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MCAS CHERRY POINT
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DRAFT REPORT OF ADDITIONAL SOIL AND FREE PRODUCT ASSESSMENT BUILDING 133 UNDERGROUND STORAGE TANK SITE WITH TRANSMITTAL MCAS CHERRY POINT NC

12/4/2000

CATLIN ENGINEERS AND SCIENTISTS

LAW CATLIN

ENVIRONMENTAL AND
ENGINEERING CONSULTANTS

RALEIGH, N.C.
WILMINGTON, N.C.

DRAFT
REPORT OF ADDITIONAL SOIL AND FREE PRODUCT ASSESSMENT

BUILDING 133 UST SITE
MARINE CORPS AIR STATION – CHERRY POINT
HAVELOCK, NORTH CAROLINA

December 4, 2000

Contract Number: N62470-95-D-6009
Delivery Order Number: 0080
LAW Job No. 30740-6-0600-0080

Law Engineering and Environmental Services, Inc.
3301 Atlantic Avenue
Raleigh, NC 27604

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ENVIRONMENTAL AND
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WILMINGTON, N.C.
RALEIGH, N.C.

December 4, 2000

Commander
LANTNAVFACENGCOM
1510 Gilbert Street
Norfolk, Virginia 23511-2699

Attention: Mr. Charlie Hilton, EV21-CRH

Subject: **DRAFT REPORT OF ADDITIONAL SOIL AND FREE PRODUCT ASSESSMENT**
BUILDING 133 UST SITE
MARINE CORPS AIR STATION – CHERRY POINT
HAVELOCK, NORTH CAROLINA
LAW ENGINEERING JOB NO. 30740-6-0600-0080

Dear Mr. Hilton:

In accordance with Naval Facilities Engineering Command Order for Supplies and Services Contract No. N62470-95-D-6009, Delivery Order Number 0080, Law Engineering and Environmental Services, Inc. (LAW) is pleased to present this Report of Additional Soil and Free Product Assessment for the above-referenced project site. This report contains information gathered as part of additional assessment activities and data obtained during previous investigations performed at the site.

The scope of our services, as described in the attached report, included advancement of soil test borings and collection of soil samples for laboratory testing, and collection of free product samples from existing monitoring wells for laboratory testing. The objective of our services was to provide additional information regarding the extent/severity of petroleum and chlorinated solvent contamination in the subsurface soils and free product plumes identified at the subject site.

This report is intended for the exclusive use of Naval Facilities Engineering Command, Atlantic Division. The contents should not be relied upon by any other parties without the expressed written consent of LAW. The findings are relevant to the dates of our site work and should not be relied upon to represent site conditions on other dates.

We appreciate the opportunity to continue to our environmental services on this project. If any questions arise, please contact us at (919) 876-0416. We look forward to receiving your comments.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Jeffrey A. Mann
Project Engineer

Brian J. Bellis, L.G.
Principal Hydrogeologist

cc: Mr. John Myers, Marine Corps Air Station, Cherry Point
Mr. Chris Foskey, LANTNAVFACENGOM (cover letter only)
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EXECUTIVE SUMMARY

In accordance with the Naval Facilities Engineering Command Order for Supplies and Services Contract No. N62470-95-D-6009, Delivery Order 0080, Law Engineering and Environmental Services, Inc. (LAW) performed additional soil and free product assessment in the vicinity of Building 133 located at the Cherry Point Marine Corps Air Station (MCAS) in Havelock, North Carolina. The investigation involved the assessment of soil and free product plume conditions in the vicinity of Buildings 133, 421, 422, 1689 and Test Cell 133, which are located within the Naval Aviation Depot (NADEP).

Field activities were conducted in three stages. The first stage involved the delineation and measurement of free product in the vicinity of Buildings 133, 421, 422, 1689 and Test Cell 133. On April 27, 2000, LAW collected free product measurements from 38 monitoring wells located across the site. Free product was detected in 10 of the 38 monitoring wells gauged. Free product data indicated the presence of four independent free product plumes in the area. The first plume identified in the vicinity of the former NADEP Tank Farm encompassed monitoring wells N2GW38, N2GW45A, N2GW45, N2GW10 and N2GW18, and indicated a free product thickness ranging from 0.25 to 2.01 feet. The second and third plumes were identified in the vicinity of Building 422 and encompassed wells N3GW01 (1.88 feet of free product) and N2GW39 (0.51 feet of free product), respectively. The fourth plume identified in the vicinity of Building 421 and Test Cell 133 encompassed wells N4GW08, N4GW19 and PW-1, and indicated a free product thickness ranging from 1.31 to 2.01 feet.

The second stage of field activities involved the collection of free product samples from six of the wells. On May 10, 2000, LAW collected three samples from wells (N2GW45A, N2GW10 and N2GW18) within the free product plume at the former NADEP Tank Farm and three samples from wells (N4GW08, N4GW19 and PW-1) within the plume at Building 421/Test Cell 133. Analysis of the free product samples collected from these wells indicated the presence of numerous petroleum constituents indicative of diesel fuel and jet fuel. Petroleum constituents were detected at concentrations ranging from 58 to 21,100 mg/kg. Additionally, 1,1,1-trichloroethane (TCA) was identified in the free product sample collected from well N4GW08 at a concentration of 179 mg/kg. The identification of 1,1,1-TCA in this free product sample confirms the existence of chlorinated solvents within the free product and groundwater at the subject site.

The third stage of field activities involved the collection of soil samples from selected location across the site to define better the nature and extent of soil contamination. On May 9-10, 2000, LAW advanced 20 Powerprobe® borings (500PP01 through 500PP20). Soil samples were collected from each boring, with the exception of boring 500PP12, and were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH). The soil samples from borings 500PP02, 500PP05, 500PP15 and 500PP19 were also tested for lead and chromium.

Various petroleum constituents (VOCs, SVOCs, VPH and EPH) were detected at concentrations above detection limits, but below their respective Residential and Industrial Commercial Maximum Soil Contaminant Concentrations (MSCCs). In additional to the petroleum constituents, cis-1,2-dichloroethene and vinyl chloride were detected in soil samples collected from the subject site. Cis-1,2-dichloroethene was detected in soil sample 500PP16 at a concentration of 0.017 mg/kg, which is below its respective Residential and Industrial/Commercial MSCCs. Vinyl chloride was detected in soil sample 500PP18 at a concentration of 0.009 mg/kg, which is also below its respective Residential and Industrial/Commercial MSCCs.

Based on the results of the additional soil assessment and delineation of free product plumes at the subject site, LAW recommends preparing a Secondary Source Abatement Plan (SSAP) to address the corrective action alternatives for the remediation of petroleum and chlorinated solvent contamination identified at the site. LAW also recommends continued recovery of free product from the plumes identified at the site. Because contaminated groundwater at the site is currently being addressed under a separate remedial action plan in accordance with CERCLA guidelines, the SSAP would only address soil contamination and free product recovery.

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1.0 INTRODUCTION

1.1 Purpose of Investigation

The Commander of the Atlantic Division Naval Facilities Engineering Command in Norfolk, Virginia, contracted with LAW to perform additional soil and free product assessment for the Building 133 UST Site, located at the Cherry Point Marine Corps Air Station (MCAS) in Havelock, North Carolina (Drawing 1). The purpose of the investigation was to assess the horizontal extent of petroleum and chlorinated solvent contaminated soil, and delineate the extent, composition and accumulation free product resulting from various releases of petroleum at the subject site. The objective of this additional investigation was to evaluate petroleum and chlorinated solvent concentrations in subsurface soils and free phase product previously identified at the subject site. The findings of this investigation will be used to determine the appropriate corrective action alternative for recovery of free product and remediation of soil contamination.

1.2 Scope of Work

Authorization to proceed with the investigation was granted by the Commander of the Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia, via Contract No. N62470-95-D-6009, Delivery Order Number 0080. As specified in the contract requirements and outlined in the delivery order, the scope of work included the advancement of soil test borings and collection of soil samples for laboratory testing; delineation and measurement of free product accumulation; collection of free product samples from existing monitoring wells for laboratory testing; and the preparation of this report.

1.3 Area of Investigation

The subject site encompasses Buildings 421, 422, 1689 and portions of Building 133 and Test Cell 133, at the Cherry Point MCAS, in Havelock, Craven County, North Carolina (Drawing 1). The subject site consists of a variety of buildings located within the Naval Aviation Depot (NADEP), which are used to repair, study and test aviation equipment. Nine storage tanks were previously located within the project area. The site is situated primarily within the confines of the NADEP and is bounded to the east by Building 133, to the south by Taylor Drive, to the west by Harrison Drive and to the north by "A" Street.

2.0 BACKGROUND

2.1 Site History and Operations

The site designated as Building 133 UST Site is comprised of Buildings 421, 422, 1689 and portions of Building 133 and Test Cell 133 (Drawing 2). The buildings comprising the subject site are used primarily for repair, study and testing of aviation equipment. Nine underground storage tanks (USTs) comprising three tank systems were previously located at the subject site. The first UST system consisted of two 10,000-gallon USTs identified as 133-TC1 and 133-TC2, located near Test Cell 133. Two 2,000-gallon USTs identified as 422-T1 and 422-T2, located near Building 422, comprised the second UST system. Four 13,000-gallon and a 2,000-gallon UST designated as 1828, 1829, 1830, 1831 and 1827, respectively were located at the NADEP Tank Farm to the north of Building 422, comprising the third UST system. USTs 133-TC1, 133-TC2, 1828, 1829, 1830 and 1831 were used to store jet fuel. USTs 422-T1 and 422-T2 were used to store waste oil, and UST 1827 was used to store Varsol.

2.2 Contaminant Source Inventory

Subsurface releases of jet fuel from UST systems 133-TC1, 133-TC2, 1828, 1829, 1830 and 1831 are suspected to be the main contributors of soil contamination and free product accumulation at the site. Documented releases from UST systems 422-T1 and 422-T2 are also suspected contributors to the subsurface petroleum contamination identified at the site. USTs 133-TC1 and 133-TC2 were removed from the subject site in October 1991. USTs 422-T1 and 422-T2 were removed from the site in September 1992. The NADEP Tank Farm (USTs 1827 through 1831) was closed and the USTs removed in August 1993.

A free product recovery system was installed in February 1994 in the vicinity of the former 133 USTs. In June 1992, a free product recovery system was installed in the vicinity of the NADEP fuel farm USTs. Approximately 360 and 1660 gallons of free product were recovered from the system, respectively.

Petroleum constituents that have been identified in groundwater in excess of North Carolina Groundwater Quality Standards include benzene, ethylbenzene, naphthalene, 1,4-dichlorobenzene, MTBE, and phenanthrene. Chlorinated solvents including 1,1,1-trichloroethane (TCA) have also been identified in the groundwater samples collected from the subject site at concentrations in excess of North Carolina Groundwater Quality Standards. The presence of 1,1,1-TCA and other chlorinated solvents is believed to the result of a former release from an industrial waste line, which crosses the subject site.

Recovery and remediation of chlorinated solvents within the groundwater at the subject site is being addressed as part of a separate remedial action in accordance with CERCLA protocol.

2.3 List of Previous Environmental Reports:

NO.	REPORT TITLE	DATE	AUTHOR
1	Subsurface Soil Assessment	May 4, 1987	Soil & Material Engineers Inc.
2	Underground Storage Tank (UST) Site Check Investigation Report, Naval Aviation Depot (NADEP), Site N3, Building 422, USTs 422-T1 and 422-T2	March 23,1992	ATEC Associates, Inc.
3	Underground Storage Tank (UST) Site Check Investigation Report, Naval Aviation Depot (NADEP), Site N5, Building 133, UST Number 133HT1	March 23, 1992	ATEC Associates, Inc.
4	Addendum Leaking Underground Storage Tank Site Assessment Report, UST Nos. 133-TC1 and 133-TC2	April 7, 1994	Law Engineering, Inc.
5	Addendum to Leaking Underground Storage Tank Site Assessment Report, UST Nos. 133-TC1 and 133-TC2	August 29, 1994	Law Engineering, Inc.
6	Final Site Assessment Report, Naval Aviation Depot, Former Tank Farm, Underground Storage Tanks 1827-1831	October 19, 1994	Baker Environmental, Inc.
7	Final Performance Specification for LNAPL Recovery Building 133 Area, Underground Storage Tanks (UST) , Sites N2, N3, and N4	July 1996	Brown & Root Environmental

3.0 ADDITIONAL FREE PRODUCT ASSESSMENT

3.1 Field Activities

As the first stage of the assessment, LAW gauged 38 monitoring wells located across the subject site, including several wells previously identified to have free product (see Drawing 3). On April 27, 2000, free product was detected in 10 monitoring wells (N2GW38, N2GW45A, N2GW45, N2GW10, N2GW18, N2GW39, N3GW01, N4GW08, N4GW19 and PW-1) with product thickness ranging from 0.25 to 2.01 feet (see Drawing 4). The wells identified with free product indicated the presence of four individual free product plume, the largest plume being in the area of the former NADEP Tank Farm (see Drawing 4).

As the second stage of the assessment, LAW collected free product samples from six of the monitoring wells identified with the greatest free product thickness. On May 10, 2000, samples were collected from well N2GW45A, N2GW10 and N2GW18, which are located within the free product plume around the former NADEP Tank Farm. Samples were also collected from well N4GW08, N4GW19 and PW-1, located within the free product plume near Test Cell 133. The locations of these wells are shown on Drawing 3. The free product samples were collected using precleaned disposable bailers and decanted into laboratory prepared jars. The samples were shipped in a cooler with ice, under chain-of-custody, to GeoChem Laboratories (GeoChem) in Morrisville, North Carolina. The laboratory tested the samples for VOCs by EPA Method 8260, to determine the type of petroleum product and concentrations of chlorinated solvents commingled within the free product plumes.

3.2 Extent of Free Product

Free product was detected in 10 of the 38 monitoring wells gauged at the subject site on April 27, 2000. The free product gauging data indicated the presence of four independent free product plumes at the site. The first plume identified in the vicinity of the former NADEP Tank Farm encompassed monitoring wells N2GW38, N2GW45A, N2GW45, N2GW10 and N2GW18, with a free product thickness ranging from 0.25 to 2.01 feet. The second and third plumes were identified in the vicinity of Building 422 and encompassed wells N3GW01 (1.88 feet of free product) and N2GW39 (0.51 feet of free product), respectively. The fourth plume identified in the vicinity of Building 421 and Test Cell 133 encompassed wells N4GW08, N4GW19 and PW-1, with free product thickness ranging from 1.31 to 2.01 feet.

Free product is currently being recovered from the plumes at the former NADEP Tank Farm and Building 421/Test Cell 133. The free product is transported to the MCAS Central Heating Plant and used as a fuel source.

3.3 Groundwater Flow Direction

On April 27, 2000, LAW measured the depth to groundwater from the top of well casing in 38 of the existing monitoring wells. Free product was detected in 10 of the 38 wells measured. The groundwater depths were used to calculate the elevation of the water table at each well location and develop groundwater elevation contours to evaluate groundwater flow direction (see Drawing 5). The groundwater elevation data is tabulated in Table 1.

The groundwater elevations and the interpreted flow direction indicate that groundwater flow across the site is generally westward.

3.4 Laboratory Results

A summary of laboratory results for the free product samples collected from wells N2GW38, N2GW45A, N2GW45, N2GW10, N2GW18, N2GW39, N3GW01, N4GW08, N4GW19 and PW-1 is presented in Table 2. Analysis of the free product samples collected from these wells indicated the presence of numerous petroleum constituents indicative of diesel fuel and jet fuel. Petroleum constituents were detected as concentrations ranging from 58 to 21,100 mg/kg. However, 1,1,1-trichloroethane (TCA) was also identified in the free product sample collected from well N4GW08 at a concentration of 179 mg/kg. The identification of 1,1,1-TCA in this free product sample confirms the existence of chlorinated solvents within the free product and groundwater at the subject site.

4.0 ADDITIONAL SOILS INVESTIGATION

4.1 Field Activities

As the third stage of the assessment, LAW advanced 20 Powerprobe® borings (500PP01 through 500PP20) in the vicinity of Building 133 (see Drawing 6). On May 9-10, 2000, LAW advanced the borings on a grid pattern which encompassed Buildings 421, 422, 1689, the former NADEP Tank Farm and the western portion of Building 133.

Because depth to groundwater across the site ranges from 8.0 to 13.5 feet below land surface (bls), each boring was advanced to a depth of approximately 8 feet bls. Borings were not advanced beyond 8 feet bls to avoid collecting soil samples which are periodically saturated by seasonal and tidal groundwater table changes. Groundwater was not encountered in any of the borings. Using clean, disposable, Powerprobe sampling tube, continuous soil samples were collected from each borings at 2 foot intervals. Powerprobe® refusal was encountered in borings 500PP12 and 500PP14 at depths of approximately 4 feet and 5 feet bls, respectively.

The soil samples collected from each boring were split, placing one-half into a plastic bag and the other half into laboratory prepared jars. LAW obtained a reading from the headspace within the plastic bag samples using a portable photoionization detector (PID) to test for the presence of organic vapors. PID results are summarized in Table 3.

LAW submitted two soil samples from each boring, with the exception of boring 500PP12, for laboratory testing. The soil samples were place into laboratory prepared jars and shipped in a cooler with ice, under chain-of-custody, to Paradigm Analytical Laboratory (Paradigm) in Wilmington, North Carolina. Paradigm tested the soil samples for Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs) by EPA Methods 8260B and 8270, respectively, and Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) by the Massachusetts Department of Environmental Protection (MADEP) method. Soil samples from borings 500PP02, 500PP05, 500PP15 and 500PP19 were also tested for lead and chromium by EPA Method 6010.

4.2 Laboratory Results

Laboratory test results for the soil samples are summarized in Table 4. The laboratory results indicated the presence of VOCs and SVOCs in 11 of the 19 soil samples submitted for analysis. Various petroleum constituents, both VOCs and SVOCs, were detected at concentrations above detection limits, but below their respective Residential and Industrial Commercial Maximum Soil Contaminant Concentrations (MSCCs) established in Section 7.3 of the North Carolina Department of Environment and Natural Resources (NCDENR) Guidelines. In additional to the petroleum constituents, cis-1,2-dichloroethene and vinyl chloride were detected in soil samples collected from the subject site. Cis-1,2-dichloroethene was detected in soil sample 500PP16 at a concentrations of 0.017 mg/kg, which is below its respective Residential and Industrial/Commercial MSCCs. Vinyl chloride was detected in soil sample 500PP18 at a concentration of 0.009 mg/kg, which is also below its respective Residential and Industrial/Commercial MSCCs.

VPH and EPH were detected in 13 of the 19 soil samples submitted for analysis. However, the concentrations of VPH and EPH detected in the soil samples were below their respectively Residential and Industrial/Commercial MSCCs. Likewise, lead and chromium were detected in the four soil samples analyzed for lead and chromium. However, the concentrations of lead and chromium detected were also below their respective Residential and Industrial/Commercial MSCCs. Furthermore, these concentrations appear to be indicative of the natural soil chemistry in the vicinity of the subject site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the findings of our additional assessment activities, we offer the following conclusions and recommendations.

5.1 Conclusions

The following conclusions are made based on the results of this investigation and the results from previous investigations performed at the Building 133 UST Site:

- On April 27, 2000, free product was detected in 10 groundwater monitoring well across the subject site, comprising four separate free product plumes. Free product plumes were identified in the vicinity of the former NADEP Tank Farm, Building 422 and Building 421/Test Cell 133;

- Recovery of free product from the plumes at the former NADEP Tank Farm and Building 421/Test Cell 133 is currently being performed. Free product recovered from these plumes is transported to the MCAS Central Heating Plant and used as a fuel source.

- Laboratory test results of free product samples collected from the subject site identify the product as primarily diesel fuel and/or jet fuel. Petroleum constituents were detected at concentrations ranging from 58 to 21,100 mg/kg;

- 1,1,1-TCA was also identified in the free product sample collected from well N4GW08 at a concentration of 179 mg/kg. The identification of 1,1,1-TCA in this free product sample confirms the existence of chlorinated solvents within the free product and groundwater at the subject site. The presence of chlorinated solvents within this free product samples is believed to be the result of former release from an industrial waste line which crosses the subject site. Recovery and remediation of chlorinated solvents within the groundwater at the subject site is being addressed as part of a separate remedial action in accordance with CERCLA protocol;

- Groundwater flow at the site is predominantly to the west;

- Detectable concentrations of petroleum constituents were identified in eleven of the soil samples at concentrations below their respective Residential and Industrial Commercial MSCCs;

- Detectable concentrations of chlorinated solvents (cis-1,2-dichloroethene and vinyl choride) were identified in two of the soil samples at concentrations below their respective Residential and Industrial Commercial MSCCs; and

- Detectable concentrations of lead and chromium were identified in four of the soil samples at concentrations below their respective Residential and Industrial/Commercial MSCCs. Furthermore, the presence of lead and chromium may be attributed to naturally occurring concentrations within the soils at the site.

5.2 Recommendations

Based on the information obtained to date, LAW offers the following recommendations relative to the soil contamination and free product plumes identified at the Building 133 UST Site.

- Continue recovery of free product from the plumes identified at the site.
- Petroleum and chlorinated solvent constituents were detected in the subsurface soils at concentrations below the Residential and Industrial/Commercial MSCCs. Therefore, upon removal of free product identified at the site, additional remediation of contaminated soils will not be necessary.
- Prepare a Secondary Source Abatement Plan for the site as required by North Carolina Administrative Code, Title 15A, Subchapter 2L, Section .0106. LAW recommends evaluating possible free product recovery alternatives for remediation of the site. Due to the characteristics associated with the site, the report would be termed a Secondary Source Abatement Plan rather that a Corrective Action Plan for ease in regulatory review.

TABLES

TABLE 1 page 1 of 2
MONITORING WELL CASING AND GROUNDWATER ELEVATION WORKSHEET
MCAS – BUILDING 133 UST SITE

PROJECT NAME Building 133 UST Site JOB NUMBER 30740-6-0600-0080
LOCATION MCAS, Cherry Point, North Carolina DATE 4/27/00

DESCRIPTION OF SURVEY DATUM Top of Casing
FIELD PERSONNEL Jeff Mann/Tana Jones
MEASURING DEVICE(S)

WELL NUMBER	ELEV OF MEASURING POINT (1) (FT)	DEPTH TO WATER (FT)	ELEV OF WATER (FT)	PRODUCT THICKNESS (FT)	COMMENTS (ODOR, WELL COND., PROTECTIVE COVER CONDITION)
N2GW4C	22.96	11.48	11.48		GOOD CONDITION
N2GW04	21.93	10.65	11.28		GOOD CONDITION
N2GW06	23.08	11.11	11.97		GOOD CONDITION
N2GW10	22.88	13.32	11.17*	**2.01**	GOOD CONDITION
N2GW14	25.75	14.41	11.34		GOOD CONDITION
N2GW16	22.85	11.27	11.58		GOOD CONDITION
N2GW18	24.79	14.07	11.42*	**0.87**	GOOD CONDITION
N2GW20	22.62	11.17	11.45		GOOD CONDITION
N2GW29	21.79	10.49	11.30		GOOD CONDITION
N2GW30	14.90	4.58	10.32		GOOD CONDITION
N2GW31	21.72	9.94	11.78		GOOD CONDITION
N2GW32	21.84	10.69	11.15		GOOD CONDITION
N2GW33	21.99	10.78	11.21		GOOD CONDITION
N2GW34	22.85	11.06	11.79		GOOD CONDITION
N2GW35	17.57	6.63	10.94		GOOD CONDITION
N2GW36	21.26	9.85	11.41		GOOD CONDITION
N2GW38	22.84	12.35	11.19*	**0.87**	GOOD CONDITION
N2GW39	21.70	10.81	11.30*	**0.51**	GOOD CONDITION
N2GW44	13.93	4.62	9.31		GOOD CONDITION
N2GW45	23.26	12.31	11.15*	**0.25**	GOOD CONDITION
N2GW45A	23.05	13.71	10.70*	**1.69**	GOOD CONDITION
PW-1	22.18	11.98	11.30*	**1.37**	GOOD CONDITION

(1) Measuring point top of casing unless otherwise noted.
ND = None detected; equipment capable of measuring ≥0.01 feet.
* Calculated groundwater elevation

TABLE 1 page 2 of 2
MONITORING WELL CASING AND GROUNDWATER ELEVATION WORKSHEET
MCAS – BUILDING 133 UST SITE

PROJECT NAME Building 133 UST Site JOB NUMBER 30740-6-0600-0080
LOCATION MCAS, Cherry Point, North Carolina DATE 4/27/00

DESCRIPTION OF SURVEY DATUM Top of Casing
FIELD PERSONNEL Jeff Mann/Tana Jones
MEASURING DEVICE(S)

WELL NUMBER	ELEV OF MEASURING POINT (1) (FT)	DEPTH TO WATER (FT)	ELEV OF WATER (FT)	PRODUCT THICKNESS (FT)	COMMENTS (ODOR, WELL COND., PROTECTIVE COVER CONDITION)
N3GW01	22.91	12.83	11.58*	**1.88**	GOOD CONDITION
N3GW02	22.48	10.82	11.66		GOOD CONDITION
N4GW01	20.11	9.51	10.60		GOOD CONDITION
N4GW04	22.74	10.95	11.79		GOOD CONDITION
N4GW05	20.35	8.36	11.99		GOOD CONDITION
N4GW07	21.73	10.38	11.35		GOOD CONDITION
N4GW08	22.10	12.35	11.36*	**2.01**	GOOD CONDITION
N4GW13	19.22	8.21	11.01		GOOD CONDITION
N4GW14	18.08	6.80	11.28		GOOD CONDITION
N4GW15	21.25	9.48	11.77		GOOD CONDITION
N4GW17	22.49	10.97	11.52		GOOD CONDITION
N4GW18	21.24	9.80	11.44		GOOD CONDITION
N4GW19	21.26	10.72	11.59*	**1.31**	GOOD CONDITION
N4GW20	21.14	9.37	11.77		GOOD CONDITION
N4GW21	21.47	9.94	11.53		GOOD CONDITION
N4GW22	21.74	10.51	11.23		GOOD CONDITION

(1) Measuring point top of casing unless otherwise noted.
ND = None detected; equipment capable of measuring ≥0.01 feet.
* Calculated groundwater elevation

TABLE 2
SUMMARY OF FREE PRODUCT ANALYSIS RESULTS
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080

Units: mg/kg

Contaminant Constituents	Samples Locations and Depths					
	N2GW18	N4GW08	N4GW10	N4GW19	N4GW45A	PW-1
Volatile Organic Compounds (8260)						
Ethylbenzene	554	226	434	384	900	
Isoproplybenzene	918	195	854	332	992	58
4-Isopropyltoluene	1,488	611	1,654	973	2,260	67
Naphthalene	1,842	1,130	1,636	1,790	1,286	3,010
n-Butylbenzene	1,980	1,240	2,060	1,920	2,420	595
n-Propylbenzene	2,160	488	2,080	851	2,020	131
sec-Butylbenzene	1,002	667	1,032	1,150	1,418	248
Toluene	132	60				
1,1,1-Trichloroethane		179				
1,2,4-Trimethylbenzene	17,100	3,390	19,800	5,000	21,100	
1,3,5-Trimethylbenzene	8,400	1,360	9,750	1,800	10,200	
Total Xylene	5,618	772	3,092	1,041	4,020	

TABLE 3 page 1 of 2
SUMMARY OF HEADSPACE TESTING
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080
Units: ppm

SAMPLE LOCATION I.D.	SAMPLE DEPTH (FT.)	TVA READING/DETECTION OF PETROLEUM ODORS
500PP01	0-2	0.0
	2-4	276
	4-6*	1428
	6-8	16.4
500PP02	0-2	0.0
	2-4	30.7
	4-6*	1720
	6-8	6.14
500PP03	0-2	no odor
	2-4	no odor
	4-6*	slight petroleum odor
	6-8	slight petroleum odor
500PP04	0-2	no odor
	2-4	slight petroleum odor
	4-6*	moderate petroleum odor
	6-8	slight petroleum odor
500PP05	0-2	no odor
	2-4	no odor
	4-6*	slight petroleum odor
	6-8	slight petroleum odor
500PP06	0-2	no odor
	2-4	no odor
	4-6	no odor
	6-8*	slight petroleum odor
500PP07	0-2	no odor
	2-4	no odor
	4-6	slight petroleum odor
	6-8*	moderate petroleum odor
500PP08	0-2	no odor
	2-4	no odor
	4-6*	slight petroleum odor
	6-8	slight petroleum odor
500PP09	0-2	no odor
	2-4	no odor
	4-6	no odor
	6-8*	slight petroleum odor
500PP10	0-2	no odor
	2-4	slight petroleum odor
	4-6	slight petroleum odor
	6-8*	heavy petroleum odor
500PP11	0-2	no odor
	2-4	no odor
	4-6	moderate petroleum odor
	6-8*	heavy petroleum odor

* Sample selected for laboratory analysis

Note: TVA malfunction during field activities. Sample selection for petroleum contamination determined by presence of petroleum odor in soil samples

TABLE 3 page 2 of 2 SUMMARY OF HEADSPACE TESTING MCAS – BUILDING 133 UST SITE CHERRY POINT, NORTH CAROLINA LAW JOB NO. 30740-6-0600, PHASE 0080 Units: ppm		
SAMPLE LOCATION I.D.	**SAMPLE DEPTH (FT.)**	**TVA READING/DETECTION OF PETROLEUM ODORS**
500PP12 **	0-2	no odor
	2-4 (refusal @ 4')	no odor
500PP13	0-2	no odor
	2-4	no odor
	4-6	slight petroleum odor
	6-8*	moderate petroleum odor
500PP14 **	0-2	no odor
	2-4* (refusal @ 5')	no odor
500PP15	0-2	no odor
	2-4	no odor
	4-6	no odor
	6-8*	slight petroleum odor
500PP16	0-2	no odor
	2-4	no odor
	4-6*	moderate petroleum odor
	6-8	moderate petroleum odor
500PP17	0-2	no odor
	2-4	no odor
	4-6	slight petroleum odor
	6-8*	slight petroleum odor
500PP18	0-2	no odor
	2-4	slight petroleum odor
	4-6*	moderate petroleum odor
	6-8	slight petroleum odor
500PP19	0-2	no odor
	2-4	no odor
	4-6*	slight petroleum odor
	6-8	no odor
500PP20	0-2	no odor
	2-4	no odor
	4-6	no odor
	6-8*	slight petroleum odor

* Sample selected for laboratory analysis

** Powerprobe refusal encountered

Note: TVA malfunction during field activities. Sample selection for petroleum contamination determined by presence of petroleum odor in soil samples

TABLE 4 Page 1 of 4
SUMMARY OF SOIL ANALYSIS RESULTS
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080
Units: mg/kg

Contaminant Constituents	Samples Locations and Depths					Residential MSCC	Industrial/ Commercial MSCC	Soil-to-Groundwater MSCC
	500PP01 4-6	500PP02 4-6	500PP03 4-6	500PP04 4-6	500PP05 4-6			
VOCs EPA Method 8260								
Benzene						22	200	0.0056
sec-Butylbenzene						156	4088	3
Cis-1,2-Dichloroethene						156	4000	0.35
Ethylbenzene						1560	40000	0.24
Isopropylbenzene						1564	40880	2
4-Isopropyltoluene						**	**	**
Methylene chloride						85	763	0.02
Naphthalene						63	1635	0.58
n-Propylbenzene						156	4088	2
Toluene						3200	82000	7
1,2,4-Trimethylbenzene						782	20440	8
1,3,5-Trimethylbenzene						782	20440	7
Vinyl chloride						0.336	1.075	0.000087
m,p-Xylene						32000	200000	5
o-Xylene						32000	200000	5
SVOCs EPA Method 8270								
2-Methylnaphthalene						63	1635	3
Naphthalene		0.57				63	1635	0.58
Lead & Chromium EPA Method 6010								
Chromium	NT	2.57	NT	NT	11.5	78	2000	27
Lead	NT	2.60	NT	NT	5.75	400	400	270
MADEP EPH/VPH								
C5-C8 (VPH)	<0.5	<0.5	<0.5	0.76	<0.5	939	24528	72
C9-C18 (VPH/EPH)	<10	55	<10	<10	<10	9386	245280	3255
C9-C12 (VPH)	*9.6*	*10.0*	*<0.5*	*<0.5*	*<0.5*			
C9-C18 (EPH)	*<10*	*45*	*<10*	*10*	*<10*			
C19-C36 (EPH)	<10	11	<10	<10	<10	93860	Heath-based level > 100%	Considered immobile
C9-C22 (VPH/EPH)	<10	55.2	<10	90	<10	469	12264	34
C9-C10 (VPH)	*4.0*	*1.2*	*<0.5*	*<0.5*	*<0.5*			
C11-C22 (EPH)	*<10*	*54*	*<10*	*90*	*<10*			

** MSCCs cannot be calculated because octanol water coefficient (Kow) and oral reference dose (RfDo) have not been determined for this compound.

NT Not tested

TABLE 4 Page 2 of 4
SUMMARY OF SOIL ANALYSIS RESULTS
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080
Units: mg/kg

Contaminant Constituents	Samples Locations and Depths					Residential MSCC	Industrial/ Commercial MSCC	Soil-to-Groundwater MSCC
	500PP06 6-8	500PP07 6-8	500PP08 4-6	500PP09 6-8	500PP10 6-8			
VOCs EPA Method 8260								
Benzene						22	200	0.0056
sec-Butylbenzene					0.011	156	4088	3
Cis-1,2-Dichloroethene						156	4000	0.35
Ethylbenzene					0.016	1560	40000	0.24
Isopropylbenzene					0.014	1564	40880	2
4-Isopropyltoluene					0.034	**	**	**
Methylene chloride						85	763	0.02
Naphthalene						63	1635	0.58
n-Propylbenzene					0.020	156	4088	2
Toluene	0.0087			0.06	0.0094	3200	82000	7
1,2,4-Trimethylbenzene		0.069			0.084	782	20440	8
1,3,5-Trimethylbenzene		0.044			0.140	782	20440	7
Vinyl chloride						0.336	1.075	0.000087
m,p-Xylene					0.083	32000	200000	5
o-Xylene						32000	200000	5
SVOCs EPA Method 8270								
2-Methylnaphthalene						63	1635	3
Naphthalene						63	1635	0.58
Lead & Chromium EPA Method 6010								
Chromium	NT	NT	NT	NT	NT	78	2000	27
Lead	NT	NT	NT	NT	NT	400	400	270
MADEP EPH/VPH								
C5-C8 (VPH)	<0.5	<0.5	<0.5	0.5	5.5	939	24528	72
C9-C18 (VPH/EPH)	<10	<10	<10	21	<10	9386	245280	3255
C9-C12 (VPH)	*<0.5*	*7.3*	*<0.5*	*<0.5*	*<0.5*			
C9-C18 (EPH)	*<10*	*<10*	*<10*	*21*	*<10*			
C19-C36 (EPH)	<10	<10	<10	<10	<10	93860	Health-based level > 100%	Considered immobile
C9-C22 (VPH/EPH)	<10	<10	<10	63	<10	469	12264	34
C9-C10 (VPH)	*<0.5*	*2.8*	*<0.5*	*<0.5*	*<0.5*			
C11-C22 (EPH)	*<10*	*<10*	*<10*	*63*	*<10*			

** MSCCs cannot be calculated because octanol water coefficient (Kow) and oral reference dose (RfDo) have not been determined for this compound.

NT Not tested

TABLE 4 Page 3 of 4
SUMMARY OF SOIL ANALYSIS RESULTS
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080
Units: mg/kg

Contaminant Constituents	Samples Locations and Depths					Residential MSCC	Industrial/ Commercial MSCC	Soil-to-Groundwater MSCC
	500PP11 6-8	500PP13 6-8	500PP14 2-4	500PP15 6-8	500PP16 4-6			
VOCs EPA Method 8260								
Benzene		0.042		0.035		22	200	0.0056
sec-Butylbenzene	0.055			0.0069		156	4088	3
Cis-1,2-Dichloroethene					0.017	156	4000	0.35
Ethylbenzene		0.015		0.016		1560	40000	0.24
Isopropylbenzene				0.013		1564	40880	2
4-Isopropyltoluene		0.057			0.010	**	**	**
Methylene chloride		0.029				85	763	0.02
Naphthalene	0.035					63	1635	0.58
n-Propylbenzene				0.025		156	4088	2
Toluene						3200	82000	7
1,2,4-Trimethylbenzene	0.080	0.028		0.029	0.021	782	20440	8
1,3,5-Trimethylbenzene	0.020	0.015		0.011	0.011	782	20440	7
Vinyl chloride						0.336	1.075	0.000087
m,p-Xylene		0.044		0.013		32000	200000	5
o-Xylene						32000	200000	5
SVOCs EPA Method 8270								
2-Methylnaphthalene						63	1635	3
Naphthalene						63	1635	0.58
Lead & Chromium EPA Method 6010								
Chromium	NT	NT	NT	8.27	NT	78	2000	27
Lead	NT	NT	NT	43.2	NT	400	400	270
MADEP EPH/VPH								
C5-C8 (VPH)	<0.5	1.0	0.840	20	3.5	939	24528	72
C9-C18 (VPH/EPH)	<10	17.81	191	170	53	9386	245280	3255
C9-C12 (VPH)	*<0.5*	*0.810*	*61*	*130*	*30*			
C9-C18 (EPH)	*<10*	*17*	*130*	*40*	*23*			
C19-C36 (EPH)	<10	<10	200	<10	<10	93860	Health-based level > 100%	Considered immobile
C9-C22 (VPH/EPH)	<10	59	86	107	81.4	469	12264	34
C9-C10 (VPH)	*<0.5*	*<0.5*	*13*	*31*	*7.4*			
C11-C22 (EPH)	*<10*	*59*	*73*	*76*	*74*			

** MSCCs cannot be calculated because octanol water coefficient (Kow) and oral reference dose (RfDo) have not been determined for this compound.

NT Not tested

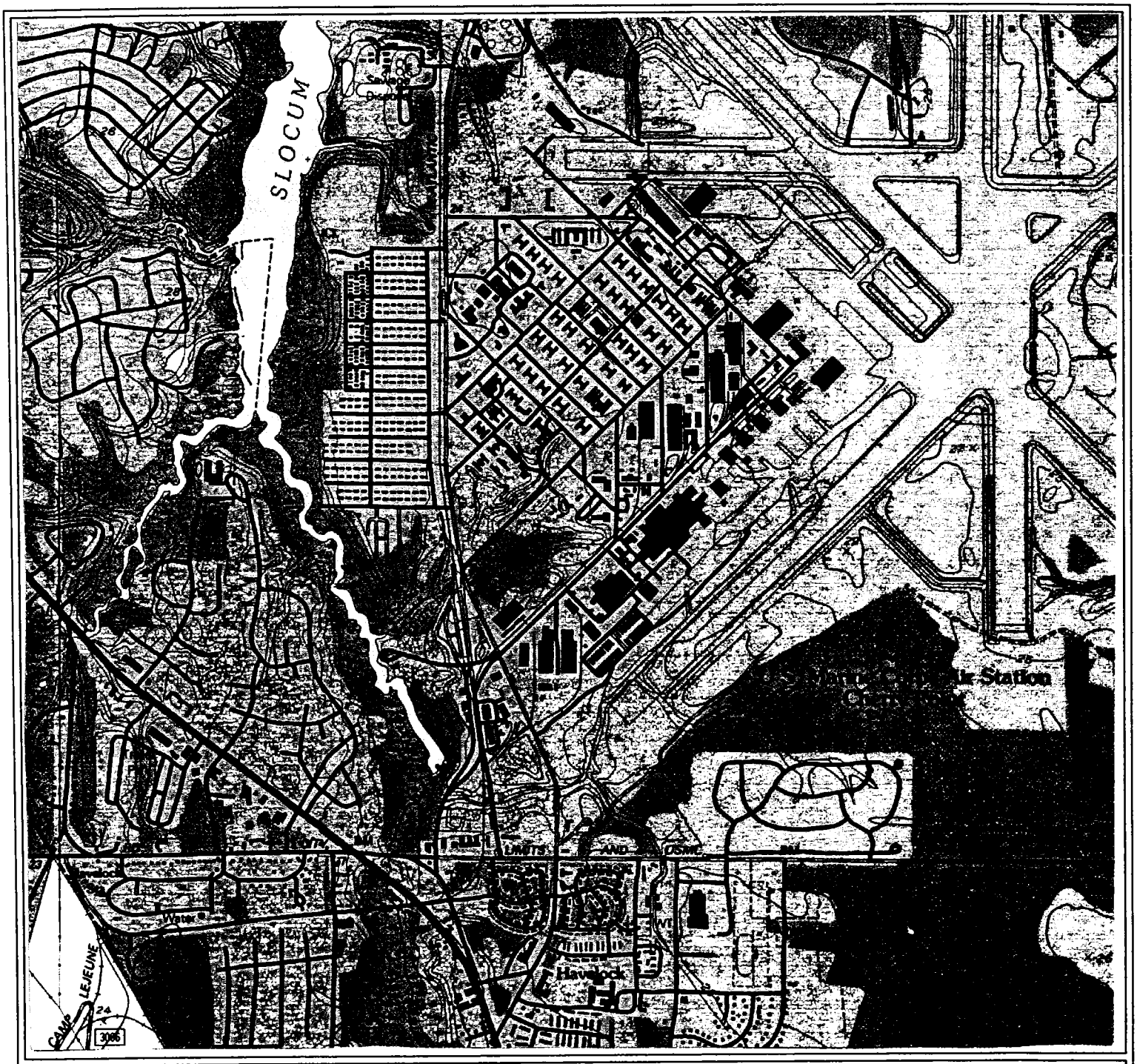
TABLE 4 Page 4 of 4
SUMMARY OF SOIL ANALYSIS RESULTS
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA
LAW JOB NO. 30740-6-0600, PHASE 0080
Units: mg/kg

Contaminant Constituents	Samples Locations and Depths				Residential MSCC	Industrial/ Commercial MSCC	Soil-to-Groundwater MSCC
	500PP17 6-8	500PP18 4-6	500PP19 4-6	500PP20 6-8			
VOCs EPA Method 8260							
Benzene		0.053		0.018	22	200	0.0056
sec-Butylbenzene					156	4088	3
Cis-1,2-Dichloroethene		0.150			156	4000	0.35
Ethylbenzene		0.014			1560	40000	0.24
Isopropylbenzene		0.0066			1564	40880	2
4-Isopropyltoluene					**	**	**
Methylene chloride				0.031	85	763	0.02
Naphthalene					63	1635	0.58
n-Propylbenzene					156	4088	2
Toluene		0.010			3200	82000	7
1,2,4-Trimethylbenzene		0.012			782	20440	8
1,3,5-Trimethylbenzene					782	20440	7
Vinyl chloride		0.009			0.336	1.075	0.000087
m,p-Xylene					32000	200000	5
o-Xylene		0.011			32000	200000	5
SVOCs EPA Method 8270							
2-Methylnaphthalene					63	1635	3
Naphthalene					63	1635	0.58
Lead & Chromium EPA Method 6010							
Chromium	NT	NT	15.4	NT	78	2000	27
Lead	NT	NT	3.80	NT	400	400	270
MADEP EPH/VPH							
C5-C8 (VPH)	<0.5	9.5	1.9	1.1	939	24528	72
C9-C18 (VPH/EPH)	<10	<10	<10	<10	9386	245280	3255
C9-C12 (VPH)	*2.2*	*9.6*	*5.6*	*1.4*			
C9-C18 (EPH)	*<10*	*<10*	*<10*	*<10*			
C19-C36 (EPH)	<10	<10	<10	<10	93860	Health-based level > 100%	Considered immobile
0C9-C22 (VPH/EPH)	<10	<10	<10	<10	469	12264	34
C9-C10 (VPH)	*<0.5*	*0.820*	*0.860*	*<0.5*			
C11-C22 (EPH)	*<10*	*<10*	*<10*	*<10*			

** MSCCs cannot be calculated because octanol water coefficient (Kow) and oral reference dose (RfDo) have not been determined for this compound.

NT Not tested

DRAWINGS



NORTH

HAVELOCK, N.C.
34076-H8-TF-024

1994

DMA 5553 I SE-SERIES V842

GRAPHIC SCALE FEET

2000 1000 0 2000 4000

N.C.

QUADRANGLE LOCATION

NOTE: SITE LOCATION IS APPROXIMATE.

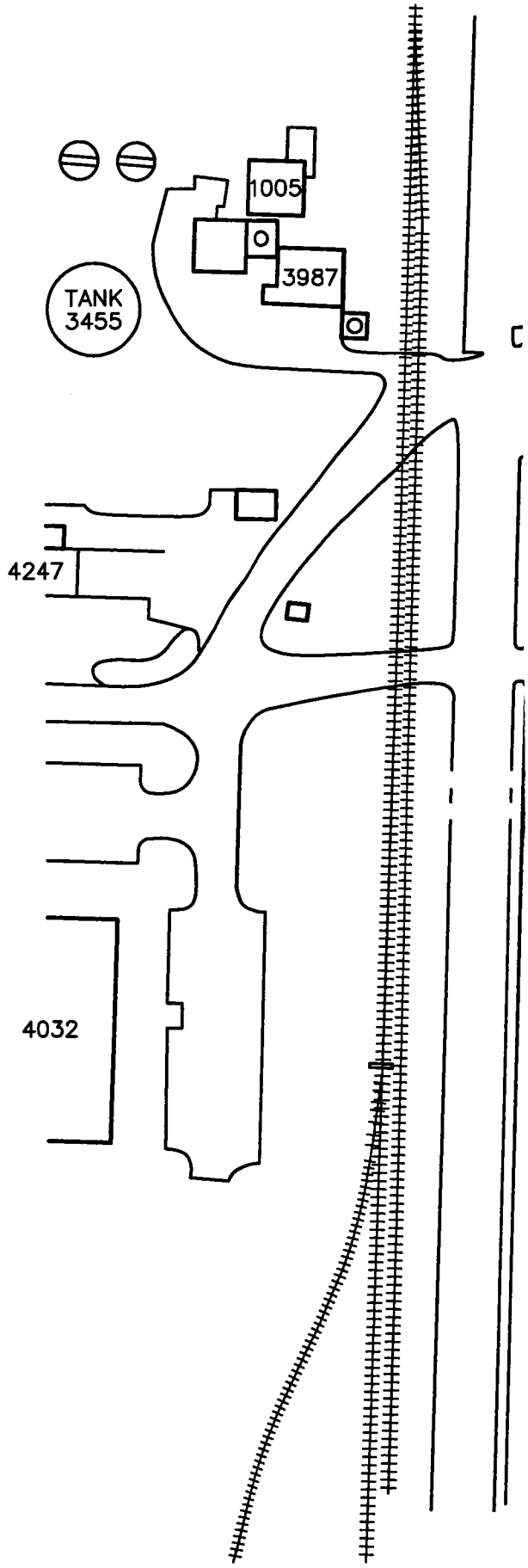
LAW

LAWGIBB Group Member

LAW ENGINEERING & ENVIRONMENTAL SERVICES, INC. RALEIGH, NC

TOPOGRAPHIC SITE MAP
MCAS – BUILDING 133 UST SITE
CHERRY POINT, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
DFT CHECK:	SCALE: 1: 24000
ENG CHECK:	JOB: 30740-6-0600
APPROVAL:	DWG: 1



LAW

LAWGIBB Group Member

LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
DFT CHECK:	SCALE: 1"=100'
ENG CHECK:	JOB:30740-0-0600-0080
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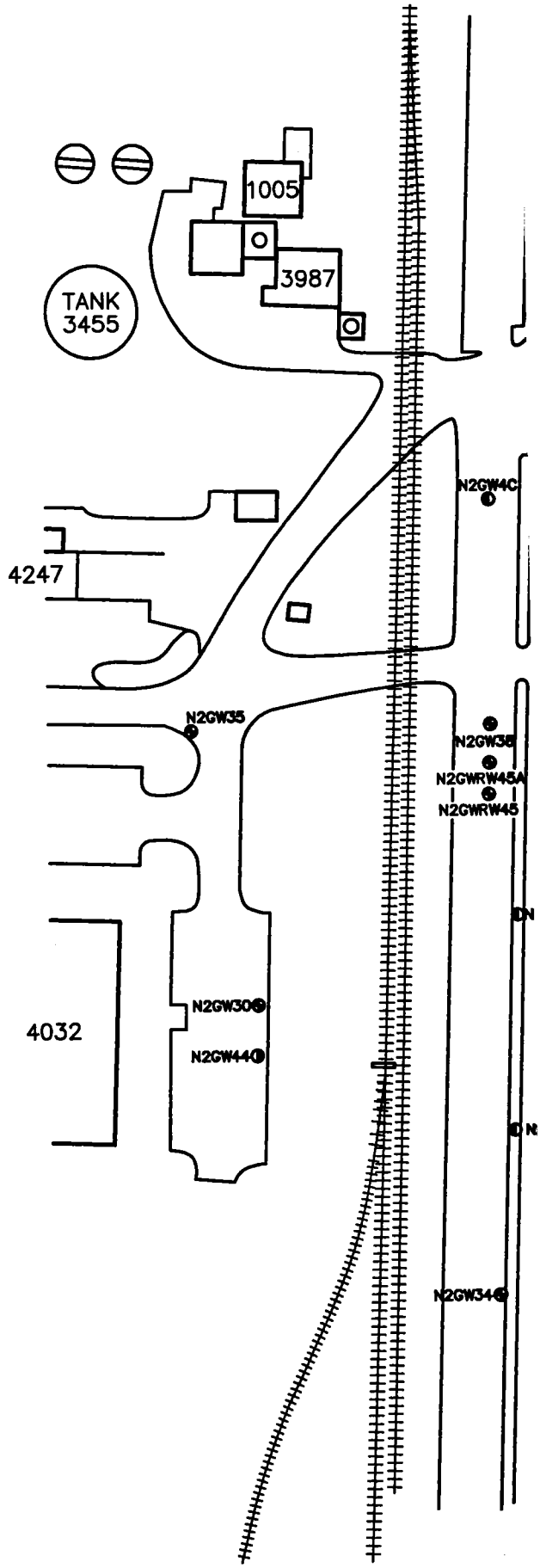
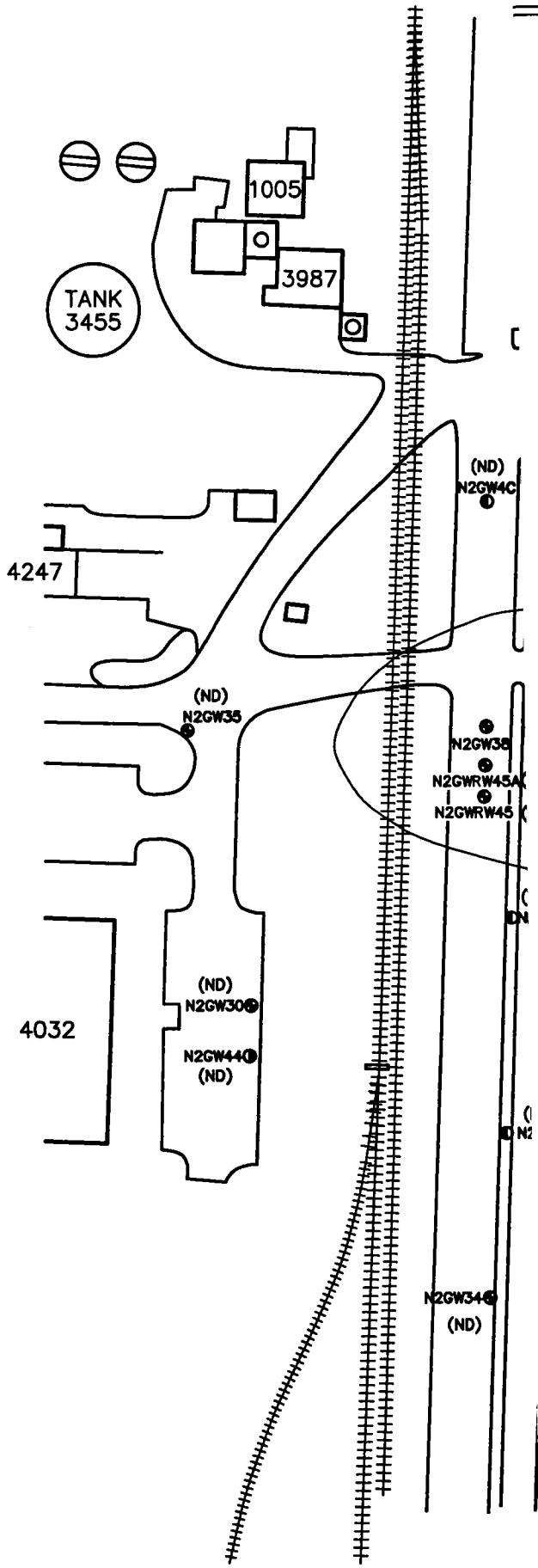


LAW

LAWGIBB Group Member

LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
DFT CHECK:	SCALE: 1"=100'
ENG CHECK:	JOB:30740-0-0600-0080
APPROVAL:	DWG: 3



LAW

LAWGIBB Group Member

LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
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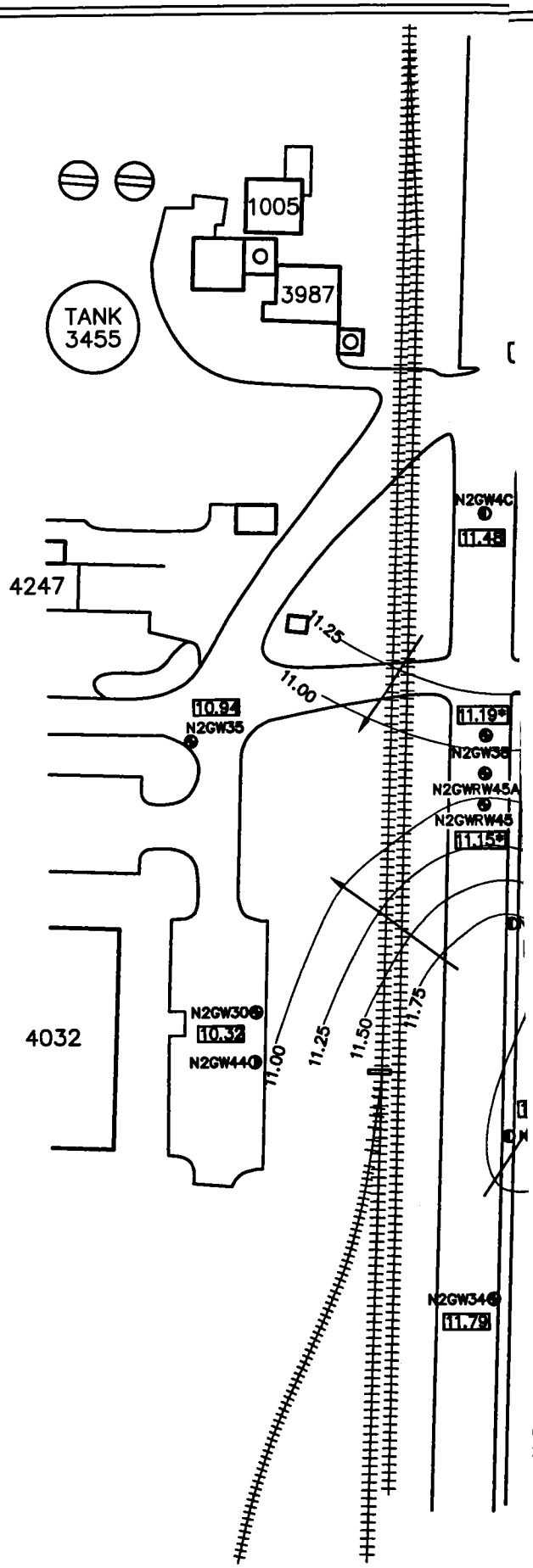


LEGEND

11.25 —— WATER–TABLE ELEVATION CONTOUR

APPROXIMATE GROUNDWATER FLOW DIRECTION

N2GN36 SHALLOW MONITORING WELL

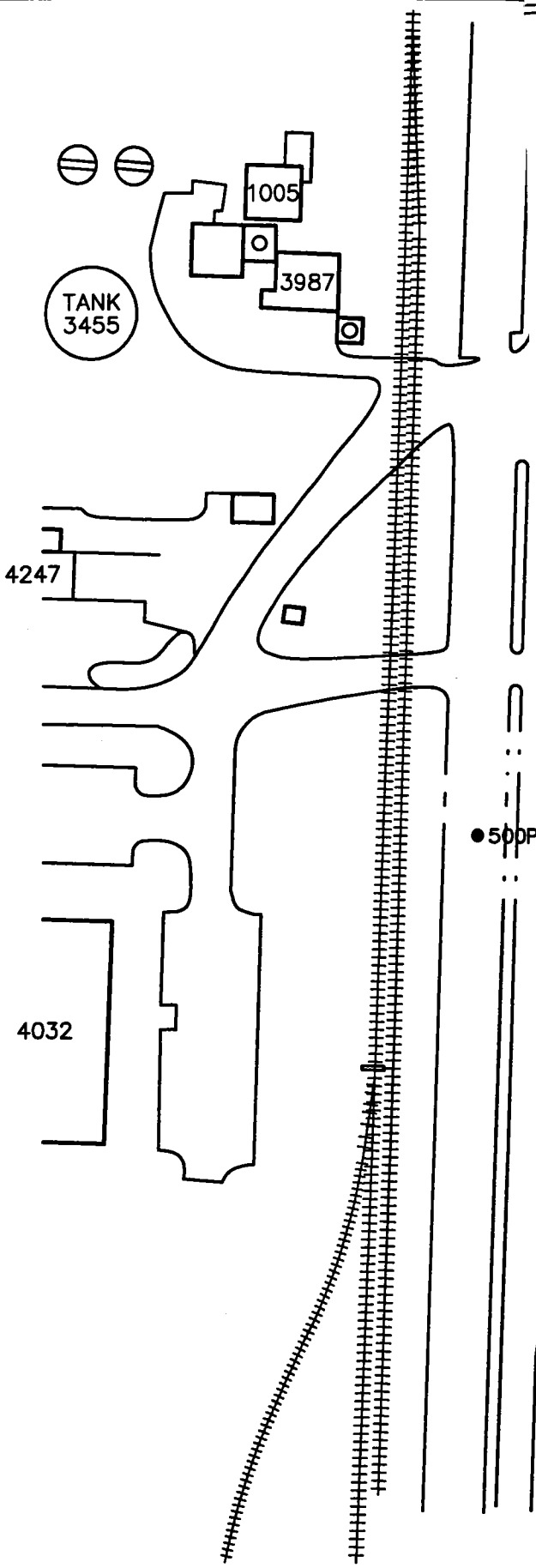
11.41 WATER–TABLE ELEVATION MEASURED ON _____, ____, 2000

LAW

LAWGIBB Group Member

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
DFT CHECK:	SCALE: 1"=100'
ENG CHECK:	JOB:30740–0–0600–0080
APPROVAL:	DWG: 5



LEGEND

● 500PP01 BORING LOCATIONS

GRAPHIC SCALE – IN FEET

100 50 0 100 200

LAW

LAWGIBB Group Member

LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

DRAWN:	DATE: NOVEMBER 2000
DFT CHECK:	SCALE: 1"=100'
ENG CHECK:	JOB:30740–0–0600–0080
APPROVAL:	DWG: 6

APPENDIX A
LABORATORY ANALYTICAL TEST REPORTS AND CHAIN OF CUSTODY RECORDS

SOIL ANALYTICAL TEST RESULTS

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP01 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87294
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	BQL
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP01 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87294
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL
4-Isopropyltoluene	6	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	BQL
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	BQL
1,3,5-Trimethylbenzene	6	BQL
Vinyl chloride	6	BQL
m-,p-Xylene	12	BQL
o-Xylene	6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	51.2	102
1,2-Dichloroethane-d4	50	55.4	111
Toluene-d8	50	50.3	101

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP01 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87294
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.5

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	730	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	730	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP01 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87294
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.5

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.7	77
Nitrobenzene-d5	10	4.7	47
4-Terphenyl-d14	10	7.6	76

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MRC

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP01 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	84
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	9600 (µg/Kg)
C_9-C_{10} Aromatics**	4000 (µg/Kg)
Surrogate % Recovery - PID	420
Surrogate % Recovery - FID	1300

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87294

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP01 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	83.5
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	81
Aromatic Surrogate % Recovery	72

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87294

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP02 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87295
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.6

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	58	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.8	BQL
Bromobenzene	5.8	BQL
Bromochloromethane	5.8	BQL
Bromodichloromethane	5.8	BQL
Bromoform	5.8	BQL
Bromomethane	5.8	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.8	BQL
sec-Butylbenzene	5.8	BQL
tert-Butylbenzene	5.8	BQL
Carbon disulfide	5.8	BQL
Carbon tetrachloride	5.8	BQL
Chlorobenzene	5.8	BQL
Chloroethane	5.8	BQL
2-Chloroethyl vinyl ether	5.8	BQL
Chloroform	5.8	BQL
Chloromethane	5.8	BQL
2-Chlorotoluene	5.8	BQL
4-Chlorotoluene	5.8	BQL
Dibromochloromethane	5.8	BQL
1,2-Dibromo-3-chloropropane	5.8	BQL
Dibromomethane	5.8	BQL
1,2-Dibromoethane (EDB)	5.8	BQL
1,2-Dichlorobenzene	5.8	BQL
1,3-Dichlorobenzene	5.8	BQL
1,4-Dichlorobenzene	5.8	BQL
trans-1,4-Dichloro-2-butene	5.8	BQL
1,1-Dichloroethane	5.8	BQL
1,1-Dichloroethene	5.8	BQL
1,2-Dichloroethane	5.8	BQL
cis-1,2-Dichloroethene	5.8	BQL
trans-1,2-dichloroethene	5.8	BQL
1,2-Dichloropropane	5.8	BQL
1,3-Dichloropropane	5.8	BQL
2,2-Dichloropropane	5.8	BQL
1,1-Dichloropropene	5.8	BQL
cis-1,3-Dichloropropene	5.8	BQL
trans-1,3-Dichloropropene	5.8	BQL
Dichlorodifluoromethane	5.8	BQL
Diisopropyl ether (DIPE)	5.8	BQL
Ethylbenzene	5.8	BQL
Hexachlorobutadiene	5.8	BQL

Reviewed by: mm

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP02 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87295
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.6

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.8	BQL
Iodomethane	5.8	BQL
Isopropylbenzene	5.8	BQL
4-Isopropyltoluene	5.8	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.8	BQL
Methyl-tert-butyl ether (MTBE)	5.8	BQL
Naphthalene	5.8	BQL
n-Propyl benzene	5.8	BQL
Styrene	5.8	BQL
1,1,1,2-Tetrachloroethane	5.8	BQL
1,1,2,2-Tetrachloroethane	5.8	BQL
Tetrachloroethene	5.8	BQL
Toluene	5.8	BQL
1,2,3-Trichlorobenzene	5.8	BQL
1,2,4-Trichlorobenzene	5.8	BQL
Trichloroethene	5.8	BQL
1,1,1-Trichloroethane	5.8	BQL
1,1,2-Trichloroethane	5.8	BQL
Trichlorofluoromethane	5.8	BQL
1,2,3-Trichloropropane	5.8	BQL
1,2,4-Trimethylbenzene	5.8	BQL
1,3,5-Trimethylbenzene	5.8	BQL
Vinyl chloride	5.8	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.8	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	51.5	103
1,2-Dichloroethane-d4	50	50.9	102
Toluene-d8	50	49.4	99

Comments:

All results are corrected for dilution.

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP02 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87295
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.6

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	350	BQL
Acenaphthylene	350	BQL
Anthracene	350	BQL
Benzo[a]anthracene	350	BQL
Benzo[a]pyrene	350	BQL
Benzo[b]fluoranthene	350	BQL
Benzo[g,h,i]perylene	350	BQL
Benzo[k]fluoranthene	350	BQL
Bis(2-chloroethoxy)methane	350	BQL
Bis(2-chloroethyl)ether	350	BQL
Bis(2-chloroisopropyl)ether	350	BQL
Bis(2-ethylhexyl)phthalate	350	BQL
4-bromophenyl phenyl ether	350	BQL
Butylbenzylphthalate	350	BQL
4-Chloroaniline	350	BQL
2-Chloronaphthalene	350	BQL
4-Chlorophenyl phenyl ether	350	BQL
Chrysene	350	BQL
Di-n-Butylphthalate	350	BQL
Di-n-octylphthalate	350	BQL
Dibenzo[a,h]anthracene	350	BQL
Dibenzofuran	350	BQL
1,2-Dichlorobenzene	350	BQL
1,3-Dichlorobenzene	350	BQL
1,4-Dichlorobenzene	350	BQL
3,3'-Dichlorobenzidine	700	BQL
Diethylphthalate	350	BQL
Dimethylphthalate	350	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrotoluene	350	BQL
2,6-Dinitrotoluene	350	BQL
Fluoranthene	350	BQL
Fluorene	350	BQL
Hexachlorobenzene	350	BQL
Hexachlorobutadiene	350	BQL
Hexachlorocyclopentadiene	700	BQL
Hexachloroethane	350	BQL
Indeno(1,2,3-c,d)pyrene	350	BQL
Isophorone	350	BQL
2-Methylnaphthalene	350	590

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PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP02 4'-6'	Date Collected:	5/9/00
Client Project ID:	TC-133 Navy	Date Received:	5/10/00
Lab Sample ID:	87295	Date Analyzed:	5/18/00
Lab Project ID:	G132-659	Analyzed By:	MRC
Matrix:	Soil %Solids: 86.6	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	350	BQL
N-Nitrosodiphenylamine	350	BQL
Naphthalene	350	**570**
2-Nitroaniline	350	BQL
3-Nitroaniline	350	BQL
4-Nitroaniline	350	BQL
Nitrobenzene	350	BQL
Phenanthrene	350	BQL
Pyrene	350	BQL
1,2,4-Trichlorobenzene	350	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	10	103
Nitrobenzene-d5	10	9.4	94
4-Terphenyl-d14	10	8.9	88

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP02 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	87
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	10000 (µg/Kg)
C_9-C_{10} Aromatics**	1200 (µg/Kg)
Surrogate % Recovery - PID	100
Surrogate % Recovery - FID	140

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87295

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP02 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/22/00
Dry Weight	86.6
Dilution Factor	1
C_9-C_{18} Aliphatics*	45 (mg/Kg)
C_{19}-C_{36} Aliphatics*	11 (mg/Kg)
C_{11}-C_{22} Aromatics*	54 (mg/Kg)
Aliphatic Surrogate % Recovery	71
Aromatic Surrogate % Recovery	72
Fractionation Surrogate 1 % Recovery	83

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-659-87295

Reviewed By: MA

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Pesticides
by EPA 8081

Client Sample ID: 500PP02 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87295
Lab Project ID: G132-659
Matrix: Soil %SOLIDS 86.6

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/23/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
alpha-BHC	18	BQL
beta-BHC	18	BQL
delta-BHC	18	BQL
gamma-BHC (Lindane)	18	BQL
Heptachlor	18	BQL
Aldrin	18	BQL
Heptachlor epoxide	18	BQL
Endosulfan I	18	BQL
Dieldrin	18	BQL
4,4'-DDE	18	BQL
Endrin	18	BQL
DDD	18	BQL
Endosulfan II	18	BQL
4,4'-DDT	18	BQL
Methoxychlor	72	BQL
Toxaphene	72	BQL
Chlordane	72	BQL
Endrin aldehyde	18	BQL
Endosulfan sulfate	18	BQL
Endrin ketone	18	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	111	111

Comments:
BQL = Below Quantitation Limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for PCBs
by EPA 8082

Client Sample ID: 500PP02 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87295
Lab Project ID: G132-659
Matrix: Soil %SOLIDS: 86.6

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/26/00
Analyzed By: CLP
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Arochlor-1016	180	BQL
Arochlor-1221	180	BQL
Arochlor-1232	180	BQL
Arochlor-1242	180	BQL
Arochlor-1248	180	BQL
Arochlor-1254	180	BQL
Arochlor-1260	180	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	64	64

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	500PP02 4'-6'	Analyzed By:	JMF
Client Project ID:	TC-133 Navy	Date Collected:	5/9/00
Lab Sample ID:	87295	Date Received:	5/10/00
Lab Project ID:	G132-659	Matrix:	Soil

Solids 86.58

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Chromium	**2.57**	1.12	MG/KG	6010B	5/18/00
Lead	**2.10**	1.12	MG/KG	6010B	5/18/00

Comments

BQL = Below Quantitation Limits

Reviewed By: ma

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP03 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87296
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	58	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.8	BQL
Bromobenzene	5.8	BQL
Bromochloromethane	5.8	BQL
Bromodichloromethane	5.8	BQL
Bromoform	5.8	BQL
Bromomethane	5.8	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.8	BQL
sec-Butylbenzene	5.8	BQL
tert-Butylbenzene	5.8	BQL
Carbon disulfide	5.8	BQL
Carbon tetrachloride	5.8	BQL
Chlorobenzene	5.8	BQL
Chloroethane	5.8	BQL
2-Chloroethyl vinyl ether	5.8	BQL
Chloroform	5.8	BQL
Chloromethane	5.8	BQL
2-Chlorotoluene	5.8	BQL
4-Chlorotoluene	5.8	BQL
Dibromochloromethane	5.8	BQL
1,2-Dibromo-3-chloropropane	5.8	BQL
Dibromomethane	5.8	BQL
1,2-Dibromoethane (EDB)	5.8	BQL
1,2-Dichlorobenzene	5.8	BQL
1,3-Dichlorobenzene	5.8	BQL
1,4-Dichlorobenzene	5.8	BQL
trans-1,4-Dichloro-2-butene	5.8	BQL
1,1-Dichloroethane	5.8	BQL
1,1-Dichloroethene	5.8	BQL
1,2-Dichloroethane	5.8	BQL
cis-1,2-Dichloroethene	5.8	BQL
trans-1,2-dichloroethene	5.8	BQL
1,2-Dichloropropane	5.8	BQL
1,3-Dichloropropane	5.8	BQL
2,2-Dichloropropane	5.8	BQL
1,1-Dichloropropene	5.8	BQL
cis-1,3-Dichloropropene	5.8	BQL
trans-1,3-Dichloropropene	5.8	BQL
Dichlorodifluoromethane	5.8	BQL
Diisopropyl ether (DIPE)	5.8	BQL
Ethylbenzene	5.8	BQL
Hexachlorobutadiene	5.8	BQL

Reviewed by: mm

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP03 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87296
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.8	BQL
Iodomethane	5.8	BQL
Isopropylbenzene	5.8	BQL
4-Isopropyltoluene	5.8	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.8	BQL
Methyl-tert-butyl ether (MTBE)	5.8	BQL
Naphthalene	5.8	BQL
n-Propyl benzene	5.8	BQL
Styrene	5.8	BQL
1,1,1,2-Tetrachloroethane	5.8	BQL
1,1,2,2-Tetrachloroethane	5.8	BQL
Tetrachloroethene	5.8	BQL
Toluene	5.8	BQL
1,2,3-Trichlorobenzene	5.8	BQL
1,2,4-Trichlorobenzene	5.8	BQL
Trichloroethene	5.8	BQL
1,1,1-Trichloroethane	5.8	BQL
1,1,2-Trichloroethane	5.8	BQL
Trichlorofluoromethane	5.8	BQL
1,2,3-Trichloropropane	5.8	BQL
1,2,4-Trimethylbenzene	5.8	BQL
1,3,5-Trimethylbenzene	5.8	BQL
Vinyl chloride	5.8	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.8	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.9	106
1,2-Dichloroethane-d4	50	51.0	102
Toluene-d8	50	50.9	102

Comments:

All results are corrected for dilution.

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP03 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87296
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.5

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	720	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	720	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

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PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP03 4'-6'		Date Collected: 5/9/00
Client Project ID:	TC-133 Navy		Date Received: 5/10/00
Lab Sample ID:	87296		Date Analyzed: 5/18/00
Lab Project ID:	G132-659		Analyzed By: MRC
Matrix:	Soil	%Solids: 86.5	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
Nitrobenzene-d5	10	6.6	66
4-Terphenyl-d14	10	8.5	85

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP03 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	86
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	110
Surrogate % Recovery - FID	160

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87296

Reviewed By: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP03 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	86.5
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	86
Aromatic Surrogate % Recovery	84

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87296

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP04 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87297
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	BQL
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP04 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87297
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL
4-Isopropyltoluene	6	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	BQL
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	BQL
1,3,5-Trimethylbenzene	6	BQL
Vinyl chloride	6	BQL
m-,p-Xylene	12	BQL
o-Xylene	6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	50.7	101
1,2-Dichloroethane-d4	50	51.3	103
Toluene-d8	50	49.9	100

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP04 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87297
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.7

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	710	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	710	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP04 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87297
Lab Project ID: G132-659
Matrix: Soil %Solids: 83.7

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	10	100
Nitrobenzene-d5	10	9.5	95
4-Terphenyl-d14	10	8.7	87

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP04 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	84
Dilution Factor	1
C_5-C_8 Aliphatics**	760 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	160
Surrogate % Recovery - FID	340

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87297

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP04 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/22/00
Dry Weight	83.7
Dilution Factor	1
C_9-C_{18} Aliphatics*	10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	90 (mg/Kg)
Aliphatic Surrogate % Recovery	48
Aromatic Surrogate % Recovery	61
Fractionation Surrogate 1 % Recovery	130

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-659-87297

Reviewed By: mm

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP05 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87298
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	63	BQL
Acrolein	130	BQL
Acrylonitrile	130	BQL
Benzene	6.3	BQL
Bromobenzene	6.3	BQL
Bromochloromethane	6.3	BQL
Bromodichloromethane	6.3	BQL
Bromoform	6.3	BQL
Bromomethane	6.3	BQL
2-Butanone	31	BQL
n-Butylbenzene	6.3	BQL
sec-Butylbenzene	6.3	BQL
tert-Butylbenzene	6.3	BQL
Carbon disulfide	6.3	BQL
Carbon tetrachloride	6.3	BQL
Chlorobenzene	6.3	BQL
Chloroethane	6.3	BQL
2-Chloroethyl vinyl ether	6.3	BQL
Chloroform	6.3	BQL
Chloromethane	6.3	BQL
2-Chlorotoluene	6.3	BQL
4-Chlorotoluene	6.3	BQL
Dibromochloromethane	6.3	BQL
1,2-Dibromo-3-chloropropane	6.3	BQL
Dibromomethane	6.3	BQL
1,2-Dibromoethane (EDB)	6.3	BQL
1,2-Dichlorobenzene	6.3	BQL
1,3-Dichlorobenzene	6.3	BQL
1,4-Dichlorobenzene	6.3	BQL
trans-1,4-Dichloro-2-butene	6.3	BQL
1,1-Dichloroethane	6.3	BQL
1,1-Dichloroethene	6.3	BQL
1,2-Dichloroethane	6.3	BQL
cis-1,2-Dichloroethene	6.3	BQL
trans-1,2-dichloroethene	6.3	BQL
1,2-Dichloropropane	6.3	BQL
1,3-Dichloropropane	6.3	BQL
2,2-Dichloropropane	6.3	BQL
1,1-Dichloropropene	6.3	BQL
cis-1,3-Dichloropropene	6.3	BQL
trans-1,3-Dichloropropene	6.3	BQL
Dichlorodifluoromethane	6.3	BQL
Diisopropyl ether (DIPE)	6.3	BQL
Ethylbenzene	6.3	BQL
Hexachlorobutadiene	6.3	BQL

Reviewed by: Ma

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP05 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87298
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6.3	BQL
Iodomethane	6.3	BQL
Isopropylbenzene	6.3	BQL
4-Isopropyltoluene	6.3	BQL
Methylene chloride	25	BQL
4-Methyl-2-pentanone	6.3	BQL
Methyl-tert-butyl ether (MTBE)	6.3	BQL
Naphthalene	6.3	BQL
n-Propyl benzene	6.3	BQL
Styrene	6.3	BQL
1,1,1,2-Tetrachloroethane	6.3	BQL
1,1,2,2-Tetrachloroethane	6.3	BQL
Tetrachloroethene	6.3	BQL
Toluene	6.3	BQL
1,2,3-Trichlorobenzene	6.3	BQL
1,2,4-Trichlorobenzene	6.3	BQL
Trichloroethene	6.3	BQL
1,1,1-Trichloroethane	6.3	BQL
1,1,2-Trichloroethane	6.3	BQL
Trichlorofluoromethane	6.3	BQL
1,2,3-Trichloropropane	6.3	BQL
1,2,4-Trimethylbenzene	6.3	BQL
1,3,5-Trimethylbenzene	6.3	BQL
Vinyl chloride	6.3	BQL
m-,p-Xylene	13	BQL
o-Xylene	6.3	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	49.1	98
1,2-Dichloroethane-d4	50	53.3	107
Toluene-d8	50	50.4	101

Comments:

All results are corrected for dilution.

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP05 4'-6'	Date Collected:	5/9/00
Client Project ID:	TC-133 Navy	Date Received:	5/10/00
Lab Sample ID:	87298	Date Analyzed:	5/18/00
Lab Project ID:	G132-659	Analyzed By:	MRC
Matrix:	Soil %Solids: 79.7	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	390	BQL
Acenaphthylene	390	BQL
Anthracene	390	BQL
Benzo[a]anthracene	390	BQL
Benzo[a]pyrene	390	BQL
Benzo[b]fluoranthene	390	BQL
Benzo[g,h,i]perylene	390	BQL
Benzo[k]fluoranthene	390	BQL
Bis(2-chloroethoxy)methane	390	BQL
Bis(2-chloroethyl)ether	390	BQL
Bis(2-chloroisopropyl)ether	390	BQL
Bis(2-ethylhexyl)phthalate	390	BQL
4-bromophenyl phenyl ether	390	BQL
Butylbenzylphthalate	390	BQL
4-Chloroaniline	390	BQL
2-Chloronaphthalene	390	BQL
4-Chlorophenyl phenyl ether	390	BQL
Chrysene	390	BQL
Di-n-Butylphthalate	390	BQL
Di-n-octylphthalate	390	BQL
Dibenzo[a,h]anthracene	390	BQL
Dibenzofuran	390	BQL
1,2-Dichlorobenzene	390	BQL
1,3-Dichlorobenzene	390	BQL
1,4-Dichlorobenzene	390	BQL
3,3'-Dichlorobenzidine	780	BQL
Diethylphthalate	390	BQL
Dimethylphthalate	390	BQL
4,6-Dinitro-2-methylphenol	2000	BQL
2,4-Dinitrotoluene	390	BQL
2,6-Dinitrotoluene	390	BQL
Fluoranthene	390	BQL
Fluorene	390	BQL
Hexachlorobenzene	390	BQL
Hexachlorobutadiene	390	BQL
Hexachlorocyclopentadiene	780	BQL
Hexachloroethane	390	BQL
Indeno(1,2,3-c,d)pyrene	390	BQL
Isophorone	390	BQL
2-Methylnaphthalene	390	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP05 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87298
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.7

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	390	BQL
N-Nitrosodiphenylamine	390	BQL
Naphthalene	390	BQL
2-Nitroaniline	390	BQL
3-Nitroaniline	390	BQL
4-Nitroaniline	390	BQL
Nitrobenzene	390	BQL
Phenanthrene	390	BQL
Pyrene	390	BQL
1,2,4-Trichlorobenzene	390	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.8	88
Nitrobenzene-d5	10	4.9	49
4-Terphenyl-d14	10	8.9	89

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP05 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	80
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	95
Surrogate % Recovery - FID	120

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87298

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP05 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	79.7
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	76
Aromatic Surrogate % Recovery	65

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87298

Reviewed By: MN

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Pesticides
by EPA 8081

Client Sample ID:	500PP05 4'-6'	Date Collected:	5/9/00
Client Project ID:	TC-133 Navy	Date Received:	5/10/00
Lab Sample ID:	87298	Date Analyzed:	5/23/00
Lab Project ID:	G132-659	Analyzed By:	MRC
Matrix:	Soil %SOLIDS 79.7	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
alpha-BHC	20	BQL
beta-BHC	20	BQL
delta-BHC	20	BQL
gamma-BHC (Lindane)	20	BQL
Heptachlor	20	BQL
Aldrin	20	BQL
Heptachlor epoxide	20	BQL
Endosulfan I	20	BQL
Dieldrin	20	BQL
4,4'-DDE	20	BQL
Endrin	20	BQL
DDD	20	BQL
Endosulfan II	20	BQL
4,4'-DDT	20	BQL
Methoxychlor	78	BQL
Toxaphene	78	BQL
Chlordane	78	BQL
Endrin aldehyde	20	BQL
Endosulfan sulfate	20	BQL
Endrin ketone	20	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	76	76

Comments:
BQL = Below Quantitation Limit

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for PCBs

by EPA 8082

Client Sample ID: 500PP05 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87298
Lab Project ID: G132-659
Matrix: Soil %SOLIDS: 79.7

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/26/00
Analyzed By: CLP
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Arochlor-1016	200	BQL
Arochlor-1221	200	BQL
Arochlor-1232	200	BQL
Arochlor-1242	200	BQL
Arochlor-1248	200	BQL
Arochlor-1254	200	BQL
Arochlor-1260	200	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
TCMX	100	68	68

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: mr

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	500PP05 4'-6'	Analyzed By:	JMF
Client Project ID:	TC-133 Navy	Date Collected:	5/9/00
Lab Sample ID:	87298	Date Received:	5/10/00
Lab Project ID:	G132-659	Matrix:	Soil
	Solids 79.68		

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Chromium	**11.5**	1.24	MG/KG	6010B	5/18/00
Lead	**5.75**	1.24	MG/KG	6010B	5/18/00

Comments
BQL = Below Quantitation Limits

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP06 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87299
Lab Project ID: G132-659
Matrix: Soil %Solids: 84.9

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	59	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.9	BQL
Bromobenzene	5.9	BQL
Bromochloromethane	5.9	BQL
Bromodichloromethane	5.9	BQL
Bromoform	5.9	BQL
Bromomethane	5.9	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.9	BQL
sec-Butylbenzene	5.9	BQL
tert-Butylbenzene	5.9	BQL
Carbon disulfide	5.9	BQL
Carbon tetrachloride	5.9	BQL
Chlorobenzene	5.9	BQL
Chloroethane	5.9	BQL
2-Chloroethyl vinyl ether	5.9	BQL
Chloroform	5.9	BQL
Chloromethane	5.9	BQL
2-Chlorotoluene	5.9	BQL
4-Chlorotoluene	5.9	BQL
Dibromochloromethane	5.9	BQL
1,2-Dibromo-3-chloropropane	5.9	BQL
Dibromomethane	5.9	BQL
1,2-Dibromoethane (EDB)	5.9	BQL
1,2-Dichlorobenzene	5.9	BQL
1,3-Dichlorobenzene	5.9	BQL
1,4-Dichlorobenzene	5.9	BQL
trans-1,4-Dichloro-2-butene	5.9	BQL
1,1-Dichloroethane	5.9	BQL
1,1-Dichloroethene	5.9	BQL
1,2-Dichloroethane	5.9	BQL
cis-1,2-Dichloroethene	5.9	BQL
trans-1,2-dichloroethene	5.9	BQL
1,2-Dichloropropane	5.9	BQL
1,3-Dichloropropane	5.9	BQL
2,2-Dichloropropane	5.9	BQL
1,1-Dichloropropene	5.9	BQL
cis-1,3-Dichloropropene	5.9	BQL
trans-1,3-Dichloropropene	5.9	BQL
Dichlorodifluoromethane	5.9	BQL
Diisopropyl ether (DIPE)	5.9	BQL
Ethylbenzene	5.9	BQL
Hexachlorobutadiene	5.9	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP06 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87299
Lab Project ID: G132-659
Matrix: Soil %Solids: 84.9

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.9	BQL
Iodomethane	5.9	BQL
Isopropylbenzene	5.9	BQL
4-Isopropyltoluene	5.9	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	5.9	BQL
Methyl-tert-butyl ether (MTBE)	5.9	BQL
Naphthalene	5.9	BQL
n-Propyl benzene	5.9	BQL
Styrene	5.9	BQL
1,1,1,2-Tetrachloroethane	5.9	BQL
1,1,2,2-Tetrachloroethane	5.9	BQL
Tetrachloroethene	5.9	BQL
Toluene	5.9	**8.7**
1,2,3-Trichlorobenzene	5.9	BQL
1,2,4-Trichlorobenzene	5.9	BQL
Trichloroethene	5.9	BQL
1,1,1-Trichloroethane	5.9	BQL
1,1,2-Trichloroethane	5.9	BQL
Trichlorofluoromethane	5.9	BQL
1,2,3-Trichloropropane	5.9	BQL
1,2,4-Trimethylbenzene	5.9	BQL
1,3,5-Trimethylbenzene	5.9	BQL
Vinyl chloride	5.9	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.9	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.4	105
1,2-Dichloroethane-d4	50	50.8	102
Toluene-d8	50	50.2	100

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP06 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87299
Lab Project ID: G132-659
Matrix: Soil %Solids: 84.9

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	340	BQL
Acenaphthylene	340	BQL
Anthracene	340	BQL
Benzo[a]anthracene	340	BQL
Benzo[a]pyrene	340	BQL
Benzo[b]fluoranthene	340	BQL
Benzo[g,h,i]perylene	340	BQL
Benzo[k]fluoranthene	340	BQL
Bis(2-chloroethoxy)methane	340	BQL
Bis(2-chloroethyl)ether	340	BQL
Bis(2-chloroisopropyl)ether	340	BQL
Bis(2-ethylhexyl)phthalate	340	BQL
4-bromophenyl phenyl ether	340	BQL
Butylbenzylphthalate	340	BQL
4-Chloroaniline	340	BQL
2-Chloronaphthalene	340	BQL
4-Chlorophenyl phenyl ether	340	BQL
Chrysene	340	BQL
Di-n-Butylphthalate	340	BQL
Di-n-octylphthalate	340	BQL
Dibenzo[a,h]anthracene	340	BQL
Dibenzofuran	340	BQL
1,2-Dichlorobenzene	340	BQL
1,3-Dichlorobenzene	340	BQL
1,4-Dichlorobenzene	340	BQL
3,3'-Dichlorobenzidine	690	BQL
Diethylphthalate	340	BQL
Dimethylphthalate	340	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrotoluene	340	BQL
2,6-Dinitrotoluene	340	BQL
Fluoranthene	340	BQL
Fluorene	340	BQL
Hexachlorobenzene	340	BQL
Hexachlorobutadiene	340	BQL
Hexachlorocyclopentadiene	690	BQL
Hexachloroethane	340	BQL
Indeno(1,2,3-c,d)pyrene	340	BQL
Isophorone	340	BQL
2-Methylnaphthalene	340	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP06 6'-8'		Date Collected: 5/9/00
Client Project ID:	TC-133 Navy		Date Received: 5/10/00
Lab Sample ID:	87299		Date Analyzed: 5/18/00
Lab Project ID:	G132-659		Analyzed By: MRC
Matrix:	Soil	%Solids: 84.9	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	340	BQL
N-Nitrosodiphenylamine	340	BQL
Naphthalene	340	BQL
2-Nitroaniline	340	BQL
3-Nitroaniline	340	BQL
4-Nitroaniline	340	BQL
Nitrobenzene	340	BQL
Phenanthrene	340	BQL
Pyrene	340	BQL
1,2,4-Trichlorobenzene	340	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.9	89
Nitrobenzene-d5	10	8.1	81
4-Terphenyl-d14	10	8.8	88

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MR

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP06 6'-8'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	85
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	100
Surrogate % Recovery - FID	140

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87299

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP06 6'-8'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	84.9
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	96
Aromatic Surrogate % Recovery	85

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87299

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP07 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87300
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	58	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.8	BQL
Bromobenzene	5.8	BQL
Bromochloromethane	5.8	BQL
Bromodichloromethane	5.8	BQL
Bromoform	5.8	BQL
Bromomethane	5.8	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.8	BQL
sec-Butylbenzene	5.8	BQL
tert-Butylbenzene	5.8	BQL
Carbon disulfide	5.8	BQL
Carbon tetrachloride	5.8	BQL
Chlorobenzene	5.8	BQL
Chloroethane	5.8	BQL
2-Chloroethyl vinyl ether	5.8	BQL
Chloroform	5.8	BQL
Chloromethane	5.8	BQL
2-Chlorotoluene	5.8	BQL
4-Chlorotoluene	5.8	BQL
Dibromochloromethane	5.8	BQL
1,2-Dibromo-3-chloropropane	5.8	BQL
Dibromomethane	5.8	BQL
1,2-Dibromoethane (EDB)	5.8	BQL
1,2-Dichlorobenzene	5.8	BQL
1,3-Dichlorobenzene	5.8	BQL
1,4-Dichlorobenzene	5.8	BQL
trans-1,4-Dichloro-2-butene	5.8	BQL
1,1-Dichloroethane	5.8	BQL
1,1-Dichloroethene	5.8	BQL
1,2-Dichloroethane	5.8	BQL
cis-1,2-Dichloroethene	5.8	BQL
trans-1,2-dichloroethene	5.8	BQL
1,2-Dichloropropane	5.8	BQL
1,3-Dichloropropane	5.8	BQL
2,2-Dichloropropane	5.8	BQL
1,1-Dichloropropene	5.8	BQL
cis-1,3-Dichloropropene	5.8	BQL
trans-1,3-Dichloropropene	5.8	BQL
Dichlorodifluoromethane	5.8	BQL
Diisopropyl ether (DIPE)	5.8	BQL
Ethylbenzene	5.8	BQL
Hexachlorobutadiene	5.8	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP07 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87300
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.8	BQL
Iodomethane	5.8	BQL
Isopropylbenzene	5.8	BQL
4-Isopropyltoluene	5.8	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.8	BQL
Methyl-tert-butyl ether (MTBE)	5.8	BQL
Naphthalene	5.8	BQL
n-Propyl benzene	5.8	BQL
Styrene	5.8	BQL
1,1,1,2-Tetrachloroethane	5.8	BQL
1,1,2,2-Tetrachloroethane	5.8	BQL
Tetrachloroethene	5.8	BQL
Toluene	5.8	BQL
1,2,3-Trichlorobenzene	5.8	BQL
1,2,4-Trichlorobenzene	5.8	BQL
Trichloroethene	5.8	BQL
1,1,1-Trichloroethane	5.8	BQL
1,1,2-Trichloroethane	5.8	BQL
Trichlorofluoromethane	5.8	BQL
1,2,3-Trichloropropane	5.8	BQL
1,2,4-Trimethylbenzene	5.8	BQL
1,3,5-Trimethylbenzene	5.8	69
Vinyl chloride	5.8	44
m-,p-Xylene	12	BQL
o-Xylene	5.8	BQL
		BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.3	105
1,2-Dichloroethane-d4	50	52.9	106
Toluene-d8	50	50.2	100

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP07 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87300
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.3

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	720	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	720	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP07 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87300
Lab Project ID: G132-659
Matrix: Soil %Solids: 86.3

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.8	98
Nitrobenzene-d5	10	8.8	88
4-Terphenyl-d14	10	10	100

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP07 6'-8'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	86
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	7300 (µg/Kg)
C_9-C_{10} Aromatics**	2800 (µg/Kg)
Surrogate % Recovery - PID	110
Surrogate % Recovery - FID	170

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87300

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP07 6'-8'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	86.3
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	87
Aromatic Surrogate % Recovery	86

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87300

Reviewed By: mm

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP08 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87301
Lab Project ID: G132-659
Matrix: Soil %Solids: 88.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	56	BQL
Acrolein	110	BQL
Acrylonitrile	110	BQL
Benzene	5.6	BQL
Bromobenzene	5.6	BQL
Bromochloromethane	5.6	BQL
Bromodichloromethane	5.6	BQL
Bromoform	5.6	BQL
Bromomethane	5.6	BQL
2-Butanone	28	BQL
n-Butylbenzene	5.6	BQL
sec-Butylbenzene	5.6	BQL
tert-Butylbenzene	5.6	BQL
Carbon disulfide	5.6	BQL
Carbon tetrachloride	5.6	BQL
Chlorobenzene	5.6	BQL
Chloroethane	5.6	BQL
2-Chloroethyl vinyl ether	5.6	BQL
Chloroform	5.6	BQL
Chloromethane	5.6	BQL
2-Chlorotoluene	5.6	BQL
4-Chlorotoluene	5.6	BQL
Dibromochloromethane	5.6	BQL
1,2-Dibromo-3-chloropropane	5.6	BQL
Dibromomethane	5.6	BQL
1,2-Dibromoethane (EDB)	5.6	BQL
1,2-Dichlorobenzene	5.6	BQL
1,3-Dichlorobenzene	5.6	BQL
1,4-Dichlorobenzene	5.6	BQL
trans-1,4-Dichloro-2-butene	5.6	BQL
1,1-Dichloroethane	5.6	BQL
1,1-Dichloroethene	5.6	BQL
1,2-Dichloroethane	5.6	BQL
cis-1,2-Dichloroethene	5.6	BQL
trans-1,2-dichloroethene	5.6	BQL
1,2-Dichloropropane	5.6	BQL
1,3-Dichloropropane	5.6	BQL
2,2-Dichloropropane	5.6	BQL
1,1-Dichloropropene	5.6	BQL
cis-1,3-Dichloropropene	5.6	BQL
trans-1,3-Dichloropropene	5.6	BQL
Dichlorodifluoromethane	5.6	BQL
Diisopropyl ether (DIPE)	5.6	BQL
Ethylbenzene	5.6	BQL
Hexachlorobutadiene	5.6	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP08 4'-6'
Client Project ID: TC-133 Navy
Lab Sample ID: 87301
Lab Project ID: G132-659
Matrix: Soil %Solids: 88.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.6	BQL
Iodomethane	5.6	BQL
Isopropylbenzene	5.6	BQL
4-Isopropyltoluene	5.6	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.6	BQL
Methyl-tert-butyl ether (MTBE)	5.6	BQL
Naphthalene	5.6	BQL
n-Propyl benzene	5.6	BQL
Styrene	5.6	BQL
1,1,1,2-Tetrachloroethane	5.6	BQL
1,1,2,2-Tetrachloroethane	5.6	BQL
Tetrachloroethene	5.6	BQL
Toluene	5.6	BQL
1,2,3-Trichlorobenzene	5.6	BQL
1,2,4-Trichlorobenzene	5.6	BQL
Trichloroethene	5.6	BQL
1,1,1-Trichloroethane	5.6	BQL
1,1,2-Trichloroethane	5.6	BQL
Trichlorofluoromethane	5.6	BQL
1,2,3-Trichloropropane	5.6	BQL
1,2,4-Trimethylbenzene	5.6	BQL
1,3,5-Trimethylbenzene	5.6	BQL
Vinyl chloride	5.6	BQL
m-,p-Xylene	11	BQL
o-Xylene	5.6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	51.4	103
1,2-Dichloroethane-d4	50	51.2	102
Toluene-d8	50	50.0	100

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP08 4'-6'	Date Collected:	5/9/00
Client Project ID:	TC-133 Navy	Date Received:	5/10/00
Lab Sample ID:	87301	Date Analyzed:	5/18/00
Lab Project ID:	G132-659	Analyzed By:	MRC
Matrix:	Soil %Solids: 88.7	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	350	BQL
Acenaphthylene	350	BQL
Anthracene	350	BQL
Benzo[a]anthracene	350	BQL
Benzo[a]pyrene	350	BQL
Benzo[b]fluoranthene	350	BQL
Benzo[g,h,i]perylene	350	BQL
Benzo[k]fluoranthene	350	BQL
Bis(2-chloroethoxy)methane	350	BQL
Bis(2-chloroethyl)ether	350	BQL
Bis(2-chloroisopropyl)ether	350	BQL
Bis(2-ethylhexyl)phthalate	350	BQL
4-bromophenyl phenyl ether	350	BQL
Butylbenzylphthalate	350	BQL
4-Chloroaniline	350	BQL
2-Chloronaphthalene	350	BQL
4-Chlorophenyl phenyl ether	350	BQL
Chrysene	350	BQL
Di-n-Butylphthalate	350	BQL
Di-n-octylphthalate	350	BQL
Dibenzo[a,h]anthracene	350	BQL
Dibenzofuran	350	BQL
1,2-Dichlorobenzene	350	BQL
1,3-Dichlorobenzene	350	BQL
1,4-Dichlorobenzene	350	BQL
3,3'-Dichlorobenzidine	700	BQL
Diethylphthalate	350	BQL
Dimethylphthalate	350	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	350	BQL
2,6-Dinitrotoluene	350	BQL
Fluoranthene	350	BQL
Fluorene	350	BQL
Hexachlorobenzene	350	BQL
Hexachlorobutadiene	350	BQL
Hexachlorocyclopentadiene	700	BQL
Hexachloroethane	350	BQL
Indeno(1,2,3-c,d)pyrene	350	BQL
Isophorone	350	BQL
2-Methylnaphthalene	350	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP08 4'-6'	Date Collected:	5/9/00
Client Project ID:	TC-133 Navy	Date Received:	5/10/00
Lab Sample ID:	87301	Date Analyzed:	5/18/00
Lab Project ID:	G132-659	Analyzed By:	MRC
Matrix:	Soil %Solids: 88.7	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	350	BQL
N-Nitrosodiphenylamine	350	BQL
Naphthalene	350	BQL
2-Nitroaniline	350	BQL
3-Nitroaniline	350	BQL
4-Nitroaniline	350	BQL
Nitrobenzene	350	BQL
Phenanthrene	350	BQL
Pyrene	350	BQL
1,2,4-Trichlorobenzene	350	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	10	100
Nitrobenzene-d5	10	7.7	77
4-Terphenyl-d14	10	9.5	96

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP08 4'-6'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/23/00
Dry Weight	89
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	89
Surrogate % Recovery - FID	110

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-659-87301

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP08 4'-6'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	88.7
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	75
Aromatic Surrogate % Recovery	65

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87301

Reviewed By: Mar

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP09 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87302
Lab Project ID: G132-659
Matrix: Soil %Solids: 80.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	62	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6.2	BQL
Bromobenzene	6.2	BQL
Bromochloromethane	6.2	BQL
Bromodichloromethane	6.2	BQL
Bromoform	6.2	BQL
Bromomethane	6.2	BQL
2-Butanone	31	BQL
n-Butylbenzene	6.2	BQL
sec-Butylbenzene	6.2	BQL
tert-Butylbenzene	6.2	BQL
Carbon disulfide	6.2	BQL
Carbon tetrachloride	6.2	BQL
Chlorobenzene	6.2	BQL
Chloroethane	6.2	BQL
2-Chloroethyl vinyl ether	6.2	BQL
Chloroform	6.2	BQL
Chloromethane	6.2	BQL
2-Chlorotoluene	6.2	BQL
4-Chlorotoluene	6.2	BQL
Dibromochloromethane	6.2	BQL
1,2-Dibromo-3-chloropropane	6.2	BQL
Dibromomethane	6.2	BQL
1,2-Dibromoethane (EDB)	6.2	BQL
1,2-Dichlorobenzene	6.2	BQL
1,3-Dichlorobenzene	6.2	BQL
1,4-Dichlorobenzene	6.2	BQL
trans-1,4-Dichloro-2-butene	6.2	BQL
1,1-Dichloroethane	6.2	BQL
1,1-Dichloroethene	6.2	BQL
1,2-Dichloroethane	6.2	BQL
cis-1,2-Dichloroethene	6.2	BQL
trans-1,2-dichloroethene	6.2	BQL
1,2-Dichloropropane	6.2	BQL
1,3-Dichloropropane	6.2	BQL
2,2-Dichloropropane	6.2	BQL
1,1-Dichloropropene	6.2	BQL
cis-1,3-Dichloropropene	6.2	BQL
trans-1,3-Dichloropropene	6.2	BQL
Dichlorodifluoromethane	6.2	BQL
Diisopropyl ether (DIPE)	6.2	BQL
Ethylbenzene	6.2	BQL
Hexachlorobutadiene	6.2	BQL

Reviewed by: mm

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP09 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87302
Lab Project ID: G132-659
Matrix: Soil %Solids: 80.7

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6.2	BQL
Iodomethane	6.2	BQL
Isopropylbenzene	6.2	BQL
4-Isopropyltoluene	6.2	BQL
Methylene chloride	25	BQL
4-Methyl-2-pentanone	6.2	BQL
Methyl-tert-butyl ether (MTBE)	6.2	BQL
Naphthalene	6.2	BQL
n-Propyl benzene	6.2	BQL
Styrene	6.2	BQL
1,1,1,2-Tetrachloroethane	6.2	BQL
1,1,2,2-Tetrachloroethane	6.2	BQL
Tetrachloroethene	6.2	BQL
Toluene	6.2	BQL
1,2,3-Trichlorobenzene	6.2	60
1,2,4-Trichlorobenzene	6.2	BQL
Trichloroethene	6.2	BQL
1,1,1-Trichloroethane	6.2	BQL
1,1,2-Trichloroethane	6.2	BQL
Trichlorofluoromethane	6.2	BQL
1,2,3-Trichloropropane	6.2	BQL
1,2,4-Trimethylbenzene	6.2	BQL
1,3,5-Trimethylbenzene	6.2	BQL
Vinyl chloride	6.2	BQL
m-,p-Xylene	12	BQL
o-Xylene	6.2	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	51.5	103
1,2-Dichloroethane-d4	50	52.2	104
Toluene-d8	50	49.6	99

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP09 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87302
Lab Project ID: G132-659
Matrix: Soil %Solids: 80.7

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	380	BQL
Acenaphthylene	380	BQL
Anthracene	380	BQL
Benzo[a]anthracene	380	BQL
Benzo[a]pyrene	380	BQL
Benzo[b]fluoranthene	380	BQL
Benzo[g,h,i]perylene	380	BQL
Benzo[k]fluoranthene	380	BQL
Bis(2-chloroethoxy)methane	380	BQL
Bis(2-chloroethyl)ether	380	BQL
Bis(2-chloroisopropyl)ether	380	BQL
Bis(2-ethylhexyl)phthalate	380	BQL
4-bromophenyl phenyl ether	380	BQL
Butylbenzylphthalate	380	BQL
4-Chloroaniline	380	BQL
2-Chloronaphthalene	380	BQL
4-Chlorophenyl phenyl ether	380	BQL
Chrysene	380	BQL
Di-n-Butylphthalate	380	BQL
Di-n-octylphthalate	380	BQL
Dibenzo[a,h]anthracene	380	BQL
Dibenzofuran	380	BQL
1,2-Dichlorobenzene	380	BQL
1,3-Dichlorobenzene	380	BQL
1,4-Dichlorobenzene	380	BQL
3,3'-Dichlorobenzidine	770	BQL
Diethylphthalate	380	BQL
Dimethylphthalate	380	BQL
4,6-Dinitro-2-methylphenol	1900	BQL
2,4-Dinitrotoluene	380	BQL
2,6-Dinitrotoluene	380	BQL
Fluoranthene	380	BQL
Fluorene	380	BQL
Hexachlorobenzene	380	BQL
Hexachlorobutadiene	380	BQL
Hexachlorocyclopentadiene	770	BQL
Hexachloroethane	380	BQL
Indeno(1,2,3-c,d)pyrene	380	BQL
Isophorone	380	BQL
2-Methylnaphthalene	380	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP09 6'-8'		Date Collected: 5/9/00
Client Project ID:	TC-133 Navy		Date Received: 5/10/00
Lab Sample ID:	87302		Date Analyzed: 5/18/00
Lab Project ID:	G132-659		Analyzed By: MRC
Matrix:	Soil	%Solids: 80.7	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	380	BQL
N-Nitrosodiphenylamine	380	BQL
Naphthalene	380	BQL
2-Nitroaniline	380	BQL
3-Nitroaniline	380	BQL
4-Nitroaniline	380	BQL
Nitrobenzene	380	BQL
Phenanthrene	380	BQL
Pyrene	380	BQL
1,2,4-Trichlorobenzene	380	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.1	91
Nitrobenzene-d5	10	8.6	86
4-Terphenyl-d14	10	8.5	86

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: ma

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP09 6'-8'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/18/00
Dry Weight	81
Dilution Factor	1
C_5-C_8 Aliphatics**	500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	95
Surrogate % Recovery - FID	110

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-659-87302

Reviewed By: MM

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP09 6'-8'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/22/00
Dry Weight	80.7
Dilution Factor	1
C_9-C_{18} Aliphatics*	21 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	63 (mg/Kg)
Aliphatic Surrogate % Recovery	65
Aromatic Surrogate % Recovery	64
Fractionation Surrogate 1 % Recovery	71

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-659-87302

Reviewed By: Mn

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP10 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87303
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	63	BQL
Acrolein	130	BQL
Acrylonitrile	130	BQL
Benzene	6.3	BQL
Bromobenzene	6.3	BQL
Bromochloromethane	6.3	BQL
Bromodichloromethane	6.3	BQL
Bromoform	6.3	BQL
Bromomethane	6.3	BQL
2-Butanone	32	BQL
n-Butylbenzene	6.3	BQL
sec-Butylbenzene	6.3	11
tert-Butylbenzene	6.3	BQL
Carbon disulfide	6.3	BQL
Carbon tetrachloride	6.3	BQL
Chlorobenzene	6.3	BQL
Chloroethane	6.3	BQL
2-Chloroethyl vinyl ether	6.3	BQL
Chloroform	6.3	BQL
Chloromethane	6.3	BQL
2-Chlorotoluene	6.3	BQL
4-Chlorotoluene	6.3	BQL
Dibromochloromethane	6.3	BQL
1,2-Dibromo-3-chloropropane	6.3	BQL
Dibromomethane	6.3	BQL
1,2-Dibromoethane (EDB)	6.3	BQL
1,2-Dichlorobenzene	6.3	BQL
1,3-Dichlorobenzene	6.3	BQL
1,4-Dichlorobenzene	6.3	BQL
trans-1,4-Dichloro-2-butene	6.3	BQL
1,1-Dichloroethane	6.3	BQL
1,1-Dichloroethene	6.3	BQL
1,2-Dichloroethane	6.3	BQL
cis-1,2-Dichloroethene	6.3	BQL
trans-1,2-dichloroethene	6.3	BQL
1,2-Dichloropropane	6.3	BQL
1,3-Dichloropropane	6.3	BQL
2,2-Dichloropropane	6.3	BQL
1,1-Dichloropropene	6.3	BQL
cis-1,3-Dichloropropene	6.3	BQL
trans-1,3-Dichloropropene	6.3	BQL
Dichlorodifluoromethane	6.3	BQL
Diisopropyl ether (DIPE)	6.3	BQL
Ethylbenzene	6.3	16
Hexachlorobutadiene	6.3	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP10 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87303
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6.3	BQL
Iodomethane	6.3	BQL
Isopropylbenzene	6.3	**14**
4-Isopropyltoluene	6.3	**34**
Methylene chloride	25	BQL
4-Methyl-2-pentanone	6.3	BQL
Methyl-tert-butyl ether (MTBE)	6.3	BQL
Naphthalene	6.3	BQL
n-Propyl benzene	6.3	**20**
Styrene	6.3	BQL
1,1,1,2-Tetrachloroethane	6.3	BQL
1,1,2,2-Tetrachloroethane	6.3	BQL
Tetrachloroethene	6.3	BQL
Toluene	6.3	**9.4**
1,2,3-Trichlorobenzene	6.3	BQL
1,2,4-Trichlorobenzene	6.3	BQL
Trichloroethene	6.3	BQL
1,1,1-Trichloroethane	6.3	BQL
1,1,2-Trichloroethane	6.3	BQL
Trichlorofluoromethane	6.3	BQL
1,2,3-Trichloropropane	6.3	BQL
1,2,4-Trimethylbenzene	6.3	see 5:1 run
1,3,5-Trimethylbenzene	6.3	**140**
Vinyl chloride	6.3	BQL
m-,p-Xylene	13	**83**
o-Xylene	6.3	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	55.1	110
1,2-Dichloroethane-d4	50	53.9	108
Toluene-d8	50	50.1	100

Comments:

All results are corrected for dilution.

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP10 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87303
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.3

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 5

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
1,2,4-Trimethylbenzene	16	84

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	54.4	109
1,2-Dichloroethane-d4	50	45.7	91
Toluene-d8	50	50.4	101

Comments:

All results are corrected for dilution.

Reviewed by: mm

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID: 500PP10 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87303
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.3

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	390	BQL
Acenaphthylene	390	BQL
Anthracene	390	BQL
Benzo[a]anthracene	390	BQL
Benzo[a]pyrene	390	BQL
Benzo[b]fluoranthene	390	BQL
Benzo[g,h,i]perylene	390	BQL
Benzo[k]fluoranthene	390	BQL
Bis(2-chloroethoxy)methane	390	BQL
Bis(2-chloroethyl)ether	390	BQL
Bis(2-chloroisopropyl)ether	390	BQL
Bis(2-ethylhexyl)phthalate	390	BQL
4-bromophenyl phenyl ether	390	BQL
Butylbenzylphthalate	390	BQL
4-Chloroaniline	390	BQL
2-Chloronaphthalene	390	BQL
4-Chlorophenyl phenyl ether	390	BQL
Chrysene	390	BQL
Di-n-Butylphthalate	390	BQL
Di-n-octylphthalate	390	BQL
Dibenzo[a,h]anthracene	390	BQL
Dibenzofuran	390	BQL
1,2-Dichlorobenzene	390	BQL
1,3-Dichlorobenzene	390	BQL
1,4-Dichlorobenzene	390	BQL
3,3'-Dichlorobenzidine	780	BQL
Diethylphthalate	390	BQL
Dimethylphthalate	390	BQL
4,6-Dinitro-2-methylphenol	2000	BQL
2,4-Dinitrotoluene	390	BQL
2,6-Dinitrotoluene	390	BQL
Fluoranthene	390	BQL
Fluorene	390	BQL
Hexachlorobenzene	390	BQL
Hexachlorobutadiene	390	BQL
Hexachlorocyclopentadiene	780	BQL
Hexachloroethane	390	BQL
Indeno(1,2,3-c,d)pyrene	390	BQL
Isophorone	390	BQL
2-Methylnaphthalene	390	BQL

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP10 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87303
Lab Project ID: G132-659
Matrix: Soil %Solids: 79.3

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	390	BQL
N-Nitrosodiphenylamine	390	BQL
Naphthalene	390	BQL
2-Nitroaniline	390	BQL
3-Nitroaniline	390	BQL
4-Nitroaniline	390	BQL
Nitrobenzene	390	BQL
Phenanthrene	390	BQL
Pyrene	390	BQL
1,2,4-Trichlorobenzene	390	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.5	75
Nitrobenzene-d5	10	5.4	54
4-Terphenyl-d14	10	8.1	81

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: mn

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP10 6'-8'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/18/00
Dry Weight	79
Dilution Factor	1
C_5-C_8 Aliphatics**	5500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	88
Surrogate % Recovery - FID	100

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-659-87303

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP10 6'-8'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	79.3
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	78
Aromatic Surrogate % Recovery	60

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87303

Reviewed By: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP11 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87304
Lab Project ID: G132-659
Matrix: Soil %Solids: 85.4

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	59	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.9	BQL
Bromobenzene	5.9	BQL
Bromochloromethane	5.9	BQL
Bromodichloromethane	5.9	BQL
Bromoform	5.9	BQL
Bromomethane	5.9	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.9	BQL
sec-Butylbenzene	5.9	55
tert-Butylbenzene	5.9	BQL
Carbon disulfide	5.9	BQL
Carbon tetrachloride	5.9	BQL
Chlorobenzene	5.9	BQL
Chloroethane	5.9	BQL
2-Chloroethyl vinyl ether	5.9	BQL
Chloroform	5.9	BQL
Chloromethane	5.9	BQL
2-Chlorotoluene	5.9	BQL
4-Chlorotoluene	5.9	BQL
Dibromochloromethane	5.9	BQL
1,2-Dibromo-3-chloropropane	5.9	BQL
Dibromomethane	5.9	BQL
1,2-Dibromoethane (EDB)	5.9	BQL
1,2-Dichlorobenzene	5.9	BQL
1,3-Dichlorobenzene	5.9	BQL
1,4-Dichlorobenzene	5.9	BQL
trans-1,4-Dichloro-2-butene	5.9	BQL
1,1-Dichloroethane	5.9	BQL
1,1-Dichloroethene	5.9	BQL
1,2-Dichloroethane	5.9	BQL
cis-1,2-Dichloroethene	5.9	BQL
trans-1,2-dichloroethene	5.9	BQL
1,2-Dichloropropane	5.9	BQL
1,3-Dichloropropane	5.9	BQL
2,2-Dichloropropane	5.9	BQL
1,1-Dichloropropene	5.9	BQL
cis-1,3-Dichloropropene	5.9	BQL
trans-1,3-Dichloropropene	5.9	BQL
Dichlorodifluoromethane	5.9	BQL
Diisopropyl ether (DIPE)	5.9	BQL
Ethylbenzene	5.9	BQL
Hexachlorobutadiene	5.9	BQL

Reviewed by: mn

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP11 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87304
Lab Project ID: G132-659
Matrix: Soil %Solids: 85.4

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/9/00
Date Received: 5/10/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.9	BQL
Iodomethane	5.9	BQL
Isopropylbenzene	5.9	BQL
4-Isopropyltoluene	5.9	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.9	BQL
Methyl-tert-butyl ether (MTBE)	5.9	BQL
Naphthalene	5.9	35
n-Propyl benzene	5.9	BQL
Styrene	5.9	BQL
1,1,1,2-Tetrachloroethane	5.9	BQL
1,1,2,2-Tetrachloroethane	5.9	BQL
Tetrachloroethene	5.9	BQL
Toluene	5.9	BQL
1,2,3-Trichlorobenzene	5.9	BQL
1,2,4-Trichlorobenzene	5.9	BQL
Trichloroethene	5.9	BQL
1,1,1-Trichloroethane	5.9	BQL
1,1,2-Trichloroethane	5.9	BQL
Trichlorofluoromethane	5.9	BQL
1,2,3-Trichloropropane	5.9	BQL
1,2,4-Trimethylbenzene	5.9	80
1,3,5-Trimethylbenzene	5.9	20
Vinyl chloride	5.9	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.9	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	54.6	109
1,2-Dichloroethane-d4	50	48.7	97
Toluene-d8	50	50.2	100

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID: 500PP11 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87304
Lab Project ID: G132-659
Matrix: Soil %Solids: 85.4

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	370	BQL
Acenaphthylene	370	BQL
Anthracene	370	BQL
Benzo[a]anthracene	370	BQL
Benzo[a]pyrene	370	BQL
Benzo[b]fluoranthene	370	BQL
Benzo[g,h,i]perylene	370	BQL
Benzo[k]fluoranthene	370	BQL
Bis(2-chloroethoxy)methane	370	BQL
Bis(2-chloroethyl)ether	370	BQL
Bis(2-chloroisopropyl)ether	370	BQL
Bis(2-ethylhexyl)phthalate	370	BQL
4-bromophenyl phenyl ether	370	BQL
Butylbenzylphthalate	370	BQL
4-Chloroaniline	370	BQL
2-Chloronaphthalene	370	BQL
4-Chlorophenyl phenyl ether	370	BQL
Chrysene	370	BQL
Di-n-Butylphthalate	370	BQL
Di-n-octylphthalate	370	BQL
Dibenzo[a,h]anthracene	370	BQL
Dibenzofuran	370	BQL
1,2-Dichlorobenzene	370	BQL
1,3-Dichlorobenzene	370	BQL
1,4-Dichlorobenzene	370	BQL
3,3'-Dichlorobenzidine	730	BQL
Diethylphthalate	370	BQL
Dimethylphthalate	370	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	370	BQL
2,6-Dinitrotoluene	370	BQL
Fluoranthene	370	BQL
Fluorene	370	BQL
Hexachlorobenzene	370	BQL
Hexachlorobutadiene	370	BQL
Hexachlorocyclopentadiene	730	BQL
Hexachloroethane	370	BQL
Indeno(1,2,3-c,d)pyrene	370	BQL
Isophorone	370	BQL
2-Methylnaphthalene	370	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP11 6'-8'
Client Project ID: TC-133 Navy
Lab Sample ID: 87304
Lab Project ID: G132-659
Matrix: Soil %Solids: 85.4

Date Collected: 5/9/00
Date Received: 5/10/00
Date Analyzed: 5/18/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	370	BQL
N-Nitrosodiphenylamine	370	BQL
Naphthalene	370	BQL
2-Nitroaniline	370	BQL
3-Nitroaniline	370	BQL
4-Nitroaniline	370	BQL
Nitrobenzene	370	BQL
Phenanthrene	370	BQL
Pyrene	370	BQL
1,2,4-Trichlorobenzene	370	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.9	99
Nitrobenzene-d5	10	9	90
4-Terphenyl-d14	10	9.4	94

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP11 6'-8'
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/09/00
Date Analyzed	05/18/00
Dry Weight	85
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	< 500 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	85
Surrogate % Recovery - FID	94

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-659-87304

Reviewed By: Mr

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP11 6'-8'
Sample Matrix	Soil
Date Collected	05/09/00
Date Received	05/10/00
Date Extracted	05/16/00
Date Analyzed	05/18/00
Dry Weight	85.4
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	82
Aromatic Surrogate % Recovery	84

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-659-87304

Reviewed By: MW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP13
Client Project ID: TC-133 Navy
Lab Sample ID: 87342
Lab Project ID: G132-660
Matrix: Soil %Solids: 84.1

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	59	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.9	**42**
Bromobenzene	5.9	BQL
Bromochloromethane	5.9	BQL
Bromodichloromethane	5.9	BQL
Bromoform	5.9	BQL
Bromomethane	5.9	BQL
2-Butanone	30	BQL
n-Butylbenzene	5.9	BQL
sec-Butylbenzene	5.9	BQL
tert-Butylbenzene	5.9	BQL
Carbon disulfide	5.9	BQL
Carbon tetrachloride	5.9	BQL
Chlorobenzene	5.9	BQL
Chloroethane	5.9	BQL
2-Chloroethyl vinyl ether	5.9	BQL
Chloroform	5.9	BQL
Chloromethane	5.9	BQL
2-Chlorotoluene	5.9	BQL
4-Chlorotoluene	5.9	BQL
Dibromochloromethane	5.9	BQL
1,2-Dibromo-3-chloropropane	5.9	BQL
Dibromomethane	5.9	BQL
1,2-Dibromoethane (EDB)	5.9	BQL
1,2-Dichlorobenzene	5.9	BQL
1,3-Dichlorobenzene	5.9	BQL
1,4-Dichlorobenzene	5.9	BQL
trans-1,4-Dichloro-2-butene	5.9	BQL
1,1-Dichloroethane	5.9	BQL
1,1-Dichloroethene	5.9	BQL
1,2-Dichloroethane	5.9	BQL
cis-1,2-Dichloroethene	5.9	BQL
trans-1,2-dichloroethene	5.9	BQL
1,2-Dichloropropane	5.9	BQL
1,3-Dichloropropane	5.9	BQL
2,2-Dichloropropane	5.9	BQL
1,1-Dichloropropene	5.9	BQL
cis-1,3-Dichloropropene	5.9	BQL
trans-1,3-Dichloropropene	5.9	BQL
Dichlorodifluoromethane	5.9	BQL
Diisopropyl ether (DIPE)	5.9	BQL
Ethylbenzene	5.9	**15**
Hexachlorobutadiene	5.9	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP13
Client Project ID: TC-133 Navy
Lab Sample ID: 87342
Lab Project ID: G132-660
Matrix: Soil %Solids: 84.1

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.9	BQL
Iodomethane	5.9	BQL
Isopropylbenzene	5.9	BQL
4-Isopropyltoluene	5.9	**57**
Methylene chloride	24	**29**
4-Methyl-2-pentanone	5.9	BQL
Methyl-tert-butyl ether (MTBE)	5.9	BQL
Naphthalene	5.9	BQL
n-Propyl benzene	5.9	BQL
Styrene	5.9	BQL
1,1,1,2-Tetrachloroethane	5.9	BQL
1,1,2,2-Tetrachloroethane	5.9	BQL
Tetrachloroethene	5.9	BQL
Toluene	5.9	BQL
1,2,3-Trichlorobenzene	5.9	BQL
1,2,4-Trichlorobenzene	5.9	BQL
Trichloroethene	5.9	BQL
1,1,1-Trichloroethane	5.9	BQL
1,1,2-Trichloroethane	5.9	BQL
Trichlorofluoromethane	5.9	BQL
1,2,3-Trichloropropane	5.9	BQL
1,2,4-Trimethylbenzene	5.9	**28**
1,3,5-Trimethylbenzene	5.9	**15**
Vinyl chloride	5.9	BQL
m-,p-Xylene	12	**44**
o-Xylene	5.9	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	51.0	102
1,2-Dichloroethane-d4	50	46.5	93
Toluene-d8	50	52.5	105

Comments:

All results are corrected for dilution.

Reviewed by: [signature]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP13	Date Collected:	5/10/00
Client Project ID:	TC-133 Navy	Date Received:	5/11/00
Lab Sample ID:	87342	Date Analyzed:	5/22/00
Lab Project ID:	G132-660	Analyzed By:	MRC
Matrix:	Soil	%Solids: 84.1	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	370	BQL
Acenaphthylene	370	BQL
Anthracene	370	BQL
Benzo[a]anthracene	370	BQL
Benzo[a]pyrene	370	BQL
Benzo[b]fluoranthene	370	BQL
Benzo[g,h,i]perylene	370	BQL
Benzo[k]fluoranthene	370	BQL
Bis(2-chloroethoxy)methane	370	BQL
Bis(2-chloroethyl)ether	370	BQL
Bis(2-chloroisopropyl)ether	370	BQL
Bis(2-ethylhexyl)phthalate	370	BQL
4-bromophenyl phenyl ether	370	BQL
Butylbenzylphthalate	370	BQL
4-Chloroaniline	370	BQL
2-Chloronaphthalene	370	BQL
4-Chlorophenyl phenyl ether	370	BQL
Chrysene	370	BQL
Di-n-Butylphthalate	370	BQL
Di-n-octylphthalate	370	BQL
Dibenzo[a,h]anthracene	370	BQL
Dibenzofuran	370	BQL
1,2-Dichlorobenzene	370	BQL
1,3-Dichlorobenzene	370	BQL
1,4-Dichlorobenzene	370	BQL
3,3'-Dichlorobenzidine	740	BQL
Diethylphthalate	370	BQL
Dimethylphthalate	370	BQL
4,6-Dinitro-2-methylphenol	1900	BQL
2,4-Dinitrotoluene	370	BQL
2,6-Dinitrotoluene	370	BQL
Fluoranthene	370	BQL
Fluorene	370	BQL
Hexachlorobenzene	370	BQL
Hexachlorobutadiene	370	BQL
Hexachlorocyclopentadiene	740	BQL
Hexachloroethane	370	BQL
Indeno(1,2,3-c,d)pyrene	370	BQL
Isophorone	370	BQL
2-Methylnaphthalene	370	BQL

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PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP13		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87342		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 84.1	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	370	BQL
N-Nitrosodiphenylamine	370	BQL
Naphthalene	370	BQL
2-Nitroaniline	370	BQL
3-Nitroaniline	370	BQL
4-Nitroaniline	370	BQL
Nitrobenzene	370	BQL
Phenanthrene	370	BQL
Pyrene	370	BQL
1,2,4-Trichlorobenzene	370	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.4	64
Nitrobenzene-d5	10	3.8	38
4-Terphenyl-d14	10	7.4	74

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP13
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	84
Dilution Factor	1
C_5-C_8 Aliphatics**	1000 (µg/Kg)
C_9-C_{12} Aliphatics**	810 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	140
Surrogate % Recovery - FID	270

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-660-87342

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP13
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/18/00
Date Analyzed	05/24/00
Dry Weight	84.1
Dilution Factor	1
C_9-C_{18} Aliphatics*	17 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	59 (mg/Kg)
Aliphatic Surrogate % Recovery	63
Aromatic Surrogate % Recovery	61
Fractionation Surrogate 1 % Recovery	77

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-660-87342

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP14
Client Project ID: TC-133 Navy
Lab Sample ID: 87343
Lab Project ID: G132-660
Matrix: Soil %Solids: 90.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	55	BQL
Acrolein	110	BQL
Acrylonitrile	110	BQL
Benzene	5.5	BQL
Bromobenzene	5.5	BQL
Bromochloromethane	5.5	BQL
Bromodichloromethane	5.5	BQL
Bromoform	5.5	BQL
Bromomethane	5.5	BQL
2-Butanone	28	BQL
n-Butylbenzene	5.5	BQL
sec-Butylbenzene	5.5	BQL
tert-Butylbenzene	5.5	BQL
Carbon disulfide	5.5	BQL
Carbon tetrachloride	5.5	BQL
Chlorobenzene	5.5	BQL
Chloroethane	5.5	BQL
2-Chloroethyl vinyl ether	5.5	BQL
Chloroform	5.5	BQL
Chloromethane	5.5	BQL
2-Chlorotoluene	5.5	BQL
4-Chlorotoluene	5.5	BQL
Dibromochloromethane	5.5	BQL
1,2-Dibromo-3-chloropropane	5.5	BQL
Dibromomethane	5.5	BQL
1,2-Dibromoethane (EDB)	5.5	BQL
1,2-Dichlorobenzene	5.5	BQL
1,3-Dichlorobenzene	5.5	BQL
1,4-Dichlorobenzene	5.5	BQL
trans-1,4-Dichloro-2-butene	5.5	BQL
1,1-Dichloroethane	5.5	BQL
1,1-Dichloroethene	5.5	BQL
1,2-Dichloroethane	5.5	BQL
cis-1,2-Dichloroethene	5.5	BQL
trans-1,2-dichloroethene	5.5	BQL
1,2-Dichloropropane	5.5	BQL
1,3-Dichloropropane	5.5	BQL
2,2-Dichloropropane	5.5	BQL
1,1-Dichloropropene	5.5	BQL
cis-1,3-Dichloropropene	5.5	BQL
trans-1,3-Dichloropropene	5.5	BQL
Dichlorodifluoromethane	5.5	BQL
Diisopropyl ether (DIPE)	5.5	BQL
Ethylbenzene	5.5	BQL
Hexachlorobutadiene	5.5	BQL

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP14
Client Project ID: TC-133 Navy
Lab Sample ID: 87343
Lab Project ID: G132-660
Matrix: Soil %Solids: 90.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.5	BQL
Iodomethane	5.5	BQL
Isopropylbenzene	5.5	BQL
4-Isopropyltoluene	5.5	BQL
Methylene chloride	22	BQL
4-Methyl-2-pentanone	5.5	BQL
Methyl-tert-butyl ether (MTBE)	5.5	BQL
Naphthalene	5.5	BQL
n-Propyl benzene	5.5	BQL
Styrene	5.5	BQL
1,1,1,2-Tetrachloroethane	5.5	BQL
1,1,2,2-Tetrachloroethane	5.5	BQL
Tetrachloroethene	5.5	BQL
Toluene	5.5	BQL
1,2,3-Trichlorobenzene	5.5	BQL
1,2,4-Trichlorobenzene	5.5	BQL
Trichloroethene	5.5	BQL
1,1,1-Trichloroethane	5.5	BQL
1,1,2-Trichloroethane	5.5	BQL
Trichlorofluoromethane	5.5	BQL
1,2,3-Trichloropropane	5.5	BQL
1,2,4-Trimethylbenzene	5.5	BQL
1,3,5-Trimethylbenzene	5.5	BQL
Vinyl chloride	5.5	BQL
m-,p-Xylene	11	BQL
o-Xylene	5.5	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	55.3	111
1,2-Dichloroethane-d4	50	48.6	97
Toluene-d8	50	49.4	99

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP14	Date Collected:	5/10/00
Client Project ID:	TC-133 Navy	Date Received:	5/11/00
Lab Sample ID:	87343	Date Analyzed:	5/22/00
Lab Project ID:	G132-660	Analyzed By:	MRC
Matrix:	Soil %Solids: 90.5	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	340	BQL
Acenaphthylene	340	BQL
Anthracene	340	BQL
Benzo[a]anthracene	340	BQL
Benzo[a]pyrene	340	BQL
Benzo[b]fluoranthene	340	BQL
Benzo[g,h,i]perylene	340	BQL
Benzo[k]fluoranthene	340	BQL
Bis(2-chloroethoxy)methane	340	BQL
Bis(2-chloroethyl)ether	340	BQL
Bis(2-chloroisopropyl)ether	340	BQL
Bis(2-ethylhexyl)phthalate	340	BQL
4-bromophenyl phenyl ether	340	BQL
Butylbenzylphthalate	340	BQL
4-Chloroaniline	340	BQL
2-Chloronaphthalene	340	BQL
4-Chlorophenyl phenyl ether	340	BQL
Chrysene	340	BQL
Di-n-Butylphthalate	340	BQL
Di-n-octylphthalate	340	BQL
Dibenzo[a,h]anthracene	340	BQL
Dibenzofuran	340	BQL
1,2-Dichlorobenzene	340	BQL
1,3-Dichlorobenzene	340	BQL
1,4-Dichlorobenzene	340	BQL
3,3'-Dichlorobenzidine	690	BQL
Diethylphthalate	340	BQL
Dimethylphthalate	340	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrotoluene	340	BQL
2,6-Dinitrotoluene	340	BQL
Fluoranthene	340	BQL
Fluorene	340	BQL
Hexachlorobenzene	340	BQL
Hexachlorobutadiene	340	BQL
Hexachlorocyclopentadiene	690	BQL
Hexachloroethane	340	BQL
Indeno(1,2,3-c,d)pyrene	340	BQL
Isophorone	340	BQL
2-Methylnaphthalene	340	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP14	Date Collected:	5/10/00
Client Project ID:	TC-133 Navy	Date Received:	5/11/00
Lab Sample ID:	87343	Date Analyzed:	5/22/00
Lab Project ID:	G132-660	Analyzed By:	MRC
Matrix:	Soil %Solids: 90.5	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	340	BQL
N-Nitrosodiphenylamine	340	BQL
Naphthalene	340	BQL
2-Nitroaniline	340	BQL
3-Nitroaniline	340	BQL
4-Nitroaniline	340	BQL
Nitrobenzene	340	BQL
Phenanthrene	340	BQL
Pyrene	340	BQL
1,2,4-Trichlorobenzene	340	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.7	77
Nitrobenzene-d5	10	6.3	62
4-Terphenyl-d14	10	9	90

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MM

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP14
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	90
Dilution Factor	1
C_5-C_8 Aliphatics**	840 (µg/Kg)
C_9-C_{12} Aliphatics**	61000 (µg/Kg)
C_9-C_{10} Aromatics**	13000 (µg/Kg)
Surrogate % Recovery - PID	400
Surrogate % Recovery - FID	1400

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-660-87343

Reviewed By: MS

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP14
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/18/00
Date Analyzed	06/01/00
Dry Weight	90.5
Dilution Factor	1
C_9-C_{18} Aliphatics*	130 (mg/Kg)
C_{19}-C_{36} Aliphatics*	200 (mg/Kg)
C_{11}-C_{22} Aromatics*	73 (mg/Kg)
Aliphatic Surrogate % Recovery	80
Aromatic Surrogate % Recovery	79
Fractionation Surrogate 1 % Recovery	77

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-660-87343

Reviewed By: Ma

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP15
Client Project ID: TC-133 Navy
Lab Sample ID: 87344
Lab Project ID: G132-660
Matrix: Soil %Solids: 88.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	57	BQL
Acrolein	110	BQL
Acrylonitrile	110	BQL
Benzene	5.7	**35**
Bromobenzene	5.7	BQL
Bromochloromethane	5.7	BQL
Bromodichloromethane	5.7	BQL
Bromoform	5.7	BQL
Bromomethane	5.7	BQL
2-Butanone	28	BQL
n-Butylbenzene	5.7	BQL
sec-Butylbenzene	5.7	**6.9**
tert-Butylbenzene	5.7	BQL
Carbon disulfide	5.7	BQL
Carbon tetrachloride	5.7	BQL
Chlorobenzene	5.7	BQL
Chloroethane	5.7	BQL
2-Chloroethyl vinyl ether	5.7	BQL
Chloroform	5.7	BQL
Chloromethane	5.7	BQL
2-Chlorotoluene	5.7	BQL
4-Chlorotoluene	5.7	BQL
Dibromochloromethane	5.7	BQL
1,2-Dibromo-3-chloropropane	5.7	BQL
Dibromomethane	5.7	BQL
1,2-Dibromoethane (EDB)	5.7	BQL
1,2-Dichlorobenzene	5.7	BQL
1,3-Dichlorobenzene	5.7	BQL
1,4-Dichlorobenzene	5.7	BQL
trans-1,4-Dichloro-2-butene	5.7	BQL
1,1-Dichloroethane	5.7	BQL
1,1-Dichloroethene	5.7	BQL
1,2-Dichloroethane	5.7	BQL
cis-1,2-Dichloroethene	5.7	BQL
trans-1,2-dichloroethene	5.7	BQL
1,2-Dichloropropane	5.7	BQL
1,3-Dichloropropane	5.7	BQL
2,2-Dichloropropane	5.7	BQL
1,1-Dichloropropene	5.7	BQL
cis-1,3-Dichloropropene	5.7	BQL
trans-1,3-Dichloropropene	5.7	BQL
Dichlorodifluoromethane	5.7	BQL
Diisopropyl ether (DIPE)	5.7	BQL
Ethylbenzene	5.7	**16**
Hexachlorobutadiene	5.7	BQL

Reviewed by: MW

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP15
Client Project ID: TC-133 Navy
Lab Sample ID: 87344
Lab Project ID: G132-660
Matrix: Soil %Solids: 88.3

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.7	BQL
Iodomethane	5.7	BQL
Isopropylbenzene	5.7	**13**
4-Isopropyltoluene	5.7	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.7	BQL
Methyl-tert-butyl ether (MTBE)	5.7	BQL
Naphthalene	5.7	BQL
n-Propyl benzene	5.7	**25**
Styrene	5.7	BQL
1,1,1,2-Tetrachloroethane	5.7	BQL
1,1,2,2-Tetrachloroethane	5.7	BQL
Tetrachloroethene	5.7	BQL
Toluene	5.7	BQL
1,2,3-Trichlorobenzene	5.7	BQL
1,2,4-Trichlorobenzene	5.7	BQL
Trichloroethene	5.7	BQL
1,1,1-Trichloroethane	5.7	BQL
1,1,2-Trichloroethane	5.7	BQL
Trichlorofluoromethane	5.7	BQL
1,2,3-Trichloropropane	5.7	BQL
1,2,4-Trimethylbenzene	5.7	**29**
1,3,5-Trimethylbenzene	5.7	**11**
Vinyl chloride	5.7	BQL
m-,p-Xylene	11	**13**
o-Xylene	5.7	BQL

Surrogate Spike Recoveries Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	53.3	107
1,2-Dichloroethane-d4	50	49.0	98
Toluene-d8	50	50.1	100

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID:	500PP15		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87344		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 88.3	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	350	BQL
Acenaphthylene	350	BQL
Anthracene	350	BQL
Benzo[a]anthracene	350	BQL
Benzo[a]pyrene	350	BQL
Benzo[b]fluoranthene	350	BQL
Benzo[g,h,i]perylene	350	BQL
Benzo[k]fluoranthene	350	BQL
Benzoic Acid	710	BQL
Bis(2-chloroethoxy)methane	350	BQL
Bis(2-chloroethyl)ether	350	BQL
Bis(2-chloroisopropyl)ether	350	BQL
Bis(2-ethylhexyl)phthalate	350	BQL
4-bromophenyl phenyl ether	350	BQL
Butylbenzylphthalate	350	BQL
4-Chloroaniline	350	BQL
4-Chloro-3-methylphenol	350	BQL
2-Chloronaphthalene	350	BQL
2-Chlorophenol	350	BQL
4-Chlorophenyl phenyl ether	350	BQL
Chrysene	350	BQL
Di-n-Butylphthalate	350	BQL
Di-n-octylphthalate	350	BQL
Dibenzo[a,h]anthracene	350	BQL
Dibenzofuran	350	BQL
1,2-Dichlorobenzene	350	BQL
1,3-Dichlorobenzene	350	BQL
1,4-Dichlorobenzene	350	BQL
3,3'-Dichlorobenzidine	710	BQL
2,4-Dichlorophenol	350	BQL
Diethylphthalate	350	BQL
2,4-Dimethylphenol	350	BQL
Dimethylphthalate	350	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrophenol	1800	BQL
2,4-Dinitrotoluene	350	BQL
2,6-Dinitrotoluene	350	BQL
Fluoranthene	350	BQL
Fluorene	350	BQL
Hexachlorobenzene	350	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatiles
by GCMS 8270

Client Sample ID:	500PP15		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87344		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 88.3	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Hexachlorobutadiene	350	BQL
Hexachlorocyclopentadiene	710	BQL
Hexachloroethane	350	BQL
Indeno(1,2,3-c,d)pyrene	350	BQL
Isophorone	350	BQL
2-Methylnaphthalene	350	BQL
2-Methylphenol	350	BQL
3- & 4-Methylphenol	350	BQL
N-Nitrosodi-n-propylamine	350	BQL
N-Nitrosodiphenylamine	350	BQL
Naphthalene	350	BQL
2-Nitroaniline	350	BQL
3-Nitroaniline	350	BQL
4-Nitroaniline	350	BQL
Nitrobenzene	350	BQL
2-Nitrophenol	350	BQL
4-Nitrophenol	1800	BQL
Pentachlorophenol	1800	BQL
Phenanthrene	350	BQL
Phenol	350	BQL
Pyrene	350	BQL
1,2,4-Trichlorobenzene	350	BQL
2,4,5-Trichlorophenol	350	BQL
2,4,6-Trichlorophenol	350	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.8	68
2-Fluorophenol	10	6.4	64
Nitrobenzene-d5	10	6.4	64
Phenol-d6	10	6.7	67
2,4,6-Tribromophenol	10	7.3	73
4-Terphenyl-d14	10	7.6	76

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MMC

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP15
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	88
Dilution Factor	1
C_5-C_8 Aliphatics**	20000 (µg/Kg)
C_9-C_{12} Aliphatics**	130000 (µg/Kg)
C_9-C_{10} Aromatics**	31000 (µg/Kg)
Surrogate % Recovery - PID	290
Surrogate % Recovery - FID	870

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-660-87344

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP15
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/18/00
Date Analyzed	05/23/00
Dry Weight	88.3
Dilution Factor	1
C_9-C_{18} Aliphatics*	40 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	76 (mg/Kg)
Aliphatic Surrogate % Recovery	64
Aromatic Surrogate % Recovery	72
Fractionation Surrogate 1 % Recovery	130

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-660-87344

Reviewed By: rwn

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Pesticides
by EPA 8081

Client Sample ID:	500PP15	Date Collected:	5/10/00
Client Project ID:	TC-133 Navy	Date Received:	5/11/00
Lab Sample ID:	87344	Date Analyzed:	5/23/00
Lab Project ID:	G132-660	Analyzed By:	MRC
Matrix:	Soil %SOLIDS 88.3	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
alpha-BHC	6.9	BQL
beta-BHC	6.9	BQL
delta-BHC	6.9	BQL
gamma-BHC (Lindane)	6.9	BQL
Heptachlor	6.9	BQL
Aldrin	6.9	BQL
Heptachlor epoxide	6.9	BQL
Endosulfan I	6.9	BQL
Dieldrin	6.9	BQL
4,4'-DDE	6.9	BQL
Endrin	6.9	BQL
DDD	6.9	BQL
Endosulfan II	6.9	BQL
4,4'-DDT	6.9	BQL
Methoxychlor	17	BQL
Toxaphene	34	BQL
Chlordane	34	BQL
Endrin aldehyde	6.9	BQL
Endosulfan sulfate	6.9	BQL
Endrin ketone	6.9	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	66	66

Comments:
BQL = Below Quantitation Limit

Reviewed By: Ma

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for PCBs
by EPA 8082

Client Sample ID:	500PP15		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87344		Date Analyzed: 5/23/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%SOLIDS: 88.3	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Arochlor-1016	170	BQL
Arochlor-1221	170	BQL
Arochlor-1232	170	BQL
Arochlor-1242	170	BQL
Arochlor-1248	170	BQL
Arochlor-1254	170	BQL
Arochlor-1260	170	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	66	66

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	500PP15	Analyzed By:	JMF
Client Project ID:	TC-133 Navy	Date Collected:	5/10/00
Lab Sample ID:	87344	Date Received:	5/11/00
Lab Project ID:	G132-660	Matrix:	Soil

Solids 88.33

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Chromium	**8.27**	1.12	MG/KG	6010B	5/18/00
Lead	**43.2**	1.12	MG/KG	6010B	5/18/00

Comments
BQL = Below Quantitation Limits

Reviewed By: JMA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP16
Client Project ID: TC-133 Navy
Lab Sample ID: 87345
Lab Project ID: G132-660
Matrix: Soil %Solids: 83.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	BQL
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	17
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	BQL
Hexachlorobutadiene	6	BQL

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP16
Client Project ID: TC-133 Navy
Lab Sample ID: 87345
Lab Project ID: G132-660
Matrix: Soil %Solids: 83.5

Date Analyzed: 5/18/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	BQL
4-Isopropyltoluene	6	**10**
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	BQL
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	**21**
1,3,5-Trimethylbenzene	6	**11**
Vinyl chloride	6	BQL
m-,p-Xylene	12	BQL
o-Xylene	6	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.5	105
1,2-Dichloroethane-d4	50	53.5	107
Toluene-d8	50	49.8	100

Comments:

All results are corrected for dilution.

Reviewed by: MA

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP16		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87345		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 83.5	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	720	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	720	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP16		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87345		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 83.5	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.7	67
Nitrobenzene-d5	10	3	30
4-Terphenyl-d14	10	8.6	86

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: Mrc

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP16
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	83
Dilution Factor	1
C_5-C_8 Aliphatics**	3500 (µg/Kg)
C_9-C_{12} Aliphatics**	30000 (µg/Kg)
C_9-C_{10} Aromatics**	7400 (µg/Kg)
Surrogate % Recovery - PID	170
Surrogate % Recovery - FID	570

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-660-87345

Reviewed By: Mm

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP16
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/18/00
Date Analyzed	05/24/00
Dry Weight	83.5
Dilution Factor	1
C_9-C_{18} Aliphatics*	23 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	74 (mg/Kg)
Aliphatic Surrogate % Recovery	68
Aromatic Surrogate % Recovery	57
Fractionation Surrogate 1 % Recovery	73

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G132-660-87345

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP17
Client Project ID: TC-133 Navy
Lab Sample ID: 87346
Lab Project ID: G132-660
Matrix: Soil %Solids: 90.4

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	55	BQL
Acrolein	110	BQL
Acrylonitrile	110	BQL
Benzene	5.5	BQL
Bromobenzene	5.5	BQL
Bromochloromethane	5.5	BQL
Bromodichloromethane	5.5	BQL
Bromoform	5.5	BQL
Bromomethane	5.5	BQL
2-Butanone	28	BQL
n-Butylbenzene	5.5	BQL
sec-Butylbenzene	5.5	BQL
tert-Butylbenzene	5.5	BQL
Carbon disulfide	5.5	BQL
Carbon tetrachloride	5.5	BQL
Chlorobenzene	5.5	BQL
Chloroethane	5.5	BQL
2-Chloroethyl vinyl ether	5.5	BQL
Chloroform	5.5	BQL
Chloromethane	5.5	BQL
2-Chlorotoluene	5.5	BQL
4-Chlorotoluene	5.5	BQL
Dibromochloromethane	5.5	BQL
1,2-Dibromo-3-chloropropane	5.5	BQL
Dibromomethane	5.5	BQL
1,2-Dibromoethane (EDB)	5.5	BQL
1,2-Dichlorobenzene	5.5	BQL
1,3-Dichlorobenzene	5.5	BQL
1,4-Dichlorobenzene	5.5	BQL
trans-1,4-Dichloro-2-butene	5.5	BQL
1,1-Dichloroethane	5.5	BQL
1,1-Dichloroethene	5.5	BQL
1,2-Dichloroethane	5.5	BQL
cis-1,2-Dichloroethene	5.5	BQL
trans-1,2-dichloroethene	5.5	BQL
1,2-Dichloropropane	5.5	BQL
1,3-Dichloropropane	5.5	BQL
2,2-Dichloropropane	5.5	BQL
1,1-Dichloropropene	5.5	BQL
cis-1,3-Dichloropropene	5.5	BQL
trans-1,3-Dichloropropene	5.5	BQL
Dichlorodifluoromethane	5.5	BQL
Diisopropyl ether (DIPE)	5.5	BQL
Ethylbenzene	5.5	BQL
Hexachlorobutadiene	5.5	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP17
Client Project ID: TC-133 Navy
Lab Sample ID: 87346
Lab Project ID: G132-660
Matrix: Soil %Solids: 90.4

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.5	BQL
Iodomethane	5.5	BQL
Isopropylbenzene	5.5	BQL
4-Isopropyltoluene	5.5	BQL
Methylene chloride	22	BQL
4-Methyl-2-pentanone	5.5	BQL
Methyl-tert-butyl ether (MTBE)	5.5	BQL
Naphthalene	5.5	BQL
n-Propyl benzene	5.5	BQL
Styrene	5.5	BQL
1,1,1,2-Tetrachloroethane	5.5	BQL
1,1,2,2-Tetrachloroethane	5.5	BQL
Tetrachloroethene	5.5	BQL
Toluene	5.5	BQL
1,2,3-Trichlorobenzene	5.5	BQL
1,2,4-Trichlorobenzene	5.5	BQL
Trichloroethene	5.5	BQL
1,1,1-Trichloroethane	5.5	BQL
1,1,2-Trichloroethane	5.5	BQL
Trichlorofluoromethane	5.5	BQL
1,2,3-Trichloropropane	5.5	BQL
1,2,4-Trimethylbenzene	5.5	BQL
1,3,5-Trimethylbenzene	5.5	BQL
Vinyl chloride	5.5	BQL
m-,p-Xylene	11	BQL
o-Xylene	5.5	BQL

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.6	105
1,2-Dichloroethane-d4	50	51.5	103
Toluene-d8	50	49.7	99

Comments:

All results are corrected for dilution.

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP17	Date Collected:	5/10/00
Client Project ID:	TC-133 Navy	Date Received:	5/11/00
Lab Sample ID:	87346	Date Analyzed:	5/22/00
Lab Project ID:	G132-660	Analyzed By:	MRC
Matrix:	Soil %Solids: 90.4	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	340	BQL
Acenaphthylene	340	BQL
Anthracene	340	BQL
Benzo[a]anthracene	340	BQL
Benzo[a]pyrene	340	BQL
Benzo[b]fluoranthene	340	BQL
Benzo[g,h,i]perylene	340	BQL
Benzo[k]fluoranthene	340	BQL
Bis(2-chloroethoxy)methane	340	BQL
Bis(2-chloroethyl)ether	340	BQL
Bis(2-chloroisopropyl)ether	340	BQL
Bis(2-ethylhexyl)phthalate	340	BQL
4-bromophenyl phenyl ether	340	BQL
Butylbenzylphthalate	340	BQL
4-Chloroaniline	340	BQL
2-Chloronaphthalene	340	BQL
4-Chlorophenyl phenyl ether	340	BQL
Chrysene	340	BQL
Di-n-Butylphthalate	340	BQL
Di-n-octylphthalate	340	BQL
Dibenzo[a,h]anthracene	340	BQL
Dibenzofuran	340	BQL
1,2-Dichlorobenzene	340	BQL
1,3-Dichlorobenzene	340	BQL
1,4-Dichlorobenzene	340	BQL
3,3'-Dichlorobenzidine	680	BQL
Diethylphthalate	340	BQL
Dimethylphthalate	340	BQL
4,6-Dinitro-2-methylphenol	1700	BQL
2,4-Dinitrotoluene	340	BQL
2,6-Dinitrotoluene	340	BQL
Fluoranthene	340	BQL
Fluorene	340	BQL
Hexachlorobenzene	340	BQL
Hexachlorobutadiene	340	BQL
Hexachlorocyclopentadiene	680	BQL
Hexachloroethane	340	BQL
Indeno(1,2,3-c,d)pyrene	340	BQL
Isophorone	340	BQL
2-Methylnaphthalene	340	BQL

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PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP17		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87346		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 90.4	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	340	BQL
N-Nitrosodiphenylamine	340	BQL
Naphthalene	340	BQL
2-Nitroaniline	340	BQL
3-Nitroaniline	340	BQL
4-Nitroaniline	340	BQL
Nitrobenzene	340	BQL
Phenanthrene	340	BQL
Pyrene	340	BQL
1,2,4-Trichlorobenzene	340	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
Nitrobenzene-d5	10	8.7	87
4-Terphenyl-d14	10	9.6	96

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP17
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	90
Dilution Factor	1
C_5-C_8 Aliphatics**	< 500 (µg/Kg)
C_9-C_{12} Aliphatics**	2200 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	180

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-660-87346

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP17
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/18/00
Date Analyzed	05/19/00
Dry Weight	90.4
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	78
Aromatic Surrogate % Recovery	84

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-660-87346

Reviewed By: [illegible]

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

by GCMS 8260B

Client Sample ID:	500PP18	Date Analyzed:	5/19/00
Client Project ID:	TC-133 Navy	Analyzed By:	RNP
Lab Sample ID:	87347	Date Collected:	5/10/00
Lab Project ID:	G132-660	Date Received:	5/11/00
Matrix:	Soil %Solids: 83.0	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	60	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	6	**53**
Bromobenzene	6	BQL
Bromochloromethane	6	BQL
Bromodichloromethane	6	BQL
Bromoform	6	BQL
Bromomethane	6	BQL
2-Butanone	30	BQL
n-Butylbenzene	6	BQL
sec-Butylbenzene	6	BQL
tert-Butylbenzene	6	BQL
Carbon disulfide	6	BQL
Carbon tetrachloride	6	BQL
Chlorobenzene	6	BQL
Chloroethane	6	BQL
2-Chloroethyl vinyl ether	6	BQL
Chloroform	6	BQL
Chloromethane	6	BQL
2-Chlorotoluene	6	BQL
4-Chlorotoluene	6	BQL
Dibromochloromethane	6	BQL
1,2-Dibromo-3-chloropropane	6	BQL
Dibromomethane	6	BQL
1,2-Dibromoethane (EDB)	6	BQL
1,2-Dichlorobenzene	6	BQL
1,3-Dichlorobenzene	6	BQL
1,4-Dichlorobenzene	6	BQL
trans-1,4-Dichloro-2-butene	6	BQL
1,1-Dichloroethane	6	BQL
1,1-Dichloroethene	6	BQL
1,2-Dichloroethane	6	BQL
cis-1,2-Dichloroethene	6	**150**
trans-1,2-dichloroethene	6	BQL
1,2-Dichloropropane	6	BQL
1,3-Dichloropropane	6	BQL
2,2-Dichloropropane	6	BQL
1,1-Dichloropropene	6	BQL
cis-1,3-Dichloropropene	6	BQL
trans-1,3-Dichloropropene	6	BQL
Dichlorodifluoromethane	6	BQL
Diisopropyl ether (DIPE)	6	BQL
Ethylbenzene	6	**14**
Hexachlorobutadiene	6	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 8260B

Client Sample ID: 500PP18
Client Project ID: TC-133 Navy
Lab Sample ID: 87347
Lab Project ID: G132-660
Matrix: Soil %Solids: 83.0

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	6	BQL
Iodomethane	6	BQL
Isopropylbenzene	6	**6.6**
4-Isopropyltoluene	6	BQL
Methylene chloride	24	BQL
4-Methyl-2-pentanone	6	BQL
Methyl-tert-butyl ether (MTBE)	6	BQL
Naphthalene	6	BQL
n-Propyl benzene	6	BQL
Styrene	6	BQL
1,1,1,2-Tetrachloroethane	6	BQL
1,1,2,2-Tetrachloroethane	6	BQL
Tetrachloroethene	6	BQL
Toluene	6	**10**
1,2,3-Trichlorobenzene	6	BQL
1,2,4-Trichlorobenzene	6	BQL
Trichloroethene	6	BQL
1,1,1-Trichloroethane	6	BQL
1,1,2-Trichloroethane	6	BQL
Trichlorofluoromethane	6	BQL
1,2,3-Trichloropropane	6	BQL
1,2,4-Trimethylbenzene	6	**12**
1,3,5-Trimethylbenzene	6	BQL
Vinyl chloride	6	**9**
m-,p-Xylene	12	BQL
o-Xylene	6	**11**

Surrogate Spike Recoveries

Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	53.2	106
1,2-Dichloroethane-d4	50	50.9	102
Toluene-d8	50	50.7	101

Comments:

All results are corrected for dilution.

Reviewed by: MM

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP18		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87347		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 83.0	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	370	BQL
Acenaphthylene	370	BQL
Anthracene	370	BQL
Benzo[a]anthracene	370	BQL
Benzo[a]pyrene	370	BQL
Benzo[b]fluoranthene	370	BQL
Benzo[g,h,i]perylene	370	BQL
Benzo[k]fluoranthene	370	BQL
Bis(2-chloroethoxy)methane	370	BQL
Bis(2-chloroethyl)ether	370	BQL
Bis(2-chloroisopropyl)ether	370	BQL
Bis(2-ethylhexyl)phthalate	370	BQL
4-bromophenyl phenyl ether	370	BQL
Butylbenzylphthalate	370	BQL
4-Chloroaniline	370	BQL
2-Chloronaphthalene	370	BQL
4-Chlorophenyl phenyl ether	370	BQL
Chrysene	370	BQL
Di-n-Butylphthalate	370	BQL
Di-n-octylphthalate	370	BQL
Dibenzo[a,h]anthracene	370	BQL
Dibenzofuran	370	BQL
1,2-Dichlorobenzene	370	BQL
1,3-Dichlorobenzene	370	BQL
1,4-Dichlorobenzene	370	BQL
3,3'-Dichlorobenzidine	740	BQL
Diethylphthalate	370	BQL
Dimethylphthalate	370	BQL
4,6-Dinitro-2-methylphenol	1900	BQL
2,4-Dinitrotoluene	370	BQL
2,6-Dinitrotoluene	370	BQL
Fluoranthene	370	BQL
Fluorene	370	BQL
Hexachlorobenzene	370	BQL
Hexachlorobutadiene	370	BQL
Hexachlorocyclopentadiene	740	BQL
Hexachloroethane	370	BQL
Indeno(1,2,3-c,d)pyrene	370	BQL
Isophorone	370	BQL
2-Methylnaphthalene	370	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP18		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87347		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 83.0	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	370	BQL
N-Nitrosodiphenylamine	370	BQL
Naphthalene	370	BQL
2-Nitroaniline	370	BQL
3-Nitroaniline	370	BQL
4-Nitroaniline	370	BQL
Nitrobenzene	370	BQL
Phenanthrene	370	BQL
Pyrene	370	BQL
1,2,4-Trichlorobenzene	370	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.2	72
Nitrobenzene-d5	10	5.3	53
4-Terphenyl-d14	10	9.4	95

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MR

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP18
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/23/00
Dry Weight	83
Dilution Factor	1
C_5-C_8 Aliphatics**	9500 (µg/Kg)
C_9-C_{12} Aliphatics**	9600 (µg/Kg)
C_9-C_{10} Aromatics**	820 (µg/Kg)
Surrogate % Recovery - PID	160
Surrogate % Recovery - FID	260

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

High surrogate recovery due to coelution confirmed by duplicate analysis.

Lab Info: G132-660-87347

Reviewed By: m

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP18
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/19/00
Date Analyzed	05/19/00
Dry Weight	83
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	82
Aromatic Surrogate % Recovery	88

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-660-87347

Reviewed By:

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP19
Client Project ID: TC-133 Navy
Lab Sample ID: 87348
Lab Project ID: G132-660
Matrix: Soil %Solids: 86.3

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	58	BQL
Acrolein	120	BQL
Acrylonitrile	120	BQL
Benzene	5.8	BQL
Bromobenzene	5.8	BQL
Bromochloromethane	5.8	BQL
Bromodichloromethane	5.8	BQL
Bromoform	5.8	BQL
Bromomethane	5.8	BQL
2-Butanone	29	BQL
n-Butylbenzene	5.8	BQL
sec-Butylbenzene	5.8	BQL
tert-Butylbenzene	5.8	BQL
Carbon disulfide	5.8	BQL
Carbon tetrachloride	5.8	BQL
Chlorobenzene	5.8	BQL
Chloroethane	5.8	BQL
2-Chloroethyl vinyl ether	5.8	BQL
Chloroform	5.8	BQL
Chloromethane	5.8	BQL
2-Chlorotoluene	5.8	BQL
4-Chlorotoluene	5.8	BQL
Dibromochloromethane	5.8	BQL
1,2-Dibromo-3-chloropropane	5.8	BQL
Dibromomethane	5.8	BQL
1,2-Dibromoethane (EDB)	5.8	BQL
1,2-Dichlorobenzene	5.8	BQL
1,3-Dichlorobenzene	5.8	BQL
1,4-Dichlorobenzene	5.8	BQL
trans-1,4-Dichloro-2-butene	5.8	BQL
1,1-Dichloroethane	5.8	BQL
1,1-Dichloroethene	5.8	BQL
1,2-Dichloroethane	5.8	BQL
cis-1,2-Dichloroethene	5.8	BQL
trans-1,2-dichloroethene	5.8	BQL
1,2-Dichloropropane	5.8	BQL
1,3-Dichloropropane	5.8	BQL
2,2-Dichloropropane	5.8	BQL
1,1-Dichloropropene	5.8	BQL
cis-1,3-Dichloropropene	5.8	BQL
trans-1,3-Dichloropropene	5.8	BQL
Dichlorodifluoromethane	5.8	BQL
Diisopropyl ether (DIPE)	5.8	BQL
Ethylbenzene	5.8	BQL
Hexachlorobutadiene	5.8	BQL

Reviewed by: Mm

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results of Volatiles
by GCMS 8260B

Client Sample ID:	500PP19	Date Analyzed:	5/19/00
Client Project ID:	TC-133 Navy	Analyzed By:	RNP
Lab Sample ID:	87348	Date Collected:	5/10/00
Lab Project ID:	G132-660	Date Received:	5/11/00
Matrix:	Soil %Solids: 86.3	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.8	BQL
Iodomethane	5.8	BQL
Isopropylbenzene	5.8	BQL
4-Isopropyltoluene	5.8	BQL
Methylene chloride	23	BQL
4-Methyl-2-pentanone	5.8	BQL
Methyl-tert-butyl ether (MTBE)	5.8	BQL
Naphthalene	5.8	BQL
n-Propyl benzene	5.8	BQL
Styrene	5.8	BQL
1,1,1,2-Tetrachloroethane	5.8	BQL
1,1,2,2-Tetrachloroethane	5.8	BQL
Tetrachloroethene	5.8	BQL
Toluene	5.8	BQL
1,2,3-Trichlorobenzene	5.8	BQL
1,2,4-Trichlorobenzene	5.8	BQL
Trichloroethene	5.8	BQL
1,1,1-Trichloroethane	5.8	BQL
1,1,2-Trichloroethane	5.8	BQL
Trichlorofluoromethane	5.8	BQL
1,2,3-Trichloropropane	5.8	BQL
1,2,4-Trimethylbenzene	5.8	BQL
1,3,5-Trimethylbenzene	5.8	BQL
Vinyl chloride	5.8	BQL
m-,p-Xylene	12	BQL
o-Xylene	5.8	BQL

Surrogate Spike Recoveries Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	50.9	102
1,2-Dichloroethane-d4	50	52.7	105
Toluene-d8	50	49.4	99

Comments:

All results are corrected for dilution.

Reviewed by: _____

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP19		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87348		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 86.3	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	360	BQL
Acenaphthylene	360	BQL
Anthracene	360	BQL
Benzo[a]anthracene	360	BQL
Benzo[a]pyrene	360	BQL
Benzo[b]fluoranthene	360	BQL
Benzo[g,h,i]perylene	360	BQL
Benzo[k]fluoranthene	360	BQL
Bis(2-chloroethoxy)methane	360	BQL
Bis(2-chloroethyl)ether	360	BQL
Bis(2-chloroisopropyl)ether	360	BQL
Bis(2-ethylhexyl)phthalate	360	BQL
4-bromophenyl phenyl ether	360	BQL
Butylbenzylphthalate	360	BQL
4-Chloroaniline	360	BQL
2-Chloronaphthalene	360	BQL
4-Chlorophenyl phenyl ether	360	BQL
Chrysene	360	BQL
Di-n-Butylphthalate	360	BQL
Di-n-octylphthalate	360	BQL
Dibenzo[a,h]anthracene	360	BQL
Dibenzofuran	360	BQL
1,2-Dichlorobenzene	360	BQL
1,3-Dichlorobenzene	360	BQL
1,4-Dichlorobenzene	360	BQL
3,3'-Dichlorobenzidine	720	BQL
Diethylphthalate	360	BQL
Dimethylphthalate	360	BQL
4,6-Dinitro-2-methylphenol	1800	BQL
2,4-Dinitrotoluene	360	BQL
2,6-Dinitrotoluene	360	BQL
Fluoranthene	360	BQL
Fluorene	360	BQL
Hexachlorobenzene	360	BQL
Hexachlorobutadiene	360	BQL
Hexachlorocyclopentadiene	720	BQL
Hexachloroethane	360	BQL
Indeno(1,2,3-c,d)pyrene	360	BQL
Isophorone	360	BQL
2-Methylnaphthalene	360	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables

by GCMS 8270

Client Sample ID:	500PP19		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87348		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 86.3	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	360	BQL
N-Nitrosodiphenylamine	360	BQL
Naphthalene	360	BQL
2-Nitroaniline	360	BQL
3-Nitroaniline	360	BQL
4-Nitroaniline	360	BQL
Nitrobenzene	360	BQL
Phenanthrene	360	BQL
Pyrene	360	BQL
1,2,4-Trichlorobenzene	360	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.7	67
Nitrobenzene-d5	10	6.6	66
4-Terphenyl-d14	10	7.5	75

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MRC

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP19
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/28/00
Dry Weight	86
Dilution Factor	1
C_5-C_8 Aliphatics**	1900 (µg/Kg)
C_9-C_{12} Aliphatics**	5600 (µg/Kg)
C_9-C_{10} Aromatics**	860 (µg/Kg)
Surrogate % Recovery - PID	120
Surrogate % Recovery - FID	83

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-660-87348

Reviewed By: mm

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP19
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/19/00
Date Analyzed	05/19/00
Dry Weight	86.3
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	73
Aromatic Surrogate % Recovery	77

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-660-87348

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Pesticides
by EPA 8081

Client Sample ID: 500PP19
Client Project ID: TC-133 Navy
Lab Sample ID: 87348
Lab Project ID: G132-660
Matrix: Soil %SOLIDS 86.3

Date Collected: 5/10/00
Date Received: 5/11/00
Date Analyzed: 5/24/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
alpha-BHC	7.2	BQL
beta-BHC	7.2	BQL
delta-BHC	7.2	BQL
gamma-BHC (Lindane)	7.2	BQL
Heptachlor	7.2	BQL
Aldrin	7.2	BQL
Heptachlor epoxide	7.2	BQL
Endosulfan I	7.2	BQL
Dieldrin	7.2	BQL
4,4'-DDE	7.2	BQL
Endrin	7.2	BQL
DDD	7.2	BQL
Endosulfan II	7.2	BQL
4,4'-DDT	7.2	BQL
Methoxychlor	18	BQL
Toxaphene	36	BQL
Chlordane	36	BQL
Endrin aldehyde	7.2	BQL
Endosulfan sulfate	7.2	BQL
Endrin ketone	7.2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	59	59

Comments:
BQL = Below Quantitation Limit

Reviewed By: MR

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for PCBs
by EPA 8082

Client Sample ID: 500PP19
Client Project ID: TC-133 Navy
Lab Sample ID: 87348
Lab Project ID: G132-660
Matrix: Soil %SOLIDS: 86.3

Date Collected: 5/10/00
Date Received: 5/11/00
Date Analyzed: 5/24/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Arochlor-1016	180	BQL
Arochlor-1221	180	BQL
Arochlor-1232	180	BQL
Arochlor-1242	180	BQL
Arochlor-1248	180	BQL
Arochlor-1254	180	BQL
Arochlor-1260	180	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
DBC	100	59	59

Comments:
BQL = Below Quantitation Limit
NA = Not applicable, surrogate diluted out.

Reviewed By: [illegible]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Inorganics

Client Sample ID:	500PP19	Analyzed By:	JMF
Client Project ID:	TC-133 Navy	Date Collected:	5/10/00
Lab Sample ID:	87348	Date Received:	5/11/00
Lab Project ID:	G132-660	Matrix:	Soil
	Solids 86.27		

Metals	Result	Quantitation Limit	Units	Procedure	Date Analyzed
Chromium	**15.4**	1.10	MG/KG	6010B	5/18/00
Lead	**3.80**	1.10	MG/KG	6010B	5/18/00

Comments
BQL = Below Quantitation Limits

Reviewed By: MA

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GCMS 8260B

Client Sample ID: 500PP20
Client Project ID: TC-133 Navy
Lab Sample ID: 87349
Lab Project ID: G132-660
Matrix: Soil %Solids: 88.9

Date Analyzed: 5/19/00
Analyzed By: RNP
Date Collected: 5/10/00
Date Received: 5/11/00
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acetone	56	BQL
Acrolein	110	BQL
Acrylonitrile	110	BQL
Benzene	5.6	**18**
Bromobenzene	5.6	BQL
Bromochloromethane	5.6	BQL
Bromodichloromethane	5.6	BQL
Bromoform	5.6	BQL
Bromomethane	5.6	BQL
2-Butanone	28	BQL
n-Butylbenzene	5.6	BQL
sec-Butylbenzene	5.6	BQL
tert-Butylbenzene	5.6	BQL
Carbon disulfide	5.6	BQL
Carbon tetrachloride	5.6	BQL
Chlorobenzene	5.6	BQL
Chloroethane	5.6	BQL
2-Chloroethyl vinyl ether	5.6	BQL
Chloroform	5.6	BQL
Chloromethane	5.6	BQL
2-Chlorotoluene	5.6	BQL
4-Chlorotoluene	5.6	BQL
Dibromochloromethane	5.6	BQL
1,2-Dibromo-3-chloropropane	5.6	BQL
Dibromomethane	5.6	BQL
1,2-Dibromoethane (EDB)	5.6	BQL
1,2-Dichlorobenzene	5.6	BQL
1,3-Dichlorobenzene	5.6	BQL
1,4-Dichlorobenzene	5.6	BQL
trans-1,4-Dichloro-2-butene	5.6	BQL
1,1-Dichloroethane	5.6	BQL
1,1-Dichloroethene	5.6	BQL
1,2-Dichloroethane	5.6	BQL
cis-1,2-Dichloroethene	5.6	BQL
trans-1,2-dichloroethene	5.6	BQL
1,2-Dichloropropane	5.6	BQL
1,3-Dichloropropane	5.6	BQL
2,2-Dichloropropane	5.6	BQL
1,1-Dichloropropene	5.6	BQL
cis-1,3-Dichloropropene	5.6	BQL
trans-1,3-Dichloropropene	5.6	BQL
Dichlorodifluoromethane	5.6	BQL
Diisopropyl ether (DIPE)	5.6	BQL
Ethylbenzene	5.6	BQL
Hexachlorobutadiene	5.6	BQL

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

Results of Volatiles
by GCMS 8260B

Client Sample ID:	500PP20	Date Analyzed:	5/19/00
Client Project ID:	TC-133 Navy	Analyzed By:	RNP
Lab Sample ID:	87349	Date Collected:	5/10/00
Lab Project ID:	G132-660	Date Received:	5/11/00
Matrix:	Soil %Solids: 88.9	Dilution:	1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
2-Hexanone	5.6	BQL
Iodomethane	5.6	BQL
Isopropylbenzene	5.6	BQL
4-Isopropyltoluene	5.6	BQL
Methylene chloride	23	**31**
4-Methyl-2-pentanone	5.6	BQL
Methyl-tert-butyl ether (MTBE)	5.6	BQL
Naphthalene	5.6	BQL
n-Propyl benzene	5.6	BQL
Styrene	5.6	BQL
1,1,1,2-Tetrachloroethane	5.6	BQL
1,1,2,2-Tetrachloroethane	5.6	BQL
Tetrachloroethene	5.6	BQL
Toluene	5.6	BQL
1,2,3-Trichlorobenzene	5.6	BQL
1,2,4-Trichlorobenzene	5.6	BQL
Trichloroethene	5.6	BQL
1,1,1-Trichloroethane	5.6	BQL
1,1,2-Trichloroethane	5.6	BQL
Trichlorofluoromethane	5.6	BQL
1,2,3-Trichloropropane	5.6	BQL
1,2,4-Trimethylbenzene	5.6	BQL
1,3,5-Trimethylbenzene	5.6	BQL
Vinyl chloride	5.6	BQL
m-,p-Xylene	11	BQL
o-Xylene	5.6	BQL

Surrogate Spike Recoveries Compound	Spike Added (ug/KG)	Surrogate Result (ug/KG)	%Rec
Bromofluorobenzene	50	52.3	105
1,2-Dichloroethane-d4	50	49.8	100
Toluene-d8	50	50.4	101

Comments:

All results are corrected for dilution.

Reviewed by: [illegible]

Flags: BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID: 500PP20
Client Project ID: TC-133 Navy
Lab Sample ID: 87349
Lab Project ID: G132-660
Matrix: Soil %Solids: 88.9

Date Collected: 5/10/00
Date Received: 5/11/00
Date Analyzed: 5/22/00
Analyzed By: MRC
Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
Acenaphthene	320	BQL
Acenaphthylene	320	BQL
Anthracene	320	BQL
Benzo[a]anthracene	320	BQL
Benzo[a]pyrene	320	BQL
Benzo[b]fluoranthene	320	BQL
Benzo[g,h,i]perylene	320	BQL
Benzo[k]fluoranthene	320	BQL
Bis(2-chloroethoxy)methane	320	BQL
Bis(2-chloroethyl)ether	320	BQL
Bis(2-chloroisopropyl)ether	320	BQL
Bis(2-ethylhexyl)phthalate	320	BQL
4-bromophenyl phenyl ether	320	BQL
Butylbenzylphthalate	320	BQL
4-Chloroaniline	320	BQL
2-Chloronaphthalene	320	BQL
4-Chlorophenyl phenyl ether	320	BQL
Chrysene	320	BQL
Di-n-Butylphthalate	320	BQL
Di-n-octylphthalate	320	BQL
Dibenzo[a,h]anthracene	320	BQL
Dibenzofuran	320	BQL
1,2-Dichlorobenzene	320	BQL
1,3-Dichlorobenzene	320	BQL
1,4-Dichlorobenzene	320	BQL
3,3'-Dichlorobenzidine	640	BQL
Diethylphthalate	320	BQL
Dimethylphthalate	320	BQL
4,6-Dinitro-2-methylphenol	1600	BQL
2,4-Dinitrotoluene	320	BQL
2,6-Dinitrotoluene	320	BQL
Fluoranthene	320	BQL
Fluorene	320	BQL
Hexachlorobenzene	320	BQL
Hexachlorobutadiene	320	BQL
Hexachlorocyclopentadiene	640	BQL
Hexachloroethane	320	BQL
Indeno(1,2,3-c,d)pyrene	320	BQL
Isophorone	320	BQL
2-Methylnaphthalene	320	BQL

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Semivolatile Base/Neutral Extractables
by GCMS 8270

Client Sample ID:	500PP20		Date Collected: 5/10/00
Client Project ID:	TC-133 Navy		Date Received: 5/11/00
Lab Sample ID:	87349		Date Analyzed: 5/22/00
Lab Project ID:	G132-660		Analyzed By: MRC
Matrix:	Soil	%Solids: 88.9	Dilution: 1

Compound	Quantitation Limit (ug/KG)	Result (ug/KG)
N-Nitrosodi-n-propylamine	320	BQL
N-Nitrosodiphenylamine	320	BQL
Naphthalene	320	BQL
2-Nitroaniline	320	BQL
3-Nitroaniline	320	BQL
4-Nitroaniline	320	BQL
Nitrobenzene	320	BQL
Phenanthrene	320	BQL
Pyrene	320	BQL
1,2,4-Trichlorobenzene	320	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
Nitrobenzene-d5	10	8.6	86
4-Terphenyl-d14	10	9.2	92

Comments:

Results are corrected for %solids and dilution where applicable.

Flags:

BQL = Below Quantitation Limit.

Reviewed By: MR

North Carolina Wastewater Certification #481

PARADIGM ANALYTICAL LABORATORIES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP20
Sample Matrix	Soil
Collection Option (for Soil)*	3
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/10/00
Date Analyzed	05/28/00
Dry Weight	89
Dilution Factor	1
C_5-C_8 Aliphatics**	1100 (µg/Kg)
C_9-C_{12} Aliphatics**	1400 (µg/Kg)
C_9-C_{10} Aromatics**	< 500 (µg/Kg)
Surrogate % Recovery - PID	110
Surrogate % Recovery - FID	110

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G132-660-87349

Reviewed By: Mn

PARADIGM ANALYTICAL LABORATORIES, INC.

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: LAW ENGINEERING

Project Name: TC-133 Navy

Sample Information and Analytical Results	
Sample Identification	500PP20
Sample Matrix	Soil
Date Collected	05/10/00
Date Received	05/11/00
Date Extracted	05/19/00
Date Analyzed	05/22/00
Dry Weight	88.9
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 10 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	< 10 (mg/Kg)
Aliphatic Surrogate % Recovery	76
Aromatic Surrogate % Recovery	81

Comments:

* = Excludes any surrogates or internal standards.
Sample did not require fractionation.

Lab info: G132-660-87349

Reviewed By: MA

ARAGON ANALYTICAL LABORATORIES INC
527 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

Client: Law Engineering
Address:
Address: Raleigh, NC
Quote #: Navy Contract w/Catlin

Project ID: TC-133 Navy
Contact: Jeff Mann
Phone: (919) 831-8066
Fax: (919) 831-8136

Date: 5/9/00
Turnaround: 2 weeks
Job Number: 30740-0-0600-0080
P.O. Number:

Report To: Jeff Mann
Invoice To:

Sample ID	Date	Time	Matrix	Preservatives				Analyses: 8260	8270 BN only	VPH	EPH	lead/chromium	8081/8082					Comments: Please specify any special reporting requirements
																		Use EDD Format
500PP01 4'-6'	5/9/00	901	S					X	X	X	X							9132-1659
500PP02 4'-6'	5/9/00	944	S					X	X	X	X	X	X					
500PP03 4'-6'	5/9/00	1217	S					X	X	X	X							
500PP04 4'-6'	5/9/00	1251	S					X	X	X	X							
500PP05 4'-6'	5/9/00	1324	S					X	X	X	X	X	X					
500PP06 6'-8'	5/9/00	1428	S					X	X	X	X							
500PP07 6'-8'	5/9/00	1451	S					X	X	X	X							
500PP08 4'-6'	1532	5/9/00	S					X	X	X	X							
500PP09 6'-8'	1558	5/9/00	S					X	X	X	X							
500PP10 6'-8'	5/9/00	1630	S					X	X	X	X							

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[signature]	5/9/00	1740	[signature]	5/10/00	0930	3.1

State Certification Requested
NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

627 Northchase Parkway SE, Wilmington, NC 28405
hone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

lient: Law Engineering
ddress:
ddress: Raleigh, NC
uote #: Navy Quote w/ Catlin

Project ID: TC-133 Navy
Contact: Jeff Mann
Phone: (919) 831-8066
Fax: (919) 831-8136

Date: 5/10/00
Turnaround: 2 weeks
Job Number: 30740-6-0600-0080
P.O. Number:

Report To: Jeff Mann
Invoice To:

Sample ID	Date	Time	Matrix	Preservatives				Analyses: 8260	8270 BN ONLY	8270 BNA	VPH	EPH	Pb i Chromium	8081/8082				Comments: Please specify any special reporting requirements
																		USE EDD Format
500PP12	5/10/00		S					X	X		X	X						61332-0600
500PP13		928	S					X	X		X	X						
500PP14		941	S					X	X		X	X						
500PP15		1010	S					X		X	X	X	X	X				
500PP16		1034	S					X	X		X	X						
500PP17		1136	S					X	X		X	X						
500PP18		1152	S					X	X		X	X						
500PP19		1223	S					X	X		X	X	X	X				
500PP20		1534	S					X	X		X	X						
500MW61		1417	S					X	·	X	X	X						

Relinquished By	Date	Time	Received By	Date	Time	Temperature
[illegible]	5/10/00	1830	[illegible]	5/10/00	1830	
[illegible]	5/11/00	756	[illegible]	5/11/000	8:00	on ice

State Certification Requested

NC _____ SC _____ Other _____

SEE REVERSE FOR TERMS AND CONDITIONS

ARATHGM ANALYTICAL LABORATORIES, INC.
627 Northchase Parkway SE, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC #

Client: Law Engineering
Address:
Address: Raleigh, NC
Quote #: Navy Contract w/ Cattin

Project ID: TC-133 Navy
Contact: Jeff Mann
Phone: (919) 831-8066
Fax: (919) 831-8136

Date: 5/9/00
Turnaround: 2 weeks
Job Number: 30740-6-0600-0080
P.O. Number:

Report To: Jeff Mann
Invoice To:

Sample ID	Date	Time	Matrix	Preservatives: ~~8260~~	~~8270~~	~~VPH~~	~~EPH~~	Analyses: 8260	8270 BN only	EPH	VPH							Comments: Please specify any special reporting requirements
																		Use EDD Format
00PP11 6'-8' ~~1704~~	5/9/00	1704	S	X	X	X	X	X	X	X	X							61132-1659

Relinquished By	Date	Time	Received By	Date	Time	Temperature	State Certification Requested
[signature]	5/9/00	1740	[signature]	5/10/00	0930	3.1	NC ____ SC ____ Other ____
							SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL

FREE PRODUCT ANALYTICAL TEST RESULTS

GeoChem Incorporated Certified Analytical Laboratory

Site Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

Field ID **N2GW18** *Date Analyzed: 5/25/2000* Dry wt % 100.0

Lab ID ***1077***

8260 soil

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
MTBE	**BQL**	100000.0	20,000.0
IPE	**BQL**	100000.0	20,000.0
n-Butylbenzene	**1,980,000.0**	100000.0	20,000.0
Dichlorodifluoromethane	**BQL**	100000.0	20,000.0
Chloromethane	**BQL**	100000.0	20,000.0
Vinyl Chloride	**BQL**	100000.0	20,000.0
Bromomethane	**BQL**	100000.0	20,000.0
Chloroethane	**BQL**	100000.0	20,000.0
Trichlorofluoromethane	**BQL**	100000.0	20,000.0
Acrolein	**BQL**	500000.0	20,000.0
Acetone	**BQL**	500000.0	20,000.0
1,1-Dichloroethene	**BQL**	100000.0	20,000.0
Iodomethane	**BQL**	100000.0	20,000.0
Carbon Disulfide	**BQL**	100000.0	20,000.0
Methylene Chloride	**BQL**	100000.0	20,000.0
Acrylonitrile	**BQL**	100000.0	20,000.0
trans-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
1,1-Dichloroethane	**BQL**	100000.0	20,000.0
Vinyl Acetate	**BQL**	100000.0	20,000.0
2,2-Dichloropropane	**BQL**	100000.0	20,000.0
cis-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
2-Butanone	**BQL**	500000.0	20,000.0
Bromochloromethane	**BQL**	100000.0	20,000.0
Chloroform	**BQL**	100000.0	20,000.0
1,1,1-Trichloroethane	**BQL**	100000.0	20,000.0
1,1-Dichloropropene	**BQL**	100000.0	20,000.0
Carbon Tetrachloride	**BQL**	100000.0	20,000.0
Benzene	**BQL**	100000.0	20,000.0
1,2-Dichloroethane	**BQL**	100000.0	20,000.0
Trichloroethene	**BQL**	100000.0	20,000.0
1,2-Dichloropropane	**BQL**	100000.0	20,000.0
Dibromomethane	**BQL**	100000.0	20,000.0
Bromodichloromethane	**BQL**	100000.0	20,000.0
2-Chloroethylvinylether	**BQL**	100000.0	20,000.0
cis-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
4-Methyl-2-pentanone	**BQL**	100000.0	20,000.0
Toluene	**132,000.0**	100000.0	20,000.0
trans-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
1,1,2-Trichloroethane	**BQL**	100000.0	20,000.0
Ethylmethacrylate	**BQL**	100000.0	20,000.0
Tetrachloroethene	**BQL**	100000.0	20,000.0

GeoChem Incorporated Certified Analytical Laboratory

'ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	100000.0	20,000.0
2-Hexanone	**BQL**	200000.0	20,000.0
Chlorodibromomethane	**BQL**	100000.0	20,000.0
1,2-Dibromoethane	**BQL**	100000.0	20,000.0
Chlorobenzene	**BQL**	100000.0	20,000.0
1,1,1,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
Ethylbenzene	**554,000.0**	100000.0	20,000.0
m,p-Xylene	**4,140,000.0**	100000.0	20,000.0
o-Xylene	**1,478,000.0**	100000.0	20,000.0
Styrene	**BQL**	100000.0	20,000.0
Bromoform	**BQL**	100000.0	20,000.0
Isopropylbenzene	**918,000.0**	100000.0	20,000.0
Bromobenzene	**BQL**	100000.0	20,000.0
1,2,3-Trichloropropane	**BQL**	100000.0	20,000.0
1,1,2,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
n-Propylbenzene	**2,160,000.0**	100000.0	20,000.0
2-Chlorotoluene	**BQL**	100000.0	20,000.0
1,4-Dichloro-2-butene	**BQL**	100000.0	20,000.0
4-Chlorotoluene	**BQL**	100000.0	20,000.0
1,3,5-Trimethylbenzene	**8,400,000.0**	500000.0	100,000.0
tert-Butylbenzene	**BQL**	100000.0	20,000.0
1,2,4-Trimethylbenzene	**17,100,000.0**	500000.0	100,000.0
sec-Butylbenzene	**1,002,000.0**	100000.0	20,000.0
1,3-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,4-Dichlorobenzene	**BQL**	100000.0	20,000.0
4-Isopropyltoluene	**1,488,000.0**	100000.0	20,000.0
1,2-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,2-Dibromo-3-chloropropan	**BQL**	100000.0	20,000.0
1,2,4-Trichlorobenzene	**BQL**	100000.0	20,000.0
Naphthalene	**1,842,000.0**	100000.0	20,000.0
Hexachlorobutadiene	**BQL**	100000.0	20,000.0
1,2,3-Trichlorobenzene	**BQL**	100000.0	20,000.0

*End of **8260 soil***

GeoChem Incorporated Quality Control Results

NC # 37745 , NC # 336, EPA ID # 155

GCI Project # **MM05-027**

Tuesday, June 06, 2000

	Percent Recovery	Lab Blank:	*lowest detection @ ideal conditions* MDL. in ug/l
8260 soil			
1,1-Dichloroethene	**88**	0	0.88
Benzene	**97**	0	0.72
Trichloroethene	**101**	0	0.71
Toluene	**104**	0	0.64
Chlorobenzene	**98**	0	0.49

End of ***8260 soil***

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

Field ID N4GW08 *Date Analyzed: 5/25/2000* Dry wt % 100.0
Lab ID 1073
8260 soil

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
MTBE	BQL	50000.0	10,000.0
IPE	BQL	50000.0	10,000.0
n-Butylbenzene	1,240,000.0	50000.0	10,000.0
Dichlorodifluoromethane	BQL	50000.0	10,000.0
Chloromethane	BQL	50000.0	10,000.0
Vinyl Chloride	BQL	50000.0	10,000.0
Bromomethane	BQL	50000.0	10,000.0
Chloroethane	BQL	50000.0	10,000.0
Trichlorofluoromethane	BQL	50000.0	10,000.0
Acrolein	BQL	250000.0	10,000.0
Acetone	BQL	250000.0	10,000.0
1,1-Dichloroethene	BQL	50000.0	10,000.0
Iodomethane	BQL	50000.0	10,000.0
Carbon Disulfide	BQL	50000.0	10,000.0
Methylene Chloride	BQL	50000.0	10,000.0
Acrylonitrile	BQL	50000.0	10,000.0
trans-1,2-Dichloroethene	BQL	50000.0	10,000.0
1,1-Dichloroethane	BQL	50000.0	10,000.0
Vinyl Acetate	BQL	50000.0	10,000.0
2,2-Dichloropropane	BQL	50000.0	10,000.0
cis-1,2-Dichloroethene	BQL	50000.0	10,000.0
2-Butanone	BQL	250000.0	10,000.0
Bromochloromethane	BQL	50000.0	10,000.0
Chloroform	BQL	50000.0	10,000.0
1,1,1-Trichloroethane	179,000.0	50000.0	10,000.0
1,1-Dichloropropene	BQL	50000.0	10,000.0
Carbon Tetrachloride	BQL	50000.0	10,000.0
Benzene	BQL	50000.0	10,000.0
1,2-Dichloroethane	BQL	50000.0	10,000.0
Trichloroethene	BQL	50000.0	10,000.0
1,2-Dichloropropane	BQL	50000.0	10,000.0
Dibromomethane	BQL	50000.0	10,000.0
Bromodichloromethane	BQL	50000.0	10,000.0
2-Chloroethylvinylether	BQL	50000.0	10,000.0
cis-1,3-Dichloropropene	BQL	50000.0	10,000.0
4-Methyl-2-pentanone	BQL	50000.0	10,000.0
Toluene	60,000.0	50000.0	10,000.0
trans-1,3-Dichloropropene	BQL	50000.0	10,000.0
1,1,2-Trichloroethane	BQL	50000.0	10,000.0
Ethylmethacrylate	BQL	50000.0	10,000.0
Tetrachloroethene	BQL	50000.0	10,000.0

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	50000.0	10,000.0
2-Hexanone	**BQL**	100000.0	10,000.0
Chlorodibromomethane	**BQL**	50000.0	10,000.0
1,2-Dibromoethane	**BQL**	50000.0	10,000.0
Chlorobenzene	**BQL**	50000.0	10,000.0
1,1,1,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
Ethylbenzene	**226,000.0**	50000.0	10,000.0
m,p-Xylene	**506,000.0**	50000.0	10,000.0
o-Xylene	**266,000.0**	50000.0	10,000.0
Styrene	**BQL**	50000.0	10,000.0
Bromoform	**BQL**	50000.0	10,000.0
Isopropylbenzene	**195,000.0**	50000.0	10,000.0
Bromobenzene	**BQL**	50000.0	10,000.0
1,2,3-Trichloropropane	**BQL**	50000.0	10,000.0
1,1,2,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
n-Propylbenzene	**488,000.0**	50000.0	10,000.0
2-Chlorotoluene	**BQL**	50000.0	10,000.0
1,4-Dichloro-2-butene	**BQL**	50000.0	10,000.0
4-Chlorotoluene	**BQL**	50000.0	10,000.0
1,3,5-Trimethylbenzene	**1,360,000.0**	50000.0	10,000.0
tert-Butylbenzene	**BQL**	50000.0	10,000.0
1,2,4-Trimethylbenzene	**3,390,000.0**	500000.0	100,000.0
sec-Butylbenzene	**667,000.0**	50000.0	10,000.0
1,3-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,4-Dichlorobenzene	**BQL**	50000.0	10,000.0
4-Isopropyltoluene	**611,000.0**	50000.0	10,000.0
1,2-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,2-Dibromo-3-chloropropan	**BQL**	50000.0	10,000.0
1,2,4-Trichlorobenzene	**BQL**	50000.0	10,000.0
Naphthalene	**1,130,000.0**	50000.0	10,000.0
Hexachlorobutadiene	**BQL**	50000.0	10,000.0
1,2,3-Trichlorobenzene	**BQL**	50000.0	10,000.0

*End of **8260 soil***

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

'ield ID **N4GW10** *Date Analyzed: 5/25/2000* Dry wt % 100.0

Lab ID ***1076***

8260 soil

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
MTBE	**BQL**	100000.0	20,000.0
IPE	**BQL**	100000.0	20,000.0
n-Butylbenzene	**2,060,000.0**	100000.0	20,000.0
Dichlorodifluoromethane	**BQL**	100000.0	20,000.0
Chloromethane	**BQL**	100000.0	20,000.0
Vinyl Chloride	**BQL**	100000.0	20,000.0
Bromomethane	**BQL**	100000.0	20,000.0
Chloroethane	**BQL**	100000.0	20,000.0
Trichlorofluoromethane	**BQL**	100000.0	20,000.0
Acrolein	**BQL**	500000.0	20,000.0
Acetone	**BQL**	500000.0	20,000.0
1,1-Dichloroethene	**BQL**	100000.0	20,000.0
Iodomethane	**BQL**	100000.0	20,000.0
Carbon Disulfide	**BQL**	100000.0	20,000.0
Methylene Chloride	**BQL**	100000.0	20,000.0
Acrylonitrile	**BQL**	100000.0	20,000.0
trans-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
1,1-Dichloroethane	**BQL**	100000.0	20,000.0
Vinyl Acetate	**BQL**	100000.0	20,000.0
2,2-Dichloropropane	**BQL**	100000.0	20,000.0
cis-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
2-Butanone	**BQL**	500000.0	20,000.0
Bromochloromethane	**BQL**	100000.0	20,000.0
Chloroform	**BQL**	100000.0	20,000.0
1,1,1-Trichloroethane	**BQL**	100000.0	20,000.0
1,1-Dichloropropene	**BQL**	100000.0	20,000.0
Carbon Tetrachloride	**BQL**	100000.0	20,000.0
Benzene	**BQL**	100000.0	20,000.0
1,2-Dichloroethane	**BQL**	100000.0	20,000.0
Trichloroethene	**BQL**	100000.0	20,000.0
1,2-Dichloropropane	**BQL**	100000.0	20,000.0
Dibromomethane	**BQL**	100000.0	20,000.0
Bromodichloromethane	**BQL**	100000.0	20,000.0
2-Chloroethylvinylether	**BQL**	100000.0	20,000.0
cis-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
4-Methyl-2-pentanone	**BQL**	100000.0	20,000.0
Toluene	**BQL**	100000.0	20,000.0
trans-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
1,1,2-Trichloroethane	**BQL**	100000.0	20,000.0
Ethylmethacrylate	**BQL**	100000.0	20,000.0
Tetrachloroethene	**BQL**	100000.0	20,000.0

GeoChem Incorporated Certified Analytical Laboratory

'ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	100000.0	20,000.0
2-Hexanone	**BQL**	200000.0	20,000.0
Chlorodibromomethane	**BQL**	100000.0	20,000.0
1,2-Dibromoethane	**BQL**	100000.0	20,000.0
Chlorobenzene	**BQL**	100000.0	20,000.0
1,1,1,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
Ethylbenzene	**434,000.0**	100000.0	20,000.0
m,p-Xylene	**2,820,000.0**	100000.0	20,000.0
o-Xylene	**272,000.0**	100000.0	20,000.0
Styrene	**BQL**	100000.0	20,000.0
Bromoform	**BQL**	100000.0	20,000.0
Isopropylbenzene	**854,000.0**	100000.0	20,000.0
Bromobenzene	**BQL**	100000.0	20,000.0
1,2,3-Trichloropropane	**BQL**	100000.0	20,000.0
1,1,2,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
n-Propylbenzene	**2,080,000.0**	100000.0	20,000.0
2-Chlorotoluene	**BQL**	100000.0	20,000.0
1,4-Dichloro-2-butene	**BQL**	100000.0	20,000.0
4-Chlorotoluene	**BQL**	100000.0	20,000.0
1,3,5-Trimethylbenzene	**9,750,000.0**	500000.0	100,000.0
tert-Butylbenzene	**BQL**	100000.0	20,000.0
1,2,4-Trimethylbenzene	**19,800,000.0**	500000.0	100,000.0
sec-Butylbenzene	**1,032,000.0**	100000.0	20,000.0
1,3-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,4-Dichlorobenzene	**BQL**	100000.0	20,000.0
4-Isopropyltoluene	**1,654,000.0**	100000.0	20,000.0
1,2-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,2-Dibromo-3-chloropropan	**BQL**	100000.0	20,000.0
1,2,4-Trichlorobenzene	**BQL**	100000.0	20,000.0
Naphthalene	**1,636,000.0**	100000.0	20,000.0
Hexachlorobutadiene	**BQL**	100000.0	20,000.0
1,2,3-Trichlorobenzene	**BQL**	100000.0	20,000.0

*End of **8260 soil***

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

'ield ID **N4GW19** *Date Analyzed: 5/25/2000* Dry wt % 100.0

Lab ID ***1072***

8260 soil

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
MTBE	**BQL**	50000.0	10,000.0
IPE	**BQL**	50000.0	10,000.0
n-Butylbenzene	**1,920,000.0**	50000.0	10,000.0
Dichlorodifluoromethane	**BQL**	50000.0	10,000.0
Chloromethane	**BQL**	50000.0	10,000.0
Vinyl Chloride	**BQL**	50000.0	10,000.0
Bromomethane	**BQL**	50000.0	10,000.0
Chloroethane	**BQL**	50000.0	10,000.0
Trichlorofluoromethane	**BQL**	50000.0	10,000.0
Acrolein	**BQL**	250000.0	10,000.0
Acetone	**BQL**	250000.0	10,000.0
1,1-Dichloroethene	**BQL**	50000.0	10,000.0
Iodomethane	**BQL**	50000.0	10,000.0
Carbon Disulfide	**BQL**	50000.0	10,000.0
Methylene Chloride	**BQL**	50000.0	10,000.0
Acrylonitrile	**BQL**	50000.0	10,000.0
trans-1,2-Dichloroethene	**BQL**	50000.0	10,000.0
1,1-Dichloroethane	**BQL**	50000.0	10,000.0
Vinyl Acetate	**BQL**	50000.0	10,000.0
2,2-Dichloropropane	**BQL**	50000.0	10,000.0
cis-1,2-Dichloroethene	**BQL**	50000.0	10,000.0
2-Butanone	**BQL**	250000.0	10,000.0
Bromochloromethane	**BQL**	50000.0	10,000.0
Chloroform	**BQL**	50000.0	10,000.0
1,1,1-Trichloroethane	**BQL**	50000.0	10,000.0
1,1-Dichloropropene	**BQL**	50000.0	10,000.0
Carbon Tetrachloride	**BQL**	50000.0	10,000.0
Benzene	**BQL**	50000.0	10,000.0
1,2-Dichloroethane	**BQL**	50000.0	10,000.0
Trichloroethene	**BQL**	50000.0	10,000.0
1,2-Dichloropropane	**BQL**	50000.0	10,000.0
Dibromomethane	**BQL**	50000.0	10,000.0
Bromodichloromethane	**BQL**	50000.0	10,000.0
2-Chloroethylvinylether	**BQL**	50000.0	10,000.0
cis-1,3-Dichloropropene	**BQL**	50000.0	10,000.0
4-Methyl-2-pentanone	**BQL**	50000.0	10,000.0
Toluene	**BQL**	50000.0	10,000.0
trans-1,3-Dichloropropene	**BQL**	50000.0	10,000.0
1,1,2-Trichloroethane	**BQL**	50000.0	10,000.0
Ethylmethacrylate	**BQL**	50000.0	10,000.0
Tetrachloroethene	**BQL**	50000.0	10,000.0

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	50000.0	10,000.0
2-Hexanone	**BQL**	100000.0	10,000.0
Chlorodibromomethane	**BQL**	50000.0	10,000.0
1,2-Dibromoethane	**BQL**	50000.0	10,000.0
Chlorobenzene	**BQL**	50000.0	10,000.0
1,1,1,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
Ethylbenzene	**384,000.0**	50000.0	10,000.0
m,p-Xylene	**688,000.0**	50000.0	10,000.0
o-Xylene	**353,000.0**	50000.0	10,000.0
Styrene	**BQL**	50000.0	10,000.0
Bromoform	**BQL**	50000.0	10,000.0
Isopropylbenzene	**332,000.0**	50000.0	10,000.0
Bromobenzene	**BQL**	50000.0	10,000.0
1,2,3-Trichloropropane	**BQL**	50000.0	10,000.0
1,1,2,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
n-Propylbenzene	**851,000.0**	50000.0	10,000.0
2-Chlorotoluene	**BQL**	50000.0	10,000.0
1,4-Dichloro-2-butene	**BQL**	50000.0	10,000.0
4-Chlorotoluene	**BQL**	50000.0	10,000.0
1,3,5-Trimethylbenzene	**1,800,000.0**	50000.0	10,000.0
tert-Butylbenzene	**BQL**	50000.0	10,000.0
1,2,4-Trimethylbenzene	**5,000,000.0**	500000.0	100,000.0
sec-Butylbenzene	**1,150,000.0**	50000.0	10,000.0
1,3-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,4-Dichlorobenzene	**BQL**	50000.0	10,000.0
4-Isopropyltoluene	**973,000.0**	50000.0	10,000.0
1,2-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,2-Dibromo-3-chloropropan	**BQL**	50000.0	10,000.0
1,2,4-Trichlorobenzene	**BQL**	50000.0	10,000.0
Naphthalene	**1,790,000.0**	50000.0	10,000.0
Hexachlorobutadiene	**BQL**	50000.0	10,000.0
1,2,3-Trichlorobenzene	**BQL**	50000.0	10,000.0

*End of **8260 soil***

GeoChem Incorporated Certified Analytical Laboratory

..ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

'ield ID **N4GW45A** *Date Analyzed: 5/25/2000* Dry wt % 100.0

Lab ID ***1075***

8260 soil

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
MTBE	**BQL**	100000.0	20,000.0
IPE	**BQL**	100000.0	20,000.0
n-Butylbenzene	**2,420,000.0**	100000.0	20,000.0
Dichlorodifluoromethane	**BQL**	100000.0	20,000.0
Chloromethane	**BQL**	100000.0	20,000.0
Vinyl Chloride	**BQL**	100000.0	20,000.0
Bromomethane	**BQL**	100000.0	20,000.0
Chloroethane	**BQL**	100000.0	20,000.0
Trichlorofluoromethane	**BQL**	100000.0	20,000.0
Acrolein	**BQL**	500000.0	20,000.0
Acetone	**BQL**	500000.0	20,000.0
1,1-Dichloroethene	**BQL**	100000.0	20,000.0
Iodomethane	**BQL**	100000.0	20,000.0
Carbon Disulfide	**BQL**	100000.0	20,000.0
Methylene Chloride	**BQL**	100000.0	20,000.0
Acrylonitrile	**BQL**	100000.0	20,000.0
trans-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
1,1-Dichloroethane	**BQL**	100000.0	20,000.0
Vinyl Acetate	**BQL**	100000.0	20,000.0
2,2-Dichloropropane	**BQL**	100000.0	20,000.0
cis-1,2-Dichloroethene	**BQL**	100000.0	20,000.0
2-Butanone	**BQL**	500000.0	20,000.0
Bromochloromethane	**BQL**	100000.0	20,000.0
Chloroform	**BQL**	100000.0	20,000.0
1,1,1-Trichloroethane	**BQL**	100000.0	20,000.0
1,1-Dichloropropene	**BQL**	100000.0	20,000.0
Carbon Tetrachloride	**BQL**	100000.0	20,000.0
Benzene	**BQL**	100000.0	20,000.0
1,2-Dichloroethane	**BQL**	100000.0	20,000.0
Trichloroethene	**BQL**	100000.0	20,000.0
1,2-Dichloropropane	**BQL**	100000.0	20,000.0
Dibromomethane	**BQL**	100000.0	20,000.0
Bromodichloromethane	**BQL**	100000.0	20,000.0
2-Chloroethylvinylether	**BQL**	100000.0	20,000.0
cis-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
4-Methyl-2-pentanone	**BQL**	100000.0	20,000.0
Toluene	**BQL**	100000.0	20,000.0
trans-1,3-Dichloropropene	**BQL**	100000.0	20,000.0
1,1,2-Trichloroethane	**BQL**	100000.0	20,000.0
Ethylmethacrylate	**BQL**	100000.0	20,000.0
Tetrachloroethene	**BQL**	100000.0	20,000.0

GeoChem Incorporated Certified Analytical Laboratory

ite Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	100000.0	20,000.0
2-Hexanone	**BQL**	200000.0	20,000.0
Chlorodibromomethane	**BQL**	100000.0	20,000.0
1,2-Dibromoethane	**BQL**	100000.0	20,000.0
Chlorobenzene	**BQL**	100000.0	20,000.0
1,1,1,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
Ethylbenzene	**900,000.0**	100000.0	20,000.0
m,p-Xylene	**4,020,000.0**	100000.0	20,000.0
o-Xylene	**BQL**	100000.0	20,000.0
Styrene	**BQL**	100000.0	20,000.0
Bromoform	**BQL**	100000.0	20,000.0
Isopropylbenzene	**992,000.0**	100000.0	20,000.0
Bromobenzene	**BQL**	100000.0	20,000.0
1,2,3-Trichloropropane	**BQL**	100000.0	20,000.0
1,1,2,2-Tetrachloroethane	**BQL**	100000.0	20,000.0
n-Propylbenzene	**2,020,000.0**	100000.0	20,000.0
2-Chlorotoluene	**BQL**	100000.0	20,000.0
1,4-Dichloro-2-butene	**BQL**	100000.0	20,000.0
4-Chlorotoluene	**BQL**	100000.0	20,000.0
1,3,5-Trimethylbenzene	**10,200,000.0**	500000.0	100,000.0
tert-Butylbenzene	**BQL**	100000.0	20,000.0
1,2,4-Trimethylbenzene	**21,100,000.0**	500000.0	100,000.0
sec-Butylbenzene	**1,418,000.0**	100000.0	20,000.0
1,3-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,4-Dichlorobenzene	**BQL**	100000.0	20,000.0
4-Isopropyltoluene	**2,260,000.0**	100000.0	20,000.0
1,2-Dichlorobenzene	**BQL**	100000.0	20,000.0
1,2-Dibromo-3-chloropropan	**BQL**	100000.0	20,000.0
1,2,4-Trichlorobenzene	**BQL**	100000.0	20,000.0
Naphthalene	**1,286,000.0**	100000.0	20,000.0
Hexachlorobutadiene	**BQL**	100000.0	20,000.0
1,2,3-Trichlorobenzene	**BQL**	100000.0	20,000.0

*End of **8260 soil***

GeoChem Incorporated Certified Analytical Laboratory

Site Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

Field ID **PW-1** *Date Analyzed: 5/25/2000* Dry wt % 100.0

Lab ID ***1074***

8260 soil

	Conc. in ug/kg	*lowest detection on sample* PQL in ug/kg	Dilution Factor
MTBE	**BQL**	50000.0	10,000.0
IPE	**BQL**	50000.0	10,000.0
n-Butylbenzene	**595,000.0**	50000.0	10,000.0
Dichlorodifluoromethane	**BQL**	50000.0	10,000.0
Chloromethane	**BQL**	50000.0	10,000.0
Vinyl Chloride	**BQL**	50000.0	10,000.0
Bromomethane	**BQL**	50000.0	10,000.0
Chloroethane	**BQL**	50000.0	10,000.0
Trichlorofluoromethane	**BQL**	50000.0	10,000.0
Acrolein	**BQL**	250000.0	10,000.0
Acetone	**BQL**	250000.0	10,000.0
1,1-Dichloroethene	**BQL**	50000.0	10,000.0
Iodomethane	**BQL**	50000.0	10,000.0
Carbon Disulfide	**BQL**	50000.0	10,000.0
Methylene Chloride	**BQL**	50000.0	10,000.0
Acrylonitrile	**BQL**	50000.0	10,000.0
trans-1,2-Dichloroethene	**BQL**	50000.0	10,000.0
1,1-Dichloroethane	**BQL**	50000.0	10,000.0
Vinyl Acetate	**BQL**	50000.0	10,000.0
2,2-Dichloropropane	**BQL**	50000.0	10,000.0
cis-1,2-Dichloroethene	**BQL**	50000.0	10,000.0
2-Butanone	**BQL**	250000.0	10,000.0
Bromochloromethane	**BQL**	50000.0	10,000.0
Chloroform	**BQL**	50000.0	10,000.0
1,1,1-Trichloroethane	**BQL**	50000.0	10,000.0
1,1-Dichloropropene	**BQL**	50000.0	10,000.0
Carbon Tetrachloride	**BQL**	50000.0	10,000.0
Benzene	**BQL**	50000.0	10,000.0
1,2-Dichloroethane	**BQL**	50000.0	10,000.0
Trichloroethene	**BQL**	50000.0	10,000.0
1,2-Dichloropropane	**BQL**	50000.0	10,000.0
Dibromomethane	**BQL**	50000.0	10,000.0
Bromodichloromethane	**BQL**	50000.0	10,000.0
2-Chloroethylvinylether	**BQL**	50000.0	10,000.0
cis-1,3-Dichloropropene	**BQL**	50000.0	10,000.0
4-Methyl-2-pentanone	**BQL**	50000.0	10,000.0
Toluene	**BQL**	50000.0	10,000.0
trans-1,3-Dichloropropene	**BQL**	50000.0	10,000.0
1,1,2-Trichloroethane	**BQL**	50000.0	10,000.0
Ethylmethacrylate	**BQL**	50000.0	10,000.0
Tetrachloroethene	**BQL**	50000.0	10,000.0

GeoChem Incorporated Certified Analytical Laboratory

Site Name:

NC # 37745 , NC # 336, EPA ID # 155
Tuesday, June 06, 2000

GCI Project # MM05-027

	Conc. in ug/kg	lowest detection on sample PQL in ug/kg	Dilution Factor
1,3-Dichloropropane	**BQL**	50000.0	10,000.0
2-Hexanone	**BQL**	100000.0	10,000.0
Chlorodibromomethane	**BQL**	50000.0	10,000.0
1,2-Dibromoethane	**BQL**	50000.0	10,000.0
Chlorobenzene	**BQL**	50000.0	10,000.0
1,1,1,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
Ethylbenzene	**BQL**	50000.0	10,000.0
m,p-Xylene	**BQL**	50000.0	10,000.0
o-Xylene	**BQL**	50000.0	10,000.0
Styrene	**BQL**	50000.0	10,000.0
Bromoform	**BQL**	50000.0	10,000.0
Isopropylbenzene	**58,000.0**	50000.0	10,000.0
Bromobenzene	**BQL**	50000.0	10,000.0
1,2,3-Trichloropropane	**BQL**	50000.0	10,000.0
1,1,2,2-Tetrachloroethane	**BQL**	50000.0	10,000.0
n-Propylbenzene	**131,000.0**	50000.0	10,000.0
2-Chlorotoluene	**BQL**	50000.0	10,000.0
1,4-Dichloro-2-butene	**BQL**	50000.0	10,000.0
4-Chlorotoluene	**BQL**	50000.0	10,000.0
1,3,5-Trimethylbenzene	**BQL**	50000.0	10,000.0
tert-Butylbenzene	**BQL**	50000.0	10,000.0
1,2,4-Trimethylbenzene	**BQL**	50000.0	10,000.0
sec-Butylbenzene	**248,000.0**	50000.0	10,000.0
1,3-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,4-Dichlorobenzene	**BQL**	50000.0	10,000.0
4-Isopropyltoluene	**67,000.0**	50000.0	10,000.0
1,2-Dichlorobenzene	**BQL**	50000.0	10,000.0
1,2-Dibromo-3-chloropropan	**BQL**	50000.0	10,000.0
1,2,4-Trichlorobenzene	**BQL**	50000.0	10,000.0
Naphthalene	**3,010,000.0**	500000.0	100,000.0
Hexachlorobutadiene	**BQL**	50000.0	10,000.0
1,2,3-Trichlorobenzene	**BQL**	50000.0	10,000.0

*End of **8260 soil***

7 Northchase Parkway SE, Wilmington, NC 28405
ne: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

MM05-027

Page 1 of 1

nt: Law Engineering
ress:
ress: Raleigh NC
e #: Navy Quote w/ Catlin

Project ID: TC-133 Navy
Contact: Jeff Mann
Phone: (919) 831-8066
Fax: (919) 831-8136

Date: 5/10/00
Turnaround: 2-weeks
Job Number: 30740-6-0606-0080
P.O. Number:

Report To: Jeff Mann
Invoice To:

Sample ID	Date	Time	Matrix	Preservatives				Analyses: 8260	VPH	EPH	625	601/602						Comments: Please specify any special reporting requirements
																		Use EDD Format
~~MW01~~	~~5/10/00~~	~~1740~~	~~W~~					~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		~~agn not sent~~				~~G1302-0600~~
GW19		1720	W					X										Hold Until Contacted 1072
GW 08		1710	W					X										1073
-1		1700	W					X										1074
W45A		1630	W					X										1075
W10		1650	W					X										1076
~~GW08~~	5/11/00	1640	W					X										1077
2GW18																		
~~call back~~ Jeff Mann NT @ ~~Catlin~~	5/11/00																	

Relinquished By	Date	Time	Received By	Date	Time	Temperature
	5/10/00	1640		5/10/00	1640	
	5/11/00	756		5/11/00	8:00	on ice
	5/15/00	4:20	Sherry Nunnamaker	5/16/00	08:45	on ice

State Certification Requested

NC ____ SC ____ Other ____

SEE REVERSE FOR TERMS AND CONDITIONS

ORIGINAL