

**FINAL
2009 ANNUAL MONITORING REPORT
JUNE 2009 – SEPTEMBER 2009**

**BUILDING LCH-4015
NCDENR INCIDENT NUMBER 85352
MARINE CORPS BASE CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA**

**CONTRACT NO. N40085-08-D-1409
CTO: 0008**

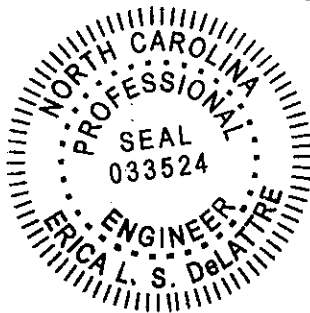
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RHĒA PROJECT NO. 438

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ACRONYMS AND ABBREVIATIONS

AS	Air Sparge
AST	Aboveground Storage Tank
bls	below land surface
CAP	Corrective Action Plan
CATLIN	CATLIN Engineers and Scientists
DRO	Diesel Range Organic
EEI	Engineering and Environment, Inc.
FID	Flame Ionization Detector
GRO	Gasoline Range Organic
GCL	Gross Contamination Level
J.A. Jones	J. A. Jones Environmental Services, Inc.
Law	Law Engineering and Environmental Services, Inc.
MCB	Marine Corps Base
mg/kg	milligrams per kilogram
MSCC	Maximum Soil Contaminant Concentration
MTBE	Methyl tert-butyl ether
NCGWQS	North Carolina Groundwater Quality Standards
NCDENR	North Carolina Department of Environment and Natural Resources
NGVD	National Geodetic Vertical Datum
NORR	Notice of Regulatory Requirement
NOV	Notice of Violation
ppm	parts per million
PAHs	Poly Aromatic Hydrocarbons
PID	Photo Ionization Detector
PVC	Polyvinyl chloride
RAO	Remedial Action Optimization
RCAP	Revised Corrective Action Plan
Rhēa	Rhēa Engineers and Consultants Inc.
Shaw	Shaw Environmental, Inc

Sovereign	Sovereign Consulting, Inc.
SVE	Soil Vapor Extraction
TPH	Total Petroleum Hydrocarbons
µg/L	micrograms per liter
UST	Underground Storage Tank

1.0 INTRODUCTION

The purpose of this report is to summarize the remediation system performance data, groundwater monitoring well gauging data, and groundwater monitoring well sampling results at the LCH-4015 site aboard MCB Camp Lejeune, North Carolina for the reporting period covering June 2009 through September 2009. The project's scope of work entailed annual gauging of 23 site monitoring wells (each are preceded by the prefix USTLCH4015) - MW01 through MW24, excluding MW17 due to the unavailable location. Analyses run included EPA (Environmental Protection Agency) Methods 602 + xylenes, poly aromatic hydrocarbons (PAHs) by 610 (625 list), and 6020 (3030C preparation) for lead. The results of Rhēa Engineers & Consultants, Inc. (Rhēa) 2009 gauging and sampling events are presented in this report.

Camp Lejeune Site Location and Description

The site is located on MCB Camp Lejeune in Onslow County, North Carolina (Figure 1). The project site consists of the Community Center Building (LCH-4014), former fueling and maintenance area (LCH-4015, removed), Marine Corps Exchange Convenience Store (LCH-4034) and the former fuel tank farm. The site is located at the intersection of North Carolina Highway 24 and the Butler Drive entrance to Midway Park.

A former aboveground storage tank (AST) system began operation in 1945 at the site. The AST system consisted of: two 14,000-gallon gasoline tanks that supplied fuel to four gasoline dispensers located on a pump island to the north of former Building LCH-4015; one 14,000-gallon diesel tank that supplied fuel to a dispenser located on the north side of Building LCH-4015 and one 3,000-gallon Number 2 fuel oil tank that supplied fuel oil to a boiler contained within Building LCH-4014. A number of smaller storage tanks were also located at the site. Fuel was distributed through a number of underground product piping systems. In 1990, the ASTs at former Building LCH-4015 were emptied of product and the three 14,000-gallon ASTs were removed and relocated for use at other locations on the base.

2.0 CONTAMINATION INVESTIGATION HISTORY

Site assessments were performed from 1994 through 1996 by R.E. Wright Associates, Inc., and Law Engineering and Environmental Resources, Inc. (Law). Groundwater samples from the monitoring wells and soil samples in the vicinity of the former AST system contained evidence of petroleum impact exceeding North Carolina Administrative Code (NCAC) 2L Groundwater Quality Standards (GWQS).

In 1996, a Corrective Action Plan (CAP) was prepared for the site by Law. The CAP identified target clean-up levels for soil of 40 milligrams per kilogram (mg/kg) for Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) and 160 mg/kg for TPH Diesel Range Organic (DRO). Groundwater target clean-up levels were set at the NCAC 2L GWQS. The CAP recommended installation of an air sparge and soil vapor extraction (AS/SVE) system for the remedial action at the site.

The treatment system was constructed by J.A. Jones and began remediation activities in November 1998. The groundwater treatment system has operated continuously since 1998, with the exception of occasional maintenance repairs and groundwater sampling events. Presently, 23 monitoring wells are included in gauging and sampling events. Various remediation contractors have maintained and operated the site since 1998 including J.A. Jones Environmental Services, Inc. (J.A. Jones), Engineering and Environment, Inc. (EEI), Sovereign Consulting Inc. (Sovereign), and Shaw Environmental, Inc. (Shaw).

Additional assessment work has been conducted at the site in the last several years. First, North Carolina Department of Environment and Natural Resources (NCDENR) requested that three intermediate monitoring wells (MW21 to MW23) be installed to further delineate the vertical extent of groundwater contamination. Well installation took place in June 2001. In addition, three underground storage tanks (USTs) were removed from the site in 2002. Subsequent soil and groundwater assessment work in the former UST area concluded that soils did not require remediation as contaminant levels were below residential Maximum Soil Contaminant Concentrations (MSCC). Affected soils were also within the influence of the current SVE system.

Groundwater contamination near the former UST basin was also within the influence of the current system layout; therefore, additional groundwater remediation was not recommended. The former UST basin assessment was conducted as a result of recommendations made in an optimization report conducted by CATLIN Engineers and Scientist (CATLIN) in 2004. Results are contained in the CATLIN *Report of Findings for Soil and Free Phase Product*, dated December 2004. The NCDENR requested that groundwater be delineated in a Notice of Regulatory Requirement (NORR) letter dated June 14, 2004. Data from the CATLIN report was used to evaluate where to install additional monitoring wells that would define the groundwater contamination. As a result, one shallow monitoring well (MW24) was installed in the immediate vicinity of former USTs LCH-4034-1, LCH 4034-2 and LCH 4034-3 in February 2005. The well was subsequently incorporated into the monitoring program. Overall, the 2004 optimization report concluded that the system has been effective in reducing petroleum constituent concentrations in the upper portion of the contaminant plume and should

continue operation in order to maintain influence.

Monitoring and maintenance of the groundwater treatment system at the LCH 4015 site has continued from its installation in 1998 to the present. The system was temporarily deactivated in early June 2007 as a result of the Notice of Violation (NOV) issued for the site, but the AS/SVE system was reactivated on August 31, 2007. The August 2007 groundwater sampling event was cancelled and a soil investigation was conducted instead to examine boring locations with historical exceedances of the state action levels of 10 mg/kg for TPH GRO and 40 mg/kg for TPH DRO. Three soil boring locations, SB36A, 37A, and 38A, had exceedances of the state action limits, therefore, soils with contaminant concentrations above state action levels were excavated and disposed of at a licensed disposal facility and replaced with clean backfill.

In January 2009, CATLIN collected two soil samples at the former fuel island associated with the LCH-4015 AST system to determine if soil contamination above the NCDENR action levels was present in this area. This was done in response to a request by NCDENR due to historical data indicating that no samples had ever been collected from beneath the dispensers. The results for both samples indicated TPH GRO and TPH DRO results above the NCDENR action levels. Due to the location of this area being within the area of influence of the AS/SVE system, these results support the continued operation of the system and CATLIN recommended that the soil in this area be re-sampled once the groundwater contaminant levels have been reduced to below the NCAC 2L GWQS.

Annual sampling of 12 wells and gauging of 23 monitoring wells were completed at this site in August, 2009. This report outlines and describes such activities performed by Rhēa during the monitoring period of June through September 2009. Petroleum constituent concentrations, were above NCAC 2L GWQS, but, have decreased over time, indicating that operation of the AS/SVE system has benefited groundwater quality at the site.

3.0 REMEDIATION SYSTEM OPERATIONS AND MAINTENANCE

The LCH-4015 remediation system includes 38 vertical AS wells and five SVE wells. The AS wells reportedly were installed with a 1.5 to 3.5 feet screen interval ranging from 4.5 to 8.0 feet below land surface (bls). The SVE wells consist of a two-inch diameter 0.02-inch slot width polyvinyl chloride (PVC) horizontal well screen reportedly to be installed slightly above the shallow groundwater table. The system has been operational since it was installed in 1998. Figure 2 illustrates the current remedial system layout.

The system generally operated continuously except during equipment servicing/repair, power outages, and high level water alarms. There were no non-routine service calls made for the system during this monitoring period.

System monitoring and maintenance were performed regularly, with site visits conducted at a minimum of three times per week. Instrument readings conducted during the site visits included AS flow rates, AS/SVE pressures/vacuums, temperatures, and tank liquid levels. Servicing (oil changes, belt re-tensioning or replacement, filter changes, etc.) was conducted per manufacturer's instructions or as needed upon system inspection. Emptying of the polyethylene holding tank was also conducted as needed. Monitoring well purge water, development water and equipment decontamination water generated during field events were contained in a portable holding tank.

Operational data collection for the AS/SVE system collected by Rhēa began on June 1, 2009, and has continued at regular intervals to the present. Flame Ionization Detector (FID) readings were recorded weekly during the monitoring period. For purposes of this report, system operation data and results have been reviewed from June 1, 2009 through September 30, 2009. Within this period of operation, the system has recovered a cumulative mass of 0 pounds of hydrocarbons based on FID readings. It should be noted that dilution air is added to the air/water separator to reduce the overall vacuum of the SVE system and thereby reduces the amount of entrained water in the SVE line. This added dilution air makes it difficult to accurately determine the amount of hydrocarbons removed as FID readings may be non-detect based on the quantity of ambient air added to the exhaust stream. Hydrocarbon vapor recovery data and graph is provided in Table 1. No major changes were made to the system configuration in the 2009 monitoring period.

4.0 GROUNDWATER MONITORING AND SAMPLING RESULTS

The field program for the LCH-4015 site consisted of annual gauging and groundwater sampling. Activities were conducted in accordance with NCDENR guidance.

4.1 MONITORING WELL GAUGING

Monitoring wells MW01 through MW24 (excluding MW17) were gauged in August 2009. Gauging data is summarized in Table 2. Monitoring wells were gauged using an interface probe to measure the depth to water and depth to product (if present). No measurable free product was detected at any site well designated for gauging during the 2009 monitoring period.

Top of casing elevations and depth to water values were used to obtain groundwater

elevations at the site, as presented in Table 2 and shown in Figures 3 through 5. Figure 3 presents the groundwater elevation contour map for August 2009 from the Type II (shallow) monitoring wells. Groundwater elevations for the shallow wells ranged from 27.99 feet National Geodetic Vertical Datum (NGVD) in monitoring well MW-14 to 31.08 feet NGVD in monitoring well MW-02. The shallow groundwater flows from a ridge around MW-01, MW-02, and MW-20 to the northeast and southwest at a horizontal hydraulic gradient of 0.012 ft/ft from MW-05 to MW-19. No free phase product was detected in any of the monitoring wells during the August 2009 gauging event. Figures 4 and 5 present the groundwater elevation contour map for August 2009 from the Type III (intermediate and deep) monitoring wells.

Groundwater elevations for the intermediate and deep wells ranged from 8.33 feet NGVD in monitoring well MW-23 to 9.17 feet NGVD in monitoring well MW-13. The intermediate groundwater flows from the northwest to the southeast at a horizontal hydraulic gradient of 0.007 ft/ft. The deep groundwater flows from the southwest to the northeast at a horizontal hydraulic gradient of 0.009 ft/ft.

4.2 GROUNDWATER SAMPLING

Groundwater samples were collected from 12 monitoring wells (MW01, MW02, MW06, MW07, MW12, MW14, MW15, MW16, MW18, MW19, MW21 and MW23) during the August 2009 sampling event in accordance with the recommendations in the June 2009 AMR prepared by Shaw. Prior to sampling, monitoring wells were purged a minimum of one casing volume, until water quality parameters (pH, temperature, conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) stabilized in accordance with the *Final Master Sampling and Analysis Plan MCB Camp Lejeune* prepared by CH2M HILL dated June 2008. The water quality parameters collected at the time of sampling are presented in Tables 3 and 4. Sampling was conducted using a peristaltic pump with connected polyethylene discharge tubing and a low flow purging and sampling procedure.

Samples were collected using the laboratory-prepared sample bottles, placed on ice, and delivered under proper chain of custody to SGS North America Inc., located in Wilmington, North Carolina (NC Certification Number 481). Monitoring wells MW01, 02, 21, and 23 were analyzed for EPA Methods 602 + IPE+ methyl tert-butyl ether (MTBE)+ xylenes, PAHs by 610 (625 list), and 6020/3030C for lead. All other monitoring wells were analyzed for EPA Method 6020/3030C in accordance to the recommendations in the June 2009 AMR prepared by Shaw. Laboratory reports and chain of custody documentation are included in Appendix B.

Groundwater Analytical Results, August 2009

Two compounds, benzene and naphthalene, were detected above NCAC 2L GWQS during the August 2009 sampling event. Benzene concentrations were detected in shallow monitoring well MW01 and intermediate monitoring well MW21 at concentrations of 3.85 ug/L and 12.1 ug/L, respectively. Naphthalene was detected in intermediate monitoring well MW21 at 48.7 ug/L. Ethylbenzene and m, -p xylene were also detected in MW01 and MW02 above laboratory detection limits but below NCAC 2L GWQS. MTBE was detected in MW21 and MW23 above laboratory detection limits but below NCAC 2L GWQS. No other analytes were detected above laboratory quantitation limits. Analytical results are summarized in Tables 5, Table 6, and Figures 6 through 8. Field data log sheets for LCH 4015 monitoring wells are provided in Appendix C.

4.3 HISTORICAL DATA SYNOPSIS

Historical information, summarized in the 2004 CATLIN optimization report, coupled with recent (2004 through 2009) data shows that groundwater contamination continues to decrease at the site. Benzene and naphthalene are present in site groundwater above the applicable NCAC 2L GWQS. In the following tables, maximum contaminant concentrations detected at the site are compared over time. An overall decrease in contaminant concentrations is observed. Note that **BOLD** text indicates NCAC 2L GWQS exceedances. Historical groundwater quality data is located in Appendix A.

**MAXIMUM CONCENTRATIONS (µg/L)
TYPE II (SHALLOW) MONITORING WELLS**

Compound	2L GWQS (ug/L)	GCL (ug/L)	1995 CAP	2003	2004	2005	2006	2006- 2007	2007- 2008	2008	2009
Benzene	1	5,000	8,850	297	131	48.1	45.5	12.0	7.75	4.1	3.85
Ethylbenzene	550	84,500	2,070	420	439	270	179	118	31.7	8.6	14.6
Total Xylenes	530	87,500	9,960	1,070	704	659	370	191.2	39.93	3.3	24.5
Toluene	1,000	257,500	256	95.3	27.5	14.8	10.1	5.21	1.30J	0.77J	BQL
Naphthalene	21	15,500	667	170	216	165	111	45.5	20.3	8.9	16.2
1-Methylnaphthalene	14	12,500	271	36.8	34.5	23.1	7.9 ¹	11.1	BQL	<5.0	BQL
2-Methylnaphthalene	14	12,500	345	47	49	34.2	<10 ¹	16.4	BQL	<5.0	BQL
Lead	15	15,000	42.7	NA	7.7	<10	0.6	2.33J	1.38	305	BQL

¹ Note:2006 data only from MW08 and MW11
 NE: Not Established
 BQL: Below Quantitation Limit
 GCL: Gross Contamination Level
 Data from the Annual Monitoring Report Building LCH4015 prepared by Shaw dated June 2009

**MAXIMUM CONCENTRATIONS (µg/L)
TYPE III (INTERMEDIATE AND DEEP) MONITORING WELLS**

Compound	2LGWQS (ug/L)	GCL (ug/L)	1995 CAP	2003	2004	2005	2006	2006- 2007	2007- 2008	2008	2009
Benzene	1	5,000	0.4	33.8	73.9	47.1	25.9	122	8.42	10.9	12.1
Ethylbenzene	550	84,500	0.5	505E	5	4.2	3.05	3.51J	BQL	<1.0	BQL
Total Xylenes	530	87,500	1.9	16.9	2.7J	<3.0	0.632J	5.74J	BQL	<3.0	BQL
Toluene	1,000	257,500	1.0	2.1	2.0	1.1	<1.00	5.17	BQL	<1.0	BQL
Naphthalene	21	15,500	ND	<5.1	15.3	32.3	31.7	54.3	44.3	<4.8	48.7
1-Methylnaphthalene	14	12,500	3.8	<5.1	<5.1	2.6J	NR	BQL	BQL	<4.8	BQL
2-Methylnaphthalene	14	12,500	ND	<5.1	2.1J	2.8J	NR	BQL	BQL	<4.8	BQL
Lead	15	15,000	20.6	NA	7.7	18.8	2.28	1.90J	BQL	29.3	BQL

Data from the Annual Monitoring Report Building LCH4015 prepared by Shaw dated June 2009
 GCL: Gross Contamination Level
 BQL: Below Quantitation Limit
 ND: Not Detected
 NE: Not Established
 NR: Not Reported
 E: Estimated concentration above the linear quantitation range
 J: Estimated concentration less than reporting limit

4.4 RECEPTOR SURVEY

Rhēa reviewed site conditions and concluded that the receptor survey previously completed by CATLIN in the Remedial Action Optimization (RAO) and Revised Corrective Action Plan (RCAP) dated May 6, 2004 still applies. There has been no change in receptor impact, and there have been no changes to land use of the site or the surrounding areas.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Two compounds, benzene and naphthalene, were detected above NCAC 2L GWQS during the August 2009 sampling event. Benzene concentrations were detected in shallow monitoring well MW01 and intermediate monitoring well MW21 at concentrations of 3.85 ug/L and 12.1 ug/L, respectively. Naphthalene was detected in intermediate monitoring well MW21 at 48.7 ug/L. Ethylbenzene and m, -p xylene were also detected in MW01 and MW02 above laboratory detection limits but below NCAC 2L GWQS. MTBE was detected in MW21 and MW23 above laboratory detection limits but below NCAC 2L GWQS. No other analytes were detected above laboratory quantitation limits. No free phase product was detected in any monitoring wells gauged at the site in August 2009.

Based on historical data and laboratory analytical data gathered during the 2009 monitoring period, it is recommended to sample the following wells on an annual basis per EPA Methods 602 and 610/625: USTLCH4015-MW01, USTLCH4015-MW02, USTLCH4015MW21 and USTLCH4015-MW23. In addition, Rhēa recommends adding MW20 and MW22 to the annual sampling to determine if additional remedial action is needed in the intermediate to deep zones at these locations. As lead was not detected in any of the analyzed samples, it is recommended that lead analyses be removed from the sampling plan until site closure sampling is needed. The groundwater samples will continue to be collected utilizing a low-flow sampling techniques.

Based on the January 2009 soil sampling results performed by CATLIN in the area of the former fuel island, the continued system operation is necessary to remediate soil contamination above the NCDENR action levels present in this area. CATLIN recommended that the soil in this area be re-sampled once the groundwater contaminant levels have been reduced to below the NCAC 2L GWQS.

Continued operation and optimization of the AS/SVE system is recommended. In addition, based on the continued presence of contaminants of concern above **NCAC 2L GWQS** in the intermediate monitoring wells a more aggressive remedial approach may be warranted to effectively remediate intermediate to deep groundwater conditions at the

site. Rhēa recommends determining the feasibility of modifying MW21 and MW23 into air sparge wells to more effectively remediate intermediate groundwater conditions in the area.

6.0 REFERENCES

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TABLES

Table 1
Cumulative Mass of Recovered Volatile Hydrocarbons
Building LCH-4015
June through September 2009 Annual Monitoring Report
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Date	SVE Blower Hours of Operation (Hrs)	Vapor Velocity (ft/min)	Vapor Concentration (PPM)	Temperature (°F)	Calculated Vapor Flowrate (Q) (SCFM)	TH Conc (C) (mg/l)	TH Recovery Rate (M) (lb/day)	Cumulative Mass of Hydrocarbons Recovered (lbs)	Comments
09/03/08								142563.1	From Shaw 08-09 AMR
01/07/09								146171.0	From Shaw 08-09 AMR
04/30/09								146171.0	From Shaw 08-09 AMR
06/24/09	576	9000	2.6	100.0	289	0.014	0.4	146179.6	temperature assumed
07/29/09	696	10693	0.0	119.8	331	0.000	0.0	146179.6	
08/26/09	294	12788	0.0	117.1	398	0.000	0.0	146179.6	
09/28/09	672	11540	0.0	119.6	358	0.000	0.0	146179.6	
Average		11005	0.7	114.1	343.9	0.003	0.089		

Notes:

SVE Blower Hours of operation = value calculated between readings

Vapor Velocity = flow measured at blower influent

Temperature = measured ?

Q = vapor flowrate = $(1-B) \times V \times A \times (T_{std}/T)$

B = % water in flowstream = 0.003 from Perry's Chemical Handbook

T_{std} = Standard Temperature = 528 degrees Rankine

C = calculated total hydrocarbons = $(PPM_{measured}) \times K \times (M_g/K_g) / 1000$

K: number of carbon atoms in calibration gas (1 in methane)

P = absolute pressure of flowstream (" Hg)

K_g = 24.07 dsm³/10⁶ gm -mole

P_{std}: standard pressure (29.92" Hg)

A = 0.03407 sq. ft

T = Temperature °F + 459.67 degrees Rankine

Hydrocarbon Recovery Rate per day = $M = Q \times C \times 0.0895$

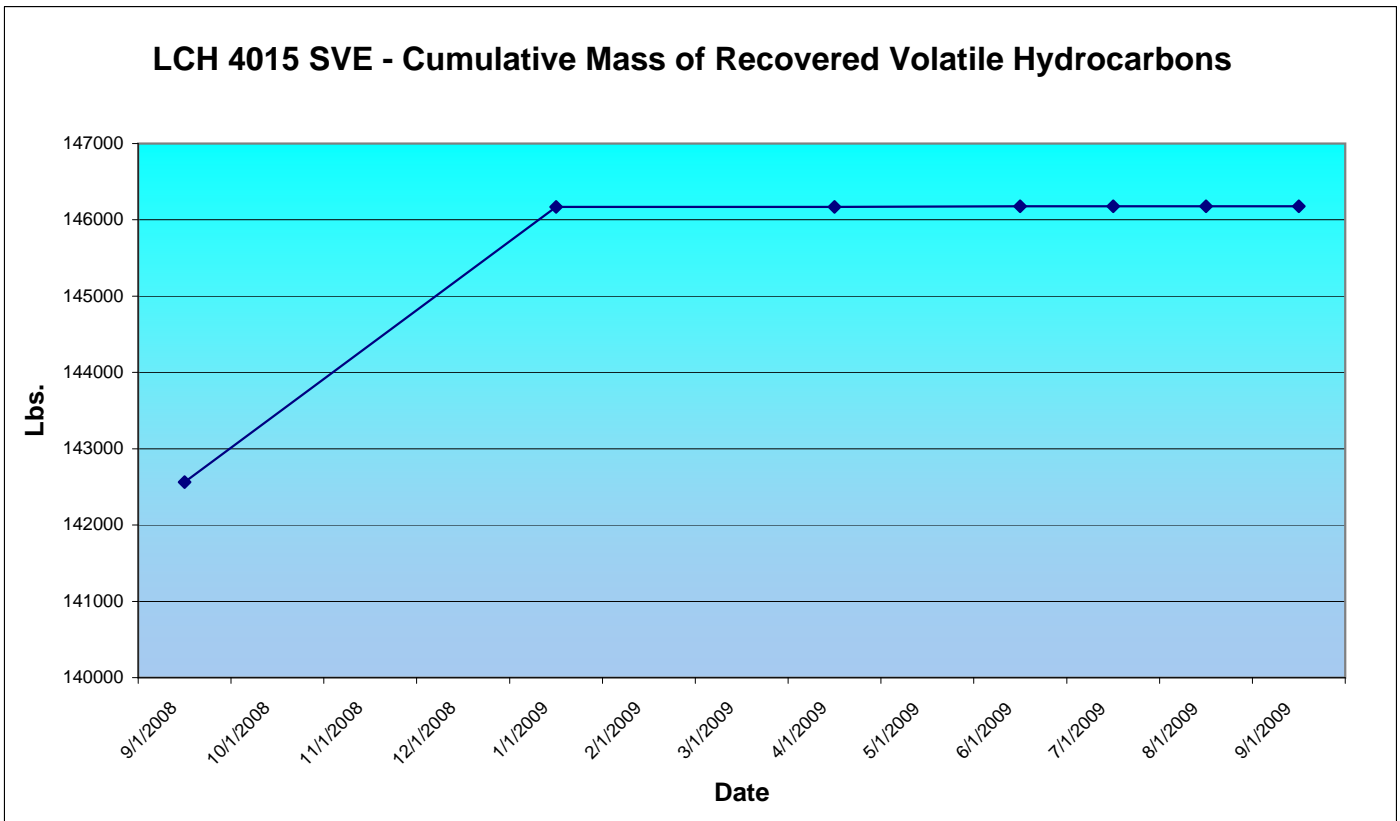


Table 2
Groundwater Elevation Table
Building LCH-4015
June through September 2009 Annual Monitoring Report
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Well I.D.	Date	TOC ¹ Elevation (feet-MSL)	Well Diameter (inches)	Total Depth (ft, bgs)	PVC Screen Interval (ft-ft, btoc)	Depth to Water from TOC (feet)	Groundwater Elevation ² (feet)
MW-1	8/19/2009	32.52	4	14.87	4.9-14.9	1.45	31.07
MW-2	8/19/2009	31.68	4	12.23	2.3-12.3	0.60	31.08
MW-3	8/19/2009	34.70	4	15.31	2.1-12.1	4.40	30.30
MW-4	8/19/2009	35.29	4	15.39	1.9-11.9	4.93	30.36
MW-5	8/19/2009	32.25	4	11.05	1.7-11.7	2.00	30.25
MW-6	8/19/2009	31.99	2	12.12	2.5-12.5	2.17	29.82
MW-7	8/19/2009	32.38	2	12.10	2.5-12.5	1.91	30.47
MW-8	8/19/2009	31.37	2	12.47	2.5-12.5	1.45	29.92
MW-9	8/19/2009	30.91	2	12.12	2.5-12.5	1.55	29.36
MW-10	8/19/2009	30.89	2	12.03	2.5-12.5	1.08	29.81
MW-11	8/19/2009	31.76	2	12.00	2.5-12.5	3.14	28.62
MW-12	8/19/2009	31.86	2	11.75	2.5-12.5	3.09	28.77
MW-13	8/19/2009	32.35	2	47.62	45-50	23.18	9.17
MW-14	8/19/2009	32.04	2	11.88	2.5-12.5	4.05	27.99
MW-15	8/19/2009	31.89	2	11.90	2.5-12.5	2.80	29.09
MW-16	8/19/2009	32.26	2	11.64	2.5-12.5	1.30	30.96
MW-17	8/19/2009	NA	NA	NA	NA	NA	NA
MW-18	8/19/2009	32.60	2	12.03	2.5-12.5	1.62	30.98
MW-19	8/19/2009	32.61	2	51.00	45-50	23.80	8.81
MW-20	8/19/2009	32.13	2	47.90	45-50	23.19	8.94
MW-21	8/19/2009	32.64	2	30.20	26.5-31.5	23.82	8.82
MW-22	8/19/2009	32.04	2	31.95	27-32	23.15	8.89
MW-23	8/19/2009	32.54	2	32.05	27-32	24.21	8.33
MW-24	8/19/2009	31.23	2	14.40	4.4-14.4	0.60	30.63

Note: TOC elevations, total depths, and screen intervals determined from *Final Annual Monitoring Report Building LCH-4015* prepared by Shaw Environmental, Inc. dated June 2009 and *Final Remedial Action Optimization and Revised Corrective*

No free product was detected

¹ TOC = Top of Well Casing

² Groundwater elevations adjusted to account for the presence of free product when applicable (Specific Gravity = 0.8).

ND: Not detected

CNL: Could not locate

NA: Not applicable

Table 3
Field Data Summary
Building LCH-4015
June through September 2009 Annual Monitoring Report
August 2009 Shallow Well Field Data
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Sample ID		USTLCH4015-MW01	USTLCH4015-MW02	USTLCH4015-MW06	USTLCH4015-MW07	USTLCH4015-MW12	USTLCH4015-MW14	USTLCH4015-MW15	USTLCH4015-MW16	USTLCH4015-MW18
Sample Date		8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009	8/19/2009
Field Parameter	Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
Depth to Water	feet	1.55	0.85	2.23	2.01	3.26	4.15	2.87	1.37	1.73
pH	NA	6.04	5.6	4.54	6	5.83	5.84	2.95	5.06	5.82
Conductivity	mS/cm	0.771	0.754	1.378	0.434	0.902	0.585	0.856	0.321	1.237
Turbidity	NTU	1.1	0.2	0.0	0.0	0.0	3.2	14.5	4.1	0.0
Dissolved Oxygen	mg/L	1.82	0.07	2.34	0.32	2.92	2.93	0.98	0.33	0.01
Temperature	°C	28.35	28.02	30.14	30.27	30.53	30.95	29.73	25.11	28.85
Oxidation-Reducton Potential	mV	-90.8	-82.5	95.6	10	-71.2	-21.2	-60.1	48.7	-254.6

ND: Not determined

Table 4
Field Data Summary
Building LCH-4015
June through September 2009 Annual Monitoring Report
August 2009 Deep Well Field Data
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Sample ID		USTLCH4015-MW19	USTLCH4015-MW21	USTLCH4015-MW23
Sample Date		8/19/2009	8/19/2009	8/19/2009
Field Parameter	Unit	Result	Result	Result
Depth to Water	feet	23.91	23.91	23.87
pH	NA	6.12	2.99	6.08
Conductivity	mS/cm	0.826	4.151	2.151
Turbidity	NTU	0.5	1.7	0
Dissolved Oxygen	mg/L	0.31	0.11	0.62
Temperature	°C	22.26	22.22	21.23
Oxidation-Reducton Potential	mV	-111.5	143.3	-81.2

ND: Not determined

Table 5
Groundwater Analytical Results
Building LCH 4015
June through September 2009 Annual Monitoring Report
Shallow Monitoring Well Data
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Date: 12/1/09			Incident Number and Name: 125709 LCH-4015 Wells																											
Analytical Method			6020								602 VOCs								610/625 PAHs											
Contaminant of Concern			Lead	Benzene	DIPE	Ethylbenzene	MTBE	Toluene	m,p-Xylene	o-Xylene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1-Methyl naphthalene	2-Methyl naphthalene	Naphthalene	Phenanthrene	Pyrene		
Sample ID/Well ID	Date Collected	Sample Depth (ft bgs)	Lead	Benzene	DIPE	Ethylbenzene	MTBE	Toluene	m,p-Xylene	o-Xylene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1-Methyl naphthalene	2-Methyl naphthalene	Naphthalene	Phenanthrene	Pyrene		
USTLCH4015-MW01	8/19/2009	NA	BQL	3.85	BQL	14.6	BQL	BQL	4.50	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	16.2	BQL	BQL	
USTLCH4015-MW02	8/19/2009	NA	BQL	BQL	BQL	2.46	BQL	BQL	24.5	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	
USTLCH4015-MW06	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW07	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW12	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW14	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW15	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW16	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
USTLCH4015-MW18	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NCAC GWQS	NA	NA	15	1	70	550	200	1000	530	530	80	210	2100	0.0479	0.0048	0.0479	210	0.479	4.79	0.0047	280	280	0.0479	14	14	21	210	210		
GCL	NA	NA	15,000	5,000	70,000	84,500	200,000	257,500	87,500	87,500	2,120	1,965	2,100	22	2	1	210	0	1	0	280	950	31	12,500	12,500	15,500	410	210		

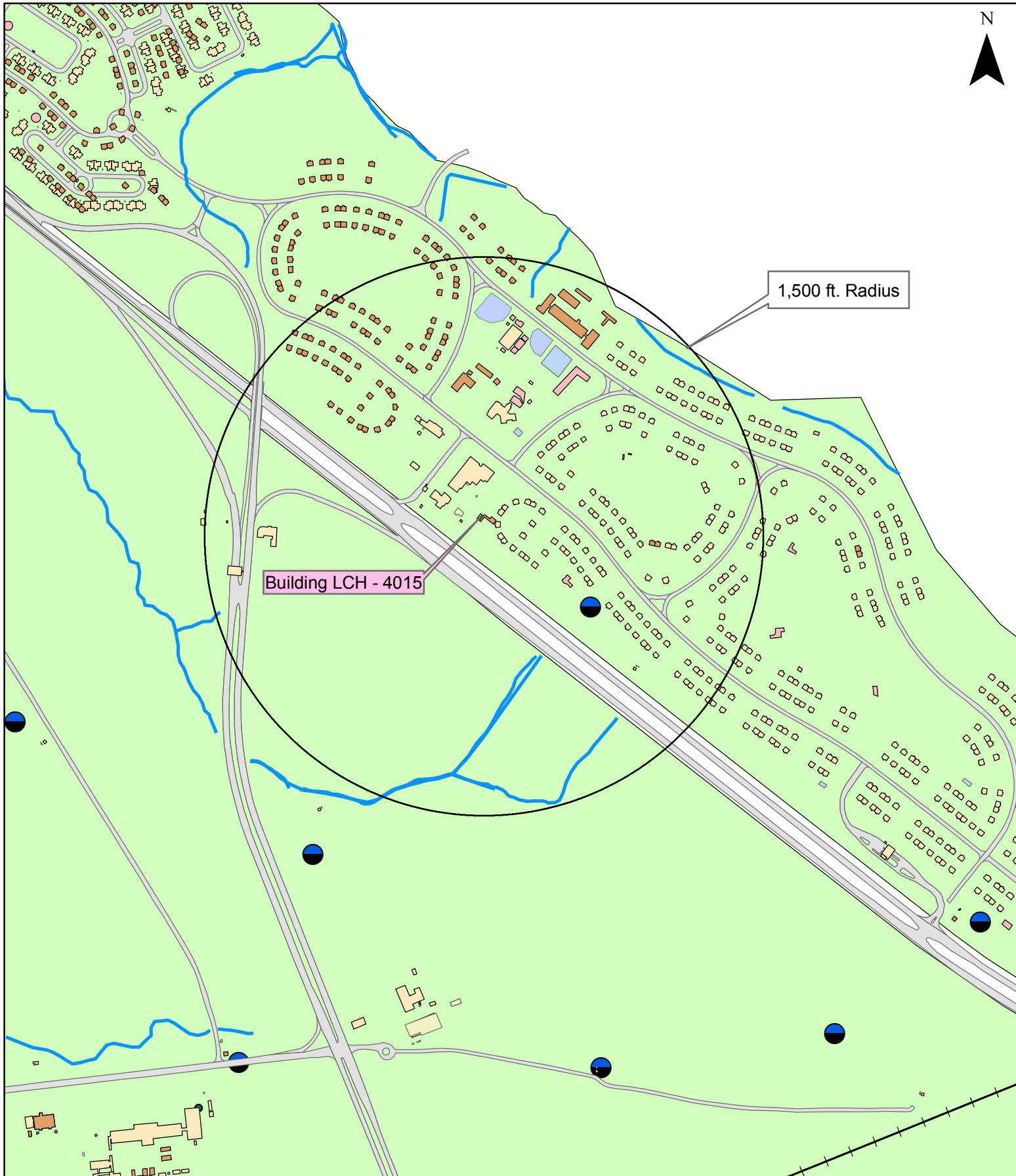
Note: Results reported in ug/L
NA: Not Analyzed
BQL - Below Quantitation Limit
Detections in bold
NCAC 2L GWQS reported in ug/L
Exceedances of the NCAC 2L GWQ standards highlighted in yellow
GCL: Gross contaminant levels reported in ug/L
Xylene 2L standard reported as Total Xylenes
Note: USTAS4141-MW20 and MW21 not sampled due to the presence of free product

Table 6
Groundwater Analytical Results
Building LCH 4015
June through September 2009 Annual Monitoring Report
Deep Monitoring Well Data
Contract No. N40085-08-D-1409, CTO: 0008
MCB Camp Lejeune, North Carolina

Date: 12/1/09			Incident Number and Name: 125709 LCH-4015 Wells																										
Analytical Method			6020									602 VOCs									610/625 PAHs								
Contaminant of Concern			Lead	Benzene	DIPE	Ethylbenzene	MTBE	Toluene	m-p Xylene	o-Xylene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1-Methylanthracene	2-Methylanthracene	Naphthalene	Phenanthrene	Pyrene	
Sample ID/Well ID	Date Collected	Sample Depth (ft bgs)	Lead	Benzene	DIPE	Ethylbenzene	MTBE	Toluene	m-p Xylene	o-Xylene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1-Methylanthracene	2-Methylanthracene	Naphthalene	Phenanthrene	Pyrene	
USTLCH4015-MW19	8/19/2009	NA	BQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW21	8/19/2009	NA	BQL	12.1	BQL	BQL	22.0	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	48.7	BQL	BQL
USTLCH4015-MW23	8/19/2009	NA	BQL	BQL	BQL	BQL	7.25	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
NCAC GWQS	NA	NA	15	1	70	550	200	1000	530	530	80	210	2100	0.0479	0.0048	0.0479	210	0.479	4.79	0.0047	280	280	0.0479	14	14	21	210	210	
GCL	NA	NA	15,000	5,000	70,000	84,500	200,000	257,500	87,500	87,500	2,120	1,965	2,100	22	2	1	210	0	1	0	280	950	31	12,500	12,500	15,500	410	210	

Note: Results reported in ug/L
 NA: Not Analyzed
 BQL - Below Quantitation Limit
 Detections in bold
 NCAC 2L GWQS reported in ug/L
 Exceedances of the NCAC 2L GWQ standards highlighted in yellow
 GCL: Gross contaminant levels reported in ug/L
 Xylene 2L standard reported as Total Xylenes
 Note: USTAS4141-MW20 and MW21 not sampled due to the presence of free product

FIGURES



Legend

Buildings	Playgrounds
Roads	Athletic Fields and Courts
Airfield Surface Area	Surface Water
Installation Area	Railroads
Structure/Demolished Area	Water Supply Wells

RHEA
Engineers & Consultants, Inc.








0 250 500 1,000 Feet

Figure 1
Vicinity Map
LCH-4015
MCB Camp Lejeune, North Carolina

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Legend

 Buildings	 Installation Area
 Surface Water	 Structure/Demolished Area
 Roads	 Groundwater Monitoring Well Locations
 Airfield Surface Area	



0 25 50 100 Feet

Figure 2
Site Map with Monitoring Well Locations
LCH - 4015
MCB Camp Lejeune, North Carolina



Legend

- Buildings
- Installation Area
- Surface Water
- Structure/Demolished Area
- Roads
- ◆ Groundwater Monitoring Well Locations
- Airfield Surface Area (8.33)
- Groundwater Elevation in feet

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0 25 50 100 Feet

Figure 4
Intermediate Well Groundwater Elevations - August 2009
LCH - 4015
MCB Camp Lejeune, North Carolina

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Legend

Buildings	Installation Area
Surface Water	Structure/Demolished Area
Roads	Groundwater Monitoring Well Locations
Airfield Surface Area (8.33)	Groundwater Elevation in feet

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0 25 50 100 Feet

Figure 5
Deep Well Groundwater Elevations - August 2009
LCH - 4015
MCB Camp Lejeune, North Carolina

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Contaminant of Concern		
Sample ID/Well ID	Date Collected	Lead
USTLCH4015-MW01	8/19/2009	BQL
USTLCH4015-MW02	8/19/2009	BQL
USTLCH4015-MW06	8/19/2009	BQL
USTLCH4015-MW07	8/19/2009	BQL
USTLCH4015-MW12	8/19/2009	BQL
USTLCH4015-MW14	8/19/2009	BQL
USTLCH4015-MW15	8/19/2009	BQL
USTLCH4015-MW16	8/19/2009	BQL
USTLCH4015-MW18	8/19/2009	BQL
USTLCH4015-MW19	8/19/2009	BQL
USTLCH4015-MW21	8/19/2009	BQL
USTLCH4015-MW23	8/19/2009	BQL
NCAC GWQS		15 ug/L

Notes:
 All results reported in ug/L (micrograms per liter)
 NS - Not Sampled
 BQL - Below Quantitation Limits
 Bold - Detected concentration
 Bold and shaded - Detected concentration above 2L Standards

Legend

- Buildings
- Installation Area
- Surface Water
- Structure/Demolished Area
- Roads
- Groundwater Monitoring Well Locations
- Airfield Surface Area

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0 25 50 100 Feet

Figure 6
Site Map with August 2009 Groundwater Results
EPA Method 6020 Lead
LCH - 4015
MCB Camp Lejeune, North Carolina

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Contaminant of Concern		Benzene	DIPE	Ethylbenzene	MTBE	Toluene	m,p Xylene	o-Xylene
Sample ID/Well ID	Date Collected							
USTLCH4015-MW01	8/19/2009	3.85	BQL	14.6	BQL	BQL	4.50	BQL
USTLCH4015-MW02	8/19/2009	BQL	BQL	2.46	BQL	BQL	24.5	BQL
USTLCH4015-MW06	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW07	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW12	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW14	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW15	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW16	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW18	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW19	8/19/2009	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW21	8/19/2009	12.1	BQL	BQL	22.0	BQL	BQL	BQL
USTLCH4015-MW23	8/19/2009	BQL	BQL	BQL	7.25	BQL	BQL	BQL
NCAC GWQS in ug/L		1	70	550	200	1000	530	530

Notes:
 All results reported in ug/L (micrograms per liter)
 NS - Not Sampled
 BQL - Below Quantitation Limits
 Bold - Detected concentration
 Bold and shaded - Detected concentration above 2L Standards

Legend

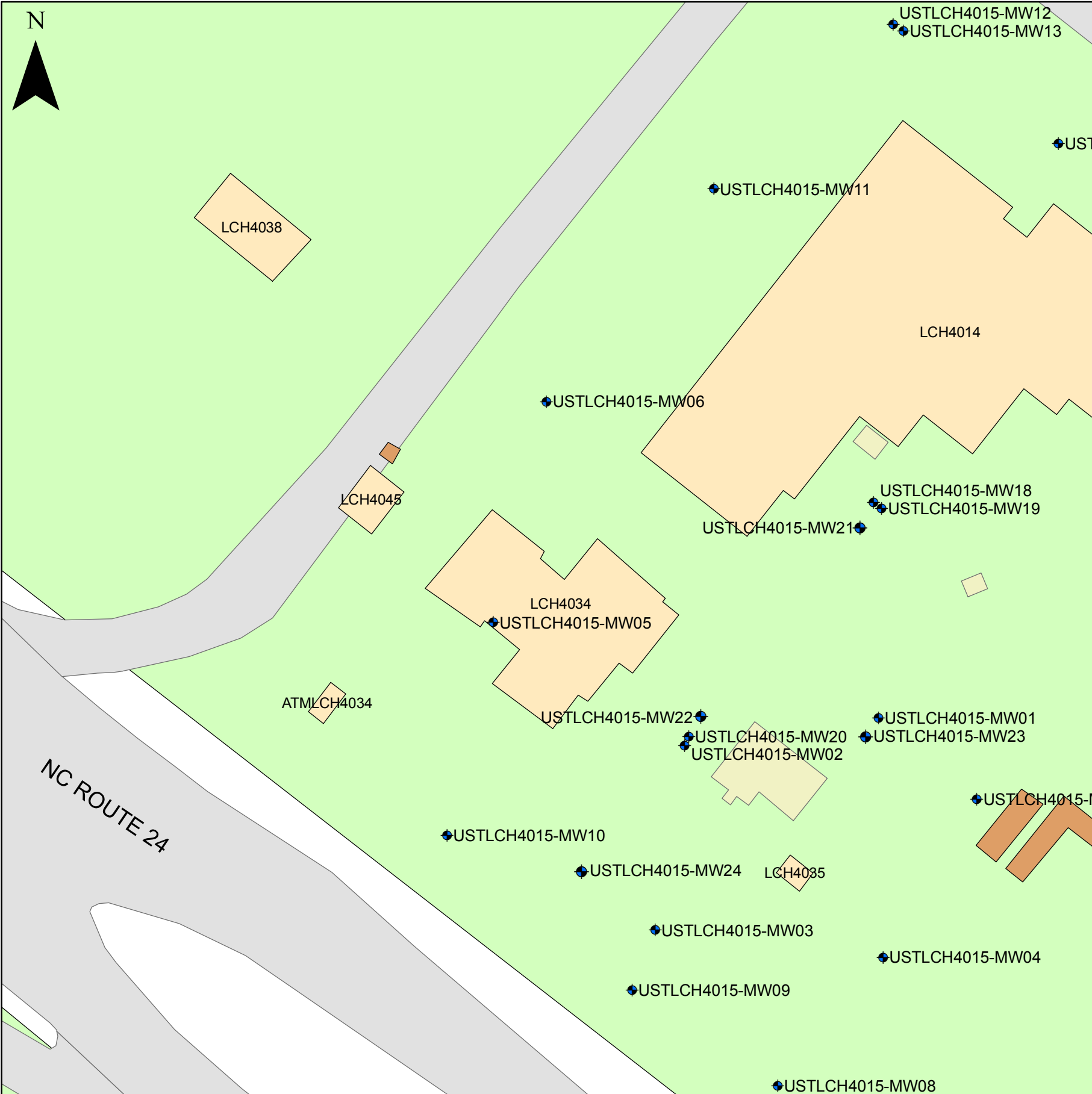
- Buildings
- Installation Area
- Surface Water
- Structure/Demolished Area
- Roads
- ◆ Groundwater Monitoring Well Locations
- Airfield Surface Area

RHEA
Engineers & Consultants, Inc.

0 25 50 100 Feet

Figure 7
Site Map with August 2009 Groundwater Results
EPA Method 602
LCH - 4015
MCB Camp Lejeune, North Carolina

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Contaminant of Concern		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Bnzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	
Sample ID/Well ID	Date Collected																			
USTLCH4015-MW01	8/19/2009	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW02	8/19/2009	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW06	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW07	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW12	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW14	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW15	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW16	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW18	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW19	8/19/2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USTLCH4015-MW21	8/19/2009	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	48.7	BQL	BQL	BQL
USTLCH4015-MW23	8/19/2009	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
NCAC GWQS		80	210	2100	0	0	0	210	0.5	4.8	0	280	280	0	NS*	14	21	210	210	

Notes:
 All results reported in ug/L (micrograms per liter)
 NS - Not Sampled
 BQL - Below Quantitation Limits
 Bold - Detected concentration
 Bold and shaded - Detected concentration above 2L Standards

Legend

- Buildings (orange)
- Surface Water (blue)
- Roads (grey)
- Airfield Surface Area (light grey)
- Installation Area (light green)
- Structure/Demolished Area (brown)
- Groundwater Monitoring Well Locations (blue diamond)

0 25 50 100 Feet

Figure 8
Site Map with August 2009 Groundwater Results
EPA Method 610/625
LCH - 4015
MCB Camp Lejeune, North Carolina

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APPENDIX A

**HISTORICAL GROUNDWATER QUALITY
DATA**

Table
Historical Groundwater Analytical Data
September 2003 Sampling Event
LCH4015

Parameter	NCGWQS	GCL	MW-01	Duplicate	MW-02	MW-03	MW-05	MW-09	MW-11
VOCs by EPA Method 6210D (µg/L)									
Benzene	1	5,000	141	138	60.1	1	<1.0	<1.0	<1.0
Ethylbenzene	29	29,000	371	368	62.9	0.8 J	1.9	0.63 J	3.6
Toluene	1,000	257,500	17.5	14.8	7.2	<1.0	<1.0	0.66 J	<1.0
Xylenes (total)	530	87,500	269	226	612	<3.0	6.9	<3.0	<3.0
Methyl-tert butyl ether (MTBE)	200		5.8	4.8	7.5	<1.0	3.8	10.7	<1.0
Total BTEX			798.5	746.8	742.2	1.8	8.8	1.29	3.6
SVOCs by EPA Method 610 (µg/L)									
Acenaphthene	80		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Acenaphthylene	210		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Anthracene	2100		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Benzo(a)anthracene	0.05		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Flouranthene	280		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Flourene	280		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
1-Methylnaphthalene	RL		29	23.3	7.1	<5.2	<5.1	<5.0	<5.1
2-Methylnaphthalene	14		43.7	36.2	7.6	<5.2	<5.1	<5.0	<5.1
Naphthalene	21		170	138	59.9	<5.2	<5.1	4.2 J	<5.1
Phenanthrene	210		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1
Pyrene	210		<5.0	<5.4	<5.7	<5.2	<5.1	<5.0	<5.1

Bold type indicates detectable concentrations

Bold and highlighted indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

mg/L - milligrams per liter

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

NA - Not analyzed; laboratory quantitation for the indicated analyte was not conducted

NS - Not sampled; the indicated location was not designated for sampling during the event

E - estimated concentration above the linear quantitation range

Table
Historical Groundwater Analytical Data
November 2003 Sampling Event
LCH4015

Sample Location	NCGWQS	MW-01 11/19/03	MW-02 11/18/03	MW-03 11/18/03	MW-03D 11/18/03	MW-05 11/18/03	MW-06 11/19/03	MW-07 11/18/03	MW-08 11/18/03	MW-09 11/18/03
EPA 602 (µg/L)										
Benzene	1	139	22.4	1.3	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	377	31.9	1.3	1.4	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1000	8.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	147	62.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	10.1	24.0	2.6	2.7	3.3	<1.0	<1.0	<1.0	7.5
Total BTEX		671	118.7	2.6	2.9	ND	ND	ND	ND	ND
EPA 610 (µg/L)										
Acenaphthene	80	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Acenaphthylene	210	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Anthracene	2100	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Benzo(a)anthracene	0.05	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Fluoranthene	280	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Fluorene	280	<5.4	<5.4	2.5 J	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
1-Methylnaphthalene	RL	28.1	5.1 J	<5.0	<5.0	<5.0	<5.1	<5.0	2.9 J	<5.1
2-Methylnaphthalene	14	47.0	2.9 J	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Naphthalene	21	169	47.8	<5.0	<5.0	<5.0	<5.1	<5.0	2.3 J	<5.1
Phenanthrene	210	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1
Pyrene	210	<5.4	<5.4	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.1

Sample Location	NCGWQS	MW-10 11/18/03	MW-11 12/11/03	MW-12 11/19/03	MW-14 11/19/03	MW-15 11/18/03	MW-16 11/18/03	MW-18 11/19/03	MW-19 11/19/03
EPA 602 (µg/L)									
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	<1.0	2.5	<1.0	<1.0	<1.0	<1.0	0.86 J	<1.0
Toluene	1000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	5.6	<1.0	<1.0	<1.0	<1.0	2.6	<1.0	<1.0
Total BTEX		ND	2.5	ND	ND	ND	ND	0.86	ND
EPA 610 (µg/L)									
Acenaphthene	80	<5.6	3.1 J	<5.2	<5.1	<5.1	<5.0	<5.2	2.4 J
Acenaphthylene	210	<5.6	<5.2	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Anthracene	2100	<5.6	<5.2	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Benzo(a)anthracene	0.05	<5.6	<5.2	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Fluoranthene	280	<5.6	<5.2	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Fluorene	280	<5.6	9.0	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
1-Methylnaphthalene	RL	<5.6	36.8	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
2-Methylnaphthalene	14	<5.6	6.3	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Naphthalene	21	<5.6	5.8	<5.2	<5.1	<5.1	<5.0	<5.2	3.2 J
Phenanthrene	210	<5.6	5.7	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1
Pyrene	210	<5.6	<5.2	<5.2	<5.1	<5.1	<5.0	<5.2	<5.1

MW-03D is a duplicate sample collected at well MW-03

NCGWQS: North Carolina Groundwater Quality Standard

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

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

µg/L: micrograms per liter

<#: detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table
 Historical Groundwater Analytical Data
 February 2004 Sampling Event
 LCH4015

Parameter	NCGWQS	GCL	MW-01	MW-02	MW-03	MW-05	Duplicate	MW-09	MW-11
VOCs by EPA Method 621-0D (µg/L)									
Benzene	1	5,000	131	19.1	10.5	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	29,000	439	14.5	3.7	<1.0	<1.0	<1.0	3.9
Toluene	1,000	257,500	27.5	1.3	0.68 J	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	87,500	514	76.9	3.6	<3.0	<3.0	<3.0	<3.0
Methyl-tert butyl ether (MTBE)	200		8.1	94.4	7	5.5	5.5	8.0	<1.0
Total BTEX			1111.5	111.8	18.48	ND	ND	ND	3.9
SVOCs by EPA Method 610 (µg/L)									
Acenaphthene	80		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Acenaphthylene	210		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Anthracene	2100		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Benzo(a)anthracene	0.05		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Flouranthene	280		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Flourene	280		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	5.1
1-Methylnaphthalene	RL		26.9	3.5 J	<5.1	<5.0	<5.0	<5.0	4.6 J
2-Methylnaphthalene	14		38.7	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Naphthalene	21		15.7	15.7	2.3 J	<5.0	<5.0	<5.0	<5.1
Phenanthrene	210		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1
Pyrene	210		<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1

Bold type indicates detectable concentrations

Bold and highlighted indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

mg/L - milligrams per liter

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

NA - Not analyzed; laboratory quantitation for the indicated analyte was not conducted

NS - Not sampled; the indicated location was not designated for sampling during the event

E - estimated concentration above the linear quantitation range

Table
Historical Groundwater Analytical Data
May 2004 Sampling Event
LCH4015

Parameter	NCGWQS	GCL	MW-01	MW-02	MW-03 ⁽¹⁾	Duplicate	MW-05	MW-06	MW-07	MW-08	MW-09	MW-10	MW-11	MW-12	MW-14	MW-15	MW-16	MW-18 ⁽¹⁾	MW-19
VOCs by EPA Method 6210D (µg/L)																			
Benzene	1	5,000	28.4	30.9	1.6	1.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	29,000	21.9	14.6	1.7	2	<1.0	<1.0	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1,000	257,500	13	1.8	<1.0	<1.0	<1.0	<1.0	0.52 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	87,500	704	85.3	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl-tert butyl ether (MTBE)	200		4.0 J	25.9	<1.0	<1.0	2.7	6.2	<1.0	<1.0	<1.0	9.8	<1.0	<1.0	<1.0	<1.0	3.7	<1.0	<1.0
Total BTEX			1064.4	132.6	3.3	3.8	ND	ND	0.52	ND	3.5	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs by EPA Method 610 (µg/L)																			
Acenaphthene	80		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	4.3 J	<5.3	<5.1	<5.0	<5.1	<5.1	3.7 J
Acenaphthylene	210		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
Anthracene	2100		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
Benzo(a)anthracene	0.05		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
Flouranthene	280		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
Flourene	280		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	8.0	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
1-Methylnaphthalene	RL		25.3	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	29.5	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
2-Methylnaphthalene	14		34.3	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	5.9	<5.3	<5.1	<5.0	<5.1	<5.1	2.1 J
Naphthalene	21		102	15.7	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	3.8 J	<5.3	<5.1	<5.0	<5.1	<5.1	2.1 J
Phenanthrene	210		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0
Pyrene	210		<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.1	<5.0	<5.1	<5.0	<5.1	<5.3	<5.1	<5.0	<5.1	<5.1	<5.0

⁽¹⁾ At well MW-03, 1,3-Dichlorobenzene was reported in the primary and duplicate sample at estimated concentrations of 0.69 µg/L and 0.78 µg/L, respectively, at well MW-18, 1,3-Dichlorobenzene was reported at a concentration of 1.6 µg/L; the NCGWQS for 1,3-Dichlorobenzene is 620 µg/L.

Bold type indicates detectable concentrations

Bold and highlighted indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

mg/L - milligrams per liter

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

NA - Not analyzed; laboratory quantitation for the indicated analyte was not conducted

NS - Not sampled; the indicated location was not designated for sampling during the event

E - estimated concentration above the linear quantitation range

Table
Historical Groundwater Analytical Data
August 2004 Sampling Event
LCH4015

Sample Location	NCGWQS	MW-01	DUP (MW-01)	MW-02	MW-03	MW-05	MW-09	MW-11
Date Sampled		08/11/04	08/11/04	08/11/04	08/11/04	08/11/04	08/11/04	08/11/04
EPA 602 (µg/L)								
Benzene	1	53.3	70.4	0.90 J	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	225	208	2.4	<1.0	<1.0	<1.0	5.4
Toluene	1000	8.6	13.3	<1.0	0.52 J	<1.0	0.50 J	0.63 J
Xylenes (total)	530	314	<3.0	13.3	<3.0	<3.0	<3.0	1.8 J
Methyl Tert Butyl Ether	200	<5.0	317	20.0	1.9	0.76 J	6.9	<1.0
Total BTEX		600.9	291.7	16.6	0.52	ND	0.5	7.83
EPA 610 (µg/L)								
Acenaphthene	80	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5
Acenaphthylene	210	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5
Anthracene	2100	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5
Benzo(a)anthracene	0.05	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5
Fluoranthene	280	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5
Fluorene	280	<48	<48	<4.8	3.3 J	<4.8	<4.8	16.4
1-Methylnaphthalene	RL	34.4 J	34.5 J	2.9 J	<4.8	<4.8	<4.8	38.2
2-Methylnaphthalene	14	49.0	48.6	3.2 J	<4.8	<4.8	<4.8	6.6 J
Naphthalene	21	207	216	45.2	<4.8	<4.8	<4.8	3.8 J
Phenanthrene	210	<48	<48	<4.8	<4.8	<4.8	<4.8	6.5 J
Pyrene	210	<48	<48	<4.8	<4.8	<4.8	<4.8	<9.5

DUP is a duplicate sample collected at well MW-01

NCGWQS: North Carolina Groundwater Quality Standard

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

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table
Historical Groundwater Analytical Data
November 2004 Sampling Event
LCH4015

Sample Location	NCGWQS	MW-01	MW-02*	MW-03	DUP (MW-03)	MW-13	MW-18
Date Sampled		11/22/04	11/22/04	11/22/04	11/23/04	11/23/04	11/23/04
EPA 602 (µg/L)							
Benzene	1	29.1	64.5	0.56 J	0.61 J	<1.0	<1.0
Ethylbenzene	29	189	64.0	<1.0	<1.0	<1.0	<1.0
Toluene	1000	4.6 J	6.7	<1.0	<1.0	<1.0	0.51 J
Xylenes (total)	530	390	220	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	<5.0	8.3	<1.0	<1.0	<1.0	<1.0
Total BTEX		612.7	375.3	0.56	0.61	ND	0.51
EPA 610 (µg/L)							
Acenaphthene	80	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Acenaphthylene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Anthracene	2100	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Benzo(a)anthracene	0.05	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Fluoranthene	280	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Fluorene	280	<4.8	<4.8	2.3 J	2.1 J	<4.8	5.8
1-Methylnaphthalene	RL	17.3	7.6	<4.8	<4.8	<4.8	<4.8
2-Methylnaphthalene	14	25.7	5.2	<4.8	<4.8	<4.8	<4.8
Naphthalene	21	18.1	94.5	<4.8	<4.8	<4.8	<4.8
Phenanthrene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Pyrene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
MADEP VPH (µg/L)							
C5-C8 Aliphatics	420	296	197	65.7 J	154 J	<190	312
C9-C12 Aliphatics		195	<190	129	<190	<190	<190
C9-C10 Aromatics		<190	<190	106	<190	<190	<190
MADEP EPH (µg/L)							
C9-C18 Aliphatics		925	487	<190	55 J	<75	<75
C19-C36 Aliphatics	42000	2030	363	<190	131	<55	68.4
C11-C22 Aromatics		1150	222	169 J	106	<20	40.9
MADEP VPH + EPH (µg/L)							
C9-C12 + C9-C18 Aliphatics	4200	1120	487	129	55 J	<265	<265
C9-C10 + C11-C22 Aromatics	210	1150	222	275 J	106	<210	40.9
SW 6010B* (µg/L)							
Lead	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Sample Location	NCGWQS	MW-19	MW-20	MW-21	MW-22	MW-23
Date Sampled		11/23/04	11/22/04	11/23/04	11/22/04	11/23/04
EPA 602 (µg/L)						
Benzene	1	<1.0	<1.0	20.8	<1.0	73.9
Ethylbenzene	29	<1.0	<1.0	5.2	<1.0	1.3
Toluene	1000	<1.0	<1.0	2.0	<1.0	<1.0
Xylenes (total)	530	<3.0	<3.0	2.7 J	<3.0	1.3 J
Methyl Tert Butyl Ether	200	<1.0	<1.0	21.3	<1.0	34.3
Total BTEX		ND	ND	30.7	ND	76.5
EPA 610 (µg/L)						
Acenaphthene	80	<4.8	<4.8	<4.8	<4.8	<4.8
Acenaphthylene	210	<4.8	<4.8	<4.8	<4.8	<4.8
Anthracene	2100	<4.8	<4.8	<4.8	<4.8	<4.8
Benzo(a)anthracene	0.05	<4.8	<4.8	<4.8	<4.8	<4.8
Fluoranthene	280	<4.8	<4.8	<4.8	<4.8	<4.8
Fluorene	280	<4.8	<4.8	<4.8	<4.8	<4.8
1-Methylnaphthalene	RL	<4.8	<4.8	<4.8	<4.8	<4.8
2-Methylnaphthalene	14	<4.8	<4.8	<4.8	<4.8	<4.8
Naphthalene	21	<4.8	14.9	15.3	<4.8	<4.8
Phenanthrene	210	<4.8	<4.8	<4.8	<4.8	<4.8
Pyrene	210	<4.8	<4.8	<4.8	<4.8	<4.8
MADEP VPH (µg/L)						
C5-C8 Aliphatics	420	<190	143 J	<190	<190	149
C9-C12 Aliphatics		<190	<190	<190	<190	<190
C9-C10 Aromatics		<190	<190	<190	<190	<190
MADEP EPH (µg/L)						
C9-C18 Aliphatics		<75	<75	<75	<75	<75
C19-C36 Aliphatics	42000	<55	<55	119	<55	<55
C11-C22 Aromatics		<20	<20	95.8	<20	<20
MADEP VPH + EPH (µg/L)						
C9-C12 + C9-C18 Aliphatics	4200	<265	<265	<265	<265	<265
C9-C10 + C11-C22 Aromatics	210	<210	<210	95.8	<210	<210
SW 6010B/3030C (µg/L)						
Lead	15	<5.0	7.7	<40	<5.0	<50

* At well MW-02, Chlorobenzene was detected at a concentration of 3.0 ug/L (NCGWQS of 50 ug/L)

NCGWQS: North Carolina Groundwater Quality Standard

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

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table
Historical Groundwater Analytical Data
March 2005 Sampling Event
LCH4015

Sample Location	NCGWQS	MW-24
Date Sampled		03/07/05
EPA 602 (µg/L)		
Benzene	1	4.38
Ethylbenzene	29	0.785 J
Toluene	1000	0.418 J
m,p-Xylene (1)		1.11 J
o-Xylene (1)		0.978 J
Total Xylenes (1)	530	2.088 J
1,2-Dichlorobenzene	620	15.8
1,3-Dichlorobenzene	620	<1.00
1,4-Dichlorobenzene	75	0.799 J
Naphthalene	21	19.3
Methyl-tert butyl ether	200	1.89 J
Diisopropyl ether	70	3.97
EPA 610 (µg/L)		
Acenaphthene	80	1.40 J
Bis(2-ethylhexyl)phthalate	3	1.40 J
Dimethylphthalate	RL	1.50 J
Fluorene	280	1.70 J
Naphthalene	21	11.1
TICs (total)		241.21 J
MADEP VPH (µg/L)		
C5-C8 Aliphatics	420	220
C9-C12 Aliphatics		130
C9-C10 Aromatics		300
MADEP EPH (µg/L)		
C9-C18 Aliphatics		<100
C19-C36 Aliphatics	42000	<100
C11-C22 Aromatics		140
MADEP VPH + EPH (µg/L)		
C9-C12 + C9-C18 Aliphatics	4200	130
C9-C10 + C11-C22 Aromatics	210	440
SW 6010B* (µg/L)		
Lead	15	<5.0

* At well MW-02, Chlorobenzene was detected at a concentratio

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the constituent

Total BTEX: Sum of detected concentrations of benzene, toluene

ND: None detected; no benzene, toluene, ethylbenzene, or xylene

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the I

Table
Historical Groundwater Analytical Data
May 2005 Sampling Event
LCH4015

Sample Location	NCGWQS	MW-01	MW-02	MW-03	DUP (MW-03)	MW-13	MW-18
Date Sampled		05/10/05	05/10/05	05/10/05	05/10/05	05/11/05	05/11/05
EPA 602 (µg/L)							
Benzene	1	30.1	13.1	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	27.0	13.5	<1.0	<1.0	<1.0	<1.0
Toluene	1000	14.8	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	65.9	32.6	<3.0	<3.0	<3.0	<3.0
Chlorobenzene	50	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	620	50.7	10.0	7.7	7.0	<1.0	2.4
1,3-Dichlorobenzene	620	<5.0	<1.0	0.83 J	0.59 J	<1.0	1.3
1,4-Dichlorobenzene	75	<5.0	<1.0	0.59 J	<1.0	<1.0	<1.0
Methyl Tert Butyl Ether	200	7.8	52.5	<1.0	<1.0	<1.0	<1.0
Total BTEX		973.9	59.2	ND	ND	ND	ND
EPA 625 (µg/L)							
Acenaphthene	80	<4.9	<4.8	1.3 J	1.2 J	<4.8	2.3 J
Acenaphthylene	210	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
Anthracene	2100	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
Benzo(a)anthracene	0.05	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
Fluoranthene	280	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
Fluorene	280	<4.9	<4.8	1.4 J	1.2 J	<4.8	3.1 J
1-Methylnaphthalene	RL	23.1	<4.8	<4.8	<5.0	<4.8	<5.0
2-Methylnaphthalene	14	34.2	<4.8	<4.8	<5.0	<4.8	<5.0
Naphthalene	21	165	11.5	1.6 J	<5.0	<4.8	<5.0
Phenanthrene	210	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
Pyrene	210	<4.9	<4.8	<4.8	<5.0	<4.8	<5.0
SW 6010B* (µg/L)							
Lead	15	<5.0	<10	<5.0	<5.0	<5.0	<5.0
Sample Location	NCGWQS	MW-19	MW-20	MW-21	MW-22	MW-23	MW-24
Date Sampled		05/11/05	05/10/05	05/11/05	05/10/05	05/11/05	05/10/05
EPA 602 (µg/L)							
Benzene	1	<1.0	<1.0	17.5	<1.0	47.1	2.3
Ethylbenzene	29	<1.0	<1.0	4.2	<1.0	0.79 J	<1.0
Toluene	1000	<1.0	<1.0	1.1	0.96 J	<1.0	<1.0
Xylenes (total)	530	<3.0	<3.0	1.1 J	<3.0	<3.0	<3.0
Chlorobenzene	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	620	<1.0	<1.0	<1.0	<1.0	<1.0	22.1
1,3-Dichlorobenzene	620	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	75	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Tert Butyl Ether	200	<1.0	<1.0	28.8	1.2	31.9	3.0
Total BTEX		ND	ND	23.9	0.96	47.89	2.3
EPA 625 (µg/L)							
Acenaphthene	80	2.6 J	<4.8	<4.8	<4.8	<4.8	1.5 J
Acenaphthylene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Anthracene	2100	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Benzo(a)anthracene	0.05	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Fluoranthene	280	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Fluorene	280	1.1 J	<4.8	<4.8	<4.8	<4.8	1.8 J
1-Methylnaphthalene	RL	<4.8	<4.8	<4.8	<4.8	<4.8	2.6 J
2-Methylnaphthalene	14	<4.8	<4.8	<4.8	<4.8	<4.8	2.8 J
Naphthalene	21	<4.8	24.8	20.4	<4.8	<4.8	<4.8
Phenanthrene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
Pyrene	210	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
SW 6010B/3030C (µg/L)							
Lead	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

NCGWQS: North Carolina Groundwater Quality Standard

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

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table
 Historical Groundwater Analytical Data
 November 2005 Sampling Event
 LCH4015

Sample Location	NCGWQS	MW-01	MW-02	MW-03	DUP (MW-02)	MW-13	MW-18
Date Sampled		11/14/05	11/14/05	11/14/05	11/14/05	11/14/05	11/14/05
EPA 602 (µg/L)							
Benzene	1	48.1	1.5	<1.0	1.9	<1.0	<1.0
Ethylbenzene	29	143	2.0	<1.0	2.3	<1.0	<1.0
Toluene	1000	4.9	<1.0	<1.0	<1.0	0.54 J	0.59 J
Xylenes (total)	530	268	5.6	<3.0	10.7	<3.0	<3.0
Chlorobenzene	50	2.1	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	620	<32	<120	<10	<120	<3.0	<3.0
1,3-Dichlorobenzene	620	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	75	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Tert Butyl Ether	200	7.2	49.6	1.1	50.1	<1.0	<1.0
Total BTEX		464	9.1	ND	14.9	0.54	0.59
EPA 625 (µg/L)							
Acenaphthene	80	<4.9	<5.0	1.6 J	<5.0	<5.3	3 J
Acenaphthylene	210	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
Anthracene	2100	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
Benzo(a)anthracene	0.05	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
Fluoranthene	280	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
Fluorene	280	<4.9	<5.0	1.6 J	<5.0	<5.3	4.3 J
1-Methylnaphthalene	RL	23.1	15	5.2	<5.0	<4.8	<5.0
2-Methylnaphthalene	14	34.2	5.5	7.9	<5.0	<4.8	<5.0
Naphthalene	21	105	2.3 J	<5.0	2.1 J	<5.3	<5.3
Phenanthrene	210	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
Pyrene	210	<4.9	<5.0	<5.0	<5.0	<5.3	<5.3
SW 6010B* (µg/L)							
Lead	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Sample Location	NCGWQS	MW-19	MW-20	MW-21	MW-22	MW-23	MW-24
Date Sampled		11/14/05	11/14/05	11/14/05	11/14/05	11/14/05	11/14/05
EPA 602 (µg/L)							
Benzene	1	<1.0	<1.0	10.9	<1.0	4.2	1.8
Ethylbenzene	29	<1.0	<1.0	1.9	<1.0	0.66 J	<1.0
Toluene	1000	0.63 J	<1.0	0.7 J	0.89 J	0.71 J	0.57 J
Xylenes (total)	530	<3.0	<3.0	1.3 J	<3.0	1.3 J	<3.0
Chlorobenzene	50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	620	<1.0	<1.0	<1.0	<1.0	<1.0	<15
1,3-Dichlorobenzene	620	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	75	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl Tert Butyl Ether	200	<1.0	<1.0	26.1	1.9	17.9	1.7
Total BTEX		0.63	ND	14.76	0.89	6.87	2.37
EPA 625 (µg/L)							
Acenaphthene	80	<5.0	<4.8	<5.3	<5.3	<4.8	1.9 J
Acenaphthylene	210	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
Anthracene	2100	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
Benzo(a)anthracene	0.05	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
Fluoranthene	280	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
Fluorene	280	<5.0	<4.8	<5.3	<5.3	<4.8	2.1 J
1-Methylnaphthalene	RL	<4.8	<4.8	<4.8	<4.8	<4.8	2.6 J
2-Methylnaphthalene	14	<4.8	<4.8	<4.8	<4.8	<4.8	2.8 J
Naphthalene	21	<5.0	9.2	32.3	<5.3	<4.8	4.4 J
Phenanthrene	210	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
Pyrene	210	<5.0	<4.8	<5.3	<5.3	<4.8	<5.6
SW 6010B/3030C (µg/L)							
Lead	15	<5.0	<5.0	18.8	<5.0	10.1	<5.0

NCGWQS: North Carolina Groundwater Quality Standard

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

Total BTEX: Sum of detected concentrations of benzene, toluene, ethylbenzene, and xylene isomers

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table
 Historical Groundwater Analytical Data
 January 2006 Sampling Event
 LCH4015

Parameter	NCGWQS	GCL	MW-01	MW-02	MW-03	MW-13	Duplicate	MW-19	MW-20	MW-21	MW-22	MW-23
VOCS by EPA Method 8210D (ug/L)												
All Compounds	Varies	Varies	<16.0	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Benzene	1	5,000	45.5	3.63	<1.00	<1.00	<1.00	<1.00	<1.00	20.2	<1.00	25.9
Diisopropyl ether (DIPE)			<8.00	<1.00	0.651	<1.00	<1.00	<1.00	<1.00	0.670	<1.00	1.81
Ethylbenzene	29	29,000	179	6.10	<1.00	<1.00	<1.00	<1.00	<1.00	3.05	<1.00	0.400
Methyl-tert butyl ether (MTBE)	200		4.98	16.7	0.949	<2.00	<2.00	<2.00	<2.00	15.4	<2.00	15.0
Toluene	1,000	257,500	10.1	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
m/p-Xylene			333	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
o-Xylene			37.5	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	0.632	<2.00	<2.00
Xylenes (total)	530	87,500	<32.0	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00	<4.00
SVOCS by EPA Method 625 (ug/L)												
Bis(2-ethylhexyl)phthalate			8.70	<10.0	<10.0	<10.0	<10.0	2.80	<10.0	<10.0	<10.0	4.90
Flourene	280	950	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Naphthalene	21	15,500	111	2.10	<10.0	<10.0	<10.0	<10.0	<10.0	31.7	<10.0	<10.0
Phenol			<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
TICs (total)			835.4	143.25	54.91	<10.0	<10.0	<10.0	<10.0	89.7	<10.0	<10.0
All other Compounds	Varies	Varies	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Metals by EPA Method SW-6010B/3030C (ug/L)												
Lead	15	15,000	0.600	<5.0	<5.0	<5.0	<5.0	0.675	2.28	<5.0	<5.0	<5.0

Bold type indicates detectable concentrations

Bold and highlighted indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

mg/L - milligrams per liter

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

NA - Not analyzed; laboratory quantitation for the indicated analyte was not conducted

NS - Not sampled; the indicated location was not designated for sampling during the event

E - estimated concentration above the linear quantitation range

Table
 Historical Groundwater Analytical Data
 October 2006 Sampling Event
 LCH4015

Parameter	NCGWQS	MW-01	MW-02	MW-03	MW-13	MW-19	MW-20	MW-21	MW-22	MW-23	MW-24	Duplicate
VOCs by EPA Method 602 (ug/L)												
Benzene	1	12	5.70	<1.00	<1.00	0.329 J	0.383 J	13.2	<1.00	116	1.34	6.03
Diisopropyl ether (DIPE)	70	7.23	<1.00	<1.00	<1.00	<1.00	<1.00	0.692 J	<1.00	7.05	1.53	0.602 J
Ethylbenzene	29	118	6.34	0.367 J	0.202 J	0.832 J	0.731 J	2.59	0.705 J	3.51 J	0.760 J	6.06
Toluene	1,000	5.21	1.94	0.831 J	0.785 J	3.76	2.99	3.86	3.09	5.17	2.16	2.13
Xylenes (total)	530	191.20	82.18	0.924 J	<2.00	4.56	4.39	4.80 J	2.57	5.74 J	3.21 J	88.67
Methyl-tert butyl ether (MTBE)	200	21.1	14.1	0.768 J	<2.00	<2.00	<2.00	15.7	9.31	84.4	1.39 J	14.6
Total BTEX		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs by EPA Method 625 (ug/L)												
Acenaphthene	80	<10.0	<10.0	<10.0	<10.0	1.40 J	<10.0	<10.0	<10.0	<10.0	2.10 J	<10.0
Acenaphthylene	210	<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	10.7	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Diethylphthalate	5,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Di-n-octylphthalate	140	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Anthracene	2100	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Benzo(a)anthracene	0.05	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Flouranthene	280	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Flourene	280	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	2.60 J	<10.0
1-Methylnaphthalene	RL	11.1	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Methylnaphthalene	14	16.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Naphthalene	21	45.5	9.40 J	<10.0	<10.0	<10.0	<10.0	44.0	<10.0	<10.0	4.80 J	9.80 J
Phenanthrene	210	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
TIC's		938.4	395.9	67.74	170.07	78.35	8.01	96.69	9.56	50.0	225.67	187.55
Pyrene	210	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA 200.7 / SM 3030C (ug/L)												
Lead (EPA 6010B / SM 3030C) (ug/L)	15	0.875 J	0.500 J	< 5.0	< 5.0	< 5.0	0.800 J	1.90 J	< 5.0	< 5.0	1.33 J	2.33 J

Bold type indicates detectable contaminant concentrations

Bold and shaded indicates detectable concentrations above the NCGWQS

Bold and shaded indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

B - Amount in prep blank > MDL

Table
 Historical Groundwater Analytical Data
 February 2007 Sampling Event
 LCH4015

Parameter	NCGWQS	MW-01	MW-02	MW-03	MW-13	MW-18	MW-19	MW-20	MW-21	MW-22	MW-23	MW-24	Duplicate
VOCs by EPA Method 602 (ug/L)													
Benzene	1	6.80	<1.00	0.965 J	<1.00	<1.00	<1.00	<1.00	21.1	<1.00	122	<1.00	<1.00
Diisopropyl ether (DIPE)	70	0.809 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.513 J	<1.00	4.50	0.770 J	<1.00
Ethylbenzene	29	23.7	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	1.80	<1.00	<1.00	<1.00	<1.00
Toluene	1,000	1.57	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.465 J	<1.00	<1.00	<1.00	<1.00
Xylenes (total)	530	26.26	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Methyl-tert butyl ether (MTBE)	200	19.5	14.2	<2.00	<2.00	<2.00	<2.00	<2.00	21.3	8.34	77.5	<2.00	<2.00
Total BTEX		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
SVOCs by EPA Method 625 (ug/L)													
Acenaphthene	80	<10.0	<10.0	<10.0	<10.0	2.10 J	1.40 J	<10.0	<10.0	<10.0	<10.0	<10.0	1.50 J
Acenaphthylene	210	<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	55.1	<10.0	5.80 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Diethylphthalate	5,000	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Di-n-octylphthalate	140	<10.0	<10.0	20.2	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Anthracene	2100	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Benzo(a)anthracene	0.05	< 4.9	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Flouranthene	280	< 4.9	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Flourene	280	<10.0	<10.0	<10.0	<10.0	2.70 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
1-Methylnaphthalene	RL	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
2-Methylnaphthalene	14	4.00 J	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Naphthalene	21	17.1	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	54.3	<10.0	<10.0	<10.0	<10.0
Phenanthrene	210	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
TIC's		712.2	125.93	106.39	10.6	16.7	21.9	9.0	111.5	27.7	110.8	213.47	12.3
Pyrene	210	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA 200.7 / SM 3030C (ug/L)													
Lead (EPA 6010B / SM 3030C) (ug/L)	15	1.53 J	0.500 J	< 5.0	< 5.0	1.57 J	0.525 J	1.02 J	0.650 J	< 5.0	< 5.0	< 5.0	< 5.0

Bold type indicates detectable contaminant concentrations

Bold and shaded indicates detectable concentrations above the NCGWQS

Bold and shaded indicates detectable concentrations above the GCL

NCGWQS - North Carolina Groundwater Quality Standard

GCL - Gross Contaminant Level

<# - not detected at the indicated reporting limit

ug/L - micrograms per liter

NE - Not established

RL - the NCGWQS for the constituent is the reporting limit

ND - None detected (no summed constituents were detected)

J - estimated concentration between minimum detection limit and reporting limit

B - Amount in prep blank > MDL

TABLE
Historical Groundwater Analytical Data 2007-2008

Incident Number and Name: 85352 – Building LCH 4015

Facility ID#: N/A

Analytical Method: EPA Method 602

Contaminant of Concern			Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
Well ID	Sample ID	Date Collected						
USTLCH4015-MW01	USTLCH4015-MW01	7/24/2007	9.75	BQL	145	BQL	BQL	293
		1/23/2008	7.75	BQL	31.7	12.6	1.30J	39.93
USTLCH4015-MW02	USTLCH4015-MW02	7/24/2007	3.16	BQL	2.76	BQL	BQL	11.5
		1/24/2008	8.26	BQL	12.3	3.51	1.39	20.5
USTLCH4015-MW03	USTLCH4015-MW03	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	0.707J	BQL	BQL
USTLCH4015-MW04	USTLCH4015-MW04	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW05	USTLCH4015-MW05	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW06	USTLCH4015-MW06	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW07	USTLCH4015-MW07	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW08	USTLCH4015-MW08	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW09	USTLCH4015-MW09	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW10	USTLCH4015-MW10	7/25/2007	BQL	BQL	BQL	0.587	BQL	BQL
USTLCH4015-MW11	USTLCH4015-MW11	7/25/2007	BQL	BQL	5.04	BQL	BQL	BQL
USTLCH4015-MW12	USTLCH4015-MW12	7/23/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW13	USTLCH4015-MW13	7/23/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW14	USTLCH4015-MW14	7/23/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW15	USTLCH4015-MW15	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW16	USTLCH4015-MW16	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW18	USTLCH4015-MW18	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW19	USTLCH4015-MW19	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL
USTLCH4015-MW20	USTLCH4015-MW20	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	0.812J	BQL	BQL
USTLCH4015-MW21	USTLCH4015-MW21	7/24/2007	21.0	0.378	1.31	19.4	BQL	BQL
		1/24/2008	26.0	1.18J	2.05	19.3	BQL	BQL
USTLCH4015-MW22	USTLCH4015-MW22	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	3.35	BQL	BQL

Contaminant of Concern			Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
Well ID	Sample ID	Date Collected						
USTLCH4015-MW23	USTLCH4015-MW23	7/24/2007	46.3	3.24	BQL	42.3	BQL	BQL
		1/23/2008	8.42	4.09	BQL	27.4	BQL	BQL
USTLCH4015-MW24	USTLCH4015-MW24	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL
		1/24/2008	BQL	BQL	BQL	BQL	BQL	BQL
Duplicate	Duplicate	7/24/2007	46.2	3.21	BQL	44.9	BQL	BQL
		1/24/2008	BQL	BQL	BQL	0.850J	BQL	BQL
2L Standard (µg/l)			1	70	550	200	1,000	530

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits
- **BOLD** and shaded = detected concentration above applicable standard
- **J** = Detected below quantitation limits

TABLE
Historical Groundwater Analytical Data 2007-2008

Incident Number and Name: 85352 – Building LCH 4015

Facility ID#: N/A

Analytical Method: EPA Method 625

Contaminant of Concern			Acenaphthene	Acenaphthylene	Bis(2-ethylhexyl)phthalate	Diethylphthalate	Di-n-octylphthalate	Fluorene	2,4-Dinitrotoluene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Tentatively Identified Compounds (TICs)	All Other Compounds
Well ID	Sample ID	Date Collected												
USTLCH4015-MW01	USTLCH4015-MW01	7/24/2007 1/23/2008	BQL BQL	BQL BQL	9.90 4.20J	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	100 20.3	882 300.7	BQL BQL
USTLCH4015-MW02	USTLCH4015-MW02	7/24/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	24.7 23.4	460.1 606	BQL BQL
USTLCH4015-MW03	USTLCH4015-MW03	7/25/2007 1/24/2008	BQL 12.4	BQL BQL	3.26 BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	25.31 18.65	BQL BQL
USTLCH4015-MW04	USTLCH4015-MW04	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	2.33J	22.08	BQL
USTLCH4015-MW05	USTLCH4015-MW05	7/25/2007	BQL	BQL	BQL	4.77J	BQL	BQL	BQL	BQL	BQL	BQL	29.28	BQL
USTLCH4015-MW06	USTLCH4015-MW06	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	13.84	BQL
USTLCH4015-MW07	USTLCH4015-MW07	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	1.20J	22.74	BQL
USTLCH4015-MW08	USTLCH4015-MW08	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	22.26	BQL
USTLCH4015-MW09	USTLCH4015-MW09	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	14.74	BQL
USTLCH4015-MW10	USTLCH4015-MW10	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	48.58	BQL
USTLCH4015-MW11	USTLCH4015-MW11	7/25/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	107.11	BQL
USTLCH4015-MW12	USTLCH4015-MW12	7/23/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	42.42	BQL
USTLCH4015-MW13	USTLCH4015-MW13	7/23/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	47.71 BQL	BQL BQL
USTLCH4015-	USTLCH4015-	7/23/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	21.88	BQL

Contaminant of Concern			Acenaphthene	Acenaphthylene	Bis(2-ethylhexyl)phthalate	Diethylphthalate	Di-n-octylphthalate	Fluorene	2,4-Dinitrotoluene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Tentatively Identified Compounds (TICs)	All Other Compounds
Well ID	Sample ID	Date Collected												
MW14	MW14													
USTLCH4015-MW15	USTLCH4015-MW15	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	15.97	BQL
USTLCH4015-MW16	USTLCH4015-MW16	7/24/2007	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	34.54	BQL
USTLCH4015-MW18	USTLCH4015-MW18	7/24/2007	BQL	BQL	BQL	BQL	BQL	1.30J	BQL	BQL	BQL	BQL	30.09	BQL
USTLCH4015-MW19	USTLCH4015-MW19	7/24/2007 1/24/2008	2.20J 12.7	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL 20.3	BQL BQL	BQL BQL	BQL BQL	34.47 BQL	BQL BQL
USTLCH4015-MW20	USTLCH4015-MW20	7/24/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	27.83 BQL	BQL BQL
USTLCH4015-MW21	USTLCH4015-MW21	7/24/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	41.8 44.3	98.77 97.2	BQL BQL
USTLCH4015-MW22	USTLCH4015-MW22	7/24/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	32.98 BQL	BQL BQL
USTLCH4015-MW23	USTLCH4015-MW23	7/24/2007 1/23/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	78.4 7.16	BQL BQL
USTLCH4015-MW24	USTLCH4015-MW24	7/25/2007 1/24/2008	BQL 13.1	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL 2.70J	BQL BQL	BQL BQL	BQL BQL	BQL BQL	16.91 131.15	BQL BQL
Duplicate	Duplicate	7/24/2007 1/24/2008	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	BQL BQL	1.20J 45.45	BQL BQL
2L Standard (µg/l)			80	210	2.5	5,000	140	280		NE	14	21	NE	Vari es

- All results reported in µg/l
- µg/L = micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits
- NE = Not Established; standard therefore compared to the reporting limit.
- J = Detected below quantitation limits.

TABLE
Historical Groundwater Analytical Data 2007-2008

Incident Number and Name: 85352 – Building LCH 4015

Facility ID#: N/A

Analytical Method: Standard Method 3030C

Contaminant of Concern			Lead
Well ID	Sample ID	Date Collected	
USTLCH4015-MW01	USTLCH4015-MW01	7/24/2007 2/6/2007	BQL BQL
USTLCH4015-MW02	USTLCH4015-MW02	7/24/2007 2/7/2007	BQL BQL
USTLCH4015-MW03	USTLCH4015-MW03	7/25/2007 2/7/2007	BQL BQL
USTLCH4015-MW04	USTLCH4015-MW04	7/25/2007	BQL
USTLCH4015-MW05	USTLCH4015-MW05	7/25/2007	BQL
USTLCH4015-MW06	USTLCH4015-MW06	7/25/2007	4.30J
USTLCH4015-MW07	USTLCH4015-MW07	7/24/2007	BQL
USTLCH4015-MW08	USTLCH4015-MW08	7/25/2007	BQL
USTLCH4015-MW09	USTLCH4015-MW09	7/25/2007	BQL
USTLCH4015-MW10	USTLCH4015-MW10	7/25/2007	BQL
USTLCH4015-MW11	USTLCH4015-MW11	7/25/2007	BQL
USTLCH4015-MW13	USTLCH4015-MW13	7/23/2007 2/6/2007	BQL BQL
USTLCH4015-MW14	USTLCH4015-MW14	7/23/2007	0.775J
USTLCH4015-MW15	USTLCH4015-MW15	7/24/2007	BQL
USTLCH4015-MW16	USTLCH4015-MW16	7/24/2007	BQL
USTLCH4015-MW18	USTLCH4015-MW18	7/24/2007	BQL
USTLCH4015-MW19	USTLCH4015-MW19	7/24/2007 2/6/2007	BQL BQL
USTLCH4015-MW20	USTLCH4015-MW20	7/24/2007 2/7/2007	BQL BQL
USTLCH4015-MW21	USTLCH4015-MW21	7/24/2007 2/6/2007	BQL BQL
USTLCH4015-MW22	USTLCH4015-MW22	7/24/2007 2/7/2007	BQL BQL
USTLCH4015-MW23	USTLCH4015-MW23	7/24/2007 2/6/2007	BQL BQL
USTLCH4015-MW24	USTLCH4015-MW24	7/25/2007 2/7/2007	BQL BQL
Duplicate	Duplicate	7/24/2007 2/6/2007	BQL BQL
2L Standard (µg/l)			15

- All results reported in µg/l
- µg/L =micrograms per liter
- GCL = gross contamination level
- BQL = Below Quantitation Limits; laboratory limit of 5.00 µg/l

Table 4.3
MCB Camp Lejeune
Building LCH-4015
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 5/12/2009			Incident Number and Name: 125709 LCH 4015 Wells										625 PAHs																		
Analytical Method: 6010B			602 VOCs										625 PAHs																		
Contaminant of Concern			Lead	Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Ethylbenzene	Methyl Tert Butyl Ether	Toluene	Xylenes (total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	
Sample ID	Date Collected	Sample Depth (ft bgs)																													
USTLCH4015-MW01	8/23/2009 and 08/28/08	N/A	172	4.1	<1.0	<10	<3.0	<2.0	1.1	13	0.77 J	0.93 J	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
USTLCH4015-MW02	8/25/2008	N/A	18.8	2.2	<1.0	<1.0	<1.0	<2.0	0.66 J	4.3	<1.0	3.3	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	8.9	<4.9	<4.9	
USTLCH4015-MW03	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW04	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW05	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW06	8/22/2008 and 08/28/08	N/A	23.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW07	8/23/2009 and 08/28/08	N/A	174	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	
USTLCH4015-MW08	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW09	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW10	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW11	8/22/2008 and 08/28/08	N/A	12.4	<1.0	<1.0	<6.0	<2.0	<2.0	8.6	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW12	8/23/2009 and 08/28/08	N/A	42.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW14	8/23/2009 and 08/28/08	N/A	170	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW15	8/23/2009 and 08/28/08	N/A	112	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	
USTLCH4015-MW16	8/23/2009 and 08/28/08	N/A	305	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW18	8/25/2008	N/A	27.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
USTLCH4015-MW24	8/22/2008 and 08/28/08	N/A	<2.0	<1.0	<1.0	<6.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	1.2 J	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	
GWQS (ug/L)			15	1	50	NS	NS	NS	550	200	1000	530	80	210	2100	0.0479	0.00479	0.0479	210	0.479	4.79	0.0047	280	280	0.047	NS	14	21	210	210	
GCL (ug/L)			15000	5000	50000	NS	NS	NS	84500	200000	257500	87500	2120	1965	2000000	22	1.5	0.6	210	0.4	0.8	0.25	280	950	31	NS	12500	15500	410	210	

Indicate method detection limit for contaminants when analyzed but not detected (i.e., <1.0)

List any contaminant detected above the method detection limit

Detectable concentration exceeds GWQS

GWQS = Groundwater Quality Standard NC Administrative Code Title 15A Subchapter 2L - Groundwater Classifications and Standards 04/01/05

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

J Numerical value is an estimate between laboratory reporting limit and laboratory method detection limit

Table 4.5
MCB Camp Lejeune
Building LCH-4015
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 5/12/2009			Incident Number and 125709 LCH 4015 Wells																											
Analytical Method: 6010B			602 VOCs										625 PAHs																	
Contaminant of Concern			Lead	Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Ethylbenzene	Methyl Tert Butyl Ether	Toluene	Xylenes (total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
Sample ID	Date Collected	Sample Depth (ft bgs)	Lead	Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Ethylbenzene	Methyl Tert Butyl Ether	Toluene	Xylenes (total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
USTLCH4015-MW13	8/23/2009 and 08/28/08	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTLCH4015-MW19	8/25/2008	N/A	20.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTLCH4015-MW20	8/25/2008	N/A	9.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
USTLCH4015-MW21	8/25/2008	N/A	14.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTLCH4015-MW22	8/25/2008	N/A	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15.5	<1.0	<3.0	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
USTLCH4015-MW23	8/25/2008	N/A	29.3	10.9	<1.0	<1.0	<1.0	<1.0	<1.0	50.3	<1.0	<3.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
GWQS (ug/L)			15	1	50	NS	NS	NS	550	200	1000	530	80	210	2100	0.0479	0.00479	0.0479	210	0.479	4.79	0.0047	280	280	0.047	NS	14	21	210	210
GCL (ug/L)			15000	5000	50000	NS	NS	NS	84500	200000	257500	87500	2120	1965	2000000	22	1.5	0.6	210	0.4	0.8	0.25	280	950	31	NS	12500	15500	410	210

Indicate method detection limit for contaminants when analyzed but not detected (i.e., <1.0)

List any contaminant detected above the method detection limit

Detectable concentration exceeds GWQS

GWQS = Groundwater Quality Standard NC Administrative Code Title 15A Subchapter 2L - Groundwater Classifications and Standards 04/01/05

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

J Numerical value is an estimate between laboratory reporting limit and laboratory method detection limit

APPENDIX B

**LABORATORY REPORTS AND CHAIN OF
CUSTODY DOCUMENTATION FROM
AUGUST 2009
SAMPLING EVENTS**



Ben Grosser
Rhea Engineer & Consultants
4951 William Flynn Hwy
Gibsonia, PA 15044

Report Number: G910-12

Client Project: LCH 4015

Dear Ben Grosser,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. 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 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 services performed during this project, please call Linda McWhirter at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America, Inc.

A handwritten signature in black ink, appearing to read 'Linda McWhirter', written over a horizontal line.

9/2/09

Project Manager
Linda McWhirter

Date

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

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/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are $10\% < \%R < LCL$; # of MEs are allowable and compounds are not detected in the sample.

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

% solids = 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.

Results for Volatiles

by GC 602

Client Sample ID: 4015-MW1
Client Project ID: LCH 4015
Lab Sample ID: G910-12-1B
Lab Project ID: G910-12

Analyzed By: DVO
Date Collected: 8/19/2009 7:45
Date Received: 8/19/2009
Matrix: Water

Analyte	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Benzene	3.85	1.00	1	8/28/2009
Diisopropyl ether (DIPE)	BQL	1.00	1	8/28/2009
Ethylbenzene	14.6	1.00	1	8/28/2009
Methyl-tert butyl ether (MTBE)	BQL	2.00	1	8/28/2009
Toluene	BQL	1.00	1	8/28/2009
m/p-Xylene	4.50	2.00	1	8/28/2009
o-Xylene	BQL	2.00	1	8/28/2009

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.9	105

Comments:

All values corrected for dilution.
BQL = Below quantitation limit.

Results for Volatiles

by GC 602

Client Sample ID: 4015-MW2
Client Project ID: LCH 4015
Lab Sample ID: G910-12-2B
Lab Project ID: G910-12

Analyzed By: DVO
Date Collected: 8/19/2009 11:05
Date Received: 8/19/2009
Matrix: Water

Analyte	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Benzene	BQL	1.00	1	8/28/2009
Diisopropyl ether (DIPE)	BQL	1.00	1	8/28/2009
Ethylbenzene	2.46	1.00	1	8/28/2009
Methyl-tert butyl ether (MTBE)	BQL	2.00	1	8/28/2009
Toluene	BQL	1.00	1	8/28/2009
m/p-Xylene	24.5	2.00	1	8/28/2009
o-Xylene	BQL	2.00	1	8/28/2009

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.0	103

Comments:

All values corrected for dilution.
BQL = Below quantitation limit.

Results for Volatiles

by GC 602

Client Sample ID: 4015-MW21

Client Project ID: LCH 4015

Lab Sample ID: G910-12-11F

Lab Project ID: G910-12

Analyzed By: DVO

Date Collected: 8/19/2009 13:15

Date Received: 8/19/2009

Matrix: Water

Analyte	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Benzene	12.1	1.00	1	8/28/2009
Diisopropyl ether (DIPE)	BQL	1.00	1	8/28/2009
Ethylbenzene	BQL	1.00	1	8/28/2009
Methyl-tert butyl ether (MTBE)	22.0	2.00	1	8/28/2009
Toluene	BQL	1.00	1	8/28/2009
m/p-Xylene	BQL	2.00	1	8/28/2009
o-Xylene	BQL	2.00	1	8/28/2009

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.1	103

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 

GC-VOA_WA

Results for Volatiles
by GC 602

Client Sample ID: 4015-MW23
Client Project ID: LCH 4015
Lab Sample ID: G910-12-12F
Lab Project ID: G910-12

Analyzed By: DVO
Date Collected: 8/19/2009 8:55
Date Received: 8/19/2009
Matrix: Water

Analyte	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Benzene	BQL	1.00	1	8/28/2009
Diisopropyl ether (DIPE)	BQL	1.00	1	8/28/2009
Ethylbenzene	BQL	1.00	1	8/28/2009
Methyl-tert butyl ether (MTBE)	7.25	2.00	1	8/28/2009
Toluene	BQL	1.00	1	8/28/2009
m/p-Xylene	BQL	2.00	1	8/28/2009
o-Xylene	BQL	2.00	1	8/28/2009

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.4	101

Comments:

All values corrected for dilution.
BQL = Below quantitation limit.

**Results for Semivolatiles
by GCMS 625 for 610 Compounds**

Client Sample ID: 4015-MW1
 Client Project ID: LCH 4015
 Lab Sample ID: G910-12-1G
 Lab Project ID: G910-12

Analyzed By: EAW
 Date Collected: 8/19/2009 7:45
 Date Received: 8/19/2009
 Date Extracted: 8/20/2009
 Matrix: Water

Initial/Final Amt: 938 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Acenaphthene	BQL	5.33	1	8/22/2009
Acenaphthylene	BQL	5.33	1	8/22/2009
Anthracene	BQL	5.33	1	8/22/2009
Benzo[a]anthracene	BQL	5.33	1	8/22/2009
Benzo[a]pyrene	BQL	5.33	1	8/22/2009
Benzo[b]fluoranthene	BQL	5.33	1	8/22/2009
Benzo[g,h,i]perylene	BQL	5.33	1	8/22/2009
Benzo[k]fluoranthene	BQL	5.33	1	8/22/2009
Chrysene	BQL	5.33	1	8/22/2009
Dibenzo[a,h]anthracene	BQL	5.33	1	8/22/2009
Fluoranthene	BQL	5.33	1	8/22/2009
Fluorene	BQL	5.33	1	8/22/2009
Indeno(1,2,3-c,d)pyrene	BQL	5.33	1	8/22/2009
1-Methylnaphthalene	BQL	5.33	1	8/22/2009
2-Methylnaphthalene	BQL	5.33	1	8/22/2009
Naphthalene	16.2	5.33	1	8/22/2009
Phenanthrene	BQL	5.33	1	8/22/2009
Pyrene	BQL	5.33	1	8/22/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.6	76
Nitrobenzene-d5	10	8.2	82
4-Terphenyl-d14	10	10.8	108

Comments:

Flags:

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

Reviewed By: EAW

**Results for Semivolatiles
by GCMS 625 for 610 Compounds**

Client Sample ID: 4015-MW2
 Client Project ID: LCH 4015
 Lab Sample ID: G910-12-2G
 Lab Project ID: G910-12

Analyzed By: EAW
 Date Collected: 8/19/2009 11:05
 Date Received: 8/19/2009
 Date Extracted: 8/20/2009
 Matrix: Water

Initial/Final Amt: 961 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Acenaphthene	BQL	5.20	1	8/24/2009
Acenaphthylene	BQL	5.20	1	8/24/2009
Anthracene	BQL	5.20	1	8/24/2009
Benzo[a]anthracene	BQL	5.20	1	8/24/2009
Benzo[a]pyrene	BQL	5.20	1	8/24/2009
Benzo[b]fluoranthene	BQL	5.20	1	8/24/2009
Benzo[g,h,i]perylene	BQL	5.20	1	8/24/2009
Benzo[k]fluoranthene	BQL	5.20	1	8/24/2009
Chrysene	BQL	5.20	1	8/24/2009
Dibenzo[a,h]anthracene	BQL	5.20	1	8/24/2009
Fluoranthene	BQL	5.20	1	8/24/2009
Fluorene	BQL	5.20	1	8/24/2009
Indeno(1,2,3-c,d)pyrene	BQL	5.20	1	8/24/2009
1-Methylnaphthalene	BQL	5.20	1	8/24/2009
2-Methylnaphthalene	BQL	5.20	1	8/24/2009
Naphthalene	BQL	5.20	1	8/24/2009
Phenanthrene	BQL	5.20	1	8/24/2009
Pyrene	BQL	5.20	1	8/24/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.1	81
Nitrobenzene-d5	10	9.1	91
4-Terphenyl-d14	10	9.5	95

Comments:

Flags:

BQL = Below Quantitation Limits.

Reviewed By: 

**Results for Semivolatiles
by GCMS 625 for 610 Compounds**

Client Sample ID: 4015-MW21
 Client Project ID: LCH 4015
 Lab Sample ID: G910-12-11J
 Lab Project ID: G910-12

Analyzed By: EAW
 Date Collected: 8/19/2009 13:15
 Date Received: 8/19/2009
 Date Extracted: 8/20/2009
 Matrix: Water

Initial/Final Amt: 928 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Acenaphthene	BQL	5.39	1	8/24/2009
Acenaphthylene	BQL	5.39	1	8/24/2009
Anthracene	BQL	5.39	1	8/24/2009
Benzo[a]anthracene	BQL	5.39	1	8/24/2009
Benzo[a]pyrene	BQL	5.39	1	8/24/2009
Benzo[b]fluoranthene	BQL	5.39	1	8/24/2009
Benzo[g,h,i]perylene	BQL	5.39	1	8/24/2009
Benzo[k]fluoranthene	BQL	5.39	1	8/24/2009
Chrysene	BQL	5.39	1	8/24/2009
Dibenzo[a,h]anthracene	BQL	5.39	1	8/24/2009
Fluoranthene	BQL	5.39	1	8/24/2009
Fluorene	BQL	5.39	1	8/24/2009
Indeno(1,2,3-c,d)pyrene	BQL	5.39	1	8/24/2009
1-Methylnaphthalene	BQL	5.39	1	8/24/2009
2-Methylnaphthalene	BQL	5.39	1	8/24/2009
Naphthalene	48.7	5.39	1	8/24/2009
Phenanthrene	BQL	5.39	1	8/24/2009
Pyrene	BQL	5.39	1	8/24/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.6	86
Nitrobenzene-d5	10	10.2	102
4-Terphenyl-d14	10	10.2	102

Comments:

Flags:

BQL = Below Quantitation Limits.

Reviewed By: 

**Results for Semivolatiles
by GCMS 625 for 610 Compounds**

Client Sample ID: 4015-MW23
 Client Project ID: LCH 4015
 Lab Sample ID: G910-12-12J
 Lab Project ID: G910-12

Analyzed By: EAW
 Date Collected: 8/19/2009 8:55
 Date Received: 8/19/2009
 Date Extracted: 8/20/2009
 Matrix: Water

Initial/Final Amt: 937 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Acenaphthene	BQL	5.34	1	8/24/2009
Acenaphthylene	BQL	5.34	1	8/24/2009
Anthracene	BQL	5.34	1	8/24/2009
Benzo[a]anthracene	BQL	5.34	1	8/24/2009
Benzo[a]pyrene	BQL	5.34	1	8/24/2009
Benzo[b]fluoranthene	BQL	5.34	1	8/24/2009
Benzo[g,h,i]perylene	BQL	5.34	1	8/24/2009
Benzo[k]fluoranthene	BQL	5.34	1	8/24/2009
Chrysene	BQL	5.34	1	8/24/2009
Dibenzo[a,h]anthracene	BQL	5.34	1	8/24/2009
Fluoranthene	BQL	5.34	1	8/24/2009
Fluorene	BQL	5.34	1	8/24/2009
Indeno(1,2,3-c,d)pyrene	BQL	5.34	1	8/24/2009
1-Methylnaphthalene	BQL	5.34	1	8/24/2009
2-Methylnaphthalene	BQL	5.34	1	8/24/2009
Naphthalene	BQL	5.34	1	8/24/2009
Phenanthrene	BQL	5.34	1	8/24/2009
Pyrene	BQL	5.34	1	8/24/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.2	82
Nitrobenzene-d5	10	9.4	94
4-Terphenyl-d14	10	10.4	104

Comments:

Flags:

BQL = Below Quantitation Limits.

Reviewed By: 

Results for Metals

Client Sample ID: 4015-MW1
Client Project ID: LCH 4015
Lab Sample ID: G910-12-1
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 07:45
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW2
Client Project ID: LCH 4015
Lab Sample ID: G910-12-2
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: Final Vol: 50 mL
Prep Batch: 14960

Analyzed By: PSW
Date Collected: 8/19/2009 11:05
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW6
Client Project ID: LCH 4015
Lab Sample ID: G910-12-3
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 11:10
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW7
Client Project ID: LCH 4015
Lab Sample ID: G910-12-4
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 09:35
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW12
Client Project ID: LCH 4015
Lab Sample ID: G910-12-5
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: Final Vol: 50 mL
Prep Batch: 14960

Analyzed By: PSW
Date Collected: 8/19/2009 11:55
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW14
Client Project ID: LCH 4015
Lab Sample ID: G910-12-6
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 12:35
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW15
Client Project ID: LCH 4015
Lab Sample ID: G910-12-7
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 10:20
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW16
Client Project ID: LCH 4015
Lab Sample ID: G910-12-8
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 08:50
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW18
Client Project ID: LCH 4015
Lab Sample ID: G910-12-9
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol:
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 12:00
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW19
Client Project ID: LCH 4015
Lab Sample ID: G910-12-10
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol:
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 12:30
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW21
Client Project ID: LCH 4015
Lab Sample ID: G910-12-11
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol:
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 13:15
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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

Results for Metals

Client Sample ID: 4015-MW23
Client Project ID: LCH 4015
Lab Sample ID: G910-12-12
Lab Project ID: G910-12
ICP InitWt/Vol: 50 mL
Hg InitWt/Vol: 50 mL
Prep Batch: 14960

Final Vol: 50 mL
Final Vol:

Analyzed By: PSW
Date Collected: 8/19/2009 08:55
Date Received: 8/19/2009
Matrix: WATER

Metals	Result	RL	DF	Units	Method	Date Analyzed
Lead	BQL	5.00	25	UG/L	6020	8/27/2009

Comments

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



Chain of Custody Record

SGS Environmental Services Inc
 5500 Business Dr
 Wilmington, NC 28405

Client Contact		Project Manager: Erica DeLatre		Site Contact: Ben Grosser		Date: 8/19/09		COC No. _____ of _____ COCs	
Rhea Engineers 4975 William Flynn Highway Ste 14 Gibsonia, PA 15044 724-443-4111 phone 724-443-4187 fax		Tel/Fax: 724-443-4111		Lab Contact: Lori Lockamy		Carrier: Ben Grosser		Job No. _____	
Project Name: LCH 4015 ✓ Site: LCH 4015 PO # 438-5		Analysis Turnaround Time Calendar (C) or Work Days (W) TAT if different from Below <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample		Lead 6020/3030 C (NIC ₂ Pres) 602 +PE+MTBE+xylenes (HCl pres) PAHs 610/625		SDG No. _____	
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Sample Specific Notes:			
✓ 4015-MW1	8/19/09	745	Grab	GW	6	X X X			
✓ 4015-MW2	8/19/09	1105	Grab	GW	6	X X X			
✓ 4015-MW6	8/19/09	1110	Grab	GW	1	X			
✓ 4015-MW7	8/19/09	935	Grab	GW	1	X			
✓ 4015-MW12	8/19/09	1155	Grab	GW	1	X			
✓ 4015-MW14	8/19/09	1235	Grab	GW	1	X			
✓ 4015-MW15	8/19/09	1020	Grab	GW	1	X			
✓ 4015-MW16	8/19/09	850	Grab	GW	1	X			
✓ 4015-MW18	8/19/09	1200	Grab	GW	1	X			
✓ 4015-MW19	8/19/09	1030	Grab	GW	1	X			
✓ 4015-MW21	8/19/09	1315	Grab	GW	6	X X X			
✓ 4015-MW23	8/19/09	855	Grab	GW	6	X X X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Relinquished by:
 Relinquished by:
 Relinquished by: _____

Received by:
 Received by:
 Received by: _____

Company:
 Company:
 Company: _____

Date/Time: 8/19/09 16:10
 Date/Time: 8/19/09 16:10
 Date/Time: _____

Company: SGS
 Company: 10.6 to temp
 Company: _____

please email results to ben@rhea.us r erica@rhea.us

APPENDIX C

FIELD DATA

