Submitted to NCDENR
12/30/2005 SAJ
Hand Delivered

ANNUAL GROUNDWATER MONITORING REPORT
SITE BB-293
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA
Revision 0

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-03-D-4000

Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Building C, Room 311
Norfolk, Virginia 23508

Prepared by:

Engineering and Environment, Inc.
824 Gum Branch Road, Suite S
Jacksonville, North Carolina, Virginia 28540

We hereby certify that the Report shown and marked in this submittal is proposed to be incorporated into Contract Number N62470-03-D-4000, is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by QC Project Manager
William C. Morris, North Carolina P.G. #1218

Project Manager
William C. Morris, North Carolina P.G. #1218

22 December 2005

12.22.05

LIST OF ACRONYMS/ABBREVIATIONS

bgs	below ground surface
Catlin	Richard Catlin and Associates, Inc.; Catlin Engineers and Scientists
Cr	Chromium
CSA	Comprehensive Site Assessment
DI	Deionized Water
DWM	Division of Waste Management
EEI	Engineering and Environment, Inc.
GCL	Gross Contamination Level
L	Liter
LSA	Limited Site Assessment
MADEP EPH	Massachusetts Department of Environmental Protection Extractable Petroleum Hydrocarbons
MADEP VPH	Massachusetts Department of Environmental Protection Volatile Petroleum Hydrocarbons
MCB	Marine Corps Base
mg/kg	milligrams per kilogram
msl	mean sea level
MW	Monitoring Well
MSCC	Maximum Soil Contamination Concentration
NAVFACENGCOM	Navy Atlantic Division, Naval Facilities Engineering Command
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NCGS	North Carolina Geological Survey
NCGWQS	North Carolina Groundwater Quality Standard
ND	Not Detected
O&G	Oil and Grease
Pb	Lead
QC	Quality Control
SVOC	Semi-Volatile Organic Compound
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
ug/L	micrograms per liter
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

TABLE OF CONTENTS

EXECUTIVE SUMMARY

On behalf of the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command, Engineering and Environment, Inc. (EEI) has prepared this annual groundwater monitoring report for Site BB-293, Marine Corps Base Camp Lejeune, North Carolina. The report presents the findings of groundwater monitoring activities conducted from June 2004 through October 2005.

The site has been used as a training facility for field purification of raw water and operation of portable field laundry facilities since 1985. In January 1996, a 550-gallon used oil underground storage tank (UST) was closed via removal from the site. Soil samples collected near the UST indicated Oil and Grease (O&G) concentrations were above the North Carolina Department of Environment and Natural Resources (NCDENR) action levels in effect at that time. A Comprehensive Site Assessment (CSA) subsequently conducted confirmed that O&G impacted soils were limited to the immediate vicinity of the former UST. A second area of impacted soil was identified approximately 100 feet east of the former UST. This area was affected by petroleum–related Volatile Organic Compounds (VOCs) thought to be a result of accidental fuel spillage from portable gasoline and diesel powered equipment used at the training site. Later soil sampling in this area reportedly indicated the VOC-affected soils were limited to the immediate vicinity of the original sampling location.

No free product was observed during the CSA. Three areas of surficial aquifer groundwater impacts were identified. One area was located in the immediate vicinity of the former UST. A second area was associated with the fuel-related VOCs observed in soils east of the former UST. A third area was located approximately 50 feet south of the former UST and was considered possibly related to the releases from the former UST. Deeper groundwater in a limestone unit beneath a clay layer underlying the surficial aquifer did not exhibit any petroleum-related impacts.

Some trihalomethane compounds were detected in groundwater samples collected during the CSA from several locations across the site. As trihalomethane compounds are common byproducts of water treatment processes such as those employed during raw water purification training exercises, the presence of trihalomethane compounds in groundwater samples collected during the CSA was attributed to the discharge of treated water produced during training exercises and was unrelated to the former UST.

In 2001, additional soil and groundwater sampling was conducted at the site. Soil samples collected near the former UST did not produce detectable concentrations of any petroleum or other organic compounds. Lead and chromium, where detected in soils, were below all of the NCDENR Maximum Soil Contamination Concentration levels.

No free product was observed during the 2001 investigation. Groundwater samples were collected from the six site monitoring wells. The only compounds detected at concentrations above NCGWQSs were chloroform, naphthalene, and the C_9-C_{22} Aromatic Fraction, and these appeared to be limited primarily to monitoring well MW-5. All concentrations were below Gross Contaminant Levels (GCLs) established at the time. The site was recommended for

consideration for a "Low Risk" classification with Industrial/Commercial cleanup levels, and that the site be considered for "No Further Action" closure status.

In July 2002, NCDENR denied the Request for No Further Action, expressing concern about the presence of the pond supply well at the site. NCDENR recommended that groundwater monitoring be continued.

In June 2004, the current groundwater monitoring program was initiated. The program includes well gauging at the six monitoring wells at the site and groundwater sampling at the six monitoring wells and the pond supply well. Initially, gauging and sampling were conducted quarterly by EEI, with events occurring in June, September, and December 2004, and March 2005. After the March 2005 event, gauging and sampling were conducted by EEI on an annual basis, with the annual event conducted in October 2005.

Data from the five monitoring events indicated that no measurable free product was present in the site monitoring wells, consistent with past investigations. Previously conducted soil sampling indicated soil contamination has been reduced below soil-to-groundwater maximum concentrations. Few target analytes were detected in the pond supply well, and concentrations of these few analytes all were considerably below NCGWQSs; the well not used to supply drinking water. The deep monitoring well at the site, located adjacent to the former UST, also produced few detectable target analytes which, with the exception of lead, were all substantially below NCGWQSs; lead was reported slightly above the NCGWQS during one event (September 2004), but the data appear to reflect laboratory contamination, as lead was reported in the laboratory blank. Data from the June 2004 and October 2005 sampling events identified some trihalomethanes in groundwater at concentrations above NCGWQSs but significantly below established GCLs. These compounds, when detected, are considered related to discharge of treated water and unrelated to petroleum products currently or previously used at the site. Petroleum-related constituents with concentrations above established NCGWQSs (primarily naphthalene and the C_9-C_{22} Aromatics) have been detected only at well MW-5, and concentrations at that well are significantly lower than established GCLs. Well MW-5 could not be sampled during the October 2005 event, as the well was found to be filled with sediment. Chromium was inconsistently detected; when detected, chromium concentrations were below the NCGWQS. Lead also was inconsistently detected. For samples in which possible laboratory contamination is not indicated, lead exceeded the NCGWQS only at well MW-5 for the December 2004 event; the lead concentration in this one sample may be associated with a relatively elevated amount of sediment in the sample. Neither the lead nor the chromium data exhibited spatial or temporal consistency, suggesting that, when detected, the low concentrations of the metals reflect natural aquifer conditions and not an on-site anthropogenic source.

The data indicate that no significant source remains at the site, and that impacts to groundwater by petroleum-related compounds are restricted to surficial aquifer groundwater in a limited area. EEI recommends continuing with annual groundwater monitoring at the site. The damage well MW-5 should be abandoned and replaced; it is EEI's understanding that this has been conducted.

SECTION 1
INTRODUCTION

On behalf of the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command (NAVFACENGCOM), Engineering and Environment, Inc. (EEI) has prepared this annual groundwater monitoring report for Site BB-293, Marine Corps Base (MCB) Camp Lejeune. The report presents the findings of groundwater monitoring activities conducted from June 2004 through October 2005. This report and the methods used to acquire the data in support of this report have been prepared in accordance with the North Carolina Department of Environmental Resources (NCDENR), Division of Waste Management (DWM), Underground Storage Tank (UST) Section guidelines (NCDENR, 2001 and 2003b) and the site specific work prepared for this site by EEI (EEI, 2004).

The site has been assigned incident # 32049 by NCDENR. NCDENR has placed the site into the High Risk classification.

1.1 Site Description

The site is located on MCB Camp Lejeune in Onslow County, North Carolina (N 34° 34' 43", W 77° 21' 45") (Catlin, 2001) (Figure 1-1). Within Camp Lejeune, the site is located east of Peach Street and north of Middle Street.

The site has served as a training facility for Basic Hygiene Equipment Operations since 1985. Training activities include field purification of raw water and operation of portable field laundry facilities. These activities involve the use of mobile gasoline and diesel powered equipment such as pumps, generators, water filtration units, etc. Building BB-293, located in the northern portion of the site, is a pump shed used for emergency storage of mobile equipment. Former UST BB-293-1 was installed in 1983 and closed by removal in 1996. The former 550-gallon UST had been used to store waste oil (Figure 1-2) (Catlin, 1998).

A water supply well is present at the site, located approximately 120 feet south of the former UST. The well is used to fill a retention pond at the site (Figure 1-2). Water is pumped from the pond for use during water purification training exercises and eventually is discharged to drainage swales at the site. The water is not used for drinking purposes. The closest active water supply well to the site is well BB-47, located approximately 1200 feet northwest of the site. A deactivated supply well, well BB-43, is located approximately 1100 feet northwest of the site. No other supply wells are within 1500 feet of the site. Wells BB-47 and BB-43 are installed into the Castle Hayne aquifer (Catlin, 1998).

The nearest mapped body of water is the New River. The river is located approximately 800 feet south-southwest of the site.

1.2 Site History

The site has been used as a training facility for field purification of raw water and operation of portable field laundry facilities since 1985. Former UST BB-293-1 was installed at the site in

1983 and was used for the storage of used oil. In January 1996, the 550-gallon UST BB-293-1 was closed by removal. Soil samples collected from the immediate vicinity of the former UST during the removal were analyzed for Total Petroleum Hydrocarbons (TPH) as Gasoline, TPH as Diesel, and Oil & Grease (O&G). TPH as Gasoline and TPH as Diesel were not detected. However, O&G concentrations exceeded NCDENR action levels in effect at that time. No free product was observed during the UST removal (Catlin, 1998).

Further site characterization field activities were initiated in 1996, and a Comprehensive Site Assessment (CSA) was submitted in 1998. Results of the CSA confirmed the presence of O&G in soils near the former UST at concentrations above NCDENR action levels then in effect. Additionally, elevated concentrations of several halogenated and aromatic volatile organic compounds (VOCs) were detected in a soil sample collected from borehole BB293-5 (advanced during installation of monitoring well MW-5). The VOC concentrations for this sample totaled approximately 20 milligrams per kilogram (mg/kg) and appeared to be petroleum related. However, they did not appear to be associated with the former UST. The VOC concentrations exceeded NCDENR reportable concentrations in effect at that time (Catlin, 1998). Reportedly, additional samples subsequently were collected near this location by Law Engineering and Environmental Services, and analysis of these samples did not detect any analytes (Catlin. 2001). It was concluded that the VOCs at this location probably were a result of accidental fuel spillage from portable gasoline and diesel powered equipment that are used at the training site (Catlin, 1998).

No free product was observed at the site during the CSA. However, three areas exhibited dissolved-phase petroleum-related constituents in surficial aquifer groundwater at concentrations above North Carolina Groundwater Quality Standards (NCGWQSs) in effect at that time. One area was located in the immediate vicinity of the former UST, and the presence of petroleum constituents in groundwater was attributed to the former UST. A second area was located approximately 50 feet south of the former UST. The origin of the petroleum constituents in groundwater at this area was uncertain, but it was considered possible that that they were related to the former UST. The third area was located approximately 100 feet east of the former UST, in the vicinity of monitoring well MW-05. The origin of the petroleum constituents detected at this location were not considered to be related to the former UST, but probably were a result of accidental fuel spillage from portable equipment used in the area, as discussed above (Catlin, 1998).

No petroleum-related constituents were detected in a groundwater sample collected during the CSA from the deep (Type III) monitoring well MW-1. This well was installed adjacent to the former UST and was screened into a limestone unit beneath a clay layer that underlies the surficial aquifer. Additionally, a groundwater sample collected from the pond supply well indicated no compounds were present at detectable concentrations (Catlin, 1998).

Some trihalomethane compounds (e.g., chloroform, dibromochloromethane, bromodichloromethane) were detected in CSA groundwater samples from several locations across the site. It was noted that trihalomethane compounds are typical byproducts of water purification treatments involving chlorine disinfection, and that these same processes are used extensively as part of the raw water field purification training programs conducted at the site,

with the treated water discharged to the drainage swales during the training programs. The presence of trihalomethane compounds in groundwater samples collected during the CSA was attributed to the discharge of the treated water produced during the raw water purification training exercises and was unrelated to the former UST (Catlin, 1998).

In 2001, additional soil and groundwater sampling was conducted during a Phase I Limited Site Assessment (LSA) at the site (Catlin, 2001). Four soil samples were collected in the vicinity of the former UST. (An attempt was made to collect a vadose zone soil sample adjacent to well MW-5; however, the upper two feet of material was gravel fill and the area was repeatedly flooded due to training activities, so a sample could not be collected in this area.) Analyses were conducted for Volatile Petroleum Hydrocarbons (VPH), Extractable Petroleum Hydrocarbons (EPH), VOCs, semi-volatile organic compounds (SVOCs), chromium (Cr), and lead (Pb). With the exception of Cr and Pb, no analytes were detected. Concentrations of Cr and Pb, where detected, were below all of the NCDENR Maximum Soil Contamination Concentration (MSCC) levels (including the commercial/industrial MSCC, the residential MSCC, and the soil-to-groundwater MSCC [NCDENR, 2001]) (Catlin, 2001).

During the 2001 investigation, no free product was observed at any site well. Groundwater samples were collected from the six site monitoring wells. (An attempt was made to collect a groundwater sample from the pond supply well, but the sampling port was inaccessible, and a sample was not collected.) Samples were analyzed for VOCs, SVOCs, VPH, EPH, Cr, and Pb. Lead and Cr were below NCGWQSs in all groundwater samples. The only VOCs detected at concentrations above NCGWQSs were chloroform and naphthalene, both reported for the sample from well MW-5. The only SVOC detected above NCGWQSs was naphthalene, again from well MW-5 (and separately quantitated as a VOC, as indicated above). The NCGWQS for the C_9-C_{22} Aromatic Fraction was exceeded at well MW-5, and potentially also at well MW-6 (The laboratory separately quantitates the C_9-C_{10} and C_{11}-C_{22} Aromatic Fractions. The former fraction was not detected at a detection limit of 100 micrograms per liter [ug/L], whereas the latter fraction was detected at 180 ug/L; therefore, the concentration could range from 180 ug/L to <280 ug/L; this range encompasses the NCGWQS of 210 ug/L.) All concentrations were below Gross Contaminant Levels (GCLs) established at the time. It was recommended that the site be considered for a "Low Risk" classification with Industrial/Commercial cleanup levels, as the pond well is not used for consumption purposes, constituents in soil are below MSCCs, and constituents in groundwater are below GCLs. It was further recommended that, should the site be classified as "Low Risk," the site would qualify for "No Further Action" status and should be considered for closure (Catlin, 2001).

In June 2003, NCDENR denied the Request for No Further Action, expressing concern about the presence of the pond supply well at the site. NCDENR recommended that groundwater monitoring be continued at the site, and that the monitoring program should include the pond supply well (NCDENR, 2003a).

In June 2004, the current groundwater monitoring program was initiated. The program includes well gauging at the six monitoring wells at the site and groundwater sampling at the six monitoring wells and the pond supply well. Initially, gauging and sampling were conducted quarterly by EEI, with events occurring in June, September, and December 2004, and March

2005. After the March 2005 event, gauging and sampling were conducted by EEI on an annual basis, with the annual event conducted in October 2005.

Data for the current monitoring program are discussed in the following sections. Section 2 describes field methods used at the site. Section 3 discusses hydrogeologic characteristics of the site. Laboratory analytical results and their significance are presented in Section 4. Section 5 provides conclusions and recommendations based on review of the data. References cited in the report are listed in Section 6. Figures and tables are organized after the text. Supporting documentation (field records, laboratory analytical reports, and historical data) are contained in Appendices A, B, and C, respectively.

SECTION 2
FIELD PROGRAM

Field methods employed during the groundwater monitoring program are discussed briefly below. Activities were conducted in accordance with NCDENR guidance (NCDENR, 2001 and 2003b) and as per the work plan (EEI, 2004) which details the field methods.

2.1 Well Gauging

The following six monitoring wells were gauged quarterly on 4 June, 23 September, and 2 December 2004, 7 and March 2005: MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. The annual gauging event was conducted on 18 October 2005; all of the above wells were gauged during the annual event except monitoring well MW-5, which found to be filled with sediment. The pond supply well could not be gauged during the events as an access port for the gauging probe was not present. Field data gauging sheets for the annual event are presented in Appendix A. Gauging sheets for the quarterly events were presented the previous monitoring report (EEI, 2005).

Wells were gauged using an electronic interface probe to measure the depth to water and depth to product (if present). Data were recorded to the nearest 0.01 foot and referenced to the surveyed top of casing. For all gauging events, no measurable free product was observed in any of the site monitoring wells.

2.2 Groundwater Sampling

Groundwater samples were collected quarterly on 4 June, 23 September, 2 and 3 December 2004, and 7 and 8 March 2005 from the pond supply well and from the following six monitoring wells: MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. The annual groundwater sampling event was conducted on 18 October 2005; all of the above wells were sampled during the annual event except monitoring well MW-5, which found to be filled with sediment. One duplicate sample was collected during each quarterly field event. Field data sampling sheets for the annual sampling event are presented in Appendix A. Field data sampling sheets for the quarterly events were presented the previous monitoring report (EEI, 2005).

Monitoring well groundwater samples were collected using low-flow purging techniques. A Grundfos Redi-Flo II stainless steel submersible pump discharging through polyethylene tubing was used to purge and sample the wells. The water level in the wells was periodically measured and recorded and, if necessary, the pumping rate was decreased to limit drawdown. Additionally, the pump intake height was adjusted as necessary. Water quality indicator parameters (pH, temperature, conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were measured and recorded repeatedly during the purge. Purging was continued until water quality indicator parameters had stabilized or until a maximum of five well casing volumes had been purged. If a well purged to dryness, the well was allowed to recharge, and a sample then was collected. Well MW-1 was purged dry during the June and September 2004 events; well MW-5 purged dry during the September 2004, December 2004, and March 2005 events; no wells purged dry in October 2005. Samples were collected immediately upon completion of the

purge by filling the laboratory-prepared sample bottles directly from the discharge tubing. Samples were kept in an iced cooler from the time of collection until received by the laboratory.

The pond supply well is equipped with a permanently installed pump. Purging was conducted by activating the well's pump for a minimum 10 minute period. Samples were collected from the well's sampling port by opening the port, adjusting the flow from the port to achieve a slow, steady stream, allowing the flow from the port to continue for at least 30 seconds, and filling the laboratory-prepared sample bottles. Samples were kept in an iced cooler from the time of collection until received by the laboratory.

Groundwater samples collected during this event were analyzed for the following parameters:

- VOCs, EPA Method 6210D (3x40 milliliter [ml] vials),
- Massachusetts Department of Environmental Protection (MADEP) - VPH (3 x 40 ml vials)
- SVOCs, EPA Method 625 + 10 largest non-target peaks (i.e., Tentatively Identified Compounds [TICs]) (2 x 1 liter [L])
- MADEP - EPH (2 x 1 L)
- Metals (Cr and Pb) –Method 6010B with preparation by Method 3030C (1 x 500 ml)

Samples were submitted under chain-of-custody to Paradigm Analytical Laboratories in Wilmington, North Carolina. Samples were delivered to the laboratory either via overnight commercial courier or were picked up by a laboratory courier.

2.3 Equipment Decontamination and Waste Handling Procedures

During each sampling event, the pump was decontaminated before first use and after each use by pumping a mixture of Alconox or Liquinox soap and potable water through the pump. The pump then was rinsed by pumping potable water through it, and final-rinsed with deionized (DI) water. New polyethylene tubing was used at each well.

Water quality meter flow-through cells and down-hole gauging equipment were decontaminated after each use by washing with an Alconox/DI water mixture, followed by a DI water rinse. The water quality probe was decontaminated with a DI rinse.

Well purge water and equipment decontamination water generated during the sampling event were contained in a portable holding tank. The water was processed through a groundwater treatment system located at Lot 203 on MCB Camp Lejeune. Used tubing and other miscellaneous material were collected and bagged as they were generated. This material was treated as normal solid waste and placed in EEI's refuse container.

2.4 Well Maintenance

During the sampling event, any brush, debris, and/or litter in the vicinity of the well heads were cleared. The well heads, casing risers, well pads, bollards, well caps, locks, etc. were inspected for damage or deterioration. During the monitoring program, all wells appeared to be

undamaged and in serviceable condition with the exception of well MW-5. As noted above, during the October 2005 monitoring event, well was found to be filled with sediment. It appears that the a subsurface potion of the well failed, allowing sediments to fill the well, as there was no indication at the well head that sediments had entered the well at the surface.

SECTION 3
HYDROGEOLOGY

The hydrogeologic characteristics of the subsurface substantially control the movement of groundwater, which strongly influences contaminant movement. The regional geologic setting provides a framework for understanding and interpreting the site-specific hydrogeology. Knowledge of the latter allows for evaluating groundwater flow at a scale relevant to the monitoring program.

3.1 Regional Hydrogeology

The site is located in the eastern portion of the Coastal Plain Physiographic Province of North Carolina. The Coastal Plain consists of nearly flat to gently dipping sedimentary strata of varying composition that overlie a crystalline basement complex. Approximately 80 miles northwest of the site, the Coastal Plain pinches out where it contacts the Piedmont Physiographic Province along the Fall Line. East of the Fall Line, the sediments gradually thicken, reaching a maximum thickness of approximately 10,000 feet at Cape Hatteras, North Carolina. In the vicinity of the site, the sedimentary sequence is estimated to be approximately 2000 feet thick (NCGS, 1988).

Surficial deposits of Quaternary age are present in and around the area of the site, typically at thicknesses ranging from about 25 to 80 feet. The uppermost mapped unit in the area of the site is identified as the River Bend Formation of Tertiary age, described as a calcareous limestone interlaced with indurated sandy, molluscan limestone (NCGS, 1985). The River Bend Formation overlies the Castle Hayne Formation, also of Tertiary age. The Castle Hayne Formation is described as gray to cream colored, fine grained to fossiliferous calcareous limestone with minor amounts of fine quartz, glauconite, and phosphate (NCGS, 1988). The thickness of the Castle Hayne Formation in the vicinity of the site is estimated at approximately 300 feet. The Castle Hayne aquifer is a primary source of potable water for the area.

3.2 Site Hydrogeology

The topography of the site is predominantly flat. No permanent surface water bodies are present. The New River is the nearest mapped surface water body, located approximately 800 feet south-southwest of the site.

Shallow soil at the site is described as very fine to medium grained, moderate-to-moderately well sorted sand extending to a depth of approximately 20 feet below ground surface (bgs), within which a one-to-three foot thick sandy-to-very sandy peat layer was observed at a depth of approximately five feet bgs. Surficial aquifer groundwater was encountered between three and four feet bgs. Underlying the sand layer, a four-to-five foot thick gray clay of moderate-to-moderately high plasticity was encountered. It was not determined if this clay layer is continuous across the site. A layer of fine-to-medium grained, moderately well sorted sands underlies the clay layer, extending to a depth of approximately 34 feet bgs. Weathered limestone was encountered beneath the clay layer, and extends to a depth of at least 40 feet bgs (Catlin, 1998).

Of the six monitoring wells installed at the site, five are shallow wells (total depths of about 12 feet bgs) screened in the saturated shallow sands of the surficial aquifer. One well (MW-1) is a deep, dual-cased (Type III) well (total depth of about 49 feet bgs) screened in the limestone below the clay unit (Catlin, 1998).

Using the top-of-casing elevations and gauging data recorded quarterly, groundwater elevations for the site monitoring wells were calculated. Table 3-1 presents gauging data for the most recent (18 October 2005) event. Table 3-2 presents gauging data for the five gauging events conducted in association with the monitoring program.

The elevation data for the shallow wells were used to construct a surficial aquifer groundwater elevation map for the 18 October 2005 annual gauging event. From this map, groundwater flow direction can be estimated. Figure 3-1 presents the groundwater elevation map for the annual gauging event. Flow maps for the quarterly events were presented in the previous monitoring report (EEI, 2005).

From the map, surficial aquifer groundwater generally flows into the site from the north, northeast, and east, converging on a drainage swale, then flows away from the site to the southwest. This differs from the flow pattern observed from the quarterly event, which exhibited a flow direction generally to the north-northwest (EEI, 2005). Previous investigations have indicated some variability in the flow direction, at times flowing west and north while at other times flow converged on drainage swales from the north and south (Catlin, 1998). It is considered likely that filling and discharging of the pond will influence surficial aquifer flow, and may account for the variability in the flow direction reported previously.

The horizontal gradient i is calculated using the standard equation $i = \Delta h / \Delta L$, where Δh is the change in head measured along the direction of groundwater flow, and ΔL is the straight-line distance between the measurement locations. For the October 2005 gauging event, shallow wells MW-6 and MW-3 are aligned closely with the groundwater flow direction; therefore, data from these wells were used to calculate the horizontal gradient. For this well pair, $\Delta L = 64$ feet, and, from the elevations presented in Table 3-1, Δh is 0.13 foot, resulting in a very low gradient of 0.0020.

Gradients also have been calculated for the quarterly groundwater elevation data. For the quarterly events, shallow wells MW-4 and MW-3 generally were aligned with the groundwater flow direction, and data from these wells were used to calculate horizontal gradients for these events. For this well pair, $\Delta L = 45$ feet. The calculated horizontal gradients for the quarterly data are summarized below.

Event	MW-4 GW Elev	MW-3 GW Elev	Δh	i
June 2004	6.18	5.74	0.44	0.010
September 2004	6.66	5.64	1.02	0.023
December 2004	6.26	5.75	0.51	0.011
March 2005	6.05	5.69	0.36	0.0080

Notes:
GW Elev: Groundwater Elevation, expressed in feet above/below mean sea level
Δh: head differential, expressed in feet
ΔL: horizontal separation
i: horizontal gradient, dimensionless

The groundwater linear flow velocity V is calculated using the standard equation $V = (Ki) / n_e$, where i is the horizontal gradient (discussed above), K is the hydraulic conductivity, and n_e is the effective porosity. Previous investigations have provided estimates of K and n_e based on aquifer (slug) testing and examination of subsurface soil samples, respectively. The investigations identified a K of 29.3 feet/day and a n_e of 0.20 (dimensionless) for the site (Catlin, 1998). Using these values and the horizontal gradient calculated above, the flow velocities for each of the gauging events have been calculated, as summarized below:

Event	i	Flow Direction	V
June 2004	0.010	Northeast	1.5 feet/day
September 2004	0.023	Northeast	3.4 feet/day
December 2004	0.011	Northeast	1.6 feet/day
March 2005	0.0080	Northeast	1.2 feet/day
October 2005	0.0020	Southeast	0.29 foot/day

Notes:
i: horizontal gradient, dimensionless
V: linear flow velocity, feet per year

The calculated velocities do not account for tortuosity (a parameter describing the deviation from a straight line flow path as groundwater moves around and between grains of soil). Consequently, at scales comparable to the size of the site, the linear velocity will overestimate the effective distance groundwater will travel for a given period of time.

Groundwater elevation data for the deeper, limestone unit are available from a single well (MW-1). Consequently, there are insufficient groundwater elevation data to estimate a flow direction for groundwater in this unit.

Deep well MW-1 is located approximately 10 feet from shallow well MW-6. From the elevation data in Table 3-2, the groundwater elevation in deep well MW-1 is lower than the groundwater elevation in shallow well MW-6 for each of the five gauging events, typically by about 1.0 to 1.5 feet. This indicates a limited potential for downward movement of surficial aquifer groundwater. However, given that elevation differences are observed at the well pair, it appears that vertical hydraulic communication is inhibited and suggests that the clay layer may be acting as a semi-confining unit (should the unit be laterally extensive). As such, vertical flow between the

groundwater of the surficial aquifer and the groundwater of underlying limestone unit would be retarded.

SECTION 4
LABORATORY ANALYTICAL RESULTS

Groundwater samples were collected quarterly in June, September, and December 2004, and March 2005 from site monitoring wells MW-1 through MW-6 and from the pond supply well. The annual sampling event was conducted in October 2005 from the pond supply well and site monitoring wells MW-1 through MW-4 and MW-6. Monitoring well MW-5 could not be sampled during the October 2005 sampling event as the well was observed to filled with sediment. One duplicate groundwater sample was collected during each event. Groundwater samples were analyzed by Paradigm Analytical Laboratories for VOCs (EPA Method 8210D), SVOCs (EPA Method 625), MADEP VPH, MADEP EPH, and Metals (Cr and Pb, Method 6010B with 3030C preparation). Appendix B presents the laboratory analytical reports for the October 2005 annual sampling event. Laboratory reports for the quarter sampling events were presented in the previous monitoring report (EEI, 2005).

4.1 Groundwater Analytical Results

Table 4-1 summarizes the laboratory analytical results for groundwater samples collected during the most recent (October 2005) sampling event. Table 4-2 presents laboratory analytical results for the one annual and four quarterly sampling events conducted during the annual monitoring program. For the VOCs and SVOCs, the tables list only those analytes detected at one or more wells during the current or previous sampling events.

4.1.1 Groundwater Analytical Results for Organic Compounds

For the annual event of October 2005, three target organic analytes were detected in deep well MW-1, located adjacent to the former UST. The compounds detected were toluene, 1,2,4-trimethylbenzene, and o,m,p-xylenes, and all were reported at low, estimated concentrations of less than 1 ug/L; all of the concentrations were substantially below NCGWQSs and GCLs.

Monitoring well MW-6, the deep well co-located with monitoring well MW-1, returned two analyte detections (chloroform at an estimated 0.2 ug/L and toluene at an estimated 0.21 ug/L). The chloroform detection exceeded the NCGWQS of 0.19 ug/L by 0.01 ug/L. Throughout the five sampling events conducted during the monitoring program, these two wells have exhibited few or no target organic analytes; when detected, these analytes have been at low concentrations (less than two ug/L) and have been substantially below NCGWQSs and GCLs (Table 4-2).

At monitoring well MW-2, located downgradient of the former UST, only two organic compounds were detected (toluene, at an estimated 0.31 ug/L, and m,p-xylenes at an estimated 0.4 ug/L during the October 2005 annual sampling event. These concentrations are substantially below NCGWQSs and GCLs.

At the pond well, no organic analytes were detected in the primary or duplicate sample collected during the October 2005 annual sampling event. Throughout the monitoring program, methylene chloride is the only target organic analyte detected in the pond supply well, reported only during the March 2005 event at a low estimated concentration of 0.42 ug/L, substantially below the

NCGWQS (of 5 ug/L) and the GCL (of 5,000 ug/L) (Table 4-2). Methylene chloride is a common laboratory contaminant.

At well MW-3, located cross-gradient to downgradient of the former UST, only two target organic analytes were detected during the October 2005 annual sampling event, both at low concentrations. Toluene was reported at an estimated concentration of 0.23 ug/L, substantially below the NCGWQS and GCL. Chloroform was reported at a concentration of 3.65 ug/L, above the NCGWQS of 0.19 ug/L, but substantially below the GCL of 190 ug/L. Figure 4-1 presents chloroform concentrations in surficial aquifer groundwater for October 2005.

Data from the quarterly events similarly indicated few organic compounds present at well MW-3. In December 2004, sec-butylbenzene, isopropylbenzene, naphthalene, toluene, total xylene isomers, and 4-isopropyltoluene were detected, all at concentrations less than two ug/L. With the exception of 4-isopropyltoluene, reported at a concentration of 0.840 ug/L, the compounds are all substantially below NCGWQSs. A NCGWQS has not been established for 4-isopropyltoluene. Therefore, the standard is set at the reporting limit, and consequently the detection of 4-isopropytoluene is by definition above the standard. A GCL has not been established for 4-isopropyltoluene. In September 2004, the only target organic analyte detected was toluene, reported at a concentration of 0.560 ug/L in the primary sample and at an estimated concentration of 0.480 ug/L in the duplicate sample. The reported concentrations are substantially below the NCGWQS and GCL for toluene.

In June 2004, the sample collected from well MW-3 identified toluene, reported at a low estimated concentration of 0.180 ug/L. Four trihalomethane compounds (bromodichloromethane, bromoform, chloroform, and dibromochloromethane) were reported at concentrations ranging from 7.8 ug/L to 2.66 ug/L. The reported concentrations exceeded their respective NCGWQSs (or Interim Maximum Allowable Concentration for dibromochloromethane), all of which have been established at levels less than one ug/L (Table 4-2). As discussed in Section 1.2, trihalomethanes are common byproducts of water treatment/purification processes, including the treatment processes used during training exercises at the site. The presence of trihalomethanes detected in groundwater in June 2004 and October 2005 is considered related to discharge of water treated during training exercises and is unrelated to the former UST. The infrequent and inconsistent detection of these compounds likely reflects sporadic discharges of treated water onto the ground surface.

The monitoring program data indicate surficial aquifer groundwater has not been affected substantially by the former UST. Additionally, groundwater in the underlying limestone unit has not been impacted by site activities.

At well MW-4, located upgradient of the former UST, 4-isopropyltoluene was at an estimated concentration of 0.23 ug/L in the sample collected during the October 2005 annual event. As discussed above, a NCGWQS has not been established for 4-isopropyltoluene. Hence, the standard is set at the reporting limit, and the detection of 4-isopropytoluene is above the standard. Toluene was reported in the sample at an estimated concentration of 0.240 µg/L, substantially below the NCGWQS and GCL.

The quarterly sampling conducted at well MW-4 identified some organic analytes, typically at concentrations below one ug/L. Of the detected organic analytes, only 4-isopropyltoluene exceeded NCGWQSs, with concentrations ranging from 0.220 ug/L (estimated) to 0.880 ug/L. As noted above, a NCGWQS has not been established for 4-isopropyltoluene, and therefore any detection of the compound is, by definition, above the standard. A GCL has not been established for 4-isopropyltoluene.

As indicated previously, during the October 2005 annual monitoring event, monitoring well MW-5 was observed to be filled with sediment. Therefore, a sample could not be collected during this event.

Various target organic analytes were detected at well MW-5 during the four quarterly sampling events, of which only 4-isopropyltoluene, naphthalene, and the C_9-C_{22} Aromatics have been reported above NCGWQSs. 4-Isopropyltoluene was reported at concentrations of 2.45 ug/L, 1.44 ug/L, and 10.4 ug/L for June, September, and December 2004, respectively, similar to the 5.20 ug/L reported in March 2005 (Table 4-2). As noted, a NCGWQS has not been established for 4-isopropyltoluene, so detection at any concentration is above the standard. Naphthalene concentrations for the previous three quarters (quantitated by the VOC and SVOC methods) have ranged from 33.8 ug/L to 180 ug/L. These concentrations exceed the NCGWQS for naphthalene, but are substantially below the GCL for naphthalene of 15,500 ug/L.

The C_9-C_{22} Aromatics have been detected only at well MW-5. At this well, C_9-C_{22} Aromatics were reported at concentrations of 820 ug/L, 830 ug/L, and 1,000 ug/L for the June 2004, December 2004, and March 2005 events, respectively. For September 2004, the C_9-C_{22} Aromatics concentration was relatively lower, reported at 200 ug/L (Table 4-2). The June 2004, December 2004, and March 2005 concentrations exceed the C_9-C_{22} Aromatics NCGWQS of 210 ug/L, whereas the September 2004 datum is below the NCGWQS. A GCL has not been established for the C_9-C_{22} Aromatics.

During the October 2005 annual sampling event, no TICs were detected in any samples; some TICS were reported at site wells from the quarterly sampling events. Total TIC concentrations are presented on Tables 4-1 and Table 4-2. (TICs are substances not on the target compound list, and not all TICs are identified and quantitated using individual standards. Frequently, TICs cannot be identified as specific compounds, and are reported as compound isomers or unknown. Some TICs were noted as having been added by the laboratory; where reported, these constituents have been excluded from the total TICs reported in Tables 4-1 and 4-2. All TIC quantitations are estimated.) Given the uncertainties associated with TIC quantitations, a reduced level of confidence in the reported concentrations is warranted, and the significance of the data is limited.

4.1.2 Groundwater Analytical Results for Inorganic Compounds

The inorganic constituents lead and chromium were included in the analytic suite during the monitoring program. For the October 2005 annual sampling event, lead was not detected. Chromium was reported at an estimated concentration of 1.85 mg/L at monitoring well location MW-3. The reported concentration is substantially below the NCGWQS of 50 ug/L and the

GCL of 50,000 ug/L for chromium. Chromium also was reported in the laboratory blank at an estimated concentration of 1.87 ug/L (greater than that reported for the sample from MW-3). Given the low concentration reported and the presence of chromium in the laboratory blank at a concentration greater than observed in the sample from MW-3, the chromium data are not considered significant.

Data from the quarterly sampling events indicated an inconsistent presence of lead and chromium (Table 4-2). In March 2005, chromium was reported in all samples at low, estimated concentrations (all below two ug/L, and all substantially below the NCGWQS and GCL). However, chromium was also reported in the laboratory blank. The reported presence of chromium in the samples is not considered significant and likely reflects a laboratory artifact. Lead was reported in the pond well, at a low, estimated concentration of 1.38 ug/L, substantially below the NCGWQS and GCL (Table 4-2).

In December 2004, chromium was reported only at well MW-2, at a low (estimated) concentration of 0.340 ug/L (below the NCGWQS of 50 ug/L). Lead was reported in all samples, typically at low (estimated) concentrations below the NCGWQS of 15 ug/L, although the sample from well MW-5 exhibited a lead concentration of 19.0 ug/L, slightly above the NCGWQS and substantially below the GCL of 15,000 ug/L. It was observed that the sample collected from well MW-5 for the December 2004 event exhibited high turbidity relative to other samples collected during the event, and, as chromium and lead are naturally occurring elements in soil and groundwater, the elevated lead concentration may have been indicative of a higher contribution of lead from the relatively greater suspended sediment content in the sample. Although well MW-5 was purged at a flow rate of approximately 0.13 gallon per minute, the well went dry after only one purge volume had been removed, and the turbidity in the sample was high at 86.2 nephelometric units, greater than observed for samples from the other site wells.

In September 2004, lead and/or chromium were detected at several wells at the site. Concentrations were below NCGWQS except for lead, which was reported above the NCGWQS at wells MW-1 (15.4 ug/L) and MW-5 (26.9 ug/L). However, both metals were detected in the laboratory blank. Consequently, the reported presence of the metals in the samples is not considered significant and likely reflects a laboratory artifact.

In June 2004, chromium was reported in well MW-5 at a concentration of 39.4 ug/L, below the NCGWQS of 50 ug/L and the GCL of 50,000 ug/L. Chromium was not detected in any other sample for the June event, and lead was not detected at any location in June.

In general, the reported concentrations of lead and chromium over the previous five sampling events do not exhibit consistent patterns, either over time or in spatial distribution. The presence of lead and chromium in laboratory blanks suggests that the reported presence of these metals in several samples is a laboratory artifact. For samples in which possible laboratory contamination is not indicated, the data again do not exhibit spatial or temporal consistency, suggesting that, when detected, the low concentrations of the metals reflect natural aquifer conditions and not an anthropogenic source.

4.1.3 Groundwater Analytical Results from Previous Investigations

The groundwater quality data reported for the current monitoring program are consistent with previous site data reported from the CSA and the LSA (Catlin, 1998 and 2001). (Appendix C presents historical groundwater quality data for site monitoring wells, reproduced from Catlin, 1998 and 2001). As with the current monitoring program, previous investigations have reported elevated concentrations at well MW-5 relative to other wells at the site. The current data generally exhibit concentrations similar to data reported from the LSA, which in turn reported lower concentrations than from the earlier CSA (Catlin, 1998 and 2001).

Data from the previous investigations also identified trihalomethanes at various locations (including well MW-5 during the LSA and wells MW-1, MW-3, and MW-6 during the CSA), whereas the current and previous quarter data did not detect trihalomethanes, and the first quarter data detected trihalomethanes only at well MW-3. As with the variation over time in trihalomethane concentrations, the spatial variation is not unexpected given that the presence of these compounds is associated with sporadic discharges of treated water onto the ground surface at variable locations.

Groundwater concentration data for lead and chromium from previous investigations indicate that these metals, when detected, were present at concentrations below NCGWQS. Detectable concentrations for chromium and/or lead were reported at well MW-2, MW-3, and MW-6. The historical metals data are consistent with that from the current program in that the presence of these metals in groundwater did not appear to have anthropogenic origin.

4.2 Quality Assurance/Quality Control and Data Verification

Quality control (QC) samples collected during the monitoring program included laboratory-supplied trip blanks and field duplicate samples. Trip blanks were submitted to Paradigm Analytical Laboratories for analysis for VOCs only. With the exception of the October and March 2005 trip blanks, no VOCs were reported in the samples. For the October 2005 trip blank, chloromethane was reported at an estimated concentration of 0.46 ug/L. For the trip blank included with the March 2005 event, methylene chloride was reported at a concentration of 0.7 ug/L. As discussed above, methylene chloride is a common laboratory contaminant, and its presence in the March 2005 trip blank is considered reflective of a laboratory artifact.

Field duplicate samples were collected from wells MW-2 (June 2004), MW-3 (September 2004), MW-6 (December 2004), MW-4 (March 2005), and Pond Well (October 2005). The primary and QC samples were submitted to Paradigm Analytical Laboratories for the same analyses. Results for each of the primary/duplicate sample sets generally were consistent. However, for the March 2005 primary/duplicate pair (collected from well MW-4), methylene chloride and chromium were reported in the duplicate sample (estimated concentrations of 0.180 ug/L and 0.400 ug/L, respectively) but were not detected in the primary sample (respective reporting limits of 5.00 ug/L and 10.0 ug/L). (As discussed previously, chromium was also reported in the laboratory blank for the March 2005 samples.) Additionally, lead was reported in the primary sample (estimated concentration of 1.21 ug/L) but was not reported in the duplicate sample (reporting limit of 10.0 ug/L).

Data verification was performed by EEI on the complete set of the primary investigative samples, and included a review of the following:

- Holding times
- Blanks
- Laboratory control spikes
- Surrogate recoveries
- Internal standards
- Calibrations

An assessment of the results indicated the data are usable for project purposes.

SECTION 5
CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations have been developed based on a review of site data. Each is discussed below.

5.1 Conclusions

The following conclusions have been drawn based on site data:

- Surficial aquifer groundwater flow is variable, with flow observed to southwest and to the north-northwest for different gauging events conducted during the monitoring program. Data from previous investigations indicate the flow direction.
- A downward vertical gradient is present between groundwater of the surficial aquifer and groundwater of an underlying limestone unit. Potential downward flow of surficial aquifer groundwater may be retarded due to the presence of a clay unit, should the unit be laterally extensive.
- A previous investigation indicated constituent concentrations in soil are below NCDENR Soil-to-Groundwater Maximum Concentrations.
- No measurable free product has been observed in any monitoring well at the site during the current monitoring program or previous investigations.
- During the monitoring program, chromium was inconsistently detected; when detected, chromium concentrations were below the NCGWQS. Lead also was inconsistently detected. For samples in which possible laboratory contamination is not indicated, lead exceeded the NCGWQS only at well MW-5 for the December 2004 event; the lead concentration in this one sample may be associated with a relatively elevated amount of sediment in the sample. Neither the lead nor the chromium data exhibited spatial or temporal consistency, suggesting that, when detected, the low concentrations of the metals reflect natural aquifer conditions and not an on-site anthropogenic source.
- Deep monitoring well MW-1, screened in the groundwater of the limestone unit and located adjacent to the former UST, produced few detectable organic compounds during the monitoring program. When detected, the organic compounds were present at concentrations typically two-to-three orders of magnitude below the NCGWQS, indicating deep groundwater has not been affected by site activities.
- Other than methylene chloride, reported in March 2005 at a low estimated concentration and considered to be a laboratory artifact, no target organic analytes were detected in the pond supply well, indicating there has been no impact to this well. The well is not used for consumption purposes.
- Trihalomethanes detected at the site during previous investigations were present only during the June 2004 and October 2005 events. These compounds, when detected, are considered related to the discharge of treated water and are unrelated petroleum products currently or previously used at the site.
- Well MW-5 exhibited elevated constituent concentrations relative to other wells at the site during the annual monitoring program, consistent with historical data. Naphthalene and the C_9-C_{22} Aromatics were the only target organic analytes detected in groundwater at concentrations above established NCGWQSs, and the compounds exceeded the

NCGWQSs only at well MW-5. Analyte concentrations are significantly lower than GCLs for compounds with established GCLs.

- The former UST is not affecting groundwater quality. The absence of free product, the limited extent of petroleum-related compounds, and analyte concentrations significantly lower than GCLs indicate that no significant source remains at the site.

5.2 Recommendations

It is recommended to continue with groundwater monitoring at the site. Monitoring well MW-5 has been rendered unusable as determined during the October 2005 sampling event. It is recommended that this well be properly abandoned and replaced for future monitoring activities at the site; it is EEI's understanding that this has been conducted. Those wells gauged and sampled during this monitoring program should continue to be included in the recommended monitoring program. Similarly, the analytic suite employed during this monitoring program should continue to be employed in the recommended program.

SECTION 6
REFERENCES

EEI, 2004 (Engineering and Environment, Inc.). June 2004. Final Work Plan, Groundwater Monitoring, Sites BB-190 and BB-293, Marine Corps Base Camp Lejeune, North Carolina. Prepared for the Department of the Navy.

EEI, 2005 (Engineering and Environment, Inc.). 13 May 2005. Annual Groundwater Monitoring Report, Site BB-293, Marine Corps Base Camp Lejeune, North Carolina. Prepared for the Department of the Navy.

Catlin, 1998 (Richard Catlin and Associates, Inc.). 31 December 1998. Leaking Underground Storage Tank Comprehensive Site Assessment, UST BB-293, Marine Corps Base Camp Lejeune, North Carolina. Prepared for the Department of the Navy.

Catlin, 2001 (Catlin Engineers and Scientists). 9 February 2001. Draft Leaking Underground Storage Tank (LUST) Phase I – Limited Site Assessment and Request for No Further Action Status for Building BB-293, Marine Corps Base Camp Lejeune, North Carolina. Prepared for the Department of the Navy.

NCDENR, 2001 (North Carolina Department of Environment and Natural Resources). 1 July 2001 (Change 1, 20 August 2002). Guidelines for Assessment and Corrective Action.

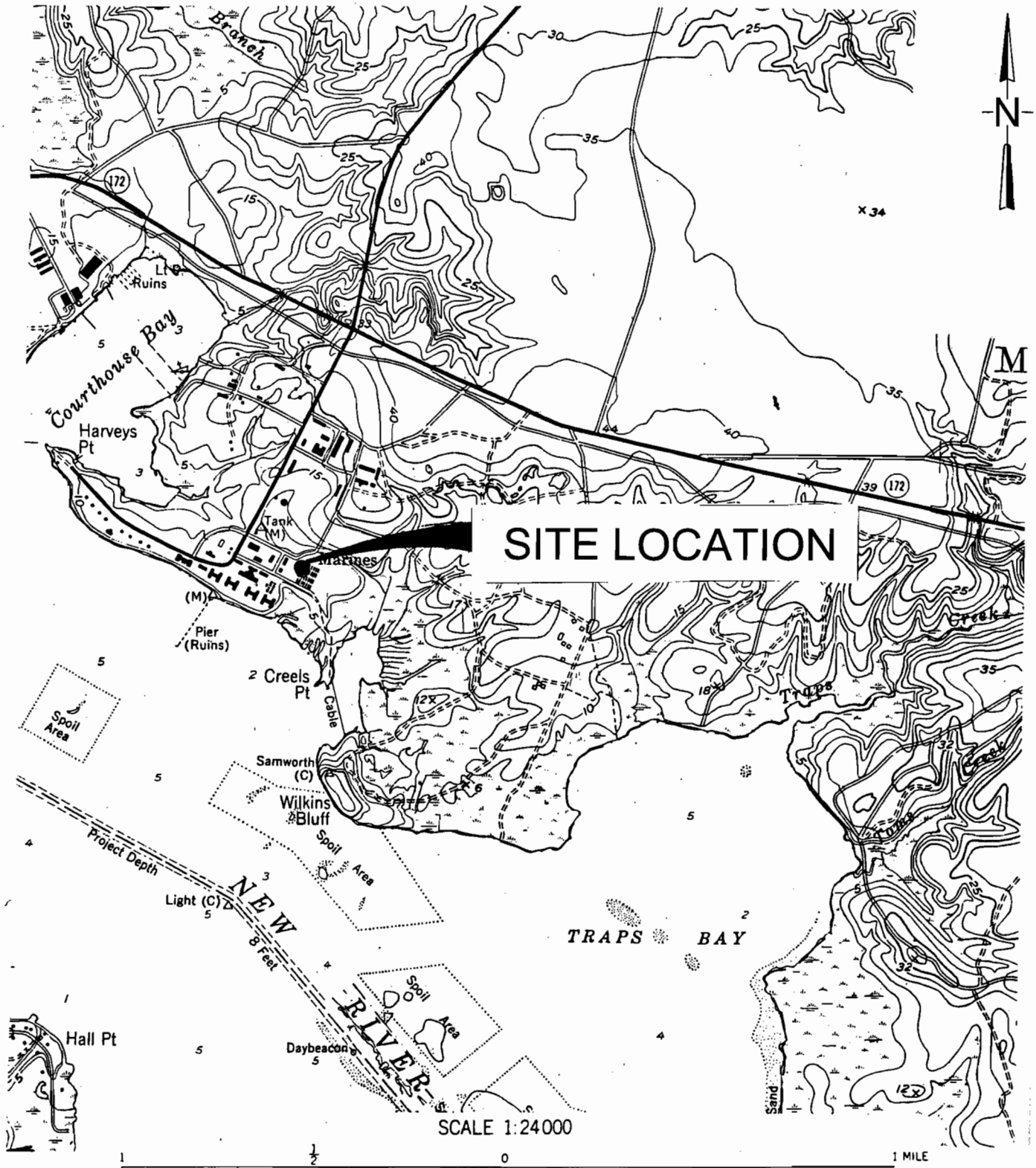
NCDENR, 2003a (North Carolina Department of Environment and Natural Resources). 2 June 2003. Correspondence from Bruce Reed, North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, to Nikki Hall, Environmental Management Department, Marine Corps Base Camp Lejeune.

NCDENR, 2003b (North Carolina Department of Environment and Natural Resources). 1 September 2003. UST Section Guidelines for Sampling, Version 1.2.

NCGS, 1985 (North Carolina Geological Survey). 1985. Geologic Map of North Carolina, scale 1:500,000.

NCGS, 1988 (North Carolina Geological Survey). 4 November 1988. Preliminary Explanatory Text for the 1985 Geologic Map of North Carolina, Contractual Report 88-1.

FIGURES



NEW RIVER INLET, N. C.

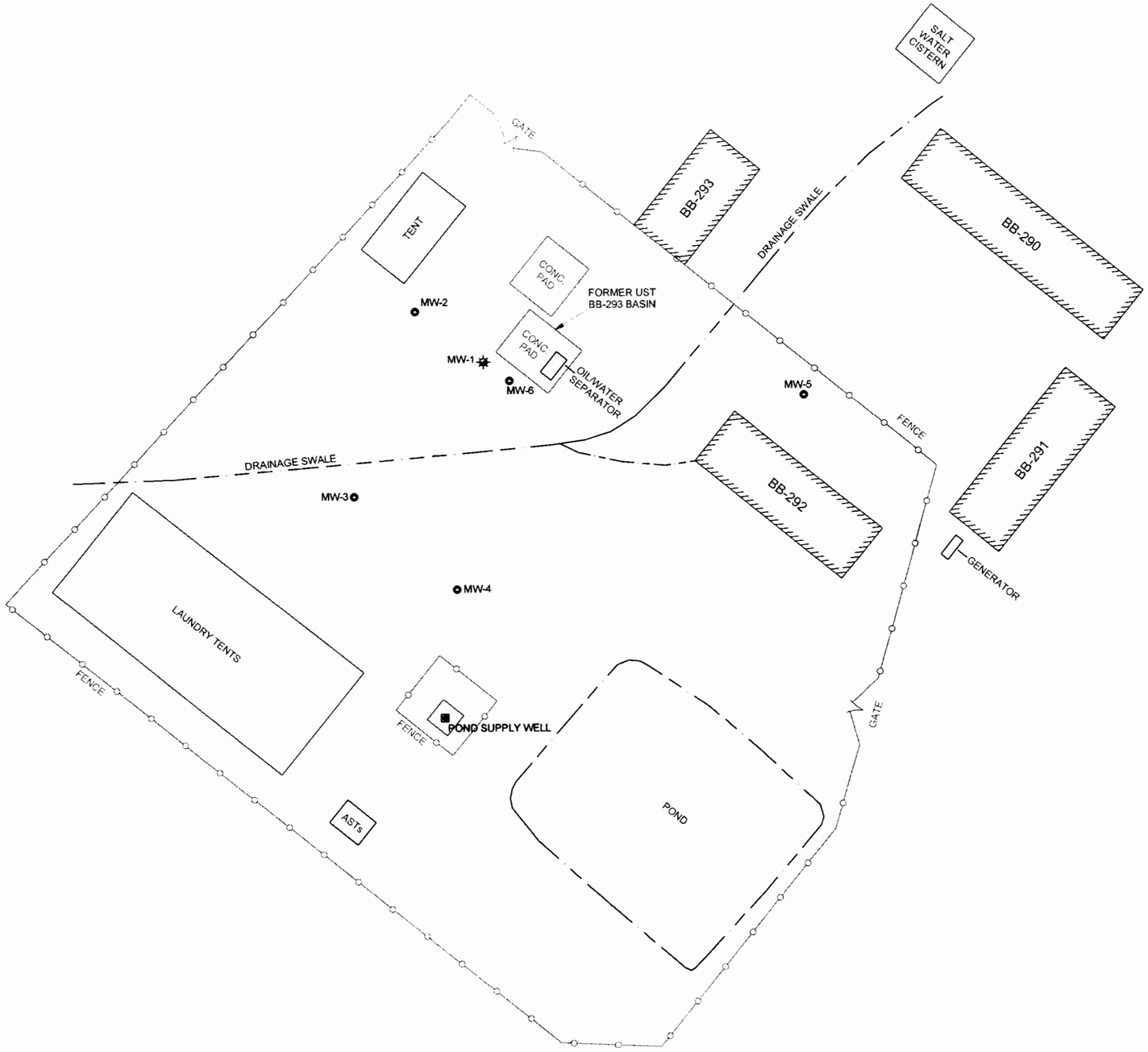
N3430—W7715/7.5

1952
PHOTOREVISED 1971
AMS 5553 III SE—SERIES V842

QUADRANGLE LOCATION

(Map adapted from Catlin, 1998)

	FIGURE 1-1	SITE LOCATION
Engineering & Environment, Inc.	DATE 6/21/04	SITE BB-293 ANNUAL MONITORING REPORT MCB CAMP LEJEUNE, NC
	REVISION 0	
	DRAWN BY WCM	
	FILE BB293_TOPO	



N

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- POND SUPPLY WELL

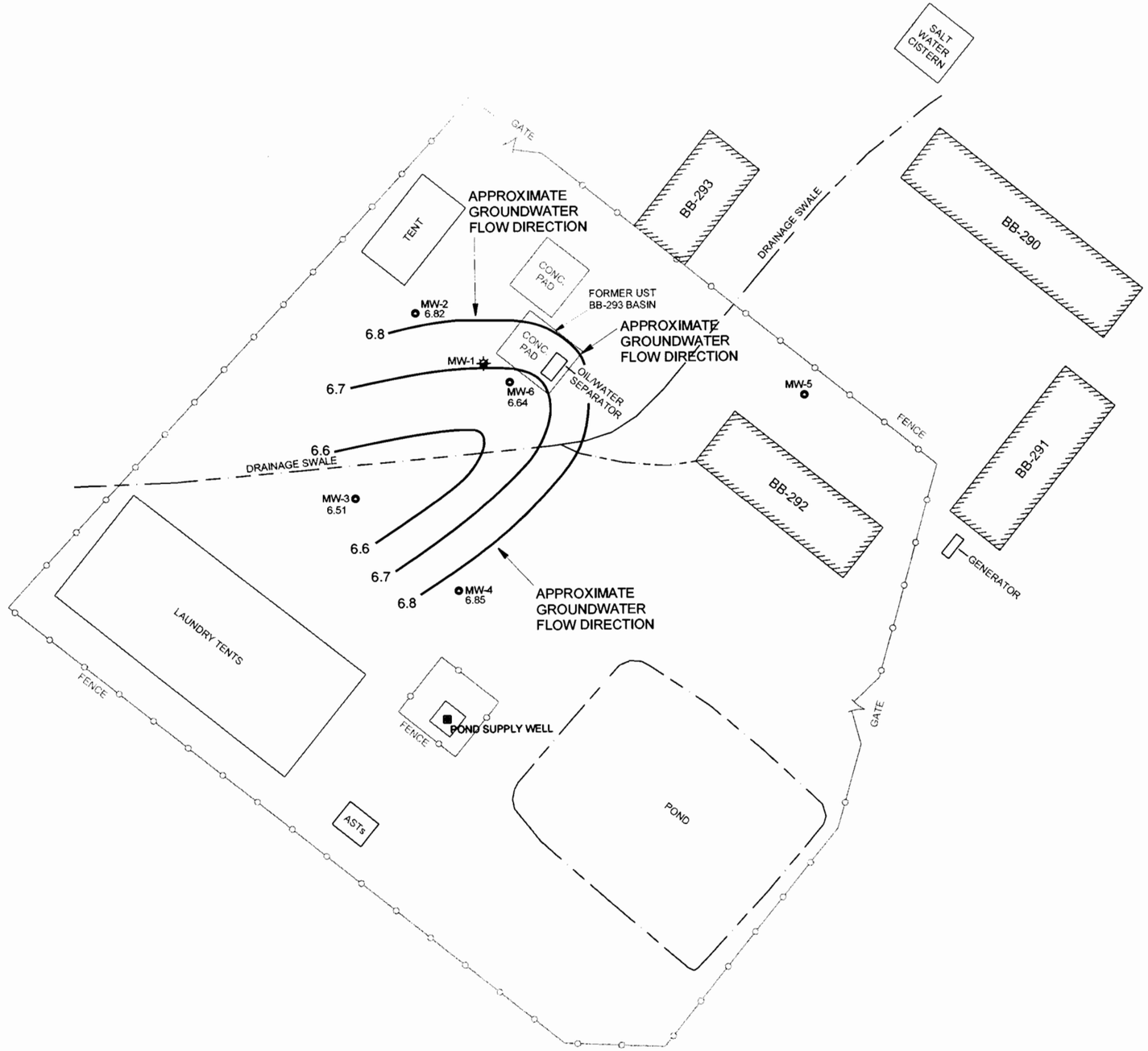
SCALE (Feet)
20 0 20 40

(Base map adapted from Catlin, 1998)

Engineering & Environment, Inc.

FIGURE	1-2
DATE	11/16/05
REVISION	0
DRAWN BY	WCM
FILE	BB293_MAP

SITE LAYOUT
AND
WELL LOCATIONS
SITE BB-293
ANNUAL MONITORING REPORT
MCB CAMP LEJEUNE, NC



N

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- POND SUPPLY WELL
- 5.81 SURFICIAL AQUIFER GROUNDWATER ELEVATION
- 6.0 SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR

(GROUNDWATER ELEVATIONS EXPRESSED IN FEET ABOVE MEAN SEA LEVEL)

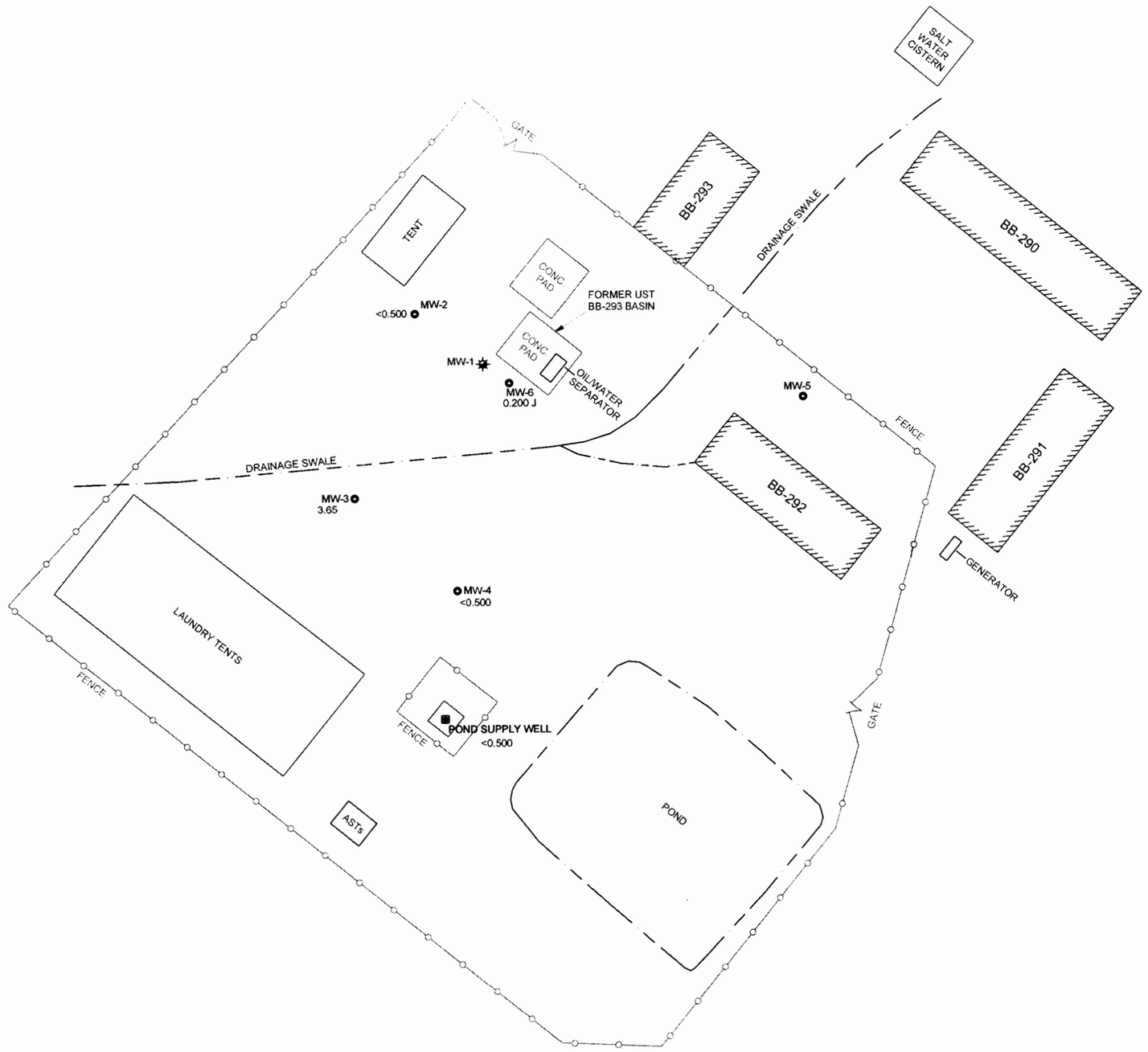
SCALE (Feet)
20 0 20 40

(Base map adapted from Catlin, 1998)

Engineering & Environment, Inc.

FIGURE	3-1
DATE	11/16/05
REVISION	0
DRAWN BY	WCM
FILE	BB293_MAP

SURFICIAL AQUIFER GROUNDWATER ELEVATIONS FOR 18 OCTOBER 2005
SITE BB-293
ANNUAL MONITORING REPORT
MCB CAMP LEJEUNE, NC



N

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- POND SUPPLY WELL
- 3.65 SURFICIAL AQUIFER CONCENTRATIONs FOR: CHLOROFORM

(CONCENTRATIONS EXPRESSED IN MICROGRAMS PER LITER)
(<# DENOTES NOT DETECTED AT THE INDICATED REPORTING LIMIT)
THE NORTH CAROLINA GROUNDWATER QUALITY STANDARD FOR CHLOROFORM IS 0.19 MICROGRAM PER LITER

SCALE (Feet)
20 0 20 40

(Base map adapted from Catlin, 1998)

Engineering & Environment, Inc.

FIGURE	4-1
DATE	11/16/05
REVISION	0
DRAWN BY	WCM
FILE	BB293_MAP

SURFICIAL AQUIFER
CHLOROFORM CONCENTRATIONS
FOR OCTOBER 2005
SITE BB-293
ANNUAL MONITORING REPORT
MCB CAMP LEJEUNE, NC

TABLES

Table 3-1
Gauging Data for 18 October 2005
Site BB-293

Well	Top of Casing Elevation (feet msl)	Depth to Water (feet btoc)	Depth to Product (feet btoc)	Groundwater Elevation (feet msl)
MW-1	9.52	3.90	NP	5.62
MW-2	8.87	2.05	NP	6.82
MW-3	9.44	2.93	NP	6.51
MW-4	9.28	2.43	NP	6.85
MW-5	10.69	NM	NP	NC
MW-6	9.53	2.89	NP	6.64
Pond Well	No Data	NM	NM	NC

NP - Not Present - no measurable product detected
NM - Not Measured - pond well access port not available; well MW-5 damaged
NC - Not Calculated - insufficient data to calculate groundwater elevation
feet msl - feet above mean sea level
feet btoc - feet below top of casing

Table 3-2
Monitoring Program Gauging Data Summary
Site BB-293

Well	Top of Casing Elevation (feet msl)	Depth to Water (feet btoc)					Depth to Product (feet btoc)					Groundwater Elevation (feet msl)				
		6/4/04	9/23/04	12/2/04	3/7/05	10/18/05	6/4/04	9/23/04	12/2/04	3/7/05	10/18/05	6/4/04	9/23/04	12/2/04	3/7/05	10/18/05
MW-1	9.52	5.03	4.21	5.18	5.10	3.90	NP	NP	NP	NP	NP	4.49	5.31	4.34	4.42	5.62
MW-2	8.87	3.06	2.60	3.13	3.11	2.05	NP	NP	NP	NP	NP	5.81	6.27	5.74	5.76	6.82
MW-3	9.44	3.70	3.80	3.69	3.75	2.93	NP	NP	NP	NP	NP	5.74	5.64	5.75	5.69	6.51
MW-4	9.28	3.10	2.62	3.02	3.23	2.43	NP	NP	NP	NP	NP	6.18	6.66	6.26	6.05	6.85
MW-5	10.69	4.69	3.89	4.66	4.79	NM	NP	NP	NP	NP	NP	6.00	6.80	6.03	5.90	NC
MW-6	9.53	3.68	3.10	3.68	3.63	2.89	NP	NP	NP	NP	NP	5.85	6.43	5.85	5.90	6.64
Pond Well	No Data	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NC	NC	NC	NC	NC

NP - Not Present - no measurable product detected
NM - Not Measured - pond well access port not available; well MW-5 damaged
NC - Not Calculated - insufficient data to calculate groundwater elevation
feet msl - feet above mean sea level
feet btoc - feet below top of casing

Table 4-1 (Page 1 of 2)

Summary of Groundwater Analytical Results for October 2005

Site BB-293

Sample Location Date Sampled	NCGWQS	GCL	MW-1 10/18/05	MW-2 10/18/05	MW-3 10/18/05	MW-4 10/18/05	MW-5 10/18/05	MW-6 10/18/05	Pond Well 10/18/05	DUP [1] 10/18/05	Trip Blank [2] 10/18/05
EPA 6210D (ug/L)											
Bromodichloromethane	0.56	NE	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Bromoform	0.19	NE	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
n-Butylbenzene	70	6900	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
sec-Butylbenzene	70	8500	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
tert-Butylbenzene	70	15,000	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Chloroform	0.19	190	<0.500	<0.500	**3.65**	<0.500	NS	**0.200 J**	<0.500	<0.500	<0.500
Dibromochloromethane	0.41 [3]	410	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	29	29,000	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Isopropylbenzene	70	25,000	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
4-Isopropyltoluene	RL	NE	<0.500	<0.500	<0.500	**0.230 J**	NS	<0.500	<0.500	<0.500	<0.500
Methylene Chloride	5	5000	<5.00	<5.00	<5.00	<5.00	NS	<5.00	<5.00	<5.00	<5.00
Naphthalene	21	15,500	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
n-Propyl benzene	70	30,000	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Toluene	1000	257,500	**0.420 J**	**0.310 J**	**0.230 J**	**0.240 J**	NS	**0.210 J**	<0.500	<0.500	<0.500
1,2,4-Trimethylbenzene	350	28,500	**0.250 J**	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
1,3,5-Trimethylbenzene	350	25,000	<0.500	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
m,p-Xylene [4]			**0.590 J**	**0.400 J**	<1.00	<1.00	NS	<1.00	<1.00	<1.00	<1.00
o-Xylene [4]			**0.170 J**	<0.500	<0.500	<0.500	NS	<0.500	<0.500	<0.500	<0.500
Total Xylenes [4]	530	87,500	**0.760 J**	**0.400 J**	--	--	NS	--	--	--	--
EPA 625 (ug/L)											
Acenaphthene	80	2120	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	NA
Bis(2-ethylhexyl)phthalate	3	3000	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	NA
Fluorene	280	950	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	NA
Naphthalene	21	15,500	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	NA
Phenanthrene	210	410	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	NA
TICs (total) [5]			NR	NR	NR	NR	NS	NR	NR	NR	NA
MADEP VPH (ug/L)											
C_5-C_8 Aliphatics	420	NE	<100	<100	<100	<100	NS	<100	<100	<100	NA
C_9-C_{12} Aliphatics [6]			<100	<100	<100	<100	NS	<100	<100	<100	NA
C_9-C_{10} Aromatics [6]			<100	<100	<100	<100	NS	<100	<100	<100	NA
MADEP EPH (ug/L)											
C_9-C_{18} Aliphatics [6]			<100	<100	<100	<100	NS	<100	<100	<100	NA
C_{19}-C_{36} Aliphatics	42,000	NE	<100	<100	<100	<100	NS	<100	<100	<100	NA
C_{11}-C_{22} Aromatics [6]			<100	<100	<100	<100	NS	<100	<100	<100	NA
6010B / 3030C (ug/L)											
Chromium	50	50,000	<5.000 B	<5.000 B	**1.85 JB**	<5.000 B	NS	<5.000 B	<5.000 B	<5.000 B	NA
Lead	15	15,000	<5.000	<5.000	<5.000	<5.000	NS	<5.000	<5.000	<5.000	NA

(Notes listed on page 2)

Table 4-1 (Page 2 of 2)
Summary of Groundwater Analytical Results for October 2005
Site BB-293

(1) DUP is a duplicate sample collected from the pond well

(2) Chloromethane was reported in the trip blank at an estimated concentration of 0.460 ug/L; chloromethane was not detected in any sample collected during the current event or during the previous monitoring program, and was not listed for events conducted prior to the previous monitoring program; the NCGWQS for chloromethane is 2.6 ug/L

(3) Interim Maximum Allowable Concentration

(4) Laboratory quantiation is performed on the m,p-xylene isomers and on the o-xylene isomer; the NCGWQS is based on the sum of the m-, p-, and o-xylene isomers; the sum of the m,p-xylene isomers and the o-xylene isomer is presented as Total Xylenes

(5) TIC: Tentatively Identified Compound; sum of all TICs is presented; any TIC identified as a specific compound is footnoted seperately

(6) Laboratory quantiation is performed on each of the indicated hydrocarbon fractions; NCGWQSs are based on the sum of the indicated fractions; the sums for the indicated fractions are presented as MADEP VPH + EPH

Bold type indicates analyte detection

Shaded area in bold indicates analyte detection at a concentration above the NCGWQS

Shaded area in bold italics indicates analyte detection at a concentration above the GCL

ug/L: micrograms per liter

<#: not detected at the indicated reporting limit

B: compound detected in the laboratory blank

J: estimated concentration less than the reporting limit

RL: Reporting Limit, no NCGWQS established for the consitituent; thereffore, the NCGWQS for the constituent is the reporting limit

NE: Not Established; a GCL has not been established for the analyte

NR: None Reported; no TICs were identified in the sample

NA: Not Analyzed; the sample was not analyzed for the indicated consituent

NS: Not Sampled; the location could not be sampled

GCL:Gross Contamination Level

NCGWQS: North Carolina Groundwater Quality Standard

Table 4-2 (Page 1 of 2)

Monitoring Program Groundwater Analytical Results Summary

Site BB-293

Sample Location	NCGWQS	GCL	MW-1					MW-2						MW-3						MW-4					
Date Sampled			06/04/04	09/23/04	12/02/04	03/08/05	10/18/05	06/04/04	Duplicate	09/23/04	12/02/04	03/07/05	10/18/05	06/04/04	09/23/04	Duplicate	12/02/04	03/08/05	10/18/05	06/04/04	09/23/04	12/03/04	03/08/05	Duplicate	10/18/05
EPA 6210D (ug/L)																									
Bromodichloromethane	0.56	NE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**6.96**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Bromoform	0.19	NE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**2.66**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
n-Butylbenzene	70	6900	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**0.900**	<0.500	<0.500	**0.250 J**	**0.410 J**	**0.890**	<0.500	<0.500	<0.500
sec-Butylbenzene	70	8500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**0.190 J**	**0.760**	<0.500	<0.500	<0.500
tert-Butylbenzene	70	15,000	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Chloroform	0.19	190	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**4.94**	<0.500	<0.500	<0.500	<0.500	**3.65**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Dibromochloromethane	0.41 [1]	410	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**7.38**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	29	29,000	<0.500	<0.500	**0.670**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Isopropylbenzene	70	25,000	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**0.720**	**0.220 J**	<0.500	<0.500	**0.460 J**	<0.500	<0.500	<0.500	<0.500
4-Isopropyltoluene	RL	NE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**0.840**	<0.500	<0.500	**0.370 J**	**0.570**	**0.880**	**0.220 J**	**0.220 J**	**0.230 J**
Methylene Chloride	5	5000	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	**0.180 J**	<5.00
Naphthalene	21	15,500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**1.44**	**0.290 J**	<0.500	**0.530**	**1.30**	**1.49**	<0.500	<0.500	<0.500
n-Propyl benzene	70	30,000	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	**0.480 J**	<0.500	<0.500	<0.500	<0.500
Toluene	1000	257,500	**0.260 J**	**0.940**	**0.860**	<0.500	**0.420 J**	<0.500	<0.500	<0.500	<0.500	<0.500	**0.310 J**	**0.180 J**	**0.560**	**0.480 J**	**0.620**	<0.500	**0.230 J**	**0.190 J**	**0.380 J**	**0.700**	<0.500	<0.500	**0.240 J**
1,2,4-Trimethylbenzene	350	28,500	<0.500	<0.500	**0.760**	<0.500	**0.250 J**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
1,3,5-Trimethylbenzene	350	25,000	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Total Xylenes [2]	530	87,500	<1.50	**0.730**	**1.83**	<1.50	**0.760 J**	<1.50	<1.50	<1.50	<1.50	<1.50	**0.400 J**	<1.50	<1.50	<1.50	**0.950 J**	<1.50	<1.50	<1.50	<1.50	**0.970 J**	<1.50	<1.50	<1.50
EPA 625 (ug/L)																									
Acenaphthene	80	2120	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Bis(2-ethylhexyl)phthalate	3	3000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	**1.90 J**	<10.0	<10.0	<10.0	<10.0	<10.0
Fluorene	280	950	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Naphthalene	21	15,500	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Phenanthrene	210	410	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
TICs (total) [3]			NR	NR	NR	**7.9 J**	NR	NR	NR	NR	NR	**6.8 J**	NR	NR	NR	**4.2 J**	NR	NR	NR	NR	**4.36 J**	**15.2 J**	**5.81 J**	NR	NR
MADEP VPH / EPH (ug/L)																									
C_5-C_8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C_{19}-C_{36} Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C_9-C_{12} + C_9-C_{18} Aliphatics [4]	4200	NE	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
C_9-C_{10} + C_{11}-C_{22} Aromatics [4]	210	NE	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
6010B / 3030C (ug/L)																									
Chromium	50	50,000	<10.0	**1.98 JB**	<10.0	**0.590 JB**	<5.000 B	<10.0	<10.0	**2.56 JB**	**0.340 J**	**0.990 JB**	<5.000 B	<10.0	<10.0 B	<10.0 B	<10.0	**1.61 JB**	**1.85 JB**	<10.0	<10.0 B	<10.0	<10.0	**0.400 JB**	<5.000 B
Lead	15	15,000	<10.0	**15.4 B**	**8.58 J**	<10.0	<5.000	<10.0	<10.0	**9.06 JB**	**6.33 J**	<10.0	<5.000	<10.0	**11.6 B**	**12.5 B**	**7.65 J**	<10.0	<5.000	<10.0	**11.0 B**	**6.56 J**	**1.21 J**	<10.0	<5.000

[1] Interim Maximum Allowable Concentration

[2] Laboratory quantiation is performed on the m,p-xylene isomers and on the o-xylene isomer; the NCGWQS is based on the sum of the m-, p-, and o-xylene isomers; the sum of the m,p-xylene isomers and the o-xylene isomer is presented as Total Xylenes

[3] TIC: Tentatively Identified Compound; sum of all TICs is presented; any TIC identified as a specific compound is footnoted seperately

[4] Laboratory quantiation is performed on each of the indicated hydrocarbon fractions; NCGWQSs are based on the sum of the indicated fractions

GCL:Gross Contamination Level

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the consitituent; therefore, the NCGWQS for the constituent is the reporting limit

NE: Not Established; a GCL has not been established for the analyte

Bold type indicates analyte detection

Shaded area in bold indicates analyte detection at a concentration above the NCGWQS

Shaded area in bold italics indicates analyte detection at a concentration above the GCL

ug/L: micrograms per liter

<#: not detected at the indicated reporting limit

B: compound detected in the laboratory blank

J: estimated concentration less than the reporting limit

NR: None Reported; no TICs were identified in the sample

Table 4-2 (Page 2 of 2)

Monitoring Program Groundwater Analytical Results Summary

Site BB-293

Sample Location	NCGWQS	GCL	MW-5					MW-6						Pond Well					
Date Sampled			06/04/04	09/23/04	12/03/04	03/07/05	10/18/05	06/04/04	09/23/04	12/02/04	Duplicate	03/08/05	10/18/05	06/08/04	09/23/04	12/03/04	03/08/05	10/18/05	Duplicate
EPA 6210D (ug/L)																			
Bromodichloromethane	0.56	NE	<0.500	<1.00	<4.00	<2.00	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Bromoform	0.19	NE	<0.500	<1.00	<4.00	<2.00	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
n-Butylbenzene	70	6900	**3.56**	<1.00	<4.00	<2.00	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
sec-Butylbenzene	70	8500	**2.20**	**1.42**	**10.1**	**4.92**	NS	<0.500	<0.500	**1.01**	**1.01**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
tert-Butylbenzene	70	15,000	**0.440 J**	<1.00	**6.40**	**0.880 J**	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Chloroform	0.19	190	<0.500	<1.00	<4.00	<2.00	NS	<0.500	<0.500	<0.500	<0.500	<0.500	**0.200 J**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Dibromochloromethane	0.41 [1]	410	<0.500	<1.00	<4.00	<2.00	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	29	29,000	**11.1**	**4.96**	**19.5**	**17.4**	NS	**0.510**	<0.500	**1.25**	**1.30**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Isopropylbenzene	70	25,000	**3.33**	**1.68**	**10.1**	**6.08**	NS	**0.300 J**	<0.500	**1.09**	**1.09**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
4-Isopropyltoluene	RL	NE	**2.45**	**1.44**	**10.4**	**5.20**	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Methylene Chloride	5	5000	<5.00	<10.0	<40.0	<20.0	NS	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	**0.420 J**	<5.00	<5.00
Naphthalene	21	15,500	**180**	**59.1**	**149**	**107**	NS	**0.680**	<0.500	**1.46**	**1.47**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
n-Propyl benzene	70	30,000	**4.87**	**2.56**	**13.3**	**9.60**	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Toluene	1000	257,500	<0.500	**0.500 J**	**4.00**	<2.00	NS	<0.500	**0.370 J**	**0.680**	**0.620**	<0.500	**0.210 J**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
1,2,4-Trimethylbenzene	350	28,500	**38.2**	**13.6**	**52.7**	**79.3**	NS	**0.520**	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
1,3,5-Trimethylbenzene	350	25,000	**7.27**	**4.82**	**19.2**	**11.7**	NS	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Total Xylenes [2]	530	87,500	**8.1**	**2.86**	**23.28**	**18.6**	NS	<1.50	<1.50	**1.60**	**1.58**	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50
EPA 625 (ug/L)																			
Acenaphthene	80	2120	**1.70 J**	<10.0	**1.40 J**	**2.30 J**	NS	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Bis(2-ethylhexyl)phthalate	3	3000	<10.0	<10.0	<10.0	<10.0	NS	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Fluorene	280	950	**3.60 J**	<10.0	**3.10 J**	**4.10 J**	NS	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Naphthalene	21	15,500	**130**	**33.8**	**155**	**106**	NS	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Phenanthrene	210	410	**2.30 J**	<10.0	**2.60 J**	**2.20 J**	NS	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
TICs (total) [3]			**375 J** [5]	**101.7 J** [6]	**381.7 J** [7]	**394.2 J** [8]	NS	NR	**348.39 J**	**15.6 J**	**7.96 J**	NR	NR	**22 J**	NR	NR	**7.85 J**	NR	NR
MADEP VPH / EPH (ug/L)																			
C_5-C_8 Aliphatics	420	NE	<100	<100	<100	<100	NS	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C_{19}-C_{36} Aliphatics	42,000	NE	<100	<100	<100	<100	NS	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C_9-C_{12} + C_9-C_{18} Aliphatics [4]	4200	NE	**1250**	**200**	**390**	**270**	NS	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
C_9-C_{10} + C_{11}-C_{22} Aromatics [4]	210	NE	**820**	**200**	**830**	**1000**	NS	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
6010B / 3030C (ug/L)																			
Chromium	50	50,000	**39.4**	<10.0 B	<10.0	**0.530 JB**	NS	<10.0	<10.0 B	<10.0	<10.0	**0.990 JB**	<5.000 B	<10.0	<10.0 B	<10.0	**0.330 JB**	<5.000 B	<5.000 B
Lead	15	15,000	<10.0	**26.9 B**	**19.0**	<10.0	NS	<10.0	**9.65 JB**	**6.63 J**	**7.31 J**	<10.0	<5.000	<10.0	**12.8 B**	**7.91 J**	**1.38 J**	<5.000	<5.000

[1] Interim Maximum Allowable Concentration

[2] Laboratory quantiation is performed on the m,p-xylene isomers and on the o-xylene isomer; the NCGWQS is based on the sum of the m-, p-, and o-xylene isomers; the sum of the m,p-xylene isomers and the o-xylene isomer is presented as Total Xylenes

[3] TIC: Tentatively Identified Compound; sum of all TICs is presented; any TIC identified as a specific compound is footnoted seperately

[4] Laboratory quantiation is performed on each of the indicated hydrocarbon fractions; NCGWQSs are based on the sum of the indicated fractions

[5] Two TICs were identified as specific compounds: 1-Methylnaphthalene was reported at 65 J ug/L (NCGWQS not established, therefore NCGWQS is the reporting limit; GCL not established); Camphor was reported at 58 ug/L J (NCGWQS not established, therefore NCGWQS is the reporting limit; GCL not established)

[6] One TIC was identified as a specific compound: Molecular sulfur was was reported at 24.7 J ug/L (NCGWQS not established; therefore NCGWQS is the reporting limit; GCL not established)

[7] Two TICs were identified as specific compounds: 1-Methylnaphthalene was reported at 66.4 J ug/L (NCGWQS not established, therefore NCGWQS is the reporting limit; GCL not established); 2-Methylnaphthalene was reported at 29.1 J ug/L (NCGWQS of 14 ug/L; GCL of 12,500 ug/L)

[8] One TIC was identified as a specific compound: 1-Methylnaphthalene was reported at an estimated concentration of 78 ug/L (NCGWQS not established, therefore, the NCGWQSs is the reporting limit; GCL not established)

GCL:Gross Contamination Level

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the consituent; therefore, the NCGWQS for the constituent is the reporting limit

NE: Not Established; a GCL has not been established for the analyte

Bold type indicates analyte detection

Shaded area in bold indicates analyte detection at a concentration above the NCGWQS

Shaded area in bold italics indicates analyte detection at a concentration above the GCL

ug/L: micrograms per liter

<#: not detected at the indicated reporting limit

B: compound detected in the laboratory blank

J: estimated concentration less than the reporting limit

NR: None Reported; no TICs were identified in the sample

NS: Not Sampled; the location could not be sampled

APPENDIX A

FIELD DATA RECORDING SHEETS

ENGINEERING AND ENVIRONMENT, INC.

BB293 Water Levels **Date: 10/18/2005**

Well ID	MW01	Depth to Bottom	49	Depth to Product		Depth to Water	3.90
Well ID	MW02	Depth to Bottom	12	Depth to Product		Depth to Water	2.05
Well ID	MW03	Depth to Bottom	12	Depth to Product		Depth to Water	2.93
Well ID	MW04	Depth to Bottom	12	Depth to Product		Depth to Water	2.43
Well ID	MW05	Depth to Bottom	12	Depth to Product		Depth to Water	damaged
Well ID	MW06	Depth to Bottom	12	Depth to Product		Depth to Water	2.89

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 09:35 **Weather** sunny

Sampler BS **Well/Sample #** USTBB293-MW01

Depth To Bottom (ft) 49 **Depth To Water (ft)** 3.90 **Water Depth (ft)** 45.1

Well Vol. 7.36 **Purge Vol.** 22.08 **Vol. Purged** 22

Sampling Device (pump/Bailer) pump

	ONE	1.5	TWO	2.5	THREE	3.5	UNIT
Time	09:11	09:17	09:22	09:27	09:33		N/A
Temperature	20.2	20.06	20.06	19.96	19.95		©
Spec. Conductivity	1.514	1.506	1.605	1.629	1.639		(m s/m)
Dissolved Oxygen	0.17	0.19	0.19	0.21	0.21		ms/L
PH	7.66	7.66	7.66	7.63	7.63		STD
ORP	-119.5	-119.6	-120.7	-129.8	-128.8		(G/L)
Turbitidy	50.5	59.8	40.9	7.36	5.28		(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:	

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid	0.0						
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 08:20 **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-MW02

Depth To Bottom (ft) 12 **Depth To Water (ft)** 2.05 **Water Depth (ft)** 9.95

Well Vol. 1.62 **Purge Vol.** 4.86 **Vol. Purged** 8.1

Sampling Device (pump/Bailer) pump

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time	08:03	08:06	08:10	08:14	08:18		N/A
Temperature	22.66	23.74	24.1	24.29	24.33		©
Spec. Conductivity	1.051	1.22	1.313	1.295	1.302		(m s/m)
Dissolved Oxygen	2.52	1.65	1.37	1.04	0.92		ms/L
PH	7.67	7.45	7.33	7.29	7.28		STD
ORP	-205.1	-305.7	-314.3	-185.2	-186.8		(G/L)
Turbitidy	498	85.7	127	60.1	38.0		(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 10:33 **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-MW03

Depth To Bottom (ft) 12 **Depth To Water (ft)** 2.93 **Water Depth (ft)** 10.07

Well Vol. 1.64 **Purge Vol.** 4.92 **Vol. Purged** 6.56

Sampling Device (pump/Bailer) pump

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time	10:22	10:25	10:27	10:31			N/A
Temperature	23.42	23.58	23.64	23.65			©
Spec. Conductivity	0.596	0.6	0.599	0.594			(m s/m)
Dissolved Oxygen	1.37	0.92	0.74	0.62			ms/L
PH	7.28	7.22	7.16	7.14			STD
ORP	-138.4	-139.3	-141.4	-143.9			(G/L)
Turbitidy	55.6	35.6	24.5	10.2			(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 11:03 **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-MW04

Depth To Bottom (ft) 12 **Depth To Water (ft)** 2.43 **Water Depth (ft)** 4.57

Well Vol. 1.56 **Purge Vol.** 4.68 **Vol. Purged** 7.8

Sampling Device (pump/Bailer) pump

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time	10:48	10:52	10:55	10:58	11:01		N/A
Temperature	23.35	23.59	23.61	23.62	23.62		©
Spec. Conductivity	0.563	0.475	0.462	0.454	0.451		(m s/m)
Dissolved Oxygen	0.33	0.21	0.2	0.22	0.22		ms/L
PH	7.3	7.32	7.31	7.34	7.35		STD
ORP	-187.4	-180.6	-175.9	-176.8	-179.8		(G/L)
Turbitidy	217	95.1	53.7	82.5	36.4		(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-MW05

Depth To Bottom (ft) **Depth To Water (ft)** **Water Depth (ft)**

Well Vol. **Purge Vol.** **Vol. Purged**

Sampling Device (pump/Bailer)

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time							N/A
Temperature							©
Spec. Conductivity							(m s/m)
Dissolved Oxygen							ms/L
PH							STD
ORP							(G/L)
Turbitidy							(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:	well filled with sediment

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 10:03 **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-MW06

Depth To Bottom (ft) 12 **Depth To Water (ft)** 2.89 **Water Depth (ft)** 9.11

Well Vol. 1.5 **Purge Vol.** 4.5 **Vol. Purged** 7.5

Sampling Device (pump/Bailer) pump

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time	09:47	09:50	09:53	09:56	10:01		N/A
Temperature	24.45	24.69	24.79	24.81	24.83		©
Spec. Conductivity	0.339	0.358	0.376	0.389	0.4		(m s/m)
Dissolved Oxygen	1.53	0.85	0.66	0.58	0.5		ms/L
PH	7.52	7.41	7.35	7.3	7.28		STD
ORP	-135.9	-140.8	-145.6	-148.0	-150.0		(G/L)
Turbitidy	136	119.0	65.7	23.8	13.9		(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

ENGINEERING AND ENVIRONMENT, INC.

BB293 Field Data

Project #LD03-015

Date 10/18/2005 **Time** 08:30 **Weather** Sunny

Sampler BS **Well/Sample #** USTBB293-SW

Depth To Bottom (ft) N/A **Depth To Water (ft)** N/A **Water Depth (ft)** N/A

Well Vol. N/A **Purge Vol.** 1 hour **Vol. Purged**

Sampling Device (pump/Bailer)

	ONE	TWO	THREE	FOUR	FIVE	SIX	UNIT
Time							N/A
Temperature							©
Spec. Conductivity							(m s/m)
Dissolved Oxygen							ms/L
PH							STD
ORP							(G/L)
Turbitidy							(NTU)

Analyte	Size	Preserv.
6210D	3 X 40 ml	HCL
625	1 X 1 L	None
VPH	2 X 40 ml	HCL

Comments:	pndo well; collected duplicate

2" well vol.=water depth X 0.1632 4" well vol.=water depth x 0.6528

Pid							
Time							
SWL							
Pump Depth							

APPENDIX B

LABORATORY ANALYTICAL REPORTS

Mr. Bill Morris
Engineering & Environment, Inc.
824 Gum Branch Road
Jacksonville NC 28546

Report Number: G546-61

Client Project: BB293

Dear Mr. Morris:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
Paradigm Analytical Laboratories, Inc.

10/31/05

Laboratory Director Date
J. Patrick Weaver

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW02
Client Project ID: BB293
Lab Sample ID: G546-61-1A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 8:20
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW02
Client Project ID: BB293
Lab Sample ID: G546-61-1A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 8:20
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	**0.310**	0.500	0.154	1	10/27/05	J
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	**0.400**	1.00	0.388	1	10/27/05	J
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	10.4	104
1,2-Dichloroethane-d4	10	9.94	99
Toluene-d8	10	9.74	97

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-SW
Client Project ID: BB293
Lab Sample ID: G546-61-2A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 8:30
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles by GCMS 6210D

Client Sample ID: BB293-SW
Client Project ID: BB293
Lab Sample ID: G546-61-2A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 8:30
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	BQL	0.500	0.154	1	10/27/05	
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.92	99
1,2-Dichloroethane-d4	10	10.3	103
Toluene-d8	10	9.84	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW1
Client Project ID: BB293
Lab Sample ID: G546-61-3A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 9:35
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW1
Client Project ID: BB293
Lab Sample ID: G546-61-3A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 9:35
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	**0.420**	0.500	0.154	1	10/27/05	J
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	**0.250**	0.500	0.205	1	10/27/05	J
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	**0.590**	1.00	0.388	1	10/27/05	J
o-Xylene	**0.170**	0.500	0.156	1	10/27/05	J

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.99	100
1,2-Dichloroethane-d4	10	10.4	104
Toluene-d8	10	9.87	99

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW6
Client Project ID: BB293
Lab Sample ID: G546-61-4A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 10:03
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	0.200	0.500	0.195	1	10/27/05	J
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW6
Client Project ID: BB293
Lab Sample ID: G546-61-4A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 10:03
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	**0.210**	0.500	0.154	1	10/27/05	J
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.9	99
1,2-Dichloroethane-d4	10	10.5	105
Toluene-d8	10	9.81	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW3
Client Project ID: BB293
Lab Sample ID: G546-61-5A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 10:33
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	**3.65**	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW3
Client Project ID: BB293
Lab Sample ID: G546-61-5A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 10:33
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	**0.230**	0.500	0.154	1	10/27/05	J
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.93	99
1,2-Dichloroethane-d4	10	10.2	102
Toluene-d8	10	9.77	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW4
Client Project ID: BB293
Lab Sample ID: G546-61-6A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 11:03
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	**0.230**	0.500	0.203	1	10/27/05	J
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-MW4
Client Project ID: BB293
Lab Sample ID: G546-61-6A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 11:03
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	**0.240**	0.500	0.154	1	10/27/05	J
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	10.2	102
1,2-Dichloroethane-d4	10	10.4	104
Toluene-d8	10	9.87	99

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-Dup
Client Project ID: BB293
Lab Sample ID: G546-61-7A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 0:00
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: BB293-Dup
Client Project ID: BB293
Lab Sample ID: G546-61-7A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 0:00
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	BQL	0.500	0.154	1	10/27/05	
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.99	100
1,2-Dichloroethane-d4	10	10.4	104
Toluene-d8	10	9.85	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: _____

Results for Volatiles
by GCMS 6210D

Client Sample ID: Trip Blank
Client Project ID: BB293
Lab Sample ID: G546-61-8A
Lab Project ID: G546-61

Analyzed By: JTF
Date Collected: 10/18/05 0:00
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	**0.460**	0.500	0.457	1	10/27/05	J
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: Trip Blank
Client Project ID: BB293
Lab Sample ID: G546-61-8A
Lab Project ID: G546-61

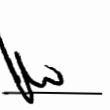
Analyzed By: JTF
Date Collected: 10/18/05 0:00
Date Received: 10/19/05
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	BQL	0.500	0.154	1	10/27/05	
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.83	98
1,2-Dichloroethane-d4	10	10.1	101
Toluene-d8	10	9.85	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results for Volatiles
by GCMS 6210D

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: VBLK3102705C
Lab Project ID:

Analyzed By: JTF
Date Collected:
Date Received:
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	BQL	0.500	0.152	1	10/27/05	
Bromobenzene	BQL	0.500	0.199	1	10/27/05	
Bromochloromethane	BQL	0.500	0.312	1	10/27/05	
Bromodichloromethane	BQL	0.500	0.195	1	10/27/05	
Bromoform	BQL	0.500	0.116	1	10/27/05	
Bromomethane	BQL	0.500	0.398	1	10/27/05	
n-Butylbenzene	BQL	0.500	0.262	1	10/27/05	
sec-Butylbenzene	BQL	0.500	0.234	1	10/27/05	
tert-Butylbenzene	BQL	0.500	0.181	1	10/27/05	
Carbon tetrachloride	BQL	0.500	0.150	1	10/27/05	
Chlorobenzene	BQL	0.500	0.178	1	10/27/05	
Chloroethane	BQL	0.500	0.373	1	10/27/05	
Chloroform	BQL	0.500	0.195	1	10/27/05	
Chloromethane	BQL	0.500	0.457	1	10/27/05	
2-Chlorotoluene	BQL	0.500	0.204	1	10/27/05	
4-Chlorotoluene	BQL	0.500	0.198	1	10/27/05	
Dibromochloromethane	BQL	0.500	0.198	1	10/27/05	
1,2-Dibromo-3-chloropropane	BQL	5.00	1.89	1	10/27/05	
Dibromomethane	BQL	0.500	0.276	1	10/27/05	
1,2-Dibromoethane (EDB)	BQL	0.500	0.269	1	10/27/05	
1,2-Dichlorobenzene	BQL	0.500	0.187	1	10/27/05	
1,3-Dichlorobenzene	BQL	0.500	0.242	1	10/27/05	
1,4-Dichlorobenzene	BQL	0.500	0.177	1	10/27/05	
1,1-Dichloroethane	BQL	0.500	0.201	1	10/27/05	
1,1-Dichloroethene	BQL	0.500	0.159	1	10/27/05	
1,2-Dichloroethane	BQL	0.500	0.223	1	10/27/05	
cis-1,2-Dichloroethene	BQL	0.500	0.161	1	10/27/05	
trans-1,2-dichloroethene	BQL	0.500	0.230	1	10/27/05	
1,2-Dichloropropane	BQL	0.500	0.132	1	10/27/05	
1,3-Dichloropropane	BQL	0.500	0.163	1	10/27/05	
2,2-Dichloropropane	BQL	0.500	0.263	1	10/27/05	
1,1-Dichloropropene	BQL	0.500	0.176	1	10/27/05	
Dichlorodifluoromethane	BQL	5.00	0.459	1	10/27/05	
Diisopropyl ether (DIPE)	BQL	0.500	0.204	1	10/27/05	
Ethylbenzene	BQL	0.500	0.183	1	10/27/05	
Hexachlorobutadiene	BQL	0.500	0.406	1	10/27/05	
Isopropylbenzene	BQL	0.500	0.163	1	10/27/05	
4-Isopropyltoluene	BQL	0.500	0.203	1	10/27/05	
Methylene chloride	BQL	5.00	0.176	1	10/27/05	
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.201	1	10/27/05	
Naphthalene	BQL	0.500	0.259	1	10/27/05	
n-Propyl benzene	BQL	0.500	0.203	1	10/27/05	

Results for Volatiles
by GCMS 6210D

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: VBLK3102705C
Lab Project ID:

Analyzed By: JTF
Date Collected:
Date Received:
Matrix: Water

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.235	1	10/27/05	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.298	1	10/27/05	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.217	1	10/27/05	
Tetrachloroethene	BQL	0.500	0.219	1	10/27/05	
Toluene	BQL	0.500	0.154	1	10/27/05	
1,2,3-Trichlorobenzene	BQL	0.500	0.206	1	10/27/05	
1,2,4-Trichlorobenzene	BQL	0.500	0.271	1	10/27/05	
Trichloroethene	BQL	0.500	0.201	1	10/27/05	
1,1,1-Trichloroethane	BQL	0.500	0.168	1	10/27/05	
1,1,2-Trichloroethane	BQL	0.500	0.231	1	10/27/05	
Trichlorofluoromethane	BQL	0.500	0.481	1	10/27/05	
1,2,3-Trichloropropane	BQL	0.500	0.214	1	10/27/05	
1,2,4-Trimethylbenzene	BQL	0.500	0.205	1	10/27/05	
1,3,5-Trimethylbenzene	BQL	0.500	0.179	1	10/27/05	
Vinyl chloride	BQL	0.500	0.464	1	10/27/05	
m-,p-Xylene	BQL	1.00	0.388	1	10/27/05	
o-Xylene	BQL	0.500	0.156	1	10/27/05	

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	9.91	99
1,2-Dichloroethane-d4	10	9.83	98
Toluene-d8	10	9.76	98

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: _____

Results for MS/MSD
by GC/MS

Client Project ID: Batch QC
Lab Sample ID: g128-1623-11a x40
Batch ID: 3102705

Date Analyzed: 27 Oct 2005 10:17 pm
Matrix: water
Analyzed By: JTF

Compound	Unspiked Sample ug/L	Spike conc. ug/L	Recovered MS %	Recovered MSD %	Limits Lower %	Limits Upper %	RPD %	RPD Limit %
benzene	BQL	5	120.2	104.6	61.6	134.6	13.8	30
chlorobenzene	BQL	5	117.8 *	102.2	77.2	117.8	14.1	30
1,1-dichloroethene	BQL	5	122.1	103.6	64.4	129.6	16.3	30
toluene	BQL	5	116.1	100.1	66.4	128.5	14.7	30
trichloroethene	BQL	5	122.7	106.0	84.9	135.5	14.6	30

Comments:

Concentrations are on column amounts.
Concentration Units: ug/L

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By:

VO43.072303.1

Results for Laboratory Control Spike (LCS)
by GC/MS

Lab Sample ID: lcs3102705b
Analyst: JTF
Batch ID: 3102705

Date Analyzed: 27 Oct 2005 1:41 pm
Matrix: Water

Compound	Spiked ug/L	Amount recovered	LCS (%)	Limits Lower (%)	Limits Upper (%)
benzene	5.0	4.85	97.1	77.4	123
chlorobenzene	5.0	4.64	92.8	72.5	128
1,1-dichloroethene	5.0	4.97	99.4	71.7	128
toluene	5.0	4.70	94.1	75.9	124
trichloroethene	5.0	4.85	96.9	77.9	122

Comments:
Concentration values are on column amount.

Flags:
* = Out of limits.
NA = Not applicable

Reviewed By: _____

VO42.072303.1

Results for 6210D 10ppb QC check

Analyst: JTF
Matrix: Water

Date Analyzed: 10/27/05
File: 1027102.D

Compound	Amount Spiked	Amount Recovered	% recovery	Limits Lower	Limits Upper
benzene	10	9.71	97.1	60.0	140
bromobenzene	10	9.97	99.7	60.0	140
bromochloromethane	10	10.47	104.7	60.0	140
bromodichloromethane	10	9.97	99.7	60.0	140
bromoform	10	10.55	105.5	60.0	140
bromomethane	10	11.18	111.8	60.0	140
n-butylbenzene	10	10.11	101.1	60.0	140
sec-butylbenzene	10	9.94	99.4	60.0	140
tert-butylbenzene	10	10.05	100.5	60.0	140
carbon tetrachloride	10	10.17	101.7	60.0	140
chlorobenzene	10	9.70	97.0	60.0	140
chloroethane	10	10.07	100.7	60.0	140
chloroform	10	9.59	95.9	60.0	140
chloromethane	10	8.46	84.6	60.0	140
2-chlorotoluene	10	10.00	100.0	60.0	140
4-chlorotoluene	10	9.93	99.3	60.0	140
dibromochloromethane	10	10.36	103.6	60.0	140
1,2-dibromomethane	10	10.10	101.0	60.0	140
dibromomethane	10	10.18	101.8	60.0	140
1,2-dichlorobenzene	10	9.85	98.5	60.0	140
1,3-dichlorobenzene	10	9.88	98.8	60.0	140
1,4-dichlorobenzene	10	9.89	98.9	60.0	140
dichlorodifluoromethane	10	9.80	98.0	60.0	140
1,1-dichloroethane	10	9.79	97.9	60.0	140
1,2-dichloroethane	10	9.71	97.1	60.0	140
1,1-dichloroethene	10	9.85	98.5	60.0	140
cis-1,2-dichloroethene	10	9.98	99.8	60.0	140
trans-1,2-dichloroethene	10	9.78	97.8	60.0	140
1,2-dichloropropane	10	9.74	97.4	60.0	140
1,3-dichloropropane	10	9.80	98.0	60.0	140
2,2-dichloropropane	10	10.09	100.9	60.0	140
1,1-dichloropropene	10	9.78	97.8	60.0	140
cis-1,3-dichloropropene	10	10.15	101.5	60.0	140
trans-1,3-dichloropropene	10	10.09	100.9	60.0	140
diisopropyl ether	10	9.43	94.3	60.0	140
ethylbenzene	10	9.54	95.4	60.0	140
hexachlorobutadiene	10	10.35	103.5	60.0	140
isopropylbenzene	10	9.82	98.2	60.0	140
4-isopropyltoluene	10	10.12	101.2	60.0	140
methyl-tert-butyl ether	10	9.72	97.2	60.0	140
methylene chloride	10	10.06	100.6	60.0	140

Results for 6210D 10ppb QC check

Analyst: JTF
Matrix: Water

Date Analyzed: 10/27/05
File: 1027102.D

Compound	Amount Spiked	Amount Recovered	% recovery	Limits Lower	Limits Upper
naphthalene	10	9.26	92.6	60.0	140
n-propyl benzene	10	9.83	98.3	60.0	140
styrene	10	9.84	98.4	60.0	140
1,1,1,2-tetrachloroethane	10	9.90	99.0	60.0	140
1,1,2,2-tetrachloroethane	10	9.99	99.9	60.0	140
tetrachloroethene	10	9.89	98.9	60.0	140
toluene	10	9.44	94.4	60.0	140
1,2,3-trichlorobenzene	10	9.19	91.9	60.0	140
1,2,4-trichlorobenzene	10	9.57	95.7	60.0	140
1,1,1-trichloroethane	10	9.82	98.2	60.0	140
1,1,2-trichloroethane	10	10.04	100.4	60.0	140
trichloroethene	10	9.85	98.5	60.0	140
trichlorofluoromethane	10	9.70	97.0	60.0	140
1,2,3-trichloropropane	10	10.92	109.2	60.0	140
1,2,4-trimethylbenzene	10	9.87	98.7	60.0	140
1,3,5-trimethylbenzene	10	9.96	99.6	60.0	140
vinyl chloride	10	9.36	93.6	60.0	140
m/p-xylene	20	19.36	96.8	60.0	140
o-xylene	10	9.82	98.2	60.0	140

Flags: * = Out of limits.
NA = Not applicable

Reviewed By:

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW02
Client Project ID: BB293
Lab Sample ID: G546-61-1M
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 8:20
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-MW02
Client Project ID: BB293
Lab Sample ID: G546-61-1M
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 8:20
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

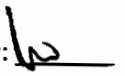
	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.5	75
2-Fluorophenol	10	7.3	73
Nitrobenzene-d5	10	7.6	76
Phenol-d6	10	7.7	77
2,4,6-Tribromophenol	10	6.6	66
4-Terphenyl-d14	10	8.5	85

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-MW02
Client Project ID: BB293
Lab Sample ID: G546-61-1M
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 8:20
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-SW
Client Project ID: BB293
Lab Sample ID: G546-61-2K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 8:30
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-SW
Client Project ID: BB293
Lab Sample ID: G546-61-2K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 8:30
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.2	82
2-Fluorophenol	10	8	80
Nitrobenzene-d5	10	8	80
Phenol-d6	10	7.9	79
2,4,6-Tribromophenol	10	6.1	61
4-Terphenyl-d14	10	9.7	97

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-SW
Client Project ID: BB293
Lab Sample ID: G546-61-2K
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 8:30
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW1
Client Project ID: BB293
Lab Sample ID: G546-61-3K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 9:35
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-MW1
Client Project ID: BB293
Lab Sample ID: G546-61-3K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 9:35
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

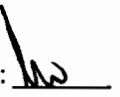
	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.8	78
2-Fluorophenol	10	7.8	78
Nitrobenzene-d5	10	7.8	78
Phenol-d6	10	7.7	77
2,4,6-Tribromophenol	10	6.6	66
4-Terphenyl-d14	10	8.3	83

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-MW1
Client Project ID: BB293
Lab Sample ID: G546-61-3K
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 9:35
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW6
Client Project ID: BB293
Lab Sample ID: G546-61-4K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 10:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW6
Client Project ID: BB293
Lab Sample ID: G546-61-4K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 10:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.2	82
2-Fluorophenol	10	8.4	84
Nitrobenzene-d5	10	8.4	84
Phenol-d6	10	8.2	82
2,4,6-Tribromophenol	10	6.8	68
4-Terphenyl-d14	10	9	90

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-MW6
Client Project ID: BB293
Lab Sample ID: G546-61-4K
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 10:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW3
Client Project ID: BB293
Lab Sample ID: G546-61-5K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 10:33
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-MW3
Client Project ID: BB293
Lab Sample ID: G546-61-5K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 10:33
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	5.7	57
2-Fluorophenol	10	5.4	54
Nitrobenzene-d5	10	5.2	52
Phenol-d6	10	5.4	54
2,4,6-Tribromophenol	10	5	50
4-Terphenyl-d14	10	9.3	93

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-MW3
Client Project ID: BB293
Lab Sample ID: G546-61-5K
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 10:33
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-MW4
Client Project ID: BB293
Lab Sample ID: G546-61-6K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 11:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-MW4
Client Project ID: BB293
Lab Sample ID: G546-61-6K
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 11:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

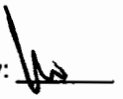
	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	6.6	66
2-Fluorophenol	10	5.7	57
Nitrobenzene-d5	10	6.6	66
Phenol-d6	10	5.8	58
2,4,6-Tribromophenol	10	6.2	62
4-Terphenyl-d14	10	8.7	87

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-MW4
Client Project ID: BB293
Lab Sample ID: G546-61-6K
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 11:03
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (**TIC**) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles
by GCMS 625

Client Sample ID: BB293-Dup
Client Project ID: BB293
Lab Sample ID: G546-61-7L
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 0:00
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles by GCMS 625

Client Sample ID: BB293-Dup
Client Project ID: BB293
Lab Sample ID: G546-61-7L
Lab Project ID: G546-61

Analyzed By: MRC
Date Collected: 10/18/2005 0:00
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Matrix: Water

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.9	79
2-Fluorophenol	10	7.7	77
Nitrobenzene-d5	10	8	80
Phenol-d6	10	8.2	82
2,4,6-Tribromophenol	10	6.9	69
4-Terphenyl-d14	10	9.1	91

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: BB293-Dup
Client Project ID: BB293
Lab Sample ID: G546-61-7L
Lab Project ID: G546-61
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: MRC
Date Collected: 10/18/2005 0:00
Date Received: 10/19/2005
Date Extracted: 10/21/2005
Date Analyzed: 10/25/2005
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	No library search compounds detected.				
2					
3					
4					
5					
6					
7					
8					
9					
10					

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB3868
Lab Project ID:

Analyzed By: MRC
Date Collected:
Date Received:
Date Extracted: 10/21/2005
Matrix: WATER

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	10.0	1.22	1	10/25/2005	
Acenaphthylene	BQL	10.0	1.12	1	10/25/2005	
Anthracene	BQL	10.0	1.75	1	10/25/2005	
Benzo[a]anthracene	BQL	10.0	1.36	1	10/25/2005	
Benzo[a]pyrene	BQL	10.0	1.27	1	10/25/2005	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	10/25/2005	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	10/25/2005	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	10/25/2005	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	10/25/2005	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	10/25/2005	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	10/25/2005	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	10/25/2005	
Butylbenzylphthalate	BQL	10.0	1.53	1	10/25/2005	
2-Chloronaphthalene	BQL	10.0	1.25	1	10/25/2005	
2-Chlorophenol	BQL	10.0	4.22	1	10/25/2005	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	10/25/2005	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	10/25/2005	
Chrysene	BQL	10.0	1.11	1	10/25/2005	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	10/25/2005	
Di-n-Butylphthalate	BQL	10.0	1.65	1	10/25/2005	
1,2-Dichlorobenzene	BQL	10.0	1.25	1	10/25/2005	
1,3-Dichlorobenzene	BQL	10.0	1.24	1	10/25/2005	
1,4-Dichlorobenzene	BQL	10.0	1.20	1	10/25/2005	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	10/25/2005	
2,4-Dichlorophenol	BQL	10.0	3.75	1	10/25/2005	
Diethylphthalate	BQL	10.0	1.48	1	10/25/2005	
Dimethylphthalate	BQL	10.0	1.04	1	10/25/2005	
2,4-Dimethylphenol	BQL	10.0	9.25	1	10/25/2005	
Di-n-octylphthalate	BQL	10.0	1.16	1	10/25/2005	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	10/25/2005	
2,4-Dinitrophenol	BQL	50.0	4.20	1	10/25/2005	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	10/25/2005	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	10/25/2005	
Diphenylamine *	BQL	10.0	1.53	1	10/25/2005	
Fluoranthene	BQL	10.0	1.41	1	10/25/2005	
Fluorene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobenzene	BQL	10.0	1.22	1	10/25/2005	
Hexachlorobutadiene	BQL	10.0	1.58	1	10/25/2005	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	10/25/2005	
Hexachloroethane	BQL	10.0	1.58	1	10/25/2005	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	10/25/2005	

Results for Semivolatiles
by GCMS 625

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB3868
Lab Project ID:

Analyzed By: MRC
Date Collected:
Date Received:
Date Extracted: 10/21/2005
Matrix: WATER

Compound	Result ug/L	Quantitation Limit ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Isophorone	BQL	10.0	1.27	1	10/25/2005	
Naphthalene	BQL	10.0	1.08	1	10/25/2005	
Nitrobenzene	BQL	10.0	1.32	1	10/25/2005	
2-Nitrophenol	BQL	10.0	3.52	1	10/25/2005	
4-Nitrophenol	BQL	50.0	3.17	1	10/25/2005	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	10/25/2005	
Pentachlorophenol	BQL	50.0	2.83	1	10/25/2005	
Phenanthrene	BQL	10.0	1.38	1	10/25/2005	
Phenol	BQL	10.0	3.38	1	10/25/2005	
Pyrene	BQL	10.0	2.08	1	10/25/2005	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	10/25/2005	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	10/25/2005	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7	70
2-Fluorophenol	10	6.3	63
Nitrobenzene-d5	10	6.6	66
Phenol-d6	10	6.4	64
2,4,6-Tribromophenol	10	5.9	59
4-Terphenyl-d14	10	8.7	87

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By:

Results For Matrix Spike / Matrix Spike Duplicate and Laboratory Control Standard (MS/MSD/LCS)
by GCMS

Client Sample ID: Batch QC
Client Sample ID:
Lab Sample ID: Batch-3868-MS/MSD/LCS
Lab Project ID:
Matrix: WATER
Prep Method: 3520

Date Collected:
Date Received:
Date Extracted: 10/21/05
Date Analyzed: 10/25/05
Analyzed By: MRC
Dilution: 1

	Sample Amount (µg/L)	MS Spike (µg/L)	MS Conc. (µg/L)	MS Spike % Rec.	MSD Spike (µg/L)	MSD Conc. (µg/L)	MSD Conc. % Rec.	RPD	QC Limits RPD	QC Limits % Rec.
Acenaphthylene	BQL	222	209	94.2	222	198	89.2	5.45	30	62.0-119
4-Chloro-3-methylphenol	BQL	222	194	87.4	222	191	86.0	1.61	30	67.0-98.0
2-Chlorophenol	BQL	222	179	80.6	222	166	74.9	7.33	30	53.0-111
1,4-Dichlorobenzene	BQL	222	126	56.5	222	118	53.3	5.83	30	29.0-86.0
2,4-Dinitrotoluene	BQL	222	207	93.1	222	209	93.9	0.856	30	63.0-103
N-Nitrosodi-n-propylamine	BQL	222	184	82.9	222	175	78.9	4.94	30	67.0-107
4-Nitrophenol	BQL	222	172	77.4	222	191	85.8	10.3	30	49.0-146
Pentachlorophenol	BQL	222	164	74.0	222	168	75.4	1.87	30	43.0-106
Phenol	BQL	222	188	84.5	222	174	78.4	7.49	30	61.0-100
Pyrene	BQL	222	204	91.9	222	196	88.4	3.88	30	41.0-123
1,2,4-Trichlorobenzene	BQL	222	172	77.2	222	160	72.2	6.69	30	41.0-96.0

	Spiked Amount (µg/L)	LCS Conc. (µg/L)	LCS Spike %	QC Limits % Rec.
Acenaphthylene	100	98.7	98.7	66.1-116
4-Chloro-3-methylphenol	100	94.8	94.8	64.3-97.6
2-Chlorophenol	100	88.6	88.6	56.9-93.4
1,4-Dichlorobenzene	100	64.3	64.3	20.6-82.8
2,4-Dinitrotoluene	100	103	103	63.7-116
N-Nitrosodi-n-propylamine	100	91.8	91.8	62.6-108
4-Nitrophenol	100	90.2	90.2	53.7-125
Pentachlorophenol	100	79.5	79.5	37.0-102
Phenol	100	92.0	92.0	57.4-99.5
Pyrene	100	94.7	94.7	44.1-124
1,2,4-Trichlorobenzene	100	82.6	82.6	37.6-97.9

Comments:

Concentrations reflect the spiked sample amounts.

Flags:

* = Out of limits.
NA = Not applicable.

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW02
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	69
Aromatic Surrogate % Recovery	76

Comments:

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

Lab info: G546-61-1J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-SW
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	78
Aromatic Surrogate % Recovery	81

Comments:

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

Lab info: G546-61-2J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW1
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	58
Aromatic Surrogate % Recovery	54

Comments:

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

Lab info: G546-61-3J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW6
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	69
Aromatic Surrogate % Recovery	76

Comments:

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

Lab info: G546-61-4J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW3
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	67
Aromatic Surrogate % Recovery	67

Comments:

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

Lab info: G546-61-5J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW4
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	76
Aromatic Surrogate % Recovery	78

Comments:

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

Lab info: G546-61-6J

Reviewed By:

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-Dup
Sample Matrix	Water
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/20/05
Date Analyzed	10/21/05
Dry Weight	
Dilution Factor	1
C_9-C_{18} Aliphatics*	< 100 (ug/L)
C_{19}-C_{36} Aliphatics*	< 100 (ug/L)
C_{11}-C_{22} Aromatics*	< 100 (ug/L)
Aliphatic Surrogate % Recovery	63
Aromatic Surrogate % Recovery	58

Comments:

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

Lab info: G546-61-7K

Reviewed By:

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 09/13/05

Calibration Ranges and Limits

Range	MDL (2/2004) (µg/L)	ML (µg/L)	RL (µg/L)	RL (mg/Kg)
C_9-C_{18} Aliphatics	3.84	12.2	100	10
C_{19}-C_{36} Aliphatics	0.57	1.8	100	10
C_{11}-C_{22} Aromatics	4.54	14.4	100	10

Calibration Concentration Levels

Range	Levels (µg/mL)	%RSD or CCC	Method of Quantitation
C_9-C_{18} Aliphatics	6	3.80	Calibration Factor
	30		
	60		
	120		
	240		
C_{19}-C_{36} Aliphatics	8	3.8	Calibration Factor
	40		
	80		
	160		
	320		
C_{11}-C_{22} Aromatics	17	7.9	Calibration Factor
	85		
	170		
	340		
	680		

Calibration Check Date: 10/21/05

Calibration Check

Range	Levels (µg/mL)	RPD
C_9-C_{18} Aliphatics	120	-0.7
C_{19}-C_{36} Aliphatics	160	-2.9
C_{11}-C_{22} Aromatics	340	-6.7

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW02
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	130
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: g546-61-1d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-SW
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	130
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: g546-61-2d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW1
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	130
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: g546-61-3d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW6
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	120
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: g546-61-4d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW3
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	120
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: g546-61-5d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-MW4
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	120
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: g546-61-6d

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Engineering & Environment, Inc.

Project Name: BB293

Sample Information and Analytical Results	
Sample Identification	BB293-Dup
Sample Matrix	Water
Collection Option (for Soil)*	
Date Collected	10/18/05
Date Received	10/19/05
Date Extracted	10/29/05
Date Analyzed	10/29/05
Dry Weight	
Dilution Factor	1
C_5-C_8 Aliphatics**	< 100 (µg/L)
C_9-C_{12} Aliphatics**	< 100 (µg/L)
C_9-C_{10} Aromatics**	< 100 (µg/L)
Surrogate % Recovery - PID	120
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: g546-61-7d

Reviewed By:

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 09/27/05 PID Initial Calibration Date: 07/14/05

Calibration Ranges and Limits

Range	MDL (07/15/2004) (µg/L)	ML (µg/L)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	4.4	14	100	10
C_9-C_{12} Aliphatics	3.4	11	100	10
C_9-C_{10} Aromatics	0.13	0.41	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	%RSD or CCC	Method of Quantitation
C_5-C_8 Aliphatics	40	19.9	Calibration Factor
	1000		
	2000		
	3000		
	4000		
C_9-C_{12} Aliphatics	10	0.99	Linear Regression
	250		
	500		
	750		
	1000		
C_9-C_{10} Aromatics	10	19.50	Calibration Factor
	250		
	500		
	750		
	1000		

Calibration Check Date: 10/28/05

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	RPD
C_5-C_8 Aliphatics	2000	200	16.6
C_9-C_{12} Aliphatics	500	50	-0.6
C_9-C_{10} Aromatics	500	50	9.3

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Results for Metals

Client Sample ID:	BB293-MW02	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 08:20
Lab Sample ID:	G546-61-1	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: MET_LIMS_3 3

Results for Metals

Client Sample ID:	BB293-SW	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 08:30
Lab Sample ID:	G546-61-2	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: MET_LIMS_3.3

Results for Metals

Client Sample ID:	BB293-MW1	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 09:35
Lab Sample ID:	G546-61-3	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By:
MET_LIMS_3.3

Results for Metals

Client Sample ID:	BB293-MW6	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 10:03
Lab Sample ID:	G546-61-4	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: MET_LIMS_3.3

Results for Metals

Client Sample ID:	BB293-MW3	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 10:33
Lab Sample ID:	G546-61-5	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**0.00185**	0.00500	0.00143	25	MG/L	6020	10/27/05	JB
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: MET_LIMS_3 3

Results for Metals

Client Sample ID:	BB293-MW4	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 11:03
Lab Sample ID:	G546-61-6	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: _____
MET_LIMS_3.3

Results for Metals

Client Sample ID:	BB293-Dup	Analyzed By:	RML
Client Project ID:	BB293	Date Collected:	10/18/2005 00:00
Lab Sample ID:	G546-61-7	Date Received:	10/19/05
Lab Project ID:	G546-61	Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.00143	25	MG/L	6020	10/27/05	B
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By:
MET_LIMS_3.3

METALS Results for LCS/LCD

ICP Batch: 3860
HG Batch:
Other:

Matrix: WATER
Units: MG/L

Analyte	TRUE Value	LCS	LCS %REC	LCD	LCD %REC	Limit Lower	Limit Upper	RPD	RPD Limit
Chromium	0.400	0.369	92.2	0.366	91.5	80	120	0.816	20
Lead	0.400	0.371	92.8	0.376	94.0	80	120	1.34	20

Reviewed By:

Results for Metals

Client Sample ID:	Lab Blank	Analyzed By:	RML
Client Project ID:		Date Collected:	
Lab Sample ID:	pb3860	Date Received:	
Lab Project ID:		Matrix:	WATER
Batch ID:	3860		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**0.00187**	0.00500	0.00143	25	MG/L	6020	10/27/05	JB
Lead	BQL	0.00500	0.000470	25	MG/L	6020	10/27/05	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > RL
Samples Prepared by 3030C

Reviewed By: _____
MET_LIMS_3.3

PARADIGM ANALYTICAL LABORATORIES, INC.

MS/MSD Results for METALS

Lab ID: G111-785-35
MS Lab ID: G111-785-35
MSD Lab ID: G111-785-35
ICP Batch: 3860
HG Batch:
Other:

Analyzed By: RML
Matrix: Water
Units: MG/L

Analyte	Sample Result	SA MS	MS Result	MS %REC	SA MSD	MSD Result	MSD %REC	Limit Lower	Limit Upper	RPD	RPD Limit
Chromium	BQL	0.400	0.332	83.0	0.400	0.331	82.8	75	125	0.302	20
Lead	BQL	0.400	0.375	93.8	0.400	0.370	92.5	75	125	1.34	20

Comments

*=Out of Limits
NA = Not applicable, due to sample concentration greater than three times spike concentration

Reviewed By:

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.092205.2

PARADIGM ANALYTICAL LABORATORIES, INC.

5500 Business Drive, Wilmington, NC 28405
Phone: (910)-350-1903 FAX: (910)-350-1557

Chain-of Custody Record & Analytical Request

COC# 51443

Page 1 of 1

Client: Engineering + Environment
Address: 824 Gum Branch rd suite 5
Address: Jacksonville, NC. 28540
Quote #:

Project ID: BB293
Contact: Bill Morris
Phone: 910-989-3214
Fax: 910-989-3344

Date: 10/19/05
Turnaround: standard
Job Number:
P.O. Number:

Report To: Bill Morris

Invoice To:

Sample ID	Date	Time	Matrix	Preservatives: HCl	HNO3	none		Analyses: 6210D	VPH	EPH	625	CR, Pb 3030C	[illegible] 10/19/05	625-TICs	TICs added	per Bill Morris 12/21/05	RM	Comments: Please specify any special reporting requirements
BB293-MW02	10/19/05	9:20	GW	6	1	1		3	2	1	1	1		1				G546-61
BB293-SW	10/19/05	9:30	GW	6	1	1		3	2	1	1	1		1				
BB293-MW1	10/19/05	9:35	GW	6	1	1		3	2	1	1	1		1				
BB293-MW6	10/19/05	10:03	GW	6	1	1		3	2	1	1	1		1				
BB293-MW3	10/19/05	10:33	GW	6	1	1		3	2	1	1	1		1				
BB293-MW4	10/19/05	11:03	GW	6	1	1		3	2	1	1	1		1				
BB293-Dup	10/19/05	—	GW	6	1	1		3	2	1	1	1						
Trip Blank	10/19/05	13:20																

Relinquished By	Date	Time	Received By	Date	Time	Temperature	State Certification Requested
Bob Sellers	10/19/05	13:30	[signature]	10/19/05	1000	2.1, 0.4°C 1.6°C	NC ____ SC ____ Other ____
							SEE REVERSE FOR TERMS AND CONDITIONS

APPENDIX C

SUMMARY OF HISORICAL GROUNDWATER QUALITY ANALYTICAL DATA

TABLE 2A (Page 1 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS –
PURGE AND TRAP CAPILLARY COLUMN GC/MS
EPA METHOD 6210D

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

		Sample Identification and Date Sampled				
ANALYTE (ug/L)	GCL NCGWQS	BB293-1 8/16/00	BB293-2 8/16/00	BB293-3 8/16/00	BB293-4 8/16/00	BB293-5 8/16/00
Chloroform	NE 0.19	<.5	<.5	<.5	<.5	120
1,2,4-Trimethylbenzene	28,500 350	<.5	<.5	<.5	1	42
1,3,5-Trimethylbenzene	25,000 350	<.5	<.5	<.5	<.5	9
Naphthalene	15,500 21	<.5	<.5	<.5	1	96
Ethylbenzene	29,000 29	<.5	<.5	<.5	<.5	9
Isopropylbenzene	25,000 70	<.5	<.5	<.5	<.5	<.5
All Other Analytes	Varies	<PQL	<PQL	<PQL	<PQL	<PQL

GCL = Gross Contaminant Level, January 2, 1998 – NCDENR Guidelines.
<PQL = Less than the Practical Quantitation Limit, analyte specific quantitation limits vary.
Shading indicates concentration above NCAC T15A:02L Interim Standards

TABLE 2A (Page 2 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS –
PURGE AND TRAP CAPILLARY COLUMN GC/MS
EPA METHOD 6210D

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

		Sample Identification and Date Sampled				
ANALYTE (ug/L)	**GCL NCGWQS**	**BB293-6 8/16/00**	**BB293-3D 8/16/00**			
Chloroform	NE 0.19	<.5	<.5			
1,2,4-Trimethylbenzene	28,500 350	<.5	<.5			
1,3,5-Trimethylbenzene	25,000 350	<.5	<.5			
Naphthalene	15,500 21	<.5	<.5			
Ethylbenzene	29,000 29	1	<.5			
Isopropylbenzene	25,000 70	0.5	<.5			
All Other Analytes	Varies	<PQL	<PQL			

GCL = Gross Contaminant Level, January 2, 1998 – NCDENR Guidelines.
<PQL = Less than the Practical Quantitation Limit, analyte specific quantitation limits vary.

TABLE 2B (Page 1 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS – MADEP VPH/EPH

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

ANALYTICAL FRACTION (ug/L)	Sample Identification and Date Sampled					
	BB293-1 8/16/00	BB293-2 8/16/00	BB293-3 8/17/00	BB293-4 8/17/00	BB293-5 8/16/00	BB293-6 8/16/00
VPH						
C_5 - C_8 Aliphatics	<100	<100	<100	<100	<100	<100
C_9 - C_{12} Aliphatics	<100	<100	<100	<100	270	<100
C_9 - C_{10} Aromatics	<100	<100	<100	<100	<100	<100
EPH						
C_9 – C_{18} Aliphatics	<100	<100	<100	<100	240	120
C_{19} – C_{36} Aliphatics	<100	<100	<100	<100	110	<100
C_{11} - C_{22} Aromatics	<100	<100	<100	<100	220	180

< = Less than the practical quantitation limit

TABLE 2B (Page 2 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS – MADEP VPH/EPH

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

	Sample Identification and Date Sampled	
ANALYTICAL FRACTION (ug/L)	**BB293-6D 8/16/00**	**TRIP BLANK 8/16/00**
VPH		
C_5 - C_8 Aliphatics	<100	<100
C_9 - C_{12} Aliphatics	<100	<100
C_9 - C_{10} Aromatics	<100	<100
EPH		
C_9 – C_{18} Aliphatics	NR	NR
C_{19} – C_{36} Aliphatics	NR	NR
C_{11} - C_{22} Aromatics	NR	NR

< = Less than the practical quantitation limit
NR = Not Required

TABLE 2D

SUMMARY OF GROUND WATER LABORATORY RESULTS – TOTAL METALS – EPA METHOD 6010B

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

		Sample Identification and Date Sampled					
ANALYTE (ug/L)	**GCL NCGWQS**	**BB293-1 8/16/00**	**BB293-2 8/16/00**	**BB293-3 8/16/00**	**BB293-4 8/16/00**	**BB293-5 8/16/00**	**BB293-6 8/16/00**
Lead	15 0.015	<10.0	13.7	10.8	<10.0	<10.0	14.3
Chromium	50 0.050	<10.0	10.3	<10.0	<10.0	<10.0	<10.0

<PQL = Less than the Practical Quantitation Limit (Compound specific quantitation limits vary.)
GCL = Gross Contaminant Level, January 2, 1998 – NCDENR Guidelines
Shading indicates concentration above NCAC T15A:02L Ground Water Quality Standards

(EEI note: Analyte concentrations are expressed in micrograms per liter; Gross Contaminant Levels and North Carolina Groundwater Quality levels are expressed in milligrams per liter; none of the above analyte concentrations exceed either standard.)

TABLE 2E (Page 1 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS – BASE/NEUTRAL AND ACIDS (GC/MS) EPA METHOD 625

BUILDING BB-293 MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA

		Sample Identification and Date Sampled				
ANALYTE (ug/L)	**GCL NCGWQS**	**BB293-1 8/16/00**	**BB293-2 8/16/00**	**BB293-3 8/16/00**	**BB293-4 8/16/00**	**BB293-5 8/16/00**
Naphthalene	15,500 21	<10	<10	<10	<10	75
All Other List Analytes	Varies	< PQL	< PQL	< PQL	< PQL	< PQL

GCL = Gross Contaminant Level, January 2, 1998 – NCDENR Guidelines
<PQL = Less than the laboratory practical quantitation limit, analyte specific quantitation limits vary
Shading indicates concentration above NCAC T15A:02L Interim Standards.

TABLE 2E (Page 2 of 2)

SUMMARY OF GROUND WATER LABORATORY RESULTS –
BASE/NEUTRAL AND ACIDS (GC/MS)
EPA METHOD 625

BUILDING BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

		Sample Identification and Date Sampled	
ANALYTE (ug/L)	GCL NCGWQS	BB293-6 8/16/00	BB293-4D 8/16/00
Naphthalene	15,500 21	<10	<10
All Other Analytes	Varies	< PQL	< PQL

GCL = Gross Contaminant Level, January 2, 1998 – NCDENR Guidelines
<PQL = Less than the laboratory practical quantitation limit, analyte specific quantitation limits vary
Shading indicates concentration above NCAC T15A:02L Interim Standards.

TABLE 5.3A (Page 1 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS* -
MONITORING WELL GROUND WATER SAMPLES

DRINKING WATER VOLATILES - EPA METHOD 502.2

UST BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

	NC GROUND WATER STANDARD*	BB293-1	BB293-2	BB293-3	BB293-4
DATE SAMPLED		8/15/96	8/15/96	8/15/96	8/15/96
ANALYTE					
Dichlorodifluoromethane	1,400	BDL	BDL	BDL	BDL
Chlorobenzene	50	BDL	BDL	BDL	BDL
Chloroform	0.19	9.0	BDL	1.8	BDL
Dibromochloromethane	NE	BDL	BDL	BDL	BDL
Toluene	1000	BDL	BDL	BDL	BDL
Bromodichloromethane	0.6	BDL	BDL	BDL	BDL
Ethylbenzene	29	BDL	BDL	BDL	BDL
m,p-Xylene	530	BDL	BDL	BDL	BDL
o-Xylene	530	BDL	BDL	BDL	BDL
Isopropylbenzene	NE	BDL	BDL	BDL	BDL
n-Propylbenzene	NE	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	NE	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	NE	BDL	BDL	BDL	BDL
sec-Butylbenzene	NE	BDL	BDL	BDL	BDL
p-Isopropyltoluene	NE	BDL	BDL	BDL	BDL
n-Butylbenzene	NE	BDL	BDL	BDL	BDL
tert-Butylbenzene	NE	BDL	BDL	BDL	BDL
Naphthalene	21	BDL	BDL	BDL	BDL
All other compounds**	varies	BDL	BDL	BDL	BDL
TOTALS		9.0	BDL	1.8	BDL

* = All results in ug/L (ppb)
** = All compounds listed in Laboratory Analytical Reports in Appendix I.
NE = Numerical value not established; therefore standard is equivalent to the method detection limit.
BDL = Below Detection Limits
Shaded areas indicate concentrations above NCAC T15A:02L standards.
Interim maximum allowable concentrations for naphthalene have been proposed by the NCDEHNR and have been applied to this investigation.

TABLE 5.3A (Page 2 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS* -
MONITORING WELL GROUND WATER SAMPLES

DRINKING WATER VOLATILES - EPA METHOD 502.2

UST BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

	NC GROUND WATER STANDARD*	BB293-5	BB293-6	BB293-GWW	BLANK	COMPOSITE	TAP
DATE SAMPLED		8/15/96	8/15/96	10/28/96	8/15/96	8/15/96	8/15/96
ANALYTE							
Dichlorodifluoromethane	1,400	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	50	BDL	BDL	BDL	BDL	BDL	0.8
Chloroform	0.19	BDL	0.7	BDL	1.4	1.1	24.8
Dibromochloromethane	NE	BDL	BDL	BDL	BDL	BDL	5.9
Toluene	1000	0.7	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	0.6	BDL	BDL	BDL	BDL	BDL	11.2
Ethylbenzene	29	23.2	BDL	BDL	BDL	2.8	BDL
m,p-Xylene	530	48.9	BDL	BDL	BDL	6.8	BDL
o-Xylene	530	2.0	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene	NE	12.6	BDL	BDL	BDL	1.5	BDL
n-Propylbenzene	NE	12.0	BDL	BDL	BDL	2.0	BDL
1,3,5-Trimethylbenzene	NE	61.3	BDL	BDL	BDL	9.7	BDL
1,2,4-Trimethylbenzene	NE	212.0	BDL	BDL	BDL	29.4	BDL
sec-Butylbenzene	NE	26.1	BDL	BDL	BDL	4.7	BDL
p-Isopropyltoluene	NE	14.2	BDL	BDL	BDL	2.6	BDL
n-Butylbenzene	NE	67.4	BDL	BDL	BDL	15.2	BDL
tert-Butylbenzene	NE	BDL	BDL	BDL	BDL	10.5	BDL
Naphthalene	21	274.0	BDL	BDL	BDL	2.1	BDL
All other compounds**	varies	BDL	BDL	BDL	BDL	BDL	BDL
TOTALS		754.4	0.7	BDL	1.4	88.4	42.7

* = All results in ug/L (ppb)
** = All compounds listed in Laboratory Analytical Reports in Appendix I.
NE = Numerical value not established; therefore standard is equivalent to the rnethod detection limit.
BDL = Below Detection Limits
Shaded areas indicate concentrations above NCAC T15A:02L standards.
Interim maximum allowable concentrations for naphthalene have been proposed by the NCDEHNR and have been applied to this investigation.

TABLE 5.3B (Page 1 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS* - MONITORING WELL GROUND WATER SAMPLES

BASE/ NEUTRALS - EPA METHOD 625

UST BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

	NC GROUND WATER STANDARD*	BB293-1	BB293-2	BB293-3	BB293-4	BB293-5
DATE SAMPLED		8/15/96	8/15/96	8/15/96	8/15/96	8/15/96
ANALYTE						
625 BASE/ NEUTRALS						
Naphthalene	21	BQL	BDL	BDL	BQL	110.2
Acenaphthene	80	BQL	BDL	BDL	BQL	BDL
Fluroene	280	BQL	BDL	BDL	BQL	BQL
Phenanthrene	210	BQL	BDL	BDL	BQL	BQL
Anthracene	2100	BQL	BDL	BDL	BQL	BDL
Fluoranthene	280	BQL	BDL	BDL	BQL	BDL
Pyrene	210	BQL	BDL	BDL	BQL	BDL
All other compounds**	varies	BQL	BDL	BDL	BQL	BDL
TOTALS		BQL	BDL	BDL	BQL	110.2

* = All results in ug/L (ppb)
** = All compounds listed in Laboratory Analytical Reports in Appendix I.
BDL = Below Detection Limits
Shaded areas indicate concentrations above NCAC TI5A:02L standards

TABLE 5.3B (Page 2 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS* - MONITORING WELL GROUND WATER SAMPLES

BASE/ NEUTRALS - EPA METHOD 625

UST BB-293
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

	NC GROUND WATER STANDARD*	BB293-6	BB293-GWW	BLANK	COMPOSITE	TAP
DATE SAMPLED		8/15/96	10/28/96	8/15/96	8/15/96	8/15/96
ANALYTE						
625 BASE/ NEUTRALS						
Naphthalene	21	BDL	BDL	BDL	26.8	BDL
Acenaphthene	80	BDL	BDL	BDL	BDL	BDL
Fluorene	280	BDL	BDL	BDL	BDL	BDL
Phenanthrene	210	BDL	BDL	BDL	BDL	BDL
Anthracene	2100	BDL	BDL	BDL	BDL	BDL
Fluoranthene	280	BDL	BDL	BDL	BDL	BDL
Pyrene	210	BDL	BDL	BDL	BDL	BDL
All other compounds**	varies	BDL	BDL	BDL	BDL	BDL
TOTALS		BDL	BDL	BDL	26.8	BDL

* = All results in ug/L (ppb)
** = All compounds listed in Laboratory Analytical Reports in Appendix I.
BDL = Below Detection Limits
Shaded areas indicate concentrations above NCAC TI5A:02L standards