Mercury	73
Selenium	79
Silver	100

QC Batch: 0717PBS1

MITKEM CORPORATION

Lab Project #: D1111
 Client Name: Foster Wheeler
 Client Proj #: DO# 13F
 Client PO #: 003195
 Project Name: Tank Farm #4
 Date Due: 7/22/97
 Total Price: \$
 Project Mgr: EL
 Salesman: PAS
 Del Req'd: NA
 Completed?: YES

Logged In By: MAM

Reviewed By: _____

Date: 7-16-97 Time: 8:41

<u>Lab ID</u>	<u>Client ID</u>	<u>Matrix</u>	<u>Analysis</u>	<u>Price</u>	<u>Sampled</u>	<u>Received</u>	<u>TPH</u>	<u>IR</u>	<u>BNA</u>	<u>Herb</u>	<u>P/P</u>	<u>Wet</u>	<u>Met</u>	<u>V-GC</u>	<u>V-MS</u>	<u>Sub</u>
-01	TPTK-38	SL	RCRA 8 SVOC 8270 TPH 418.1 VOC 8260		7/15/97	7/15/97							1			
-02	TPTK-41	SL	RCRA 8 SVOC 8270 TPH 418.1 VOC 8260		7/15/97	7/15/97							1			
-03	TK4-TBS	AQ	VOC 8260													1

<u>TPH</u>	<u>IR</u>	<u>BNA</u>	<u>Herb</u>	<u>P/P</u>	<u>Wet</u>	<u>Met</u>	<u>V-GC</u>	<u>V-MS</u>	<u>Sub</u>
0	2	2	0	0	0	2	0	3	0

ORIGINAL REPORT GOES TO:

Foster Wheeler Environmental Corp.
 P.O. Box 4749
 Middletown, R.I. 02842

Attn: Mark Gouveia
 Phone: 401 842-6940
 Fax: 401 842-6970

INVOICE GOES TO:

Same

Last Page of Data Report

TANK NO 38			
SUBSTANCE	RESIDENTIAL	GA	FIELD ANALYTICAL
	(mg/kg)	Leachability	DETECTIONS
		(mg/kg except as	(mg/kg except as
		other wise noted)	otherwise noted)
<u>VOLATILE ORGANICS</u>			
Acetone	7,800		7 (PPB)
Benzene	2.5	0.2	
Bromodichloromethane	10		
Bromoform	81		
Bromomethane	0.8		
Carbon tetrachloride	1.5	0.4	
Chlorobenzene	210	3.2	
Chloroform	1.2		
Dibromochloromethane	7.6		
Dibromochloropropane (DBCP)	0.5		
Dichloroethane (1,1-)	920		
Dichloroethane (1,2-)	0.9	0.1	
Dichchloroethylene (1,1-)		0.7	
Dichloroethene (1,1-)	0.2		
Dichloroethylene (cis-1,2,-)		1.7	
Dichloroethene (cis-1,2,-)	630		
Dichloroethylene (trans-1,2,-)		3.3	
Dichloroethene (trans-1,2,-)	1,100		
Dichloropropane (1,2)	1.9	0.1	
Ethyl benzene	71	27	
Ethylene dibromode (EDB)	0.01	5.00E-04	
Isopropyl benzene	27		
Methyl ethyl ketone	10,000		
Methyl isobutyl ketone	1200		
Methyl-tert-butyl-ether	390	0.9	
Methylene chloride	45		
Styrene	13	2.9	
Tetrachloroethane,1,1,1,2	2.2		
Tetrachloroethane,1,1,2,2	1.3		
Tetrachloroethylene	12	0.1	
Toluene	190	32	
Trichloroethane,1,1,1-	540	11	
Trichloroethane,1,1,2-	3.6	0.1	
Trichloroethylene	13	0.2	
Vinyl chloride	0.02	0.3	
Xylenes		540	
Xylenes (total)	110		
<u>SEMIVOLATILES</u>			
Acenaphthene	43		
Acenaphthylene	23		
Anthracene	35		
Benzo(a)anthracene	0.9		

Benzo(a)pyrene	0.4	240	
Benzo(b)fluoranthene	0.9		
Benzo(g,h,i)perylene	0.8		
Benzo(k)fluoranthene	0.9		
Biphenyl, 1,1-	0.8		
Bis(2-ethylhexyl)phthalate	46		
Bis(2-chloroethyl)ether	0.6		
Bis(2-chloroisopropyl)ether	9.1		
Chloroaniline, 4- (p-)	310		
Chlorophenol, 2-	50		
Chrysene	0.4		
Dibenzo(a,h)anthracene	0.4		
Dichlorobenzene (all isomers)			
Dichlorobenzene, 1,2- (o-DCB)	510	41	
Dichlorobenzene, 1,2- (o-DCB)	430		
Dichlorobenzene, 1,4- (p-DCB)	27		
Dichlorobenzidine, 3,3-	1.4		
Dichlorophenol, 2,4-	30		
Diethylhexyl phthalate			
Diethyl phthalate	340	120	
Dimethyl phenol, 2,4-	1,400		
Dimethyl phthalate	1,900		
Dinitrophenol, 2,4-	160		
Dinitrotoluene, 2,4-	0.9		
Fluoranthene	20		85 (PPB)
Fluorene	28		
Hexachlorobenzene	0.4		
Hexachlorobutadiene	8.2		
Hexachloroethane	46		
Ideno(1,2,3-cd)pyrene	0.9		
Methyl naphthalene, 2-	123		
Naphthalene	54		
Pentachlorophenol	5.3	0.8	
Phenanthrene	40	7.1	47 (PPB)
Phenol	6,000		
Pyrene	13		58 (PPB)
Trichlorobenzene, 1,2,4-	96		
Trichlorophenol, 2,4,5-	330	140	
Trichlorophenol, 2,4,6-	58		
PESTICIDES/PCBs			
Chlorodane	0.5		
Dieldrin	0.04	1.4	
Polychlorinated biphenyls (PCBs)	10		
INORGANICS		10	
Antimony	10		
Arsenic	1.7	0.05	10
Barium	5,500		18
Beryllium	0.40	23	
Cadmium	39	0.03	0.6

Chromium		0.03	
Chromium III (Trivalent)	1,400	1.1	
Chromium VI (Hexavalent)	390		16
Copper	3,100		
Cyanide	200		
Lead	150	2.4	13
Manganese	390	0.04	
Mercury	23		
Nickel	1,000	0.02	
Selenium	390	1	
Silver	200	0.6	
Thallium	5.5		
Vanadium	550	0.005	
Zinc	6,000		
TPH	500	500	

**APPENDIX K
BLAST REPORT**



INDUSTRIAL EXPLOSIVES • WATER BLASTING • VACUUM TRUCK SERVICES

BLAST REPORT

DATE: 1/21/98 BLAST TIME: 13:15

CUSTOMER: FOSTER WHEELER ENV CORP. JOB # 9800-005

PROJECT LOCATION: TANK FARM #4-4000 Defense Hwy, Port Jervis NY

SPECIFIC BLAST LOCATION: TANK # 38

BLASTER: JIM McALINDEN BLASTERS LIC # 37-36

TYPE OF PROJECT: TANK DEMOLITION

TYPE OF MATERIAL BLASTED: CONCRETE

WEATHER INFO: SKY Clear TEMP 38 WIND SP & DIR ???

DRILL HOLE INFO HOLE SIZE: 1 3/8" NO. HOLES 328 NO. ROWS 6

DEPTH RANGE: 15" FT TO 18" FT.

SUB DRILL 0 FT. BURDEN 1 FT SPACING 1.5 FT

DISTANCE TO NEAREST STRUCTURE: 500"

EXPLOSIVE INFO: TOTAL OF EXPLOSIVES USED 238 LBS

BRAND AND TYPE ICE POWER DITCH

MIN. LBS/HOLE .5 MAX LBS/HOLE .75

MAX LBS/DELAY 15 DECK SOLID STEMMIN 5

INITIATION: BRAND/TYPE ICE MASTER DETS NO. CAPS USED 328

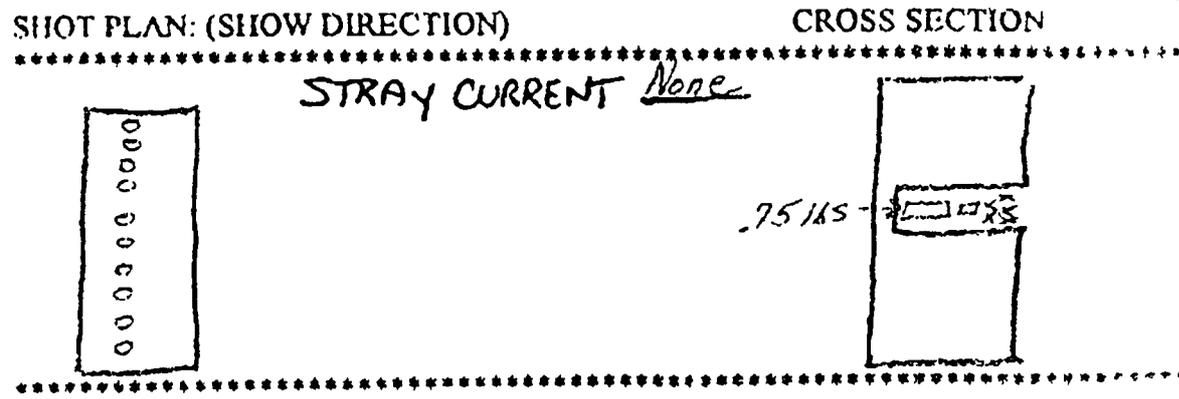
NO. DELAY USED 16 DELAY INTERVALS 25 MS

TOTAL TIME FOR INITIATION 400 MS.

PRIMACORD CONTROL: NO. OF FT. 100 SHOT LINE: 0 FT

QUANTITY DISTANCE DS. SEISMIC FT

MATS USED? NO, BACKFILL



EXPLOSIVE LOAD LIST NORTHAMERICAN INDUSTRIAL SERVICES

DATE 1-21-98 LOCATION Rhode Island JOB# 05

EXPLOSIVES

TYPE	LOT NUMBER	QTY OUT	QTY IN	QTY USED
<i>Conex 2500</i>	131216	584 CF	484 CF	100 CF
<i>Ditch 100</i>	15 OC 97J1-9137	302	64	238

DETONATORS

TYPE	LOT NUMBER	QTY OUT	QTY IN	QTY USED
<i>ELC 0612</i>	01 AV 97R2	8	4	4
1	08 OC 97R2	60	40	20
2	03 OC 97R2	60	40	20
3	10 OC 97R2	60	40	20
4	09 SE 97R2	60	40	20
5	16 SE 97R2	60	40	20
6	09 SE 97R2	60	40	20
7	03 OC 97R2	60	40	20
8	10 SE 97R2	60	40	20
9	05 AV 97R2	60	40	20
10	07 OC 97R2	60	40	20
11	01 OC 97R2	60	40	20
12	15 SE 97R2	60	40	20
13	17 NO 97R2	50	30	20
14	13 OC 97R2	60	40	20
15	18 NO 97R2	50	30	20
16	18 NO 97R2	50	30	20



INDUSTRIAL EXPLOSIVES • WATER BLASTING • VACUUM TRUCK SERVICES

N.A.I.S.

Shipping Papers

Date 1-21-98

Drivers Name Frank Tward

Drivers Signature Frank Tward

Destination: Foster Wheeler
4000 T Defense Highway
Portsmouth R.I.

From: North American Industrial Service
1240 Saratoga Rd
Dalton, N.Y.

Route to job site: NY 50 - NY 67 - NY 87 - NY 7 - NY 787 - NY 90 MASS 91
MASS 495 - MASS 24 - RI 24

No. of boxes	HM	Description of articles and exceptions	Hazard Class	I.D. Number	Group Packing	Weight	Class or Rate	Labels Required (or exemption)	Check column
33	✓	Rotating Exhaust	1.4B	0255	11	55	A	yes 172.63 1-4	✓
1	✓	Load Rotating	1.4D	0289	11	8	A	yes 172.63 1-4	✓
6	✓	Ditch 1000	1.10	0081	11	302	A	yes 172.63 1-4	✓

This is to certify that the above-named materials are properly classified, described, packed, marked and labeled / placarded and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per Frank Tward Placards Required yes Placards supplied YES NO

Drivers Signature Frank Tward

EMERGENCY RESPONSE TELEPHONE NUMBER (800) 424-9300



INDUSTRIAL EXPLOSIVES • WATER BLASTING • VACUUM TRUCK SERVICES

N.A.I.S.
Shipping Papers

Date 1-21-98

Drivers Name Frank Towner

Drivers Signature Frank Towner

Destination: North American Industrial Services From: Foster Wheeler
1240 Saratoga Rd. 4000 T. Defense Highway
Ballston Spa N.Y. Roanoke VA

Route to job site: Rt 24 - Mass 24 - Mass 493 - Mass 90 - NY 90 - NY 78?
NY 7 - NY 87 - NY 67 - NY 50

No of boxes	HM	Description of articles and exceptions	Hazard Class	I.D. Number	Group Packing	Weight	Class or Rate	Labels Required (or exemption)	Check column
33	✓	Detonators Electric	1.4B	0255	11	37	A	173.63 1-4 ^{yes}	✓
1	✓	Cord Detonators	1.4d	0289	11	6	A	173.63 1-4 ^{yes}	✓
2	✓	Ditch 1000	1.10	0081	11	64	A	173.63 1-4 ^{yes}	✓

This is to certify that the above-named materials are properly classified, described, packed, marked and labeled / placarded and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per Frank Towner Placards Required yes Placards supplied YES NO

Drivers Signature Frank Towner

EMERGENCY RESPONSE TELEPHONE NUMBER (800) 424-9300