United States Army

Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 166
Main Post

NJDEP UST Registration No. 090017-17 NJDEP Closure Approval Letter Dated June 7, 1994

May 2000

UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 166

MAIN POST
NJDEP UST REGISTRATION NO. 090017-17
NJDEP CLOSURE APPROVAL LETTER
DATED JUNE 7, 1994

MAY 2000

PROJECT NO.: 09-5004-12 CONTRACT NO.: DACA51-94-D-0014

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

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166.DOC

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EXECUTIVE SUMMARY

On June 16, 1994, a fiberglass underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval letter dated June 7, 1994, at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 090017-17, was located immediately adjacent to Building 166 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 090017-17 was a 4,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The tank closure was performed by Cleaning Up the Environment Inc. (CUTE Inc.).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST, however, evidence of potentially contaminated soils was observed surrounding the tank. Based on an inspection of the UST, and field screening of subsurface soils, the Directorate of Public Works (DPW) concluded that an historical discharge was associated with the UST. On June 16, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 090017-17 and was assigned Spill Case No. 94-6-16-1545-09.

On June 16, 1994, following the removal of the UST, approximately 24 cubic yards of potentially contaminated soil were removed from the excavation. All post-excavation soil samples collected, on June 16, 1994, from the UST excavation and from below piping associated with the former UST at Building 166 contained total petroleum hydrocarbons (TPHC) concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). The samples contained TPHC concentrations ranging from non-detectable to 786.0 mg/kg. Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill.

In response to the observation of potentially contaminated soil near the shallow water table, one shallow overburden monitoring well (MW-1) was installed at the Building 166 area on September 14, 1994. On May 18, 1995 and June 13, 1995, MW-1 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identifies compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). Groundwater analytical results were either below the detection limit or in compliance with the New Jersey Groundwater Criteria (GWQC). No product or sheen was observed in MW-1 on either of the sampling dates.

No further action is proposed in regard to the closure and site assessment of UST No. 090017-17 at Building 166.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 090017-17, was closed at Building 166 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on June 16, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on May 25, 1994, and approved on June 7, 1994. The UST was a fiberglass 4,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 090017-17 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted on site for inspection. CUTE, Inc., the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 090017-17 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 090017-17 are included in Appendices A and B, respectively.

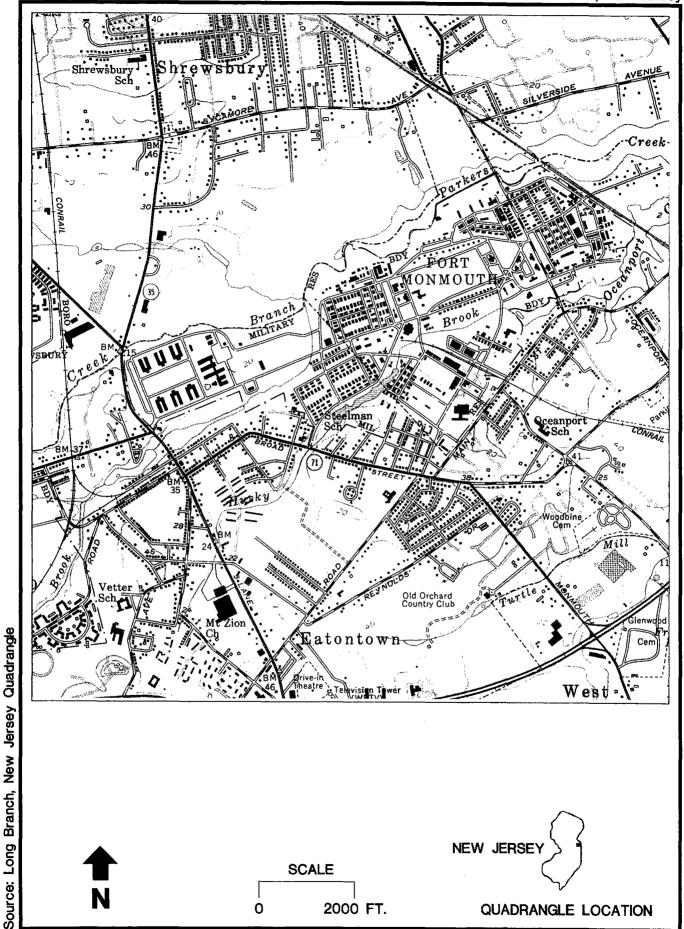
Based on an inspection of the UST, field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that a significant historical discharge was associated with this UST or more probable with a former UST. On June 16, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 090017-17 and was assigned Spill Case No. 94-6-16-1545-09.

This UST Closure and Site Investigation Report has been prepared by Smith Technology Corporation, to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. September 1990 and revisions dated November 1, 1991).

This report was prepared using information required at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in the final section of this report.



U.S. Army
Department of Public Works
Fort Monmouth, New Jersey



Project No. 09-5004-14

Figure 1
Site Location Map

1.2 SITE DESCRIPTION

Building 166 is located in the northeastern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 090017-17 was located west of Building 166 and appurtenant piping ran less than 10 feet east from the excavation to Building 166. The fill port area was located directly above the tank. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 166. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

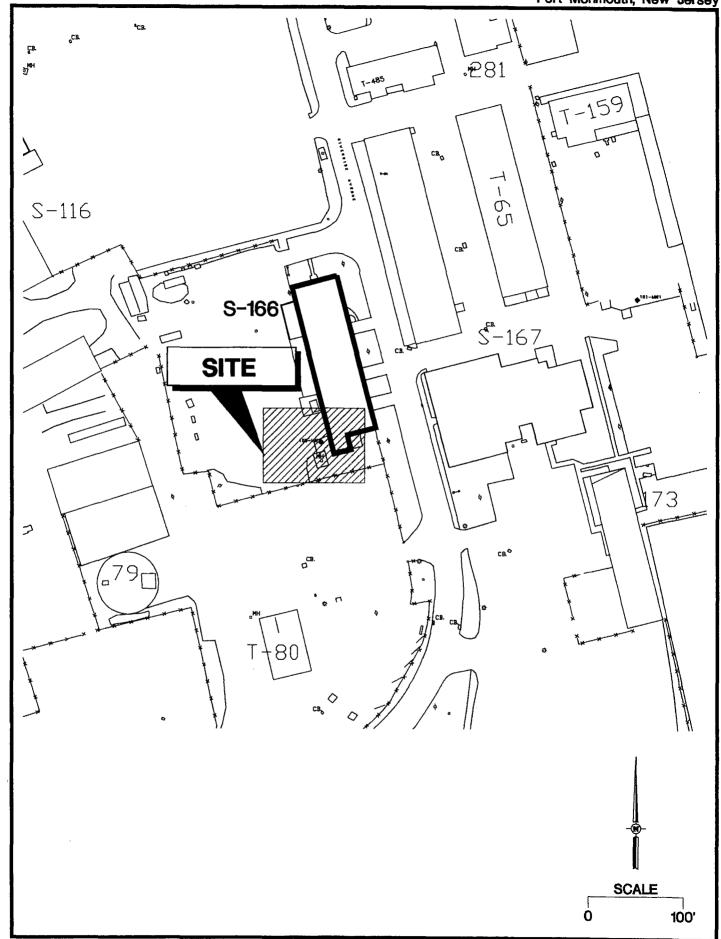
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-

U.S. Army Department of Public Works Fort Monmouth, New Jersey



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Figure 2 **Building 166**

coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore the direction of shallow groundwater should be determined on a case by case basis.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST and all associated piping were removed. Approximately 3,348 gallons of liquid were removed from the UST prior to removal from the ground, and approximately 1,738 gallons were removed from the UST four days after the UST was removed from the excavation. A total of 5,086 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifests (NJA-1603243 and NJA-1603186).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. Evidence of contamination was observed.

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The fiberglass tank was transported by CUTE, Inc. to Fort Monmouth Reclamation Center for disposal in compliance with all applicable regulations and laws. See Appendix D for UST Disposal Certificate.

The removal contractor labeled the UST prior to transport with the following information:

- site of origin
- contact person
- NJDEP UST Facility ID number
- name of transporter/contact person
- destination site/contact person

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, approximately 24 cubic yards of potentially contaminated soils were excavated from the UST excavation. Potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to a designated site on Main Post for storage prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with he NJDEP-BUST document Interim Closure Requirements for Underground Storage Tank Systems (September 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Investigation Activities.

• Closure Contractor: Cleaning Up the Environment Inc. (CUTE)

Closure Supervisor: John Lonergan Phone Number: (201)427-2881

NJDEP Company Certification No. 200128 NJDEP UST Closure Certification No.: 3248

 Subsurface Evaluator: Dinkerrai M. Desai Employer: U.S. Army, Fort Monmouth

Phone Number: (908) 532-1475 NJDEP Certification No.: E0002266

Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory

Contact Person: Brian K. McKee Phone Number: (908)532-4359 NJDEP Certification No.: 13461

Hazardous Waste Hauler: Freehold Cartage Inc.

Contact Person: Barry Olsen Phone Number: (908)721-0900

NJDEP Hazardous Waste Hauler No.: 2265

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Additional soils were removed

from the excavation surrounding UST No. 090017-17 until no evidence of contamination remained.

2.3 SOIL SAMPLING

On June 16, 1994, post-excavation soil samples A, DUP A, B, C, D, E, F, G, and H were collected from a total of eight (8) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 7.5 feet below ground surface (bgs). Groundwater was present at approximately 8.0 feet bgs.

Following removal of the UST fuel lines, sample J was collected along the former piping length of the excavation, which ran less than 10 feet in length. The piping sample was collected at a depth of at 2.0 feet bgs. All soil samples were analyzed for total petroleum hydrocarbons (TPHC).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 1,472.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

2.4 GROUNDWATER SAMPLING

2.4.1 Monitoring Well Installation

In response to the observation of potentially contaminated soil near the shallow water table, one shallow monitoring well (MW-1) was installed at the Building 166 area on September 14, 1994. It was installed approximately 12 feet southwest of Building 166 in the downgradient direction. It was screened in the 2 to 10 feet depth interval, across the water table, which is approximately 3.0 feet below ground surface.

The well was constructed in accordance with the NJDEP's well construction protocols outlined in its May 1992 *Field Sampling Procedures Manual*. The NJDEP well drilling permit and a well construction log is presented in Appendix F.

The well was constructed with 4-inch (ID) PVC riser and 0.020 slotted PVC well screen. A silica sand pack was installed in the annulus between the borehole wall and the screen. The

TABLE 1
SUMMARY OF SAMPLING ACTIVITIES
BUILDING 166, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
В	6/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
С	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
D	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
E	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
F	6/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
G	6/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
Н	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
DUP A	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
J	6/16/94	Soil	Post-Excavation	ТРНС	Polystyrene Scoop
MW-1	5/18/95	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Fill Bailer
MW-1	6/13/95	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Fill Bailer

*Note:

TPHC:

Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)

VOCs:

Volatile Organic Compounds calibrated for xylene plus 10 tentativley identified compounds (Method 524.2 / aqueous)

SVOCs:

Semivolatile Organic Compounds plus 15 tentatively identified compounds (Method 625 / aqueous)

Source:

Smith Technology Corporation (Smith Project No. 09-5004-12)

GWT166.XLS

sandpack was extended approximately one foot above the top of the screen. The sand pack above the well screen was graded down to a fine sand to minimize grout intrusion.

The borehole was tremie-grouted with bentonite-cement grout from the top of the sand pack to 0.5 inches bgs. The well was secured with a water-tight, flush-mounted locking road box. The road box was set in place with concrete, which was placed in the remaining open borehole. The elevation of the well riser was surveyed to the nearest 0.01 feet by a New Jersey-licensed surveyor. The well permit number was marked on the well casing as required.

The monitoring well was developed using a peristaltic surface pump. The well was pumped for 1 hour or until silt free. All residual soils and liquids generated during monitoring well installation and development program were collected in New Jersey Department of Transportation-approved 55-gallon drums. The drums were placed in a designated secure location for waste characterization and off-site disposal.

2.4.2 Monitoring Well Sampling

On May 18, 1995 and June 13, 1995, MW-1 was sampled for VOCs and SVOCs. Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements for Site Remediation*.

Prior to sampling, the water level was measured to the nearest 0.01 feet, and the distance to the bottom of the well was to be measured to the nearest 0.1 feet. The well was checked for floating product (light non-aqueous phase liquids). The well was purged of three to five well volumes of standing water. Sample volume was then collected using a dedicated decontaminated Teflon bottom-filled bailer attached to PTFE (Teflon)-coated stainless steel cable.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of nine (9) locations on June 16, 1994. All samples were analyzed for TPHC. The post-excavation soil sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on June 16, 1994 from the UST excavation and from below piping associated with the UST, contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation soil samples A, DUP A, B, C, D, E, F, H, and J, contained TPHC concentrations ranging from 13.1 mg/kg to 786.0 mg/kg. Sample G contained a non-detectable concentration of TPHC.

3.2 GROUNDWATER SAMPLING RESULTS

All VOC and SVOC results were either below the detection limit or in compliance with the New Jersey Groundwater Quality Criteria (GWQC).

The sample collected on May 18, 1995 from MW-1 contained methylene chloride at a concentration of 1.8 ug/l, and di-n-butylphthalate at 64 ug/l. No other compounds were detected. The trip blank contained methylene chloride at 5.1 ug/l. The field blank contained di-n-butylphthalate at 55 ug/l, and methylene chloride at 5.1 ug/l.

The sample collected on June 13, 1995 from MW-1 contained methylene chloride at 1.5 ug/l, and chloroform at 0.7 ug/l. No other compounds were detected. The trip blank contained methylene chloride at 2.3 ug/l. The field blank contained methylene chloride at 2.1 ug/l.

No product or sheen was observed in MW-1 on either of the sampling dates. The depth to the water table was 3.02 feet below ground surface on May 18, 1995 and 3.34 feet below ground surface on June 13, 1995.

All groundwater analytical results are presented in Table 3 and shown on Figure 4. The groundwater analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, DPW.

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 166, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample	Sample	Sample	Analysis	Compound	Sample	Compound	Result	NJDEP	Exceeds Cleanup
ID/Depth	Laboratory ID	Date	Date	Name	Quantitation	of	(mg/kg)	Soil Cleanup	Criteria
		•			Limit	Concern		Criteria *	
			···		(mg/kg)			(mg/kg)	
A/7.5-8.0'	1529.1	6/16/94	6/17/94	Total % Solid			86%		
				TPHC	6.6	yes	42.9	10,000	
B/7.5-8.0'	1529.2	6/16/94	6/17/94	Total % Solid			87%		
				TPHC	6.6	yes	103	10,000	
c/7.5-8.01	1529.3	6/16/94	6/17/94	Total % Solid			85%		
				TPHC	6.6	yes	13.1	10,000	**
D/7.5-8.0'	1529.4	6/16/94	6/17/94	Total % Solid			78%		
				TPHC	6.6	yes	224	10,000	
E/7.5-8.0'	1529.5	6/16/94	6/17/94	Total % Solid			86%		
				TPHC	6.6	yes	70.6	10,000	
F/7.5-8.0'	1529.6	6/16/94	6/17/94	Total % Solid			85%		
				TPHC	6.6	yes	786	10,000	
G/7.5-8.0'	1529.7	6/16/94	6/17/94	Total % Solid			86%		
				TPHC	6.6	yes	ND	10,000	••
H/7.5-8.0'	1529.8	6/16/94	6/17/94	Total % Solid			83%		
				TPHC	6.6	yes	63.6	10,000	
OUP A/7.5-8.0	1529.9	6/16/94	6/17/94	Total % Solid			88%		
				TPHC	6.6	yes	21.0	10,000	
J/2.0-2.5'	1529.10	6/16/94	6/17/94	Total % Solid			93%		
				TPHC	6.6	yes	28.4	10,000	

^{--:}

Not applicable / does not exceed criteria

Cleanup criteria for total organics

Indicates compound not detected

Actual soil TPHC values may be higher than reported due to absorbancy by polystyrene scoops. If absorbancy resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would be 1,572 mg/kg.

Source:

Smith Technology Corporation (Smith Project No. 09-5004-12)

^{*:}

ND:

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
MW-1	5/18/95	6/2/95	N-nitrosodimethylamine	2		ND	20	
			bis(2-Chloroethyl)Ether	1		ND	10	
			1,3-Dichlorobenzene	2		ND	600	
			1,4-Dichlorobenzene	1		ND	75	
			1,2-Dichlorobenzene	2		ND	600	
			bis(2-chloroisopropyl)ether	5		ND	300	
			N-Nitroso-Di-N-propytamine	2		ND	20	
			Hexachloroethane -	1		ND	10	
			Nitrobenzene	2		ND	10	
			Isophorone	1		ND	100	
			bis(2-Chloroethoxy)methane	3		ND		
			1,2,4-Trichlorobenzene	2		ND	9	
			Naphthalene	2		ND	300	
			Hexachlorobutadiene	2		ND	1	
			Hexachlorocyclopentadiene	12		ND	50	
			2-Chloronaphthalate	1		ND		
			Dimethylphthalate	1		ND		
			Acenaphthylene	5		ND	NA	
			2,6-Dinitrotoluene	2		ND	NA	
			Acenaphthene	3	• •	ND	400	
			2,4-Dinitrotoluene	3		ND	10	
			Diethylphthalate	1		ND	5,000	
			Fluorene	3		ND	300	
			4-Chlorophenyl-phenylether	3		ND		
			n-Nitrosodiphenylamine	6		ND	20	
			1,2-Diphenylhydrazine(as azo)	6		ND	0.04	
			4-Bromophenyl-phenylether	2		ND		
			Hexachlorobenzene	2		ND	10	
			Phenanthrene	2		ND	NA NA	
			Anthracene	2		ND	2,000	
			Di-n-butylphthalate	64		64	900	
			Fluoranthene	1 .		ND	300	

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TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceed
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
MW-1	5/18/95	6/2/95	Benzidine	1		ND	50	
			Pyrene	2		ND	200	
			Butylbenzylphthalate	9		ND	100	
			Benzo(a)anthracene	2		ND	0.05	
			3,3'-Dichlorobenzidine	15		ND	60	
			Chrysene	2		ND	5	
			bis(2-Ethylhexyl)phthalate	4		ND	30	
			Di-n-octylphthalate	2		ND	100	
			Benzo(b)fluoranthene	1		ND	0.05	
			Benzo(k)fluoranthene	2		ND	0.5	
			Benzo(a)pyrene	2		ND	0.005	
			Indeno(1,2,3-cd)pyrene	2		ND	0.05	
			Dibenz(a,h)anthracene	3		ND	0.005	
			Benzo(g,h,i)perylene	2		ND	NA	
			SEMIVOLATILE TICS:					
			Unknown Hydrocarbon	* =		5 J		
			Undecane, 3,6-dimethyl-			6 J		
			Heptadecane, 2, 6, 10, 14-tetra			13 J		
			Dodecane, 2, 7, 10-trimethyl-			9 J		
			Unknown			6 J		
			TOTAL TICS:			39		

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
MW-1	5/18/95	6/2/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		ND	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5		ND	5	
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		
			Methylene Chloride	1.8		1.8 B	2	
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	
			Chloroform	0.5		ND	6	·
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichloroethame	0.5		ND	30	
			Dibromomethane	0.5		ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
MW-1	5/18/95	6/2/95	Toluene	0.5		ND	1,000	
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (total)	0.5		ND	40	
	÷		Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5		ND		
			1,2,3-Tricloropropane	0.5		ND	40	
			n-Propylbenzene	0.5		ND		
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND		
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	75	+-
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
	,		n-Butylbenzene	0.5		ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene .	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteria
				Limit (ug/l)	Concern			
MW-1	5/18/95	6/2/95	Unknown			1 J		
			Naphthalene,decahydro-2-met			2 J		
			Unknown			2 J		
			Unknown			1 J		
			Unknown			2 J		
			Unknown			2 J		
			Unknown Hydrocarbon			1 J		
			Unknown			3 J		
			Unknown			3 J		
			Unknown			3 J		
			Unknown			2 J		
			Unknown			1 J		
			Unknown			2 J		
			Unknown			1 J		
			Unknown			1 J		
			TOTAL TICS:			27		

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, TRIP BLANK FORT MONMOUTH, NEW JERSEY

VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceed
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
TRIP BLANK	5/18/95	6/1/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		ND	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5		ND	5	••
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		
			Methylene Chloride	5.1		5.1 B	2	yes
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	
			Chloroform	0.5		ND	6	
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichloroethane	0.5		ND	30	
			Dibromomethane	0.5		ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
RIP BLANK	5/18/95	6/1/95	Toluene	0.5		ND	1,000	
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (totàl)	0.5		ND	40	
			Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5		ND		
			1,2,3-Tricloropropane	0.5		ND	40	
			n-Propylbenzene	0.5		ND		• •
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		• -
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND		
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	<i>7</i> 5	
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
			n-Butylbenzene	0.5		ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		•
			VOLATILE TICS:					
			NONE FOUND					

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, FIELD BLANK FORT MONMOUTH, NEW JERSEY SEMIVOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
FIELD BLANK	5/18/95	6/2/95	N-nitrosodimethylamine	. 2		ND	20	
			bis(2-Chloroethyl)Ether	1		ND	10	
			1,3-Dichlorobenzene	2		ND	600	
			1,4-Dichlorobenzene	1		ND	75	
			1,2-Dichlorobenzene	2		ND	600	
			bis(2-chloroisopropyl)ether	5		ND	300	
			N-Nitroso-Di-N-propylamine	2		ND	20	
			Hexachloroethane	1		ND	10	
			Nitrobenzene	2		ND	10	
			Isophorone	1		ND	100	
			bis(2-Chloroethoxy)methane	3		ND		
			1,2,4-Trichlorobenzene	2		ND	9	
			Naphthalene	2		ND	300	
			Hexachlorobutadiene	2		ND	1	
			Hexachlorocyclopentadiene	12		ND	50	
			2-Chloronaphthalate	1	•-	ND		
			Dimethylphthalate	1		ND		
			Acenaphthylene	5		ND	NA	
			2,6-Dinitrotoluene	2		ND	NA	
			Acenaphthene	3		ND	400	
			2,4-Dinitrotoluene	3		ND	10	
			Diethylphthalate	1		ND	5,000	
			Fluorene	3		ND	300	
			4-Chlorophenyl-phenylether	3		ND		
			n-Nitrosodiphenylamine	6		ND	20	
			1,2-Diphenylhydrazine(as azo)	6		ND	0.04	
			4-Bromophenyl-phenylether	2		ND		
			Hexachlorobenzene	2		ND	10	
			Phenanthrene	2		ND	NA	
			Anthracene	2		ND	2,000	
			Di-n-butylphthalate	55		55	900	
			Fluoranthene	1 .		ND	300	

TABLE 3

GROUNDWATER SAMPLING RESULTS

BUILDING 166, MAIN POST, FIELD BLANK

FORT MONMOUTH, NEW JERSEY

VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
FIELD BLANK	5/18/95	6/1/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		ND	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5		ND	5	
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		• •
			Methylene Chloride	5.1		5.1 B	2	yes
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	
			Chloroform	0.5		ND	6	•-
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichtoroethane	0.5		ND	30	
			Dibromomethane	0.5		ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, FIELD BLANK FORT MONMOUTH, NEW JERSEY VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
IELD BLANK	5/18/95	6/1/95	Toluene	0.5		ND	1,000	• -
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (total)	0.5		ND	40	••
			Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5		ND		
			1,2,3-Tricloropropane	0.5		ND	40	
			n-Propylbenzene	0.5		ND		
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND	++	
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	75	•-
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
			n-Butylbenzene	0.5	- -	ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		
			VOLATILE TICS:					
			NONE FOUND					

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteria
				Limit (ug/l)	Concern			
MW-1	MW-1 6/13/95	6/22/95	Benzidine	1		ND	50	
			Pyrene	2		ND	200	• •
			Butylbenzylphthalate	9		ND	100	
			Benzo(a)anthracene	2		ND	0.05	
			3,31-Dichlorobenzidine	15		ND	60	• •
			Chrysene	2		ND	5	
			bis(2-Ethylhexyl)phthalate	4		ND	30	
			Di-n-octylphthalate	2		ND	100	
			Benzo(b)fluoranthene	1		ND	0.05	
			Benzo(k)fluoranthene	2		ND	0.5	- -
			Benzo(a)pyrene	2		ND	0.005	
			Indeno(1,2,3-cd)pyrene	2	•-	ND	0.05	
			Dibenz(a,h)anthracene	3		ND	0.005	
			Benzo(g,h,i)perylene	2		ND	NA	

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
MW-1	6/13/95	6/27/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		ND	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5		ND	5	
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		
			Methylene Chloride	1.5		1.5 B	2	
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	~ -
			Chloroform	0.7		0.7	6	
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichloroethane	0.5		ND	30	
			Dibromomethane	0.5	••	ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	• •
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteria
				Limit (ug/l)	Concern			
MW-1	6/13/95	6/27/95	Toluene	0.5		ND	1,000	
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (total)	0.5		ND	40	
			Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5		.ND		
			1,2,3-Tricloropropane	0.5		ND	40	
			n-Propylbenzene	0.5		ND		
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND		
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	75	
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
			n-Butylbenzene	0.5		ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS:

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteria
				Limit (ug/l)	Concern			
MW-1	6/13/95	6/27/95	Unknown Hydrocarbon			2 J		
			Unknown Hydrocarbon			3 J		
			Unknown Hydrocarbon			2 J		• •
			Unknown			2 J		
			Unknown			2 J		
			Unknown	**		2 J		
			Unknown			4 J		
			Unknown			3 J		
			Unknown			2 J	* *	
			Unknown			2 J		
			Unknown	~-		2 J		
			Naphthalene, decahydro-2-met			5 J		
			Unknown			3 J		
			Unknown			11 J		
			Unknown			3 J		
			TOTAL TICS:			48	• •	

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, TRIP BLANK FORT MONMOUTH, NEW JERSEY VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
RIP BLANK	6/13/95	6/21/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		NĐ	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5		ND	5	
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		
			Methylene Chloride	2.3		2,3 8	2	yes
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	- -
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	
			Chloroform	0.5		ND	6	
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichloroethane	0.5		ND	30	
			Dibromomethane	0.5		ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

PAGE 18 OF 23

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
_				Limit (ug/l)	Concern			
RIP BLANK	6/13/95	6/21/95	Toluene	0.5	••	ND	1,000	
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (total)	0.5		ND	40	
			Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5	+ -	ND		
			1,2,3-Tricloropropane	0.5		ND	40	
			n-Propylbenzene	0.5		ND		
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND		
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	75	
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
			n-Butylbenzene	0.5		ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		
			VOLATILE TICS:					
			NONE FOUND					

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, FIELD BLANK FORT MONMOUTH, NEW JERSEY SEMIVOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
IELD BLANK	6/13/95	6/26/95	N-nitrosodimethylamine	. 2		ND	20	
			bis(2-Chloroethyl)Ether	1		ND	10	
			1,3-Dichlorobenzene	2		ND	600	
			1,4-Dichlorobenzene	1		ND	75	
			1,2-Dichlorobenzene	2		ND	600	
			bis(2-chloroisopropyl)ether	5		ND	300	
			N-Nitroso-Di-N-propylamine	2		ND	20	
			Hexachloroethane	1		ND	10	
			Nitrobenzene	2		ND	10	
			Isophorone	1		ND	100	
			bis(2-Chloroethoxy)methane	3		ND		
			1,2,4-Trichlorobenzene	2		ND	9	
			Naphthalene	2		ND	300	
			Hexachlorobutadiene	2		ND	1	
			Hexachlorocyclopentadiene	12		ND	50	
			2-Chloronaphthalate	1		ND		
			Dimethylphthalate	1		ND		
			Acenaphthylene	5		ND	NA	
			2,6-Dinitrotoluene	2		ND	NA	
			Acenaphthene	3		ND	400	
			2,4-Dinitrotoluene	3		ND	10	
			Diethylphthalate	1	<u></u>	ND	5,000	• •
			Fluorene	3		ND	300	
			4-Chlorophenyl-phenylether	3		ND		
			n-Nitrosodiphenylamine	6		ND	20	
			1,2-Diphenylhydrazine(as azo)	6		ND	0.04	
			4-Bromophenyl-phenylether	2		ND		
			Hexachlorobenzene	2		ND	10	
			Phenanthrene	2		ND	NA	
			Anthracene	2		ND	2,000	
			Di-n-butylphthalate	5		ND	900	
			Fluoranthene	1 .		ND	300	

PAGE 20 OF 23

TABLE 3
GROUNDWATER SAMPLING RESULTS
BUILDING 166, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
FIELD BLANK	6/13/95	6/26/95	Benzidine	1		ND	50	
			Pyrene	2		ND	200	
			Butylbenzylphthalate	9		ND	100	
			Benzo(a)anthracene	2		ND	NA	
			3,3'-Dichlorobenzidine	15		ND	60	
			Chrysene	2		ND	5	
			bis(2-Ethylhexyl)phthalate	4		ND	30	
			Di-n-octylphthalate	2		ND	100	
			Benzo(b)fluoranthene	1		ND	0.05	
			Benzo(k)fluoranthene	2		ND	0.5	
			Benzo(a)pyrene	2		ND	0.005	
			Indeno(1,2,3-cd)pyrene	2		ND	0.05	
			Dibenz(a,h)anthracene	3		ND	0.005	
			Benzo(g,h,i)perylene	2		ND	NA	
			SEMIVOLATILE TICS:					
			NONE FOUND					

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, FIELD BLANK FORT MONMOUTH, NEW JERSEY VOLATILES

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceed
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
TELD BLANK	6/13/95	6/21/95	Dichlorodifluoromethane	0.5		ND	1,000	
			Chloromethane	0.5		ND	30	
			Bromomethane	0.5		ND	10	
			Vinyl Chloride	0.5	••	ND	5	
			Chloroethane	0.5		ND		
			Trichlorofluoromethane	0.5		ND		
			Methylene Chloride	2.1		2.1 B	2	yes
			trans-1,2-Dichloroethene	0.5		ND	100	
			1,1-Dichloroethene	0.5		ND	2	
			1,1-Dichloroethane	0.5		ND	70	
			2,2-Dichloropropane	0.5		ND		
			Bromochloromethane	0.5		ND		
			cis-1,2-Dichloroethene	0.5		ND	10	
			Chloroform	0.5		ND	6	
			1,1-Dichloropropene	0.5		ND		
			1,2-Dichloroethane	0.5		ND	2	
			1,1,1-Trichloroethane	0.5		ND	30	
			Dibromomethane	0.5		ND		
			Carbon Tetrachloride	0.5		ND	2	
			Bromodichloromethane	0.5		ND	1	
			1,2-Dichloropropane	0.5		ND	1	
			cis-1,3-Dichloropropene	0.5		ND	NA	
			1,3-Dichloropropane	0.5		ND		
			Trichloroethene	0.5		ND	1	
			Dibromochloromethane	0.5		ND	10	
			1,1,2-Trichloroethane	0.5		ND	3	
			Benzene	0.5		ND	1	
			trans-1,3-Dichloropropene	0.5		ND	NA	
			Bromoform	0.5		ND	4	
			1,1,1,2-Tetrachloroethane	0.5		ND	10	
			Tetrachloroethene	0.5		ND	1	
			1,1,2,2-Tetrachloroethane	0.5		ND	2	

TABLE 3 GROUNDWATER SAMPLING RESULTS BUILDING 166, MAIN POST, FIELD BLANK FORT MONMOUTH, NEW JERSEY VOLATILES (continued)

Sample	Sample	Analysis	Compound Name	Sample	Compound	Result	GWQS	Exceeds
ID	Date	Date		Quantitation	of	(ug/l)	(ug/l)	Criteri
				Limit (ug/l)	Concern			
IELD BLANK	6/13/95	6/21/95	Toluene	0.5		ND	1,000	
			1,2-Dibromoethane	0.5		ND		
			Chlorobenzene	0.5		ND	4	
			Ethylbenzene	0.5		ND	700	
			Xylene (total)	0.5		ND	40	
			Styrene	0.5		ND	100	
			Isopropylbenzene	0.5		ND		
			Bromobenzene	0.5		ND		
			1,2,3-Tricloropropane	0.5		ND	40	••
			n-Propylbenzene	0.5		ND		
			2-Chlorotoluene	0.5		ND		
			4-Chlorotoluene	0.5		ND		
			1,3,5-Trimethylbenzene	0.5		ND		
			tert-Butylbenzene	0.5		ND		
			1,2,4-Trimethylbenzene	0.5		ND		
			sec-Butylbenzene	0.5		ND		i.
			1,3-Dichlorobenzene	0.5		ND	600	
			1,4-Dichlorobenzene	0.5		ND	<i>7</i> 5	
			4-Isopropyltoluene	0.5		ND		
			1,2-Dichlorobenzene	0.5		ND	600	
			n-Butylbenzene	0.5		ND		
			1,2-Dibromo-3-chloropropane	0.5		ND	NA	
			1,2,4-Trichlorobenzene	0.5		ND	9	
			Hexachlorobutadiene	0.5		ND	1	
			Naphthalene	0.5		ND	300	
			1,2,3-Trichorobenzene	0.5		ND		
			VOLATILE TICS:					
			NONE FOUND					

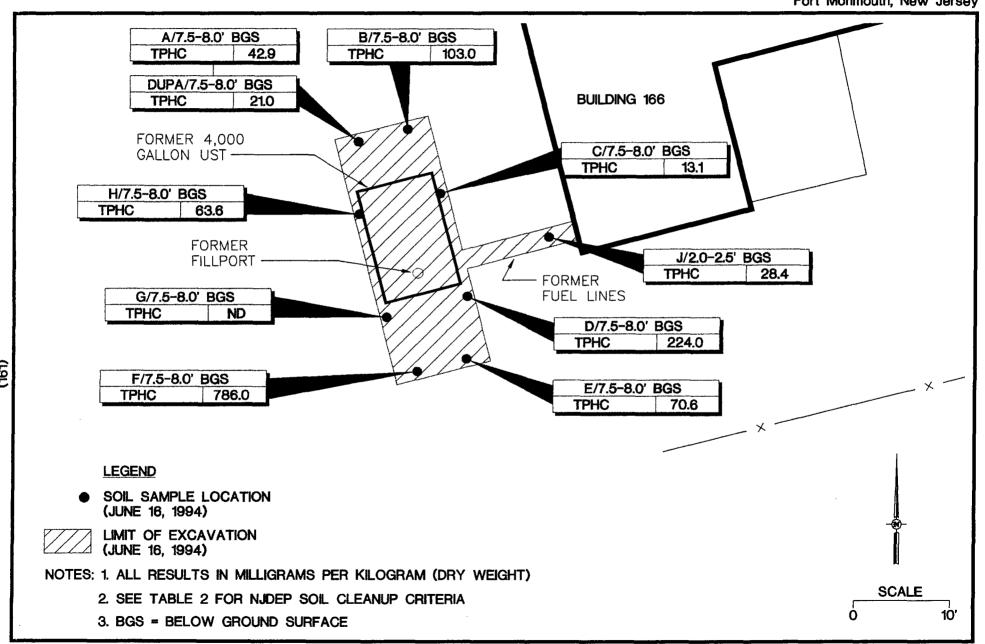
TABLE 3

DATA ANALYSIS QUALIFIER DEFINITIONS GROUNDWATER SAMPLING FORT MONMOUTH, NEW JERSEY

:	Not applicable / does not exceed criteria
(1):	Indicates detected below sample quantitation limit
(B):	Indicates also present in blank
(ND):	Indicates compound not detected
(NA):	Not available for this constituent

Groundwater Quality Standards

GWQS:



Project No. 09-5004-12

Figure 3 **Building 166 Soil Sampling Results**

Project No. 09-5004-12

Figure 4
Building 166
Goundwater Sampling Results

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 166 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected on May 18, 1995 and June 13, 1995, groundwater quality at the Building 166 closure site complies with the New Jersey Groundwater Quality Standard for VOCs and SVOCs. The trace concentrations of methylene chloride detected during both sampling rounds is attributed to sampling and/or analytical interference, based on the detection of methylene chloride, a common source of laboratory interference, in the sampling blanks.

No further action is proposed in regard to the closure and site assessment of UST No. 090017-17 at Building 166.

APPENDIX A NJDEP BUST CLOSURE APPROVAL



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN

ROBERT C. SHINN, JR. Commissioner

Mr. Joseph Fallon SELFM-EH-EV Department of the Army Headquarters CECOM Fort Monmouth Fort Monmouth, NJ 077703-5000

JAN 7 1008

Dear Mr. Fallon:

Re:

UST Closures - Fort Monmouth Fort Monmouth Army Base Tinton Falls, Monmouth County

The NJDEPE has reviewed the four underground storage tank closure plans for UST number 0081533 tanks 1 and 171 and for UST number 0090010 tanks 17 and 18 submitted on May 31, 1994 for NJDEPE review and approval. The NJDEPE has determined that the closure plans for these tanks are consistent with the Technical Requirements for Site Remediation.

The remedial efforts associated with the closures of these tanks may commence as scheduled in each of the associated closure plans. This letter must be made available to any authorized personnel responsible for review and oversight of UST removals. This approval does not relinquish Fort Monmouth from fulfilling any Federal, County or Municipal requirement associated with the removal of underground storage tanks.

if you should have any questions or require additional information, please do not hesitate to contact me at (609) 633-1455.

Sincerely,

lan R. Curtis, Case Manager Bureau of Federal Case Management

RPCE\BFCM\FTMMTH12.IRC

APPENDIX B
CERTIFICATIONS

UNDERGROUND STORAGE TANK (UST) CLOSURE CERTIFICATION

BUILDING NO. 166
NJDEP UST REGISTRATION NO90010-17
DATE TANK REMOVED 6/16/94
LIO / CONTRACT NUMBER 91-0148
I CERTIFY UNDER PENALTY OF LAW THAT TANK DECOMMISSIONING ACTIVITIES WERE PERFORMED IN COMPLIANCE WITH NJAC 7:14B-9.2(b)3. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE, INACCURATE, OR INCOMPLETE INFORMATION, INCLUDING FINES AND/OR IMPRISONMENT.
NAME (Print or Type) John Jonergan SIGNATURE
NIDEP UST CLOSURE CERTIFICATE NO. 0003248
COMPANY PERFORMING TANK DECOMMISSIONING CUTE_Inc
NIDEP UST CLOSURE CORPORATE CERTIFICATE NO
DATE OF SUBMITTAL 7/19/94

APPENDIX C

WASTE MANIFEST



nd the " 1 Papt. of Emmanmental Pratection and Energy, (609) 252-7172

State of New Jersey Department of Environmental Protection and Energy Hazardous Waste Regulation Program Manifest Section CN 028, Trenton, NJ 08625-0028

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State of New Jersey Department of Environmental Protection and Energy

Note: oil contaminates

Hazardous Waste Aegulation Program
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UNDERGROUND STORAGE TANK REMOVAL (UST)

(Submit one form for each tank)

Building No166	NJDEPE UST Reg. No	0090010	17
IJO No. 91-0148	Date Tank Removed6/	16/94	

ITEM NO.	ITEM OF WORK	UNIT	UNIT PRICE	QUANTITY	TOTAL PRICE
01100-1.1	Rmv ID#27 soil to stockpile	TN	\$14.50	35.15	\$ 509.68
01100-1.2	Supply, fill & relocate 55 Gal containers to storage	ст	\$47.50		\$ N/A
01100-1.4	Rmv & dispose of #2 fuel mixed with water Manifest #:NJA	GL	\$ 0.69	5,086	\$ _ 3,509.34
01100-1.5	Rmv & dispose of #2 fuel mixed with solvent Manifest #:NJA	GL	\$ 4.50		\$ N/A
01100-1.6	Rmv & dispose of diesel fuel	GL	\$ 0.69		\$ N/A
01100-1.7	Rmv & dispose of diesel fuel mixed with water Manifest #:NJA	GL	\$ 0.69		\$ N/A
02050-1 & 02050-4	Tank removal	GL	\$ 0.975	4,000	\$ _3,900.00
02050-5.1	Sawcut blacktop *	TN	\$27.50		\$ N/A
02050-5.2	Sawcut concrete *	TN	\$29.50	√ 15	\$ 442,50
02050-5.3	Sawcut reinforced concrete	TN	\$32.50		\$ N/A
02222-1.1	Backfill cert. clean fill *	TN	\$16.25	35.15	\$ 571.19
02222-1.2	3/4" clean stone "	TN	\$17.50	l	\$ N/A
02511-1.1	Concrete slab 4" thick	SY	\$19.80		\$ N/A
02511-1.2	Concrete slab 6" thick	SY	\$21.80		\$ N/A
02511-1.3	Concrete slab 8" thick	SY	\$24.50		\$ N/A
02511-1.4	6" Concrete curb	LF	\$16.00		\$ N/A
02551-1.1	6" Base course of 3/4" dirty blend stone	SY	\$ 6.40	٠	\$ N/A
02551-1.2	4" stabilized base	SY	8.00		s N/A
02551-1.3	2* top course	SY	\$ 5.50		\$ N/A
02935-1.1	4" top soil & sod	SY	\$ 7.80		s N/A
02935-1.2	4" top soil & hydroseed	SY	\$ 5.40		\$ N/A

025351.1	4 top 80% & 800		<u> </u>		N/A
02935-1.2	4° top soil & hydroseed	SY	\$ 5.40		\$ N/A
* Supply certifie	ed weight tickets to Contracting Offk	cer at time o	of request for paym	nent.	\$8,932.71
	penaity of law that tank decommission there are significant penaities for siment.	_	•	•	
NAME (Print or	Type): John Lonergan	_ SIGNAT	URE: //	-Jugar	
NJDEPË UST	Closure Cert. #: 0003248	DATE: .	7//8/94		
	ME: <u>CUTE</u> , Inc.	· · · · · · · · · · · · · · · · · · ·			
NJDEPE UST	Closure Corp. Cert. #: 020012	28			
List of Abbrevia	itions:				

TN = Tons

CT = 55 Gallon Container GL = Gallon

CV _ Callara Vard

CALCULATION SHEET

Building No. _/66_

NJDEPE Reg. No. <u>00900/0-/</u>

Tank Size 4000 gal

Tank Void 30.0 tons

CLEAN FILL

ITEM NO. 02222-1.1 DESCRIPTION

Clear fill

OUANTITY

TICKET #

22,13

18767

21.78

18775

21,24

18787

TOTAL GJ. /J

STONE

ITEM NO.

DESCRIPTION

QUANTITY

TICKET #

N/A

TOTAL

ID#27 soil to stockpile (64.4+ 6) - 30.0 = 35./ Chargeable clean fill

Chargeable stone N/A

4 1			
Joseph Scareno Name	1453 W. Park Ave., Waysid Asbury Park, N.J. 07712 908-493-3333		18767
ddress	12 1 1/11	Delivered	C.O.D. Charge
Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
E. 4	69800		
`	- 25550	22,13 tans	
	N 44250		
	SOUBL TO		
Driver	No. 25614	Sub Total	-
Received	CO MARCH CONTRACTOR	Delivery	
	age done off public roads. Color not guaranteed!	N.J. Tax	
Have gr	avel will travel! ince 1925	Total	
la - i			

- - -

	Joseph Scareno S	1453 W. Park Ave., Waysic Asbury Park, N.J. 07712 908-493-3333		18775 Taranjan
Name	1., 1	1 7 - 2 to 10	0.00.00.0	//
Address		11 11 Fill	Delivered F.O.B./P.U.	C.O.D. Charge
	Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
		69100		
1	·	7 25550	21.78 tone	
		N \$35.50		
1		SAUBLANCE		
Driver		No. 85312	Sub Total	•
Received	Dan	S CAL GHE	Delivery	
f	ot responsible for damage	ge done off public roads. Color not guaranteed!	N.J. Tax	

Total

Have gravel will travel!

. since 1925

Joseph Scareno S	1453 W. Park Ave., Waysid Asbury Park, N.J. 07712 908-493-3333	_	18787 V=== , == , == ,
Name	1 Tarrey	Deliver Date	///
ddress	1011 11	Delivered F.O.B./P.U.	C.O.D. Charge
Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	C- 62000		
	一大 美元 第二	21.24 tons	
	12920		
	(3)(10)(2)		
7 Oriver	No. 25814	Sub Total	-
Received		Delivery	
	ge done off public roads: Color not guaranteed!	N.J. Tax	
Have gra	rvel will travel!	Total	

since 1925

APPENDIX D UST DISPOSAL CERTIFICATE

Tank 271-0081533.55 79668 MAZZA & SONS, INC. Tank 166-0090010-17 **Recycling Division** 3230 Shafto Road . Tinton Falls, NJ 07753 (908) 922-9292 Recycling Material Receipt Form Tanka71 3.43 TONS. Tank 166 15 Tons; Customer: Address: Fort Mornatt Date: 64280 Truck/Container No. Concrete XAE 1491 Asphalt License Plate/D.E.P.# Stumps □ 10 yd Brush Wood □ 20 yd Pallets D 30 yd Glass ☐ 40 yd Tires □ 50 yd **Painted Wood**

Weighmaster:

Shingles

TOTAL:

COD

ഗ

APPENDIX E

MONITORING WELL PERMIT AND CONSTRUCTION LOG

MONITORING NZ. CERTIFICATION-FORM B-LOCAT | CERTIFICATION

Hand of Parelitted: US ARMY
Hand of Parelity: FORTMONMOUTH
LOCATION! MONMOUTH COUNTY, NJ
HJPDIS-HUNDOT: 94-6-16-1545-09
Dicar

LAND SURVEYOR'S CERTIFICATION

Wall Permit Number: This number must be permanently affixed to the well casing.

Longitude (to mearest pacond):

sections less than 0.1 mile, let miles = 0.1.

Owners Well Number (As shown on application or plans):

29-31773-

West 74°01'44.69"

Morth 40°19'03.08"

6.96

7.49

Source: MoN. FM-6

1927 1927 1983

Elevations are to be determined by double run, three wire leveling methods using balanced sights, commencing from a well marked and described point. This beginning point shall either be derived from Tederal or State benchmarks if not more than 1000 feet from the site or from an alternate datum approved by the Department. Tolerances should meet third order standards, which are 0.05 ft x (mile) 1/2. For

BLDG. 166 MW-1/2 .

Elev.:

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND BURVEYOR'S SIGNATURE

PROFESSIONAL LAND SURVEYOR'S HAME
(Please print or type)

SEAL.

FROFESSIONAL LAND BURVEYOR'S LICENSE !

L .- DWR-133M (10/93)

STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY TRENTON, NJ

Mail to

NJDEPE Bureau Water Allocation CN426

MONITORING WELL PERMIT

$\gamma_{\mathcal{L}}$	2,	.)~	۱ D.
Permit No.	ار	_ / /	

CN426 VALID ONLY AFTER API	PROVAL BY THE D.E.P.E. COORD # 9
Owner US Army Fort Monnouth	Driller Tyree Organization 14
Address SFIFM-PUI-EV	Address 1350 115 HWV 130
Fort Monhouth, NJ 17703	Evelination NJ 02016
Name of Facility [135166	Diameter Proposed of Well(s) Inches Depth of Well(s) Fee
Address Main Post	# of Wells Will pumping equipment
Fort Monnaith, NJ	Applied for (max. 10) be installed? YES NOT Type of Well If Yes, give plump capacity (see reverse) A GPN
LOCATION	OF WELL(S)
Lot # Block # Municipality County State Atlas Map No. 27	Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.
40° 20' Mw-1 15' 0 10	RIVERSIDE AVENUE
FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWIN THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTAULED:	This Space for Approval Stamp
Underground Storage Tank Site Operational Ground Water Permit Site Pretreatment and Residuals Site Water and Hazardous Waste Enforcement Case Water Supply Aquifer Test Observation Well Other (explain)	6-16-1545-09 AUG 3 1991
FOR Issuance of this permit is subject to the conditions attached. (see next page 1)	age) The well(s) may not be completed with more than 25 feet of total screen

۹	USE For monitoring purposes only USE			or uncased borehole.	
	EE REVERSE SIDE FOR IMPORTANT PROVISIONS AND R compliance with N.J.S.A. 58:4A-14, app			drill a well as described above.	av ;
¹Da	to 7-25-94	Signature o	of Driller	Sile ML	License # /431

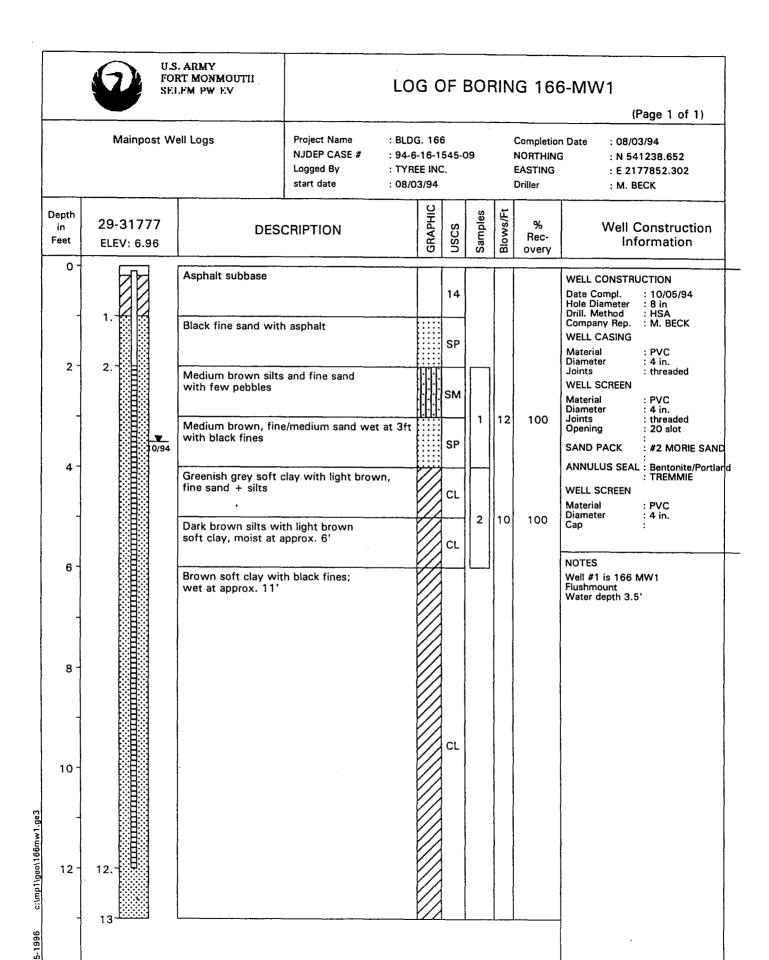
Signature of Owner Sturing Philes

www Jersey Department of Environmental Protection and Energy Bureau of Water Allocation

MONITORING WELL RECORD

MITT

		Well Atlas	Permit No Sheet Coord	 inates	19 10 eV/4
OWNER IDENTIFICATION - Owner	cer a OMY Latayy M	12141446			
Address		491 47474			
City	1.7 3.71° PM 45.86% 4.1731		State	N	Zip Code
WELL LOCATION - If not the same as	owner please give addre	ss. Owr	er's Well No.	Phis. In	, Mur 1
County	Municipality	Merel La	fx:	_ Lot No	Block No
Address				. 2	
TYPE OF WELL (as per Well Permit Ca	tegories)	* ×	Date w	ell complete	a 9 ,14 ,94
Regulatory Program Requiring Well					94 6 16 1545 00
CONSULTING FIRM/FIELD SUPERVIS	SOR (if applicable)				Tele. #
	, ,,				
WELL CONSTRUCTION Total depth drilled		Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter	Type and Material
			d surface]	(inches)	Type and Material
Well finished toft.	Inner Casing	1114			
Borehole diameter: Topin.	Outer Casing (Not Protective Casing)				
Bottom \overline{S} in.	Screen	, 1)	101	u	Ro slot MC
Well was finished:above grade	(Note slot size)		} `	7	SIGT ITC
flush mounted	Tail Piece	1 1			
If finished above grade, casing	Gravel Pack		0		#R M. C S. J
height (stick up) above land surfaceft.	Annular Seal/Grout				Besterite Postby
Was steel protective casing installed?	Method of Grouting	114	,553 C		
Yes No		05/	21 0010 1 00	(Copie:	s of other geologic logs and/or
Static water level after drilling	ft.		PLOGIC LOG	geophy	sical logs should be attached.)
Water level was measured using		C-1		30 AT	13-6-16
Well was developed for hou		<u>.</u>	11		9.0
Method of development	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	—— I·	,		
Was permanent pumping equipment in	stalled? L Yes 🔽 N) -	3' 16	1 60	m Hs+
Pump capacitygpm		•	است. معنی است	3-1	
Pump type:		}			
Drilling Method Type Name of Driller Type	- B 50	3!-	- 101 F	1. 2.	arrest Fire - northern
Drilling Fluid Type	or Hig		- 1		
Health and Safety Plan submitted?	P [1]		<u></u>		, {
Level of Protection used on site (circle of			-111 1	اريا ال	2011, 71110 med 512
N.J. License No.	o, (toile b o b A	711	:01 6	> ,	not; ran ded
Name of Drilling Company	assessable, as a stage of the Salaman			(1)	101 / 101 40
I certify that I have drilled the above	TYPENCE ENVIRONMENT			mit require	ments and all applicable
State rules and regulations.		Tradition Will	por	10901101	and an approacto
	12 1	1021			A 3 E)
Driller's Signa	ature Mala	10 16 M	 	מ	ate <u>1200094</u>



APPENDIX F SOIL ANALYTICAL DATA PACKAGE

Report of Analysis

U.S. Army, Fort Monmouth Environmental Laboratory NJDEPE Certification # 13461

Client: U.S. Army

Lab. ID #: 1529.1-.10

DPW, SELFM-PW-EV

Sample Rec'd: 06/16/94

Bldg. 167

Analysis Start: 06/17/94

Ft. Monmouth, NJ 07703

Analysis Comp: 06/17/94

Analysis: 418.1 (TPH)

NJDEPE UST Req.#: 0090010-

Matrix:

Soil

Closure #:

Analyst: S. Hubbard DICAR #: 94-6-16-1545-09

Ext. Meth: Sonc.

Location #: Bldg. 166

Lab ID.	Description		%Solid	Result (mg/1	
1529.1	Site A, North W	OVA= 30	86	42.9	6.6
1529.2	Site B, North E	OVA= 50	87	103.	6.6
1529.3	Site C,	OVA= 35	85	13.1	6.6
1529.4	Site D,	OVA= 10	78	224.	6.6
1529.5	Site E,	OVA= 30	86.	70.6	6.6
1529.6	Site F,	OVA= 90	85	786.	6.6
1529.7	Site G,	OVA= 70	86	ND	6.6
1529.8	Site H,	OVA= 10	83	63.6	6.6
1529.9	Site I,	OVA= ND	88	21.0	6.6
1529.10	Site J,	OVA= 20	93	28.4	6.6
M. Bl.	Method Blank		100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit

* = Silica Gel Added, NA = Not Applicable

1529.10dup= 90% 1529.10s= 125% 1529.10sd= 105% RPD=17.3%

Brian K. McKee

Laboratory Director

SERV-AIR, INC.

P/0.	#:	B B	PWS-107	

Chain of Custody

														-			
Project #:LT			/ Samp	ler:	τ_{Λ}			Date 6-16-84		e	Ana Para	lysi: mete:				Star	t:
Customer: DINKER	0554	I.	Site	CUTE, Name: B	106	166		- 0 10 17	<u> </u>			1	7	/	///	Fini	sh:
SELFY-P	w-G	5 V	UST	- 669 \$	Ø1Ø -										///	/ L	
Phone: X2	147	5	DIC	2 7 JU	NE 19 1-6-1	6 ¹ 159	15-	-09 a	的生	> <i>L</i>		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Y /	//	/ //	Prese	rvation Method
Lab Sample ID Number	Date/	Time '	Cu	stomer Sa tion/ID N	mple	Sam	o l e	# of Bottles] /	11.1	013/5		//			Remarks	7
1529.1	6-16	4 1610	SITE	A-NU	JH/W	50	11	1						30			
		1615	8.	B-NON	TH-6	1		. [50			
,3		1623		C										35			
4		1675		D			1	И						10			
		1628		É										30		· · · · · · · · · · · · · · · · · · ·	
		1633		F										90			
	λ	1623		9										70		1	
.8		1637		H										10	CALIB	6/16	1116
19		1640		1		·									OVA-1		
1.10		1647	<u>, V</u>	J		b							_	20	S/N A		
· .													<u> </u>		0%/	41 R	ا ع
Relinguished	By (s	_	i	Date / T	.	eceiv	ed E	3y (sign	ature	>	Ship	ped (_		CAL	4011/1/ = 94 Pl = 3, C	PM @
Relinquished	By (s			Date / T	ime Re	ceiv	ed f	for Lab	by (s	i gna	ture	:	1)ate	/ Time	B.M	14
Note: A draw of cust	ing de cody.	pictin	g sam	ple locat	ion sho	ould	oe a	attached	or di	rawr	on	the r	evei	se	side of	this ch	ain
SRI-ENV COC 1	form D	1		P	age	1	o f	- /	Par	aes		Rev.	. A	Dat	e: 02 A	pr 93	

Report of Analysis U.S. Army, Fort Monmouth Environmental Laboratory NJDEPE Certification # 13461

Client: U.S. Army

6.3

DPW, SELFM-PW-EV

Bldg. 167

Ft. Monmouth, NJ 07703

Lab. ID #: 1529.1-.10

Sample Rec'd: 06/16/94

Analysis Start: 06/17/94

Analysis Comp: 06/17/94

Analysis: Munsel

Lab ID#	Soil Color
1529.1	5GY 4/1 Dark Greenish Gray
1529.2	5GY 4/1 Dark Greenish Gray
1529.3	5GY 6/1 Greenish Gray
1529.4	5GY 2.5/1 Black
1529.5	5GY 4/1 Dark Greenish Gray
1529.6	5GY 4/1 Dark Greenish Gray
1529.7	5GY 4/1 Dark Greenish Gray
1529.8	5GY 4/1 Dark Greenish Gray
1529.9	5GY 4/1 Dark Greenish Gray
1529.10	2.5Y 8/3 Pale Yellow
·	
	
· · · · · · · · · · · · · · · · · · ·	
···	

Brian K. McKee Laboratory Director

± .	
June 17, 1994 Sarah J. Hubb	ard
Blank 0 4V	\$\$90
40.75 108 4V	
81.5 309.41	•
163 412 MV	-
1529.1 17MV	The section of a complete of the section of the sec
1529.2 37MV	
	<u>8-8-8-5</u>
1529.4 694V	
1529.6 256 HV	And the second s
1529.7 4AV	Manager to the state of the sta
1529.8 23M	manner and the second
1529.9 10 MV	
1529.10 13MV	
1529.10 12 MV	Dup
1529.10 47AV	Spok.
1529.10 fo 4V	Spe
•	

Total Control

PHC Conformance/Non-conformance Summary Report	<u>No</u>	<u>Yes</u>
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	<u> </u>	
		/
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		_
3. IR Spectra submitted for standards, blanks, & samples		<u> </u>
 Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted. 		sff)
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		• .
		. /
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)	_	
	-	
Comments:		

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Project #1529

Brian K. McKee Laboratory Manager APPENDIX G
GROUNDWATER ANALYTICAL DATA PACKAGE

EMSL ANALYTICAL, INC.

Asbestos - Lead - Environmental - Materials

Date & Time

of Collection

12:25

06:15

14:30

5/18/95

5/18/95

5/18/95

als EMSL

Date

Received

5/19/95

5/19/95

5/19/95

■ New Jersey

Corporate Office & Main Laboratory 108 Haddon Avenue

Westmont, NJ 08108 (609) 858-4800

3 Cooper Street Westmont, NJ 08108 (609) 858-4800

1056 Stelton Road
 Piscataway, NJ 08854
 (908) 981-0550

New York

350 Fifth Avenue Empire State Bldg Suite 1524 New York, NY 10118

(212) 290-0051

208 Stonehenge Lane Carle Place, NY 11514 (516) 997-7251 California

1720 S. Amphlett Blvd. Suite 130 San Mateo, CA 94402 (415) 570-5401

Florida 1878 Adams Avenue Melbourne, FL 32935

(407) 253-4224

Georgia

1600 Rosewell Street, SE Suite One Smyrna, GA 30080 (404) 333-6066

Michigan

212 S. Wagner Road Ann Arbor, MI 48103 (313) 668-6810

Laboratory Name

Field Sample No.

1833.1 Bldg. 166

1830.4 Trip Blank

1830.5 Field Blank

MW1-2931773

& Location

North Caronina

Certification No.

620-G Guilford College Rd. Greensboro, NC 27409 (910) 297-1487

Levas

2501 Central Parkway Suite C-13 Houston, TX 77092 (**13) 686-3635 Supervisor/Manager Signature

Printed Name

Date

ANALYTICAL DATA REPORT

FOR

U.S. Army Fort Monmouth SELFM-PW-EV Building 173 Fort Monmouth, NJ 07703

PROJECT: #94616154509

EMSL Project: # 9508275

Matrix

Aqueous

Aqueous

Aqueous

Laboratory

Sample ID

95-23167

95-23164

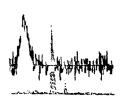
95-23165

EMSL ANALYTICAL, INC.

NJDEP No. 04653 PADER No. 68-367 NY-ELAP No. 10896

Paul V. Laraia

06-27-95





SAMPLE DATA SUMMARY PACKAGE

EMSL

Attention: Charles Appleby

U.S. Army - Fort Monmouth

SELFM-PW-EV Building 173

Fort Monmouth NJ 07703

Client Project: 94616154509

Client Designation: Bldg.166,MW1-2931773

Date of Report: Project Number: 06/23/95 09508275

Lab ID:

95-0023167

Date Collected:

05/18/95 12:25

Collected By: Client

Date Received: 05/19/95 07:00

Conc. Unit

ORGANIC

Semi-Volatiles

BN by 625 with Library Search

Volatiles

Volatiles by 524.2 w/ Library Search

see attached ug/l

see attached ug/l

US Aremy Ft. Monmonth NJ

r世間に平 1835,1

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: EMSL ANA	LYTICAL		Contract:	Bldg 166 MW1-
Project No.:		Site:	Location:	Group:
Matrix: (soil/water)	WATER	_		Lab Sample ID: <u>9523167B</u>
Sample wt/vol:	1000.0	_(g/mL ML		Lab File ID: B7780.D
Level: (low/med)		_		Date Received: 5/19/95
% Moisture:	_	decanted: (Y/N):	. <u>N</u>	Date Extracted: 5/25/95
Concentrated Extract Volume	ıme:	1000 (uL)		Date Analyzed: 6/2/95
Injection Volume:	1.0	_(uL)		Dilution Factor: 1.0
GPC Cleanup: (Y/N)	N	рŀ	I :	

Concentration Units:

		Concentration Units:	
CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
62-75-9	N-nitrosodimethylamine	2	U
111-44-4	bis(2-Chloroethyl)ether	1	U
541-73-1	1,3-Dichlorobenzene	2	U
106-46-7	1,4-Dichlorobenzene	i	U
95-50-1	1,2-Dichlorobenzene	2	U
108-60-1	bis(2-chloroisopropyl)ether	5	U
621-64-7	N-Nitroso-Di-n-propylamine	2	U
67-72-1	Hexachloroethane	1	U
98-95-3	Nitrobenzene	2	U
78-59-1	Isophorone	1	Ū
111-91-1	bis(2-Chloroethoxy)methane	3	U
120-82-1	1,2,4-Trichlorobenzene	2	U
91-20-3	Naphthalene	2	U
87-68-3	Hexachlorobutadiene	2	U
77-47-4	Hexachlorocyclopentadiene	12	U
91-58-7	2-Chloronaphthalene	1	U
131-11-3	Dimethylphthalate	1	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	2	U
83-32-9	Acenaphthene	3	U
121-14-2	2,4-Dinitrotoluene	3	U
84-66-2	Diethylphthalate	1	U
86-73-7	Fluorene	3	U
7005-72-3	4-Chlorophenyl-phenylether	3	U
86-30-6	n-Nitrosodiphenylamine	6	U
122-66-7	1,2-Diphenylhydrazine(as azo)	6	U
101-55-3	4-Bromophenyl-phenylether	2	U
118-74-1	Hexachlorobenzene	2	U
85-01-08	Phenanthrene	2	U
120-12-7	Anthracene	2	U
84-74-2	Di-n-butylphthalate	64	
206-44-0	Fluoranthene	1	U
92-87-5	Benzidine	1	U

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SAMPLE NO.

1**B**

SEMIVOL	ATILE	ORGANICS	ANALYSIS	DATA	SHEET
SEIVII VOL	TILL	CINDUITOS	ULIUT I DID	חות	JIILLI

	9523167В
t:	6/dg 166 MW1-2431773
_	θ_{i}
n:	Group:

Lab Name: EMSL ANA	ALYTICAL		Contract:		6/dg 166 11/101-2931
Project No.:	_	Site:	Location:		Group:
Matrix: (soil/water)	WATER	_		Lab Sample ID:	9523167B
Sample wt/vol:	1000.0	_(g/mL ML		Lab File ID	: <u>B7780.D</u>
Level: (low/med)		_		Date Received:	5/19/95
% Moisture:	_	decanted: (Y/N):	<u>N</u>	Date Extracted:	5/25/95
Concentrated Extract Vol	ume:	1000 (uL)		Date Analyzed:	6/2/95
Injection Volume:	1.0	_(uL)		Dilution Factor:	1.0
GPC Cleanup: (Y/N)	N	– pH	:		

Concentration Units:

		Concentration Units:	
CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
129-00-0	Pyrene	2	U
85-68-7	Butylbenzylphthalate	9	Ü
56-55-3	Benzo[a]anthracene	2	U
91-94-1	3,3'-Dichlorobenzidine	15	U
218-01-9	Chrysene	2	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	U
117-84-0	Di-n-octylphthalate	2	U
205-99-2	Benzo[b]fluoranthene	1	U
207-08-9	Benzo[k]fluoranthene	2	U
50-32-8	Benzo[a]pyrene	2	U
193-39-5	Indeno[1,2,3-cd]pyrene	2	บ
53-70-3	Dibenz[a,h]anthracene	3	U
191-24-2	Benzo[g,h,i]perylene	2	U
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	Milaton Island		
			
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	· · · · · · · · · · · · · · · · · · ·		+
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.	ひりつ
	ρυι
9523167B	
Bloc 166 MW1-2931	773
7	

Lab Name: EMSL ANA	ALYTICAL			Contract:		
Project No.:		Site	:	Location:	Group:	
Matrix: (soil/water)	WATER	_			Lab Sample ID: 9523167B	
Sample wt/vol:	1000.0	_(g/mL)	ML		Lab File ID: B7780.D	
Level: (low/med)					Date Received: 5/19/95	
% Moisture:	_	decant	ed: (Y/N)	N	Date Extracted: 5/25/95	
Concentrated Extract Vol	ume:	1000	_(uL)		Date Analyzed: 6/2/95	
Injection Volume:	1.0	_(uL)			Dilution Factor: 1.0	
GPC Cleanup: (Y/N)	N	_	pH:			
			(Concentration	Units:	
Number TICs found:	5	_		(ug/L or ug	/Kg) ug/L	

	-			
CAS Number	Compound Name	RT	Est. Conc	Q
1.	Unknown Hydrocarbon	18.11	5	J
2. 17301-28-9	Undecane, 3,6-dimethyl-	21.02	6	J
3. 18344-37-1	Heptadecane, 2,6,10,14-tetra	21.85	13	J
4. 74645-98-0	Dodecane, 2,7,10-trimethyl-	23.28	9	J
5.	Unknown	29.91	6	J
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
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29.				
30.				

VOLATILE ORGANIC ANALYSIS DATA SHEET EPA 524.2

FMETC#1833.1

		EPA 52	24.2		6116 166	MW 1-2431773
Lab Name: EMSL	. ANAT.V	דז ר ז.	T.ah	Sample ID:_	9523167	
Matrix (soil/wa			Lab	File ID:	C8336 D	
Sample wt/vol:	icci,.	_25_mL		e Received:		
Level (low/med)	•	_rom		e Analyzed:		
% Moisture: not				ution Factor		<u> </u>
		75m ID: 0.53mm		l Aliquot Vo		NA
Soil Extract Vo		NA	552	± 1.111quos 10		
BOIL BREIGHT 10			CENTR	ATION UNITS:		
CAS NO.	COMPO			or ug/Kg)	uq/L	COMMENT
-						1
		orodifluoromethane	≥	50_		ซ
74-87-3				.50		UU
74-83-9				.50		U
75-01-4				.50		U
75-00-3				.50_		U
		lorofluoromethane		.50		U
75-09-2				1.8_		В
		-1,2-Dichloroether	ne	50_		U
75-35-4	1,1-D	ichloroethene		.50		
		ichloroethane		.50		U
		ichloropropane		.50		<u></u> ד
74-97-1	Bromo	chloromethane		.50		U
		,2-Dichloroethene		.50		U
67-66-3	Chlore	oform		.50		U
563-58-6	1,1-D	ichloropropene		.50		U
107-06-2	1,2-D	ichloroethane		.50		U
71-55-6	1,1,1	-Trichloroethane		.50		U
74-95-3	Dibro	momethane		.50		U
56-23-1	Carbo	n Tetrachloride		.50		U
		dichloromethane		.50		U
78-87-1	1,2-D	ichloropropane		50		U
10061-01-1	cis-1	,3-Dichloropropene	3	.50		U
142-28-9	1,3-D	ichloropropane		.50		
79-01-6	Trich	loroethene		.50		U
124-48-1	Dibro	mochloromethane		.50		U
79-00-1	1,1,2	-Trichloroethane		.50		
71-43-2	Benze	ne		.50		
		-1,3-Dichloroprope	ene	.50		U
75-25-2				50_		U
		,2-Tetrachloroetha	ane	.50		U
127-18-4			-	_ 50		U
		, 2-Tetrachloroetha	ane	50_		U
108-88-3				50_		U
106-93-4			· · · · · · · · · · · · · · · · · · ·	.50		U
108-90-7				.50		U U
100-41-4				.50		<u> </u>
1330-29-7				-1		

U= Not Detected

Lab Name: EMSL ANALYTICAL Matrix (soil/water): WATER Sample wt/vol: 25 mL Level (low/med): LOW Moisture: not dec.: NA GC Column: DB-624 x 75m ID: 0.53mm Soil Extract Volume: NA	Lab Sample ID: 9523167 Lab File ID: C8336.D Date Received: 05/19/9 Date Analyzed: 06/02/9 Dilution Factor: 1 Soil Aliquot Volume:	5 5
CAS NO. COMPOUND	(ug/L or ug/Kg) _ug/L	COMMENT
100-42-1Styrene_	50	U
98-82-8Isopropylbenzene	.50	U
108-86-1Bromobenzene	.50	U
96-18-41,2,3-Trichloropropane_	.50	U
103-65-1n-Propylbenzene	.50	. UU
95-49-82-Chlorotoluene	.50	. U
106-43-44-Chlorotoluene	.50	UU
108-67-81,3,5-Trimethylbenzene_	.50	. U
98-06-6tert-Butylbenzene	.50	. U
95-63-61,2,4-Trimethylbenzene_	.50	U
135-98-2sec-Butylbenzene	.50	. U
541-73-11,3-Dichlorobenzene	.50	U
106-46-71,4-Dichlorobenzene	.50	UU
99-87-64-Isopropyltoluene	.50	. UU
95-50-11,2-Dichlorobenzene	.50	U
104-51-8n-Butylbenzene	.50	U
96-12-81,2-Dibromo-3-chloropro		U
120-82-11,2,4-Trichlorobenzene_	.50	U
87-68-3Hexachlorobutadiene	.50	UU
91-20-3Naphthalene	50	U
87-61-61,2,3-Trichlorobenzene_	.50	- <u>u</u>

COMMENT

U= Not Detected

BLDG.#: /// MW#: \ NJDEPE WELL ID # 3931773 U.S. ARMY FORT MONMOUTH MONITORING WELL SAMPLING DATASHEET DATE: 5-18-95 IJO#95-0091 SAMPLING CONTRACTOR: EMSL Analytical Services Inc. LABORATORY: EMSL Analytical Services, NJDEP CERT #: SAMPLERS NAMES: Tom Baxter Susan Palitonis WEATHER CONDITIONS: orcight breezy ELEVATION OF CASING SURVEY MARK: TOTAL DEPTH OF WELL FROM TOP OF SURVEYORS MARK: 1.20 FT DEPTH FROM SURVEYORS MARK TO SCREEN:___.__FT LENGTH OF SCREENED SECTION: FT. DEPTH TO WATER PRIOR TO PURGING AND SAMPLING: 3.02 FT ELEVATION OF GW PRIOR TO PURGING: . FT THICKNESS OF LNAPL PRIOR TO PURGING : O.O FT PID/Hnu READING IMMEDIATELY AFTER THE WELL CAP IS REMOVED: 34 PPM 1200 DU. 1.2 pp. ph: U.20 TEMP: 20,3 C, SPECIFIC CONDUCTIVITY: 698 us con DEPTH OF WELL:____FT HEIGHT OF WATER: ____FT EVACUATED GAL. H20: 10 GAL (5.18) X .65 X 3 = 10.101) PURGING START TIME: 1208 END TIME: 1211 PURGE METHOD: (FLOW RATE OF <0.5 GPM TO >5.0 GPM) Pump PURGE RATE (<0.5 GPM): 3 GPM TOTAL VOLUME PURGED: /D GAL. DEPTH TO WATER AFTER PURGING AND BEFORE SAMPLING: 3 .13 FT DISSOLVED OXYGEN: 13 10m pH: 6.7.7 TEMP: 20 3 °C SPECIFIC CONDUCTIVITY: 717 uslam SAMPLING METHOD: DEDICATED, DECONTAMINATED (IAW NJDEP FSPM 1992) TEFLON® BAILER START TIME OF SAMPLING: 1275 END TIME: 1275 DISSOLVED OXYGEN: CAG PAM PH: 650 TEMP: 206 °C SPECIFIC CONDUCTIVITY: 730 CORE

COMMENTS: on othe 115 can Plank So For well - Touris Coming they

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1A VOLATILE ORGANIC ANALYSIS DATA SHEET EPA 524.2

FMETC#1830,4 BLdg166

Lab Name: EMSL ANALYTICAL	Lab Sample ID: 9523164	TRIP BLANK
Matrix (soil/water): WATER	Lab File ID: C8316.D	
Sample wt/vol: 25 mL	Date Received: NA	
Level (low/med): LOW	Date Analyzed: 06/01/9	15
% Moisture: not dec.: NA	Dilution Factor: 1	
GC Column: DB-624 x 75m ID: 0.53mm	Soil Aliquot Volume:	NA
Soil Extract Volume: NA		
	ONCENTRATION UNITS:	
CAS NO. COMPOUND	(ug/L or ug/Kg) _ug/L	COMMENT
75-71-8Dichlorodifluoromethan		ַ ט
74-87-3Chloromethane	.50	ַบ
74-83-9Bromomethane	.50	U
75-01-4Vinyl Chloride	.50	U
75-00-3Chloroethane	.50	U
75-69-4Trichlorofluoromethane	.50	U
75-09-2Methylene Chloride	5.1	B
156-60-65trans-1,2-Dichloroethe	ene50	U
75-35-41,1-Dichloroethene	.50	_
75-34-31,1-Dichloroethane	.50	U
594-20-72,2-Dichloropropane	.50	Ŭ
74-97-1Bromochloromethane	.50	U
156-59-2 cis-1,2-Dichloroethene	.50	. U
67-66-3Chloroform	.50	U
563-58-61,1-Dichloropropene	.50	_ U
107-06-21,2-Dichloroethane	.50	. U
71-55-61,1,1-Trichloroethane	.50	U
74-95-3Dibromomethane	.50	_ U
56-23-1Carbon Tetrachloride_	.50	_\U
75-27-4Bromodichloromethane_	.50	U
78-87-11,2-Dichloropropane	.50	<u>U</u> _
10061-01-1cis-1,3-Dichloroproper	ne50	
142-28-91,3-Dichloropropane	.50	-\
79-01-6Trichloroethene	.50	_ <u>U</u>
124-48-1Dibromochloromethane_	.50	_ U
79-00-11,1,2-Trichloroethane		_ UU
71-43-2Benzene	.50	
10061-02-6trans-1,3-Dichloropro		<u>U</u> _
75-25-2Bromoform	.50	- <u>u</u>
630-20-61,1,1,2-Tetrachloroet	 	- <u></u> <u>U</u>
127-18-4Tetrachloroethene	.50	-\ <u>U</u>
79-34-11,1,2,2-Tetrachloroet		
108-88-3Toluene	.50	- -
106-93-41,2-Dibromoethane	.50	-\ <u>U</u>
108-90-7Chlorobenzene	.50	- <u>U</u>
100-41-4Ethylbenzene	. 50	- <u>-</u>
1330-29-7Xylene(total)	.50	. Ŭ

U= Not Detected

1A VOLATILE ORGANIC ANALYSIS DATA SHEET EPA 524.2

Lab Sample ID: 9523164 TRIPBIANK
Lab File ID: C8316.D
Date Received: NA
Date Analyzed: 06/01/95
Dilution Factor: 1

% Moisture: not dec.: NA GC Column: DB-624 x 75m ID: 0.5	Dilution Factor: 1 3mm Soil Aliquot Volume: NA	
	Julii_ Soll Aliquot volumeNA_	
Soil Extract Volume:NA	CONCENTED METON INTEG.	
CONTOURS CONTOURS	CONCENTRATION UNITS:	
CAS NO. COMPOUND	(ug/L or ug/Kg) _ug/L COM	MENT
100-42-1Styrene	.50	U
98-82-8Isopropylbenzene	.50	Ü
108-86-1Bromobenzene	.50	<u>ש</u>
96-18-41,2,3-Trichloropro	pane .50	<u>ั</u> บ
103-65-1n-Propylbenzene		ับ
95-49-82-Chlorotoluene	.50	Ū
106-43-44-Chlorotoluene		<u></u>
108-67-81,3,5-Trimethylben	zene .50	<u>"</u>
98-06-6tert-Butylbenzene		<u>ט</u>
95-63-61,2,4-Trimethylben	zene .50	U
135-98-8sec-Butylbenzene	. 50	<u>ט</u>
541-73-11,3-Dichlorobenzen	e .50	<u>"</u>
106-46-71,4-Dichlorobenzen	e .50	ָּט
99-87-64-Isopropyltoluene	.50	U
95-50-11,2-Dichlorobenzen	e .50	U
104-51-8n-Butylbenzene	.50	U
96-12-81,2-Dibromo-3-chlo		U
120-82-11,2,4-Trichloroben		ַ ע
87-68-3Hexachlorobutadien	e50	บ
91-20-3Naphthalene		บ
87-61-61,2,3-Trichloroben	zene .50	บ
I		

COMMENT

U= Not Detected

Lab Name: EMSL ANALYTICAL

Matrix (soil/water):

Sample wt/vol:

Level (low/med):

WATER

LOW

25 mL



Date of Report:

06/23/95

Project Number:

09508273

Lab ID:

95-0023165

Date Collected: 05/18/95 14:30

Collected By: Client

Date Received: 05/19/95 07:00

U.S. Army - Fort Monmouth SELFM-PW-EV

Attention: Charles Appleby

Building 173

Fort Monmouth NJ 07703

Client Project: 931021191016

Client Designation: Field Blank

Conc.

Unit

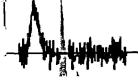
ORGANIC

Semi-Volatiles

BN by 625 with Library Search

Volatiles by 524.2 w/ Library Search see attached ug/l

see attached ug/l



SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAM	PLE NO.
BLd	9 166
Q4	523165R

Date Received: 5/19/95

Lab Name: EMSL A	NALYTICAL	Contract:	Field Black
Project No.:	Site:	Location:	Group:
Matrix: (soil/water)	WATER		Lab Sample ID: 9523165B
Sample wt/vol:	1000.0 (g/mL ML		Lab File ID: B7778.D

decanted: (Y/N): N Date Extracted: 5/25/95 % Moisture: Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/2/95

Dilution Factor: Injection Volume: 1.0 (uL) 1.0

GPC Cleanup: (Y/N) Ν

(low/med)

Level:

	Concentration Units:				
CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q		
62-75-9	N-nitrosodimethylamine	2	U		
111-44-4	bis(2-Chloroethyl)ether	1	U		
541-73-1	1,3-Dichlorobenzene	2	U		
106-46-7	1,4-Dichlorobenzene	1	U		
95-50-1	1,2-Dichlorobenzene	2	Ü		
108-60-1	bis(2-chloroisopropyl)ether	5	U		
621-64-7	N-Nitroso-Di-n-propylamine	2	U		
67-72-1	Hexachloroethane	1	Ŭ		
98-95-3	Nitrobenzene	2	U		
78-59-1	Isophorone	- 1	Ü		
111-91-1	bis(2-Chloroethoxy)methane	3	U		
120-82-1	1,2,4-Trichlorobenzene	2	U		
91-20-3	Naphthalene	2	U		
87-68-3	Hexachlorobutadiene	2	U		
77-47-4	Hexachlorocyclopentadiene	12	U		
91-58-7	2-Chloronaphthalene	1	U		
131-11-3	Dimethylphthalate	1	U		
208-96-8	Acenaphthylene	5	U		
606-20-2	2,6-Dinitrotoluene	2	U		
83-32-9	Acenaphthene	3	U		
121-14-2	2,4-Dinitrotoluene	3	U		
84-66-2	Diethylphthalate	1	U		
86-73-7	Fluorene	3	U		
7005-72-3	4-Chlorophenyl-phenylether	3	U		
86-30-6	n-Nitrosodiphenylamine	6	U		
122-66-7	1,2-Diphenylhydrazine(as azo)	6	U		
101-55-3	4-Bromophenyl-phenylether	2	U		
118-74-1	Hexachlorobenzene	2	Ŭ		
85-01-08	Phenanthrene	2	U		
120-12-7	Anthracene	2	Ū		
84-74-2	Di-n-butylphthalate	55			
206-44-0	Fluoranthene	1	U		
92-87-5	Benzidine	1	U		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAM	PLE	NO.
2//4	11.1	

			9523165B
Lab Name:	EMSL ANALYTICAL	Contract:	 Field Blank

			•		TIEIG DIE
Project No.:		Site:	Location:		Group:
Matrix: (soil/water)	WATER	_		Lab Sample ID:	9523165B
Sample wt/vol:	_1000.0	(g/mL ML		Lab File ID:	B7778.D
Level: (low/med)		_		Date Received:	5/19/95
% Moisture:	_	decanted: (Y/N)	: <u>N</u>	Date Extracted:	5/25/95
Concentrated Extract Vol	lume:	1000 (uL)		Date Analyzed:	6/2/95
Injection Volume:	1.0	_(uL)		Dilution Factor:	1.0
GPC Cleanum: (V/N)	NI	n.l	u.		

CAS No. Compound (ug/L or ug/Kg) ug/L 129-00-0 Pyrene 2 85-68-7 Butylbenzylphthalate 9 56-55-3 Benzo[a]anthracene 2 91-94-1 3,3'-Dichlorobenzidine 15 218-01-9 Chrysene 2 117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3 191-24-2 Benzo[g,h,i]perylene 2	Q U U
85-68-7 Butylbenzylphthalate 9 56-55-3 Benzo[a]anthracene 2 91-94-1 3,3'-Dichlorobenzidine 15 218-01-9 Chrysene 2 117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	
56-55-3 Benzo[a]anthracene 2 91-94-1 3,3'-Dichlorobenzidine 15 218-01-9 Chrysene 2 117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	
91-94-1 3,3'-Dichlorobenzidine 15 218-01-9 Chrysene 2 117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
218-01-9 Chrysene 2 117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
117-81-7 bis(2-Ethylhexyl)phthalate 4 117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
117-84-0 Di-n-octylphthalate 2 205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
205-99-2 Benzo[b]fluoranthene 1 207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
207-08-9 Benzo[k]fluoranthene 2 50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
50-32-8 Benzo[a]pyrene 2 193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
193-39-5 Indeno[1,2,3-cd]pyrene 2 53-70-3 Dibenz[a,h]anthracene 3	U
<u> </u>	U
191-24-2 Benzo[g,h,i]perylene 2	U
	U
<u> </u>	