

FINAL ANNUAL GROUNDWATER MONITORING REPORT 2009

BUILDING BB-190

NCDENR Incident Number: 22793

Marine Corps Base
Camp Lejeune, North Carolina

Prepared for:



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Contract Task Order 0015

June 2009

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
2.0 INTRODUCTION	4
3.0 SITE HISTORY	4
4.0 GAUGING AND SAMPLING RESULTS	6
4.1 WELL GAUGING	6
4.2 SEMI-ANNUAL GROUNDWATER SAMPLING	7
4.3 ANNUAL GROUNDWATER SAMPLING	9
5.0 RECEPTOR SURVEY	11
6.0 CONCLUSIONS AND RECOMMENDATIONS	12
7.0 REFERENCES	13

TABLES

TABLE 4-1	GROUNDWATER ELEVATION AND PRODUCT THICKNESS DATA
TABLE 4-2	WELL CONSTRUCTION INFORMATION
TABLE 4-3	SUMMARY OF AUGUST 2008 GROUNDWATER SAMPLING RESULTS – EPA METHOD 602
TABLE 4-4	SUMMARY OF AUGUST 2008 GROUNDWATER SAMPLING RESULTS – EPA METHOD 625
TABLE 4-5	SUMMARY OF AUGUST 2008 GROUNDWATER SAMPLING RESULTS – MADEP VPH/EPH
TABLE 4-6	SUMMARY OF AUGUST 2008 GROUNDWATER SAMPLING RESULTS – MADEP VPH/EPH AS COMPARED TO NCDENR 2L GWQS
TABLE 4-7	SUMMARY OF JANUARY 2009 GROUNDWATER SAMPLING RESULTS – EPA METHOD 602
TABLE 4-8	SUMMARY OF JANUARY 2009 GROUNDWATER SAMPLING RESULTS – EPA METHOD 625
TABLE 4-9	SUMMARY OF JANUARY 2009 GROUNDWATER SAMPLING RESULTS – MADEP VPH/EPH

TABLE 4-10	SUMMARY OF JANUARY 2009 GROUNDWATER SAMPLING RESULTS – MADEP VPH/EPH AS COMPARED TO NCDENR 2L GWQS
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FIGURES

FIGURE 3-1	GENERAL VICINITY TOPOGRAPHIC SITE MAP
FIGURE 4-1	SITE MAP WITH MONITORING WELL LOCATIONS
FIGURE 4-2	GROUNDWATER ELEVATIONS – AUGUST 2008
FIGURE 4-3	GROUNDWATER ELEVATIONS – JANUARY 2009
FIGURE 4-4	SITE MAP WITH AUGUST 2008 GROUNDWATER RESULTS
FIGURE 4-5	SITE MAP WITH JANUARY 2009 GROUNDWATER RESULTS

APPENDICES

APPENDIX A	HISTORICAL DATA
APPENDIX B	LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION FROM 2008 AND 2009 SAMPLING EVENTS

LIST OF ACRONYMS

2L GWQS	NCAC T15A:02L Groundwater Quality Standards
BDL	Below Detection Limit
BQL	Below Quantitation Limit
BLS	Below Land Surface
CAP	Corrective Action Plan
CSA	Comprehensive Site Assessment
DO	Dissolved Oxygen
DRO	Diesel Range Organics
DTW	Depth to Water
EMD	Environmental Management Division
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
EQB	Environmental Quality Branch
FT	Feet
GCL	Gross Contaminant Level
GRO	Gasoline Range Organics
GPS	Global Positioning System
HDPE	High Density Polyethylene
I&E	Installations and Environment Department
IPE	Isopropyl Ether
MADEP	Massachusetts Department of Environmental Protection
MCB	Marine Corps Base
NAVFAC	Naval Facilities Engineering Command Atlantic
NC	North Carolina
NCDENR	North Carolina Department of Environment and Natural Resources
NCGQS	North Carolina Groundwater Quality Standards
NFA	No Further Action
NTU	Nephelometric Turbidity Units
SVOC	Semi Volatile Organic Compound
TIC	Tentatively Identified Compound
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VPH	Volatile Petroleum Hydrocarbons

EXECUTIVE SUMMARY

Building BB-190 is located in the Courthouse Bay area of Marine Corps Base (MCB) Camp Lejeune off of Horn Road. It is an active water treatment plant. An active potable water supply well, PSWBB47, is located approximately 250 feet north of Building BB-190. The former 500-gallon underground storage tank (UST) located at the subject site was used to store diesel fuel for heat production and was abandoned in place in May 1994.

Soil samples, collected during tank closure activities, showed the presence of total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) and diesel range organics (DRO) above state action levels. As a result, a comprehensive site assessment (CSA) was conducted at the site by Richard Catlin and Associates (now known as CATLIN Engineers and Scientists (CATLIN)) in 1995. Two areas exhibited soil TPH concentrations above action levels during the CSA - one in the vicinity of monitoring well MW16 and the other in the vicinity of former UST BB-190-1. Of these two areas, only soils in the vicinity of the former UST exhibited soil TPH concentrations above the Final Clean-up Level calculated at 120 ppm as TPH-Gasoline. Free product was not identified during the CSA. Dissolved phase constituents, however, were detected in groundwater at the site.

The CSA recommended a corrective action plan (CAP) be prepared to address contamination at the site. In 1996, CATLIN prepared a CAP, which recommended biosparging to address groundwater contamination, using a combination of horizontal and vertical biosparge wells. To address vadose zone soil contamination and to collect vapors from the biosparge wells, the CAP proposed soil vapor extraction using horizontal soil vapor extraction wells. The biosparge/soil vapor extraction system was subsequently installed by J.A. Jones Environmental Services, Inc. (J.A. Jones) in October 1998 and operated until December 1999, when the system was shut down based on low contaminant concentrations.

Following system deactivation in December 1999, post-operation groundwater monitoring was conducted quarterly. No free product was present, and dissolved phase constituents remained below detectable concentrations at most site wells. Monitoring wells MW07 and MW16 were the only wells that exhibited contaminants (benzene and/or ethylbenzene) above North Carolina Groundwater Quality Standards (NCGWQSs). Soil sampling conducted in September 2001 showed soil contaminant levels were below North Carolina Department of Environment and Natural Resources (NCDENR) established soil-to-groundwater (STGW) maximum soil contaminant concentrations (MSCCs).

Based on J.A. Jones soil and groundwater data, a May 2002 monitoring report was prepared. It stated that the site qualified for a low risk classification and recommended the site be considered for No Further Action (NFA) status by the NCDENR. NCDENR subsequently denied the request for NFA due to the close proximity of potable water supply well PSWBB47. NCDENR recommended that groundwater monitoring be continued at the site and that the monitoring program should include water supply well PSWBB47. Alternatively, they recommended that the potable water supply well be properly abandoned, and a well abandonment record be submitted to NCDENR.

Subsequent gauging and sampling of the site's 17 monitoring wells, as well as the nearby potable water supply well, was conducted by Engineering and Environment, Inc. (EEI) in both June 2004 and 2005. Sampling was not performed in 2003. No free product was detected in site monitoring wells during the 2004 and 2005 monitoring events. In addition, no contaminants were detected in the water supply well, PSWBB47, or in the site's three deep monitoring wells. Contamination above 2L GWQSs was detected only in the two wells closest

to the former UST, MW07 and MW16. Groundwater contaminant concentrations were below Gross Contaminant Levels (GCLs).

Sovereign Consulting Inc. (Sovereign) conducted annual groundwater monitoring in 2006, 2007, and 2008. Measurable free product was not identified during the monitoring events. Groundwater contaminant levels were similar to historical data showing monitoring wells MW07 and MW16 as the most impacted wells. Contaminant levels showed an overall decrease as compared to pre-remediation conditions. Since this site is classified by NCDENR as a high risk site due to the close proximity of active potable water supply well PSWBB47, Sovereign recommended MCB Camp Lejeune continue groundwater monitoring and reporting at the site.

Osage of Virginia (Osage) conducted semi-annual and annual groundwater monitoring in 2008 and 2009. The semi-annual sampling event consisted of gauging and sampling the four most heavily impacted wells (MW03, MW07, MW16, and MW17). Annual sampling consisted of gauging and sampling monitoring wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, and MW17. Samples collected during the semi-annual and annual monitoring events were analyzed for EPA 602, EPA 625, and MADEP EPH/VPH. Measurable free product was not identified during the 2008-2009 monitoring period.

Four monitoring wells at the site, MW03, MW07, MW16, and MW17 exhibited contaminant concentrations above the NCGWQSs. Groundwater from monitoring wells MW07 and MW16 were the most impacted wells with noncompliant concentrations of Benzene, Naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics. Groundwater from monitoring wells MW03 and MW17 contained noncompliant concentrations of Naphthalene and C₉-C₂₂ Aromatics. None of the concentrations, however, were above the GCLs, where established. Groundwater contaminant levels were similar to historical data showing monitoring wells MW07 and MW16 as the most impacted wells. Contaminant levels showed an overall decrease as compared to pre-remediation conditions.

Since this site is classified by NCDENR as a high risk site due to the close proximity of active potable water supply well PSWBB47, Osage recommends MCB Camp Lejeune continue annual monitoring and reporting for this site.

1.0 TITLE PAGE

DATE OF REPORT: June 2009

Facility I.D.: N/A

NCDENR Incident Number: 22793

Site Name: Building BB-190

Site Location: Marine Corps Base Camp Lejeune, North Carolina

Nearest City/Town: Camp Lejeune

County: Onslow

Risk Classification: High Risk

Land Use Classification: Industrial/Commercial

Property Owner: Commanding Officer – MCB Camp Lejeune

I&E/EMD/EQB

PSC Box 20004

Address: MCB Camp Lejeune, NC 28542-0004

Phone: (910) 451-5068

Tank Owner: Same as above

Address: Same as above

Phone: Same as above

Property Occupant: Same as above

Address: MCB Camp Lejeune, NC

Phone: None

Consultant/Contractor: CATLIN Engineers and Scientists

Osage of Virginia

Address: 220 Old Dairy Rd.

2618A Colley Ave

Wilmington, NC 28405

Norfolk, VA 23517

Phone: (910) 452-5861

Phone: (757) 440-0400

Release Information

Date Discovered: June 14, 1994

Latitude:

34° 54' 84" N

Longitude:

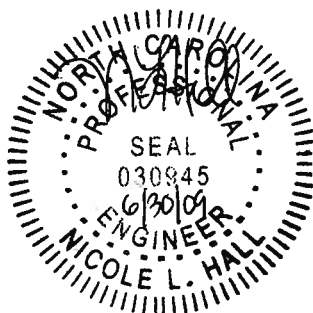
77° 21' 48.96" W

Estimated Quantity of Release: Unknown

Cause of Release: Leaking underground storage tank system

Source of Release (Piping/UST): UST and associated system

Sizes and contents of UST system(s) from which the release occurred: The former UST was a 500-gallon diesel tank.



I, Nicole L. Hall a Professional Engineer on behalf of Catlin Engineers and Scientist do certify that the information contained in this report is correct and accurate to the best of my knowledge.

2.0 INTRODUCTION

The purpose of this report is to summarize data from recent semi-annual and annual groundwater gauging and sampling events at the Building BB-190 site aboard MCB Camp Lejeune, North Carolina. This data was collected in August 2008 and January 2009. The project's scope of work implemented the 2008 Annual Monitoring Report recommendations and entailed monitoring of 17 site groundwater monitoring wells (each are preceded by the prefix USTBB190) – MW01-MW17. During the semi-annual monitoring event (August 2008), each well was gauged for presence of free product, and groundwater samples were collected from monitoring wells MW03, MW07, MW16, and MW17. During the annual monitoring event (January 2009), all monitoring wells were gauged and groundwater samples were collected from monitoring wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, MW17, and supply well PSWBB47. Analyses run included EPA Methods 602 + Xylenes, 625 + 10 largest non-target peaks, and the MADEP methods. Results of Osage's 2008 and 2009 gauging and sampling events are presented in this report.

3.0 SITE HISTORY

Building BB-190 is located in the Courthouse Bay area of MCB Camp Lejeune off of Horn Road (Figure 3-1). It is an active water treatment plant, and an active potable water supply well, PSWBB47, is located approximately 250 feet north of Building BB-190.

The former 290-gallon diesel UST located at the subject site was used to store diesel fuel for heat production. The tank system was abandoned in May 1994. The tank closure report states the delivery and vent lines servicing the UST were disconnected and capped, and the tank was abandoned in place, after appropriate cleaning, by pumping it full with concrete slurry. Two soil samples were collected during tank closure activities. Results showed the presence of TPH-GRO and DRO above state action levels in one of the two samples.

As a result, a comprehensive site assessment was conducted at the site by Richard Catlin and Associates (now known as Catlin Engineers and Scientists, CATLIN) in 1995. The report was performed in order to determine the magnitude and extent of soil and ground water contamination associated with the former UST, identify and delineate possible free product accumulation, if present, and assess the potential for exposure to possible subsurface petroleum related contaminants. Two areas exhibited soil TPH concentrations above action levels during the CSA - one in the vicinity of monitoring well MW16 and the other in the vicinity of former UST BB-190-1. Of these two areas, only soils in the vicinity of the former UST exhibited soil TPH concentrations above the Final Clean-up Level calculated at 120 ppm as TPH-Gasoline. Free product was not identified during the CSA. Dissolved phase constituents, however, were detected in groundwater at the site.

Due to soil and groundwater contamination, the CSA recommended a CAP be prepared to address contamination at the site. The 1996 CATLIN CAP recommended biosparging to address groundwater contamination, using a combination of horizontal and vertical biosparge wells. To address vadose zone soil contamination and to collect vapors from the biosparge wells, the CAP proposed soil vapor extraction using horizontal soil vapor extraction wells. The biosparge/soil vapor extraction system was subsequently installed by J.A. Jones in October 1998. The system included one horizontal biosparge well, four vertical biosparge wells, and two horizontal soil vapor extraction wells.

The remediation system operated from October 1998 until December 1999 when the system was shut down based on low contaminant concentrations. A baseline groundwater sampling event was conducted in August 1998. Monthly groundwater sampling events were conducted during the first quarter of system operation (November 1998, December 1998, and January 1999), after which groundwater sampling was conducted quarterly (April, July, and October 1999). Following the October 1999 sampling event, most wells had not exhibited detectable concentrations of any dissolved phase contaminants. In addition, only the two monitoring wells located closest to the former UST (wells MW07 and MW16) exhibited constituent concentrations above NCGWQSs (limited to benzene and/or ethylbenzene).

Following system deactivation in December 1999, post-operation groundwater monitoring was conducted quarterly during the months of January, April, July, and October 2000. Data from the post-operation monitoring indicated no free product was present, and dissolved phase constituents remained below detectable concentrations at most site wells. Wells MW07 and MW16 were the only monitoring wells that exhibited contaminants above NCGWQSs (again limited to benzene and/or ethylbenzene).

In September 2001, five soil samples were collected from five borings advanced in areas where previous investigations had identified elevated TPH concentrations in vadose zone soils. Only one of the five soil samples contained detectable contamination concentrations. These concentrations, however, were all were below NCDENR established STGW MSCCs. J.A. Jones generated a May 2002 monitoring report documenting the remediation system operation, groundwater monitoring program (during and post system operation), and 2001 soil sampling event. The report indicated the site qualified for a low risk classification and recommended the site be considered for No Further Action status by NCDENR.

In a response letter dated July 10, 2002, NCDENR denied the Request for No Further Action due to the close proximity of the site to potable water supply well PSWBB47. The supply well is located on the northern portion of the site approximately 250 feet from the former UST. NCDENR recommended that groundwater monitoring be continued at the site, and that the monitoring program should include water supply well PSWBB47. Alternatively, NCDENR recommended that the potable water supply well be properly abandoned, and a well abandonment record be submitted to NCDENR.

Follow on gauging and sampling of the site's 17 monitoring wells, as well as the nearby potable water supply well, was conducted by EEI in both June 2004 and 2005. Sampling was not performed in 2003 due to funding issues. There was no measurable free detected during the June 2004 monitoring event. In addition, no contaminants were detected in the water supply well, PSWBB47, or in the site's three deep monitoring wells. Contamination above NCGWQSs was detected only in the two monitoring wells closest to the former UST, MW07 and MW16. Contaminant concentrations were below GCLs. EEI also gauged and sampled the site in June 2005. Findings were the same as those in the June 2004 event with contaminant concentrations being slightly lower.

Sovereign conducted monitoring activities at the site from 2006-2008. The 2006 monitoring program was conducted in May 2006 and included well gauging and sampling of the 17 site monitoring wells, as well as groundwater sampling from potable water supply well PSWBB47. No measurable free product was detected during the May 2006 monitoring event. In addition, laboratory analysis did not detect any target analyte in potable water supply well PSWBB47. Only two shallow monitoring wells at the site, MW07 and MW16, exhibited contaminant concentrations above NCGWQSs in 2006. Each well contained Naphthalene, C₅-C₈

Aliphatics, and C₉-C₂₂ Aromatics at levels above their applicable groundwater quality standards. None, however, were above the GCLs, where established. No target analytes were detected in the deep monitoring wells at the site.

In February 2007, Sovereign's monitoring program included well gauging of the 17 site monitoring wells, as well as groundwater sampling from 8 select monitoring wells and from potable water supply well PSWBB47. No measurable free product was detected during the February 2007 monitoring event. In addition, laboratory analysis did not detect any target analyte in potable water supply well PSWBB47. Only two shallow monitoring wells at the site, MW07 and MW16, exhibited contaminant concentrations above NCGWQSs in 2007. Well MW07 contained C₅-C₈ Aliphatics and C₉-C₂₂ Aromatics at levels above the NCGWQSs. None, however, were above the GCLs, where established. Well MW16 contained Benzene above the NCGWQS, but below the GCL. No target analytes were detected in the deep monitoring wells at the site.

The 2008 annual monitoring program, conducted by Sovereign in January 2008, included well gauging of the 17 site monitoring wells, as well as groundwater sampling from 9 select monitoring wells and from potable water supply well PSWBB47. No measurable free product was detected during the January 2008 monitoring event. In addition, laboratory analysis did not detect any target analytes in potable water supply well PSWBB47. Four shallow monitoring wells at the site, MW03, MW07, MW16, and MW17 exhibited contaminant concentrations above NCGWQSs in 2008. Well MW03 contained C₉-C₂₂ Aromatics at above the NCGWQS. Well MW07 contained Benzene and C₉-C₂₂ Aromatics above the NCGWQSs. Well MW16 contained Benzene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics above the NCGWQSs. Well MW17 contained C₉-C₂₂ Aromatics above the NCGWQS. None, however, were above the GCLs, where established. No target analytes were detected in the deep monitoring wells at the site.

Osage carried out the 2008/2009 semi-annual and annual monitoring events in August 2008 and January 2009. Osage gauged and sampled a select list of monitoring wells as recommended in the 2008 Annual Monitoring Report. The August 2008 semi-annual monitoring event involved the sampling of wells MW03, MW07, MW16, and MW17. The January 2009 annual monitoring event involved the sampling of wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, and MW17, as well as the potable water supply well PSWBB47. This report outlines and describes site activities as performed by Osage during the 2008/2009 monitoring period.

4.0 GAUGING AND SAMPLING RESULTS

The 2008-2009 field program for the Building BB-190 site consisted of semi-annual and annual gauging events of select site wells (Figure 4-1), which included semi-annual sampling of four monitoring wells and annual sampling of nine monitoring wells and potable water supply well, PSWBB47. Activities were conducted in accordance with NCDENR guidance.

4.1 WELL GAUGING

Monitoring wells MW03, MW07, MW16, and MW17 were gauged on August 28, 2008. Monitoring wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, and MW17 were gauged on January 29, 2009. Gauging data is summarized in Table 4-1. Wells were gauged using an interface probe to measure the depth to water and depth to product (if present). Depth to water values ranged from 5.55 (MW07) to 8.55

(MW03) feet below Top of Casing (TOC) in August 2008 and 4.88 (MW02) to 9.47 (MW15) feet below TOC in January 2009. No measurable free product was detected at any site well designated for gauging during the 2008-2009 monitoring period.

Top of casing elevations and DTW values were used to obtain groundwater elevations at the site; well construction details are summarized in Table 4-2. Figure 4-2 shows shallow groundwater elevations in August 2008, Figure 4-3 shows shallow groundwater elevations in January 2009. From the maps, groundwater generally flows in a southwesterly direction, which is consistent with the direction observed from previous investigations.

4.2 SEMI-ANNUAL GROUNDWATER SAMPLING

Semi-annual groundwater sampling was conducted at the site. The semi-annual groundwater sampling was conducted in August 2008 and consisted of sampling the four most heavily impacted wells (MW03, MW07, MW16, and MW17) as recommended in the Sovereign 2008 Annual Groundwater Monitoring Report. These monitoring wells are screened in the surficial aquifer and located close to and down gradient of the former UST.

One duplicate sample was collected from well MW16 and a laboratory supplied trip blank was submitted for analysis. Prior to sampling, wells were purged of one well casing volume of water using a peristaltic pump with connected polyethylene discharge tubing and a low flow purging and sampling procedure. Purging of the wells was completed using the techniques described in the NCDENR UST Section *Guidelines for Sampling, Version 1.2*, dated September 1, 2003. Specifically, Osage field personnel follow purging completion criteria detailed in Appendix F of the *Guidelines for Sampling*. One option of these criteria state that adequate purging is achieved when three consecutive measurements in which the three parameters listed below are within the stated limits, dissolved oxygen is no greater than 20 percent of saturation at the field measured temperature, and turbidity is no greater than 20 Nephelometric Turbidity Units (NTUs):

1. Temperature: +/- 0.2° C
2. pH: +/- 0.2 Standard Units
3. Specific Conductance: +/- 5.0% of reading

This method is used in order to make the most efficient use of time when sampling. As in any scenario, professional judgment is also relied upon in the field during gauging and sampling events. Water quality indicator parameters (pH, temperature, conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were measured and recorded. If a well purged to dryness, the well was allowed to recharge before sampling.

Samples were collected after purging using the laboratory-prepared sample bottles, placed on ice, and shipped under proper chain of custody to SGS Environmental Services (SGS) in Wilmington, North Carolina (NC Certification Number 481). The lab tested the groundwater samples for volatiles via EPA Method 602, semivolatiles using EPA Method 625, and Volatile and Extractable Petroleum Hydrocarbons (VPH/EPH) with the MADEP Methods. Laboratory reports and chain of custody documentation are included in Appendix B. Results from the sampling event are discussed below.

EPA Method 602

Three volatile compounds, Benzene, Ethylbenzene, and Total Xylenes, were detected in groundwater samples from the site. Contaminant concentrations in the wells were below the established groundwater standards for the compounds, with the exception of Benzene. Benzene was detected in MW07 at 3.07 µg/L and MW16 at 23.6 µg/L as compared to the 2L Groundwater Quality Standard (GWQS) of 1 µg/L. Benzene was last detected above standards at the site in MW07 in January 2008 (2.6 µg/L) and MW16 in January 2008 (13.7 µg/L). Ethylbenzene and Total Xylenes were detected in each monitoring well sampled (MW03, MW07, MW16, and MW17); however, concentrations in all wells were below the applicable 2L GWQSs. Ethylbenzene was detected in MW03 (20.9 µg/L), MW07 (28.7 µg/L), MW16 (54.8 µg/L), and MW17 (58.6 µg/L). Total Xylenes were detected in groundwater from MW03 (60.08 µg/L), MW07 (41.33 µg/L), MW16 (20.8 µg/L), and MW17 (106 µg/L). Volatile organic compound results are summarized in Table 4-3 and shown on Figure 4-4.

EPA Method 625

Five semi-volatile compounds, Acenaphthene, Bis(2-ethylhexyl)phthalate, Fluorene, Naphthalene, and Phenanthrene, were detected at the site. Acenaphthene was detected in MW03, MW07, and MW17 at concentrations well below the NCGWQS of 80 µg/L. Bis(2-ethylhexyl)phthalate was detected in MW03 at a concentration of 2.31 µg/L, which is below the 2L GWQS of 2.5 µg/L. Monitoring wells MW03, MW07, and MW17 contained Fluorene, but at concentrations well below the 2L GWQS of 280 µg/L. Naphthalene was detected in MW03, MW07, MW16, and MW17 at concentrations of 43.2 µg/L, 46.5 µg/L, 163 µg/L, and 65.1 µg/L, respectively. These Naphthalene concentrations are each above the 2L GWQS of 21 µg/L. Phenanthrene was also detected at the site in groundwater from monitoring wells MW03, MW07 and MW17. None of the concentrations, however, were above the 2L GWQS of 210 µg/L.

Each well sampled exhibited one or more tentatively identified compounds (TICs). TICs are substances not on the target compound list, and not all TICs are identified and quantified using individual standards. All TIC quantifications are estimated. Monitoring well MW03 contained eight TICs with a total concentration of 416.4 µg/L. Monitoring well MW07 contained seven TICs with a total concentration of 500.7 µg/L. Monitoring well MW16 contained three TICs with a total concentration of 449 µg/L, and monitoring well MW17 contained seven TICs with a total concentration of 483.1 µg/L. Semivolatile compound results are summarized in Table 4-4 and shown on Figure 4-4.

MADEP Methods

MADEP constituents were detected in wells MW03, MW07, MW16, and MW17. The C₅-C₈ Aliphatics and C₉-C₂₂ Aromatics concentrations were detected in the wells at concentrations above the 2L GWQSs. Monitoring well MW16 contained a C₅-C₈ Aliphatics concentration of 1,180 µg/L, which exceeds the 2L GWQS of 420 µg/L. Monitoring wells MW03, MW07, and MW17 also contained C₅-C₈ Aliphatics; however, the concentrations were below the standard of 420 µg/L. C₉-C₂₂ Aromatics were detected in monitoring wells MW03 (1,479 µg/L), MW07 (1,396 µg/L), MW16 (1,718 µg/L), and MW17 (1,355 µg/L) at concentrations exceeding the 2L GWQS of 210 µg/L. Monitoring wells MW03, MW07, MW16, and MW17 exhibited concentrations of C₉-C₁₈ Aliphatics; however, the concentrations were below the 2L GWQS of 4,200 µg/L. No detections of C₁₉-C₃₆ Aliphatics were noted. MADEP compound results are summarized in Tables 4-5 and 4-6 and shown on Figure 4-4.

A duplicate sample was obtained from MW16. The duplicate sample results closely mirrored the named groundwater sample results. The laboratory supplied trip blank was also free of target analytes.

4.3 ANNUAL GROUNDWATER SAMPLING

Annual groundwater sampling was also conducted at the site. The annual groundwater sampling event was conducted in January 2009 and involved the sampling of wells MW01, MW02, MW03, MW07, MW08, MW12, MW15, MW16, MW17 and PSWBB47 as recommended in the Sovereign 2008 Annual Groundwater Monitoring Report.

Sampling was reduced to these ten wells based upon the absence of contaminants in historical data from the remainder of site monitoring wells (MW04, MW05, MW06, MW09, MW10, MW11, MW13, and MW14).

One duplicate sample was collected from well MW16 and a laboratory supplied trip blank was submitted for analysis. Prior to sampling, wells were purged of one well casing volume of water using a peristaltic pump with connected polyethylene discharge tubing and a low flow purging and sampling procedure. Purging of the wells was completed using the techniques described in the NCDENR UST Section *Guidelines for Sampling, Version 1.2*, dated September 1, 2003. Specifically, Osage field personnel follow purging completion criteria detailed in Appendix F of the *Guidelines for Sampling*. One option of these criteria state that adequate purging is achieved when three consecutive measurements in which the three parameters listed below are within the stated limits, dissolved oxygen is no greater than 20 percent of saturation at the field measured temperature, and turbidity is no greater than 20 Nephelometric Turbidity Units (NTUs):

1. Temperature: +/- 0.2° C
2. pH: +/- 0.2 Standard Units
3. Specific Conductance: +/- 5.0% of reading

This method is used in order to make the most efficient use of time when sampling. As in any scenario, professional judgment is also relied upon in the field during gauging and sampling events. Water quality indicator parameters (pH, temperature, conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were measured and recorded. If a well purged to dryness, the well was allowed to recharge before sampling.

Samples were collected after purging using the laboratory-prepared sample bottles, placed on ice, and shipped under proper chain of custody to SGS in Wilmington, North Carolina (NC Certification Number 481). The lab tested the groundwater samples for volatiles via EPA Method 602, semivolatiles using EPA Method 625, and Volatile and Extractable petroleum hydrocarbons with the MADEP Methods. Laboratory reports and chain of custody documentation are included in Appendix B.

Five of the nine sampled wells did not exhibit target analytes above the laboratory reporting limits – MW01, MW02, MW08, MW12 and MW15. The wells that contained detectable contaminant concentrations were MW03, MW07, MW16, and MW17. Laboratory analysis of the sample from water supply well PSWBB47 showed all target analytes were below laboratory quantitation limits. Specific results from the sampling event are discussed as follows.

EPA Method 602

Four volatile compounds were detected in groundwater collected from wells MW03, MW07, MW16, and MW17. Benzene, Ethylbenzene, Toluene, and Total Xylenes were detected. The wells are screened in the surficial aquifer and located close to and downgradient of the former UST. Contaminant concentrations in the wells were below the established groundwater standards for the compounds, with the exception of Benzene.

Benzene was detected in MW07 (2.22 µg/L) and MW16 (7.12 µg/L) as compared to the 2L standard of 1 µg/L. Benzene was last detected above standards at the site in MW07 in August 2008 (3.07 µg/L) and MW16 in August 2008 (23.6 µg/L). Ethylbenzene, Toluene, and Total Xylenes were also detected in monitoring wells MW03, MW07, MW16, and MW17; however, concentrations in these wells were well below the 2L GWQSs. Ethylbenzene was detected in groundwater from MW03 (8.23 µg/L), MW07 (13.7 µg/L), MW16 (53.6 µg/L), and MW17 (29.1 µg/L). Toluene was detected in groundwater from monitoring well MW07 at a concentration of 1.05 µg/L, MW16 at 1.76 µg/L, and MW17 at 1.84 µg/L. Total Xylenes were detected in groundwater from MW03 (22.25 µg/L), MW07 (11.6 µg/L), MW16 (4.76 µg/L), and MW17 (35.4 µg/L), respectively. Volatile organic compound results are summarized in Table 4-7 and shown on Figure 4-5.

EPA Method 625

Five semi-volatile compounds, Acenaphthene, Anthracene, Fluorene, Naphthalene, and Phenanthrene, were detected at the site. Acenaphthene was detected in MW02, MW07, MW16, and MW17 at concentrations well below the 2L GWQS of 80 µg/L. Anthracene was detected in MW07 at a concentration of 1.82J µg/L, which is below the groundwater standard of 2,100 µg/L. Monitoring wells MW07, MW16, and MW17 contained Fluorene, but at concentrations well below the 2L GWQS of 280 µg/L. Naphthalene was detected in MW03, MW07, MW16, and MW17 at noncompliant concentrations of 25.3 µg/L, 23.0 µg/L, 145 µg/L, and 48.4 µg/L, respectively. These are each above the groundwater standard of 21 µg/L. Phenanthrene was also detected at the site in groundwater from monitoring wells MW07, MW16 and MW17. None of the concentrations, however, were above the standard of 210 µg/L.

Monitoring wells MW01, MW02, MW08, MW12, and MW15 didn't contain any TICs; however, monitoring wells MW03, MW07, MW16, and MW17 exhibited one or more. Monitoring well MW03 contained 8 TICs with a total concentration of 262.57 µg/L; Monitoring well MW07 contained 8 TICs with a total concentration of 343.3 µg/L. Monitoring well MW16 contained 8 TICs with a total concentration of 568.4 µg/L, and Monitoring well MW17 contained 9 TICs with a total concentration of 516.6 µg/L. Semi-volatile compound results are summarized in Table 4-8 and shown on Figure 4-5.

MADEP Methods

MADEP constituents were detected in wells MW03, MW07, MW16, and MW17. The C₅-C₈ Aliphatics and C₉-C₂₂ Aromatics concentrations were detected in the wells at concentration above the North Carolina 2L GWQSs. C₅-C₈ Aliphatics were detected in monitoring wells MW07 (436 µg/L), MW16 (753 µg/L), and MW17 (546 µg/L) at concentrations exceeding the standard of 420 µg/L. C₉-C₂₂ Aromatics were detected in monitoring wells MW03 (505 µg/L), MW07 (946 µg/L), MW16 (1,258 µg/L), and MW17 (1,154 µg/L) at concentrations exceeding the 2L GWQS of 210 µg/L. Monitoring wells MW03, MW07, MW16, and MW17

exhibited concentrations of C₉-C₁₈ Aliphatics however, the concentrations were below the NCGWQS of 4,200 µg/L. There were no detections of C₁₉-C₃₆ Aliphatics. MADEP compound results are summarized in Tables 4-9 and 4-10 and shown on Figure 4-5.

The duplicate sample was obtained from MW16. The duplicate results closely mirrored the named groundwater sample results. The laboratory supplied trip blank was also free of target analytes.

Overall, the site continues to display a downward trend in contaminant concentrations as compared to pre-remediation conditions. The number of volatiles detected at the site stayed the same from 2008 to 2009. Benzene concentrations showed a slight decrease. The number of semi-volatile contaminants at the site increased from four in 2008 to five in 2009. Naphthalene, however, was the only contaminant detected at noncompliant concentrations. Monitoring wells MW03 and MW16 showed an increase in Naphthalene concentrations by an order of magnitude over last year; however, all other Naphthalene concentrations were generally the same as in 2008. MADEP constituents at the site were present in the groundwater samples obtained from MW03, MW07, MW16, and MW17, which has been the case over the last several monitoring events.

Current monitoring data from the August 2008 event show an overall increase in concentrations as compared to January 2008 data; however, data collected during the January 2009 event showed more comparable concentrations to the January 2008 data. Groundwater contaminant concentrations remain well below pre-remediation conditions and significantly below GCLs.

Maximum Detected Concentrations

Analyte	NCGWQS	GCL	Pre-Remediation	Post-Remediation								
			1995 Data	Jan 2000 Data	Oct 2000 Data	2004 Data	2005 Data	2006 Data	2007 Data	Jan 2008 Data	Aug 2008 Data	2009 Data
Benzene	1	5000	3,210	31	5	4.81	2.86	ND	10.2	13.7	23.6	7.12
Ethylbenzene	550	84,500	895	23	68	267	151	214	112	45.7	58.6	55
Total Xylenes	530	87,500	2,390	19	11	671	419.5	284.7	77.11	78.8	106	62.3
Naphthalene	21	15,500	423	ND	17	113	72.4	151	71.4	44	152	145
Benzo(a)pyrene	0.00479	1.5	37.2	ND	ND	ND	ND	ND	ND	ND	ND	ND

Concentrations are expressed in micrograms per liter

ND indicates the analyte was not detected at the laboratory detection limit.

(1995 data from Catlin, 1995/2000 data from Jones, 2002/2004/2005 data from EEI, 2004/2005/2006- January 2008 data from Sovereign, August 2008/January 2009 data from Osage)

Historical groundwater sampling data from previous annual reports can be found in Appendix A for comparison.

5.0 RECEPTOR SURVEY

Osage reassessed site conditions and concluded that a receptor survey previously completed by J.A. Jones in the May 2002 annual monitoring report still applies. Sovereign updated a risk classification and land use form as part of the 2006 monitoring report. Both forms can be found in the 2006 report. There has been no change in

receptor impact during the current monitoring period, and there have been no changes to land use of the site or the immediate surrounding areas.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on historical data and data gathered during the 2008-2009 monitoring period, the following conclusions and recommendations are presented:

1. Surficial aquifer groundwater flows to the southwest across the site, consistent with previous investigations. Depth to water values ranged from 5.55 (MW07) to 8.55 (MW03) feet below Top of Casing (TOC) in August 2008 and 4.88 (MW02) to 9.47 (MW15) feet below TOC
2. No measurable free product was detected during the August 2008 and January 2009 monitoring events.
3. No target analytes were detected in potable water supply well PSWBB47, indicating there has been no impact to this well.
4. Four shallow monitoring wells at the site, MW03, MW07, MW16, and MW17, exhibited contaminant concentrations above North Carolina 2L GWQSSs. Monitoring well MW16 was the most impacted well with the highest noncompliant concentrations of Benzene, Naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics. MW03 contained noncompliant concentrations of Naphthalene and C₉-C₂₂ Aromatics; MW07 contained noncompliant concentrations of Benzene, Naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics; and MW17 contained noncompliant concentrations of Naphthalene, C₅-C₈ Aliphatics, and C₉-C₂₂ Aromatics. None of the concentrations, however, were above the GCLs, where established.
5. No target analytes were detected in deep monitoring well MW15 (screened in the groundwater of the limestone unit), located adjacent to the near source surficial aquifer well MW07.
6. Previous investigations indicated constituent concentrations in soil are below NCDENR Soil-to-Groundwater Maximum Contaminant Concentrations.

Since this site is classified by NCDENR as high risk due to the close proximity of active potable water supply well PSWBB47 and given the presence of groundwater contamination, Osage recommends MCB Camp Lejeune continue annual groundwater monitoring and reporting at the site. The sampling program should include the following five site monitoring wells (MW03, MW07, MW15, MW16, and MW17), as well as water supply well PSWBB47. Sample analysis should include EPA 602, 610, and MADEP VPH/EPH.

The previous recommendation made by Sovereign regarding monitoring wells MW07 and MW16 should be evaluated. Monitoring wells MW07 and MW16 have historically been the two wells at the site that continually display noncompliant contaminant concentrations. In order to address the contamination in these two wells, additional remediation could be implemented to assist in contaminant degradation. For example, the application of iSOC®, which stands for in situ Submerged Oxygen Curtain technology, could be employed. iSOC® is a groundwater bioremediation delivery system for introducing supersaturated oxygen (or other gaseous substrates) into groundwater. It is a low cost technology for supersaturating the groundwater to enhance natural attenuation and can be used for polishing.

7.0 REFERENCES

AH Environmental Consultants, *Final Report, Wellhead Protection Plan – 2002 Update, Marine Corps Base, Camp Lejeune*, August 2002.

Richard Catlin and Associates, Inc., *Leaking Underground Storage Tank Comprehensive Site Assessment, UST BB-190-1, Marine Corps Base, Camp Lejeune, North Carolina*, October 6, 1995.

Richard Catlin and Associates, Inc., *Leaking Underground Storage Tank Corrective Action Plan, UST BB-190-1, Marine Corps Base, Camp Lejeune, North Carolina*, August 14, 1996.

Engineering and Environment, Inc., *Quarterly Groundwater Monitoring Report, Site BB-190, Marine Corps Base Camp Lejeune, North Carolina*, June 2004.

Engineering and Environment, Inc., *Annual Groundwater Monitoring Report 2005, Revision 0, Site BB-190, Marine Corps Base Camp Lejeune, North Carolina*, July 12, 2005.

Environmental and Regulatory Consultants, Inc., *Tank Removal Report, Marine Corps Base, Building BB-190, Camp Lejeune, North Carolina*, July 11, 1994

J.A. Jones Environmental Services, Inc., *Annual Monitoring Report and Request for No Further Action Status, Soil and Groundwater Remediation, UST BB190-1, Marine Corps Base Camp Lejeune, North Carolina*, May 30, 2002.

North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, *Guidelines for Assessment and Corrective Action*, April 2001.

North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, *Guidelines for Sampling, Version 1.2*, September 1, 2003.

North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, *Response Letter to MCBCLNC EMD*, July 10, 2002.

North Carolina Geological Survey, *Geologic Map of North Carolina, Scale 1:500,000*, 1985.

North Carolina Geological Survey, *Preliminary Explanatory Text for the 1985 Geologic Map of North Carolina, Contractual Report 88-1*, November 4, 1998.

Sovereign Consulting, Inc., *FINAL Annual Groundwater Monitoring Report 2006, Building BB-190, Marine Corps Base, Camp Lejeune, North Carolina*, July 24, 2006.

Sovereign Consulting, Inc., *FINAL Annual Groundwater Monitoring Report 2007, Building BB-190, Marine Corps Base, Camp Lejeune, North Carolina*, June 14, 2007.

Sovereign Consulting, Inc., *FINAL Annual Groundwater Monitoring Report 2008, Building BB-190, Marine Corps Base, Camp Lejeune, North Carolina, June 27, 2008.*

TABLES

Table 4-1
Groundwater Elevation and Product Thickness Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Monitoring Well	Top Of Casing Elevation (ft msl)	Well Type	August 2008 Depth to Free Product (ft below TOC)	August 2008 Depth to Groundwater (ft below TOC)	August 2008 Groundwater Elevation (ft msl)	January 2009 Depth to Free Product (ft below TOC)	January 2009 Depth to Groundwater (ft below TOC)	January 2009 Groundwater Elevation (ft msl)
USTBB190-MW01	12.91	II	NA	NM		NA	6.85	6.06
USTBB190-MW02	11.46	II	NA	NM		NA	4.88	6.58
USTBB190-MW03	13.64	II	NA	8.55	5.09	NA	7.83	5.81
USTBB190-MW04	13.57	II	NA	NM		NA	NM	
USTBB190-MW05	11.61	II	NA	NM		NA	NM	
USTBB190-MW06	9.85	II	NA	NM		NA	NM	
USTBB190-MW07	10.88	II	NA	5.55	5.33	NA	5.00	5.88
USTBB190-MW08	13.63	II	NA	NM		NA	7.12	6.51
USTBB190-MW09	13.48	II	NA	NM		NA	NM	
USTBB190-MW10	9.99	II	NA	NM		NA	NM	
USTBB190-MW11	12.83	II	NA	NM		NA	NM	
USTBB190-MW12	12.18	II	NA	NM		NA	5.40	6.78
USTBB190-MW13	13.39	III	NA	NM		NA	NM	
USTBB190-MW14	9.87	III	NA	NM		NA	NM	
USTBB190-MW15	11.13	III	NA	NM		NA	9.47	1.66
USTBB190-MW16	10.93	Pumping Well	NA	6.03	4.90	NA	5.51	5.42
USTBB190-MW17	10.83	II	NA	6.02	4.81	NA	5.30	5.53

TOC = Top of Casing
msl = mean sea level
NA= not applicable
NM = not measured

Table 4-2
Well Construction Information
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Monitoring Well	Installation Date	Well Depth (feet below TOC)	Top of Casing Elevation (ft msl)	Well Type
USTBB190-MW01	3/15/1995	15	12.91	II
USTBB190-MW02	3/15/1995	15	11.46	II
USTBB190-MW03	3/15/1995	15	13.64	II
USTBB190-MW04	3/16/1995	15	13.57	II
USTBB190-MW05	3/16/1995	10	11.61	II
USTBB190-MW06	3/16/1995	10	9.85	II
USTBB190-MW07	3/22/1995	15	10.88	II
USTBB190-MW08	3/23/1995	15	13.63	II
USTBB190-MW09	3/23/1995	15	13.48	II
USTBB190-MW10	3/24/1995	15	9.99	II
USTBB190-MW11	3/24/1995	15	12.83	II
USTBB190-MW12	3/24/1995	13.5	12.18	II
USTBB190-MW13	3/20/1995	50	13.39	III
USTBB190-MW14	3/24/1995	48.5	9.87	III
USTBB190-MW15	3/24/1995	50	11.13	III
USTBB190-MW16	3/23/1995	36	10.93	Pumping Well
USTBB190-MW17	Unknown	15	10.83	II

TABLE 4-3
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
EPA METHOD 602

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
	Sample ID	Date Collected						
GCL (µg/L)			5,000	70,000	84,500	200,000	257,500	87,500
2L GWQS (µg/L)			1	70	550	200	1,000	530
USTBB190-MW03	USTBB190-MW03	8/28/2008	<0.177	<0.253	20.9	<0.306	<0.313	60.08
USTBB190-MW07	USTBB190-MW07	8/28/2008	3.07	<0.253	28.7	<0.306	<0.313	41.33
USTBB190-MW16	USTBB190-MW16	8/28/2008	23.6	<1.01	54.8	<1.22	<1.25	20.8
USTBB190-MW17	USTBB190-MW17	8/28/2008	<0.708	<1.01	58.6	<1.22	<1.25	106
DUPLICATE	DUPLICATE	8/28/2008	23.7	<1.01	55.5	<1.22	<1.25	21.5
TRIP BLANK	TRIP BLANK	8/28/2008	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886

All results in micrograms per liter (µg/L).

BQL = Below Quantitation Limits; see laboratory report for specific limits

Bold results indicate concentrations above 2L GWQS or GCL.

GCL = Gross Contaminant Level

2L GWQS = NCAC T15A:02L Groundwater Quality Standards

TABLE 4-4
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
EPA METHOD 625

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Acenaphthene	Bis(2-ethylhexyl)phthalate	Flourene	Naphthalene	Phenanthrene	All Other Coumpunds	Tentatively Identified Compounds (TICs)
	Sample ID	Date Collected							
GCL (µg/L)			2,120	2,500	950	15,500	410	Varies	NA
2L GWQS (µg/L)			80	2.5	280	21	210	Varies	NA
USTBB190-MW03	USTBB190-MW03	8/28/2008	1.13J	2.31J	1.47J	43.2	0.733J	BQL	416.4
USTBB190-MW07	USTBB190-MW07	8/28/2008	2.94J	<0.439	4.12J	46.5	2.14J	BQL	500.7
USTBB190-MW16	USTBB190-MW16	8/28/2008	<8.69	<4.78	<8.46	163	<5.19	BQL	449
USTBB190-MW17	USTBB190-MW17	8/28/2008	2.02J	<0.425	2.44J	65.1	1.24J	BQL	483.1
DUPLICATE	DUPLICATE	8/28/2008	<8.79	<4.83	<8.55	152	<5.25	BQL	364.3

All results in micrograms per liter (µg/L).

BQL = Below Quantitation Limits; see laboratory report for specific limits

Bold results indicate concentrations above 2L GWQS or GCL.

J = Estimated concentration, below calibration range and above Method Detection Limit (MDL)

GCL = Gross Contaminant Level

2L GWQS = NCAC T15A:02L Groundwater Quality Standards

<# = less than the laboratory reporting limit

Duplicate sample obtained from MW16

TABLE 4-5
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
MADEP EPH/VPH

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C12 Aliphatics	C9 - C10 Aromatics	C9-C18 Aliphatics	C19-36 Aliphatics	C11-C22 Aromatics
	Sample ID	Date Collected						
USTBB190-MW03	USTBB190-MW03	8/28/2008	174	327	1,090	<100	<100	389
USTBB190-MW07	USTBB190-MW07	8/28/2008	345	261	886	<100	<100	510
USTBB190-MW16	USTBB190-MW16	8/28/2008	1,180	333	1,150	<100	<100	568
USTBB190-MW17	USTBB190-MW17	8/28/2008	349	402	1,070	<100	<100	285
DUPLICATE	DUPLICATE	8/28/2008	1,180	330	1,150	<100	<100	569

All results in micrograms per liter (µg/L)

<# = less than the laboratory reporting limit

Duplicate sample obtained from MW16

TABLE 4-6
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
MADEP EPH/VPH COMPARED TO NCDENR 2L GWQS

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C18 Aliphatics	C9 - C22 Aromatics	C19-C36 Aliphatics
	Sample ID	Date Collected				
USTBB190-MW03	USTBB190-MW03	8/28/2008	174	<427	1,479	<100
USTBB190-MW07	USTBB190-MW07	8/28/2008	345	<361	1,396	<100
USTBB190-MW16	USTBB190-MW16	8/28/2008	1,180	<433	1,718	<100
USTBB190-MW17	USTBB190-MW17	8/28/2008	349	<502	1,355	<100
DUPLICATE	DUPLICATE	8/28/2008	1,180	<430	1,719	<100
2L GWQS (µg/L)			420	4,200	210	42,000

All results in micrograms per liter (µg/L).

Bold results indicates concentrations above the 2L GWQS.

<# = less than the laboratory reporting limit

Duplicate sample obtained from MW16

TABLE 4-7
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
EPA METHOD 602

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
	Sample ID	Date Collected						
GCL (µg/L) 2L GWQS (µg/L)			5,000 1	70,000 70	84,500 550	200,000 200	257,500 1,000	87,500 530
USTBB190-MW01	USTBB190-MW01	1/29/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW02	USTBB190-MW02	1/29/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW03	USTBB190-MW03	1/29/2009	<0.428	<0.391	8.23	<0.778	<0.404	22.25
USTBB190-MW07	USTBB190-MW07	1/30/2009	2.22	<0.391	13.7	<0.778	1.05	11.6
USTBB190-MW08	USTBB190-MW08	1/31/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW12	USTBB190-MW12	1/31/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW15	USTBB190-MW15	1/30/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW16	USTBB190-MW16	1/30/2009	7.12	<1.27	53.6	<1.53	1.76J	4.76J
USTBB190-MW17	USTBB190-MW17	1/30/2009	<1.71	<1.56	29.1	<3.11	1.84J	35.4
PSWBB47	PSWBB47	1/30/2009	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886
DUPLICATE	DUPLICATE	1/30/2009	7.30	<1.96	55.0	<3.89	<2.02	9.39J
TRIP BLANK	TRIP BLANK	1/31/2009	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886

All results in micrograms per liter (µg/L).

BQL = Below Quantitation Limits; see laboratory report for specific limits

Bold results indicate concentrations above 2L GWQS or GCL.

J = Estimated concentration, below calibration range and above Method Detection Limit (MDL)

GCL = Gross Contaminant Level

2L GWQS = NCAC T15A:02L Groundwater Quality Standards

TABLE 4-8
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
EPA METHOD 625

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Acenaphthene	Anthracene	Bis(2-ethylhexyl)phthalate	Flourene	Naphthalene	Phenanthrene	All Other Coumpunds	Tentatively Identified Compounds (TICs)
	Sample ID	Date Collected								
GCL (µg/L)			2,120	2,100	2,500	950	15,500	410	Varies	NA
2L GWQS (µg/L)			80	2,100	2.5	280	21	210	Varies	NA
USTBB190-MW01	USTBB190-MW01	1/29/2009	<0.863	<1.01	<0.475	<0.840	<1.05	<0.516	BQL	BQL
USTBB190-MW02	USTBB190-MW02	1/29/2009	0.882J	<0.965	<0.452	<0.799	<1.0	<0.491	BQL	BQL
USTBB190-MW03	USTBB190-MW03	1/29/2009	<0.806	<0.947	<0.444	<0.785	25.3	<0.482	BQL	262.57
USTBB190-MW07	USTBB190-MW07	1/30/2009	1.61J	1.82J	<0.439	2.09J	23	1.87J	BQL	343.3
USTBB190-MW08	USTBB190-MW08	1/31/2009	<0.829	<0.973	<0.456	<0.806	<1.01	<0.495	BQL	BQL
USTBB190-MW12	USTBB190-MW12	1/31/2009	<0.829	<0.973	<0.456	<0.806	<1.01	<0.495	BQL	BQL
USTBB190-MW15	USTBB190-MW15	1/30/2009	<0.754	<0.886	<0.415	<0.734	<0.921	<0.450	BQL	BQL
USTBB190-MW16	USTBB190-MW16	1/30/2009	2.15J	<1.05	<0.490	2.45J	145	2.63J	BQL	568.4
USTBB190-MW17	USTBB190-MW17	1/30/2009	1.15J	<0.955	<0.448	1.20J	48.4	1.04	BQL	516.6
PSWBB47	PSWBB47	1/30/2009	<0.841	<0.988	<0.463	<0.818	<1.03	<0.502	BQL	BQL
DUPLICATE	DUPLICATE	1/30/2009	2.09J	<0.914	<0.428	2.40J	136	2.66J	BQL	554.7

All results in micrograms per liter (µg/L).

BQL = Below Quantitation Limits; see laboratory report for specific limits

Bold results indicate concentrations above 2L GWQS or GCL.

GCL = Gross Contaminant Level

2L GWQS = NCAC T15A:02L Groundwater Quality Standards

J = Estimated concentration, below calibration range and above method detection limit

TABLE 4-9
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
MADEP EPH/VPH

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C12 Aliphatics	C9 - C10 Aromatics	C9-C18 Aliphatics	C19-36 Aliphatics	C11-C22 Aromatics
	Sample ID	Date Collected						
USTBB190-MW01	USTBB190-MW01	1/29/2009	<100	<100	<100	<100	<100	<100
USTBB190-MW02	USTBB190-MW02	1/29/2009	<100	<100	<100	<100	<100	<100
USTBB190-MW03	USTBB190-MW03	1/29/2009	<100	124	334	<100	<100	171
USTBB190-MW07	USTBB190-MW07	1/30/2009	436	177	576	<100	<100	370
USTBB190-MW08	USTBB190-MW08	1/31/2009	<100	<100	<100	<100	<100	<100
USTBB190-MW12	USTBB190-MW12	1/31/2009	<100	<100	<100	<100	<100	<100
USTBB190-MW15	USTBB190-MW15	1/30/2009	<100	<100	<100	<100	<100	<100
USTBB190-MW16	USTBB190-MW16	1/30/2009	753	255	732	<100	<100	526
USTBB190-MW17	USTBB190-MW17	1/30/2009	546	282	818	<100	<100	336
PSWBB47	PSWBB47	1/30/2009	<100	<100	<100	<100	<100	<100
DUPLICATE	DUPLICATE	1/30/2009	744	262	742	<100	<100	500

All results in micrograms per liter (µg/L)

Bold Indicates a detected contaminant

<# = less than the laboratory reporting limit

Duplicate sample obtained from MW16

TABLE 4-10
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
MADEP EPH/VPH COMPARED TO NCDENR 2L GWQS

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C18 Aliphatics	C9 - C22 Aromatics	C19-C36 Aliphatics
	Sample ID	Date Collected				
USTBB190-MW01	USTBB190-MW01	1/29/2009	<100	<200	<200	<100
USTBB190-MW02	USTBB190-MW02	1/29/2009	<100	<200	<200	<100
USTBB190-MW03	USTBB190-MW03	1/29/2009	<100	<224	505	<100
USTBB190-MW07	USTBB190-MW07	1/30/2009	436	<277	946	<100
USTBB190-MW08	USTBB190-MW08	1/31/2009	<100	<200	<200	<100
USTBB190-MW12	USTBB190-MW12	1/31/2009	<100	<200	<200	<100
USTBB190-MW15	USTBB190-MW15	1/30/2009	<100	<200	<200	<100
USTBB190-MW16	USTBB190-MW16	1/30/2009	753	<355	1,258	<100
USTBB190-MW17	USTBB190-MW17	1/30/2009	546	<382	1,154	<100
PSWBB47	PSWBB47	1/30/2009	<100	<200	<200	<100
DUPLICATE	DUPLICATE	1/30/2009	744	<362	1,242	<100
2L GWQS (µg/L)			420	4,200	210	42,000

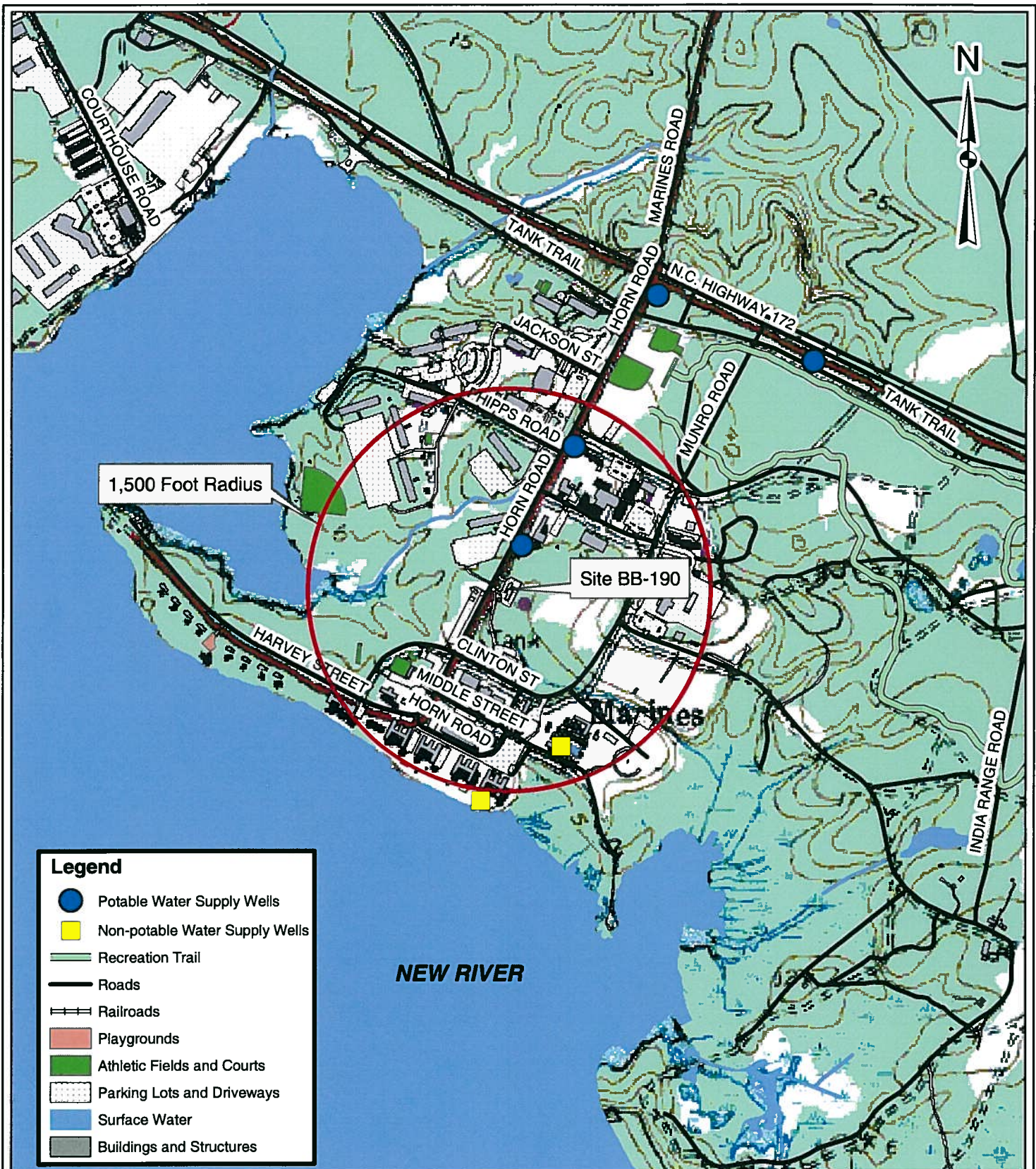
All results in micrograms per liter (µg/L).

Bold results indicates concentrations above the 2L GWQS.

<# = less than the laboratory reporting limit

Duplicate sample obtained from MW16

FIGURES

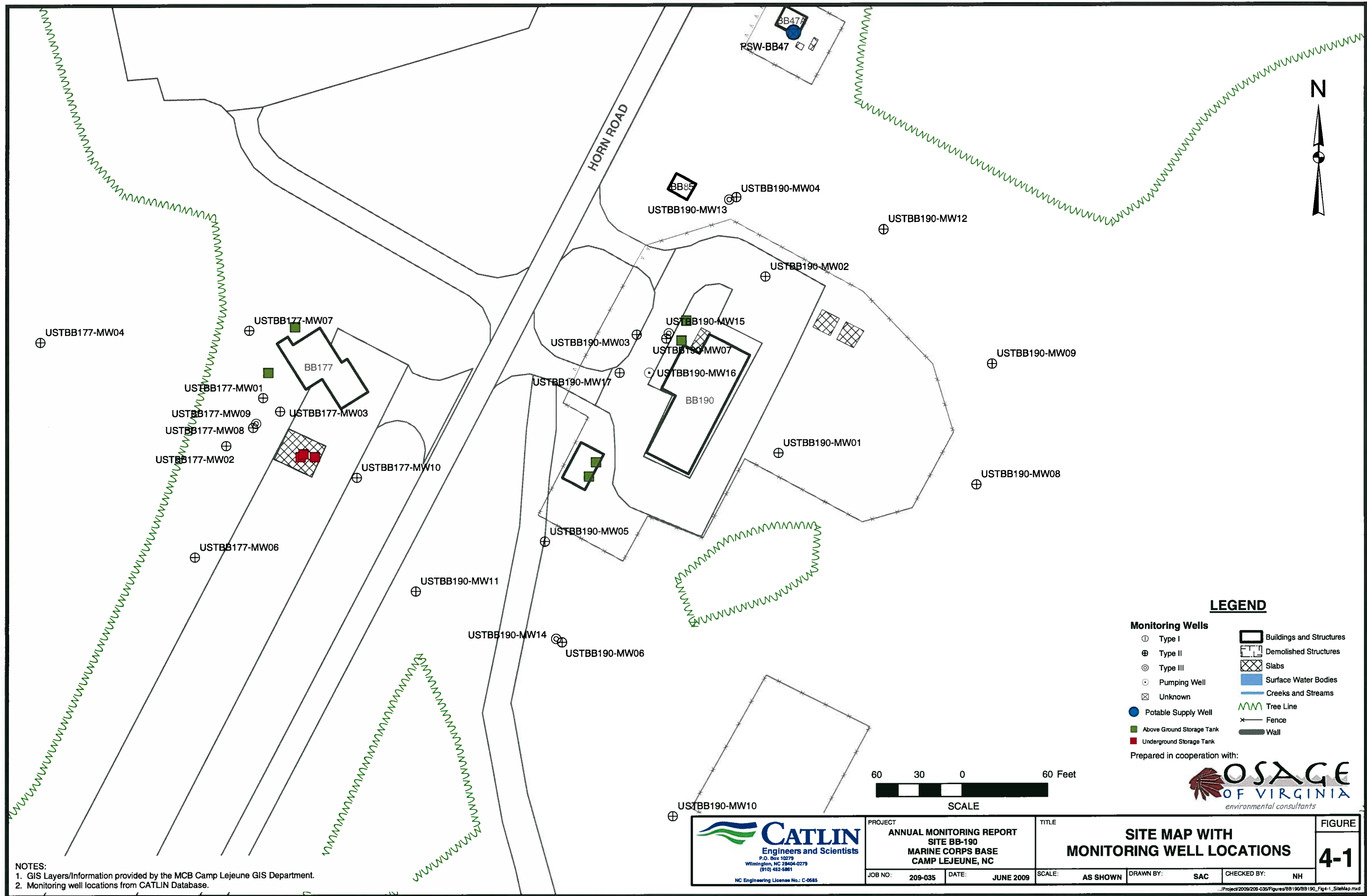


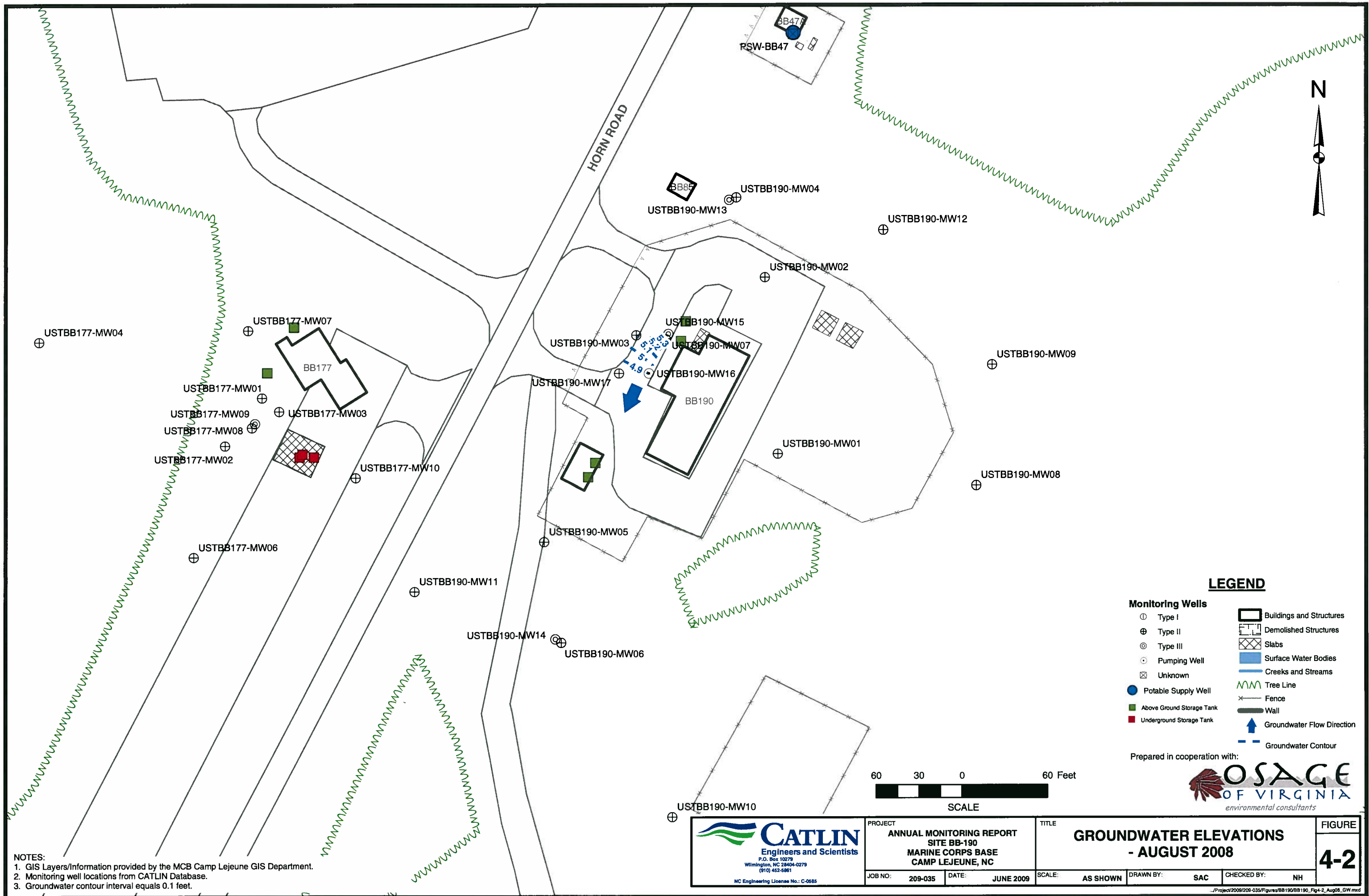
Prepared in cooperation with:



Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

 CATLIN Engineers and Scientists P.O. Box 10279 Wilmington, NC 28404-0279 (910) 452-5861 NC Engineering License No.: C-0585	PROJECT ANNUAL MONITORING REPORT SITE BB-190 MARINE CORPS BASE CAMP LEJEUNE, NC		TITLE GENERAL VICINITY TOPOGRAPHIC SITE MAP		FIGURE 3-1
	JOB NO. 209-035	DATE JUNE 2009	SCALE AS SHOWN	DRAWN BY SAC	CHECKED BY NH





NOTES:
1. GIS Layers/Information provided by the MCB Camp Lejeune GIS Department.
2. Monitoring well locations from CATLIN Database.
3. Groundwater contour interval equals 0.1 feet.

**CATLIN**
Engineers and Scientists
P.O. Box 10279
Wilmington, NC 28404-0279
(910) 452-5861
NC Engineering License No.: C-0585

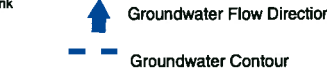
PROJECT	
ANNUAL MONITORING REPORT SITE BB-190 MARINE CORPS BASE CAMP LEJEUNE, NC	
JOB NO:	209-035
DATE:	JUNE 2009

TITLE	
GROUNDWATER ELEVATIONS - AUGUST 2008	
SCALE:	AS SHOWN
DRAWN BY:	SAC
CHECKED BY:	NH

FIGURE
4-2



Prepared in cooperation with:



LEGEND

- Monitoring Wells**

 - Type I
 - Type II
 - Type III
 - Pumping Well
 - Unknown
 - Potable Supply Well
 - Above Ground Storage Tank
 - Underground Storage Tank
- Buildings and Structures
 - Demolished Structures
 - Slabs
 - Surface Water Bodies
 - Creeks and Streams
 - Tree Line
 - Fence
 - Wall
 - Groundwater Flow Direction
 - Groundwater Contour

TABLE 4-3
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
EPA METHOD 602

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
	Sample ID	Date Collected						
GCL (µg/L)			5,000	70,000	84,500	200,000	257,500	87,500
2L GWQS (µg/L)			1	70	550	200	1,000	530
USTBB190-MW03	USTBB190-MW03	8/28/2008	<0.177	<0.253	20.9	<0.306	<0.313	60.08
USTBB190-MW07	USTBB190-MW07	8/28/2008	3.07	<0.253	28.7	<0.306	<0.313	41.33
USTBB190-MW16	USTBB190-MW16	8/28/2008	23.6	<1.01	54.8	<1.22	<1.25	20.8
USTBB190-MW17	USTBB190-MW17	8/28/2008	<0.708	<1.01	58.6	<1.22	<1.25	106
DUPLICATE	DUPLICATE	8/28/2008	23.7	<1.01	55.5	<1.22	<1.25	21.5
TRIP BLANK	TRIP BLANK	8/28/2008	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886

TABLE 4-4
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
EPA METHOD 625

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Acenaphthene	Bis(2-ethylhexyl)phthalate	Fluorene	Naphthalene	Phenanthrene	All Other Compounds	Tentatively Identified Compounds (TICs)
	Sample ID	Date Collected							
GCL (µg/L)			2,120	2,500	950	15,500	410	Varies	NA
2L GWQS (µg/L)			80	2.5	280	21	210	Varies	NA
USTBB190-MW03	USTBB190-MW03	8/28/2008	1.13J	2.31J	1.47J	43.2	0.733J	BQL	416.4
USTBB190-MW07	USTBB190-MW07	8/28/2008	2.94J	<0.439	4.12J	46.5	2.14J	BQL	500.7
USTBB190-MW16	USTBB190-MW16	8/28/2008	<8.69	<4.78	<8.46	163	<5.19	BQL	449
USTBB190-MW17	USTBB190-MW17	8/28/2008	2.02J	<0.425	2.44J	65.1	1.24J	BQL	483.1
DUPLICATE	DUPLICATE	8/28/2008	<8.79	<4.83	<8.55	152	<5.25	BQL	364.3

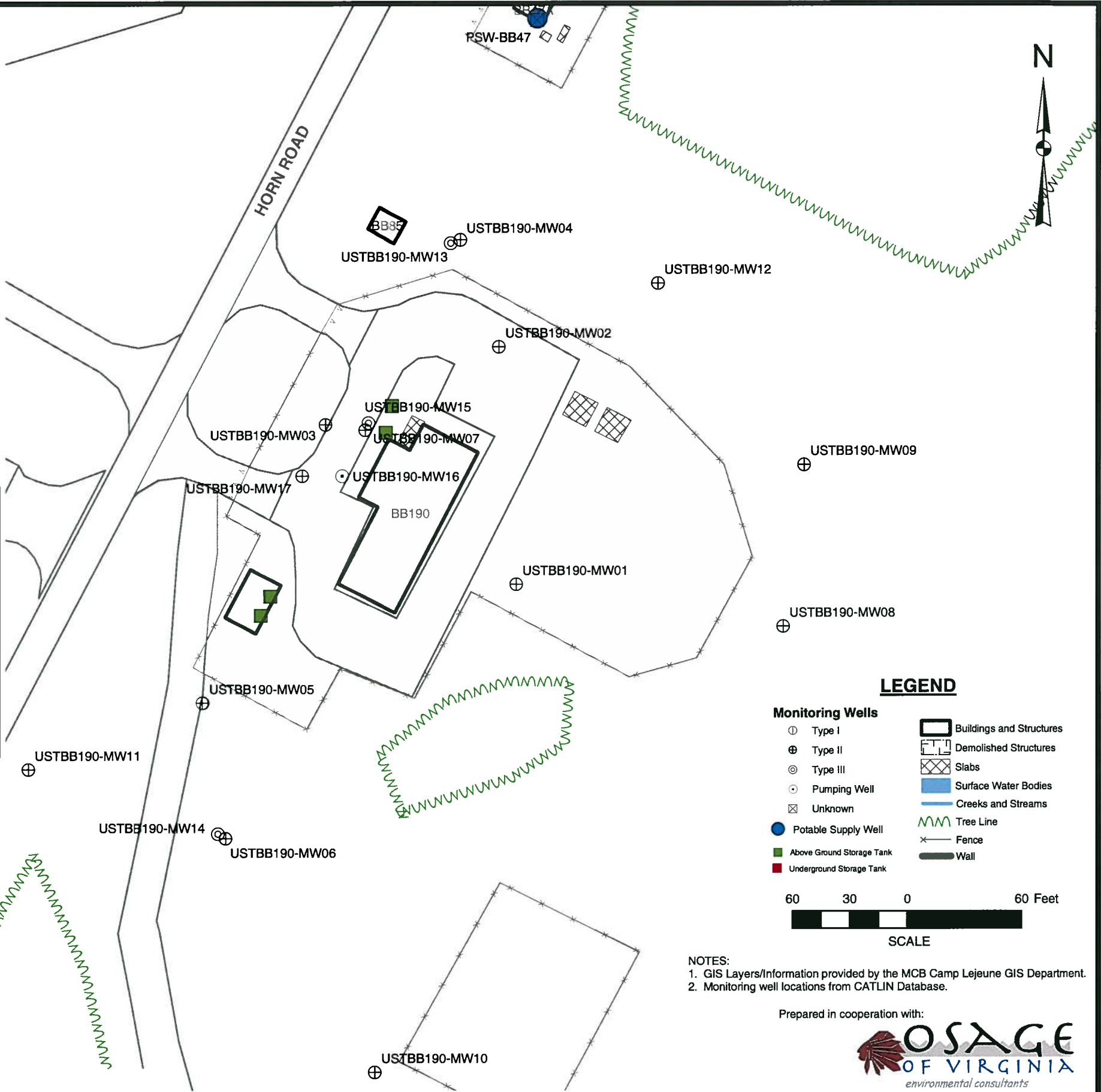
TABLE 4-6
SUMMARY OF GROUNDWATER LABORATORY RESULTS - AUGUST 2008
MADEP EPH/VPH COMPARED TO NCDENR 2L GWQS

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C18 Aliphatics	C9 - C22 Aromatics	C19-C36 Aliphatics
	Sample ID	Date Collected				
USTBB190-MW03	USTBB190-MW03	8/28/2008	174	<427	1,479	<100
USTBB190-MW07	USTBB190-MW07	8/28/2008	345	<361	1,396	<100
USTBB190-MW16	USTBB190-MW16	8/28/2008	1,180	<433	1,718	<100
USTBB190-MW17	USTBB190-MW17	8/28/2008	349	<502	1,355	<100
DUPLICATE	DUPLICATE	8/28/2008	1,180	<430	1,719	<100
2L GWQS (µg/L)			420	4,200	210	42,000

TABLE NOTES:

All results in micrograms per liter (µg/L).
BQL = Below Quantitation Limits; see laboratory report for specific limits
Bold results indicate concentrations above 2L GWQS or GCL.
J = Estimated concentration, below calibration range and above Method Detection Limit (MDL)
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A-02L Groundwater Quality Standards
<# = less than the laboratory reporting limit
Duplicate sample obtained from MW16



PROJECT
**ANNUAL MONITORING REPORT
SITE BB-190
MARINE CORPS BASE
CAMP LEJEUNE, NC**

JOB NO: 209-035 DATE: JUNE 2009

TITLE
**SITE MAP WITH AUGUST 2008
GROUNDWATER RESULTS**

SCALE: AS SHOWN DRAWN BY: SAC CHECKED BY: NH

FIGURE
4-4

TABLE 4-7
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
EPA METHOD 602

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Benzene	Diisopropyl ether (DIPE)	Ethylbenzene	Methyl-tert butyl ether (MTBE)	Toluene	Total Xylenes
	Sample ID	Date Collected						
GCL (µg/L)			5,000	70,000	84,500	200,000	257,500	87,500
2L GWQS (µg/L)			1	70	550	200	1,000	530
USTBB190-MW01	USTBB190-MW01	1/29/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW02	USTBB190-MW02	1/29/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW03	USTBB190-MW03	1/29/2009	<0.428	<0.391	8.23	<0.778	<0.404	22.25
USTBB190-MW07	USTBB190-MW07	1/30/2009	2.22	<0.391	13.7	<0.778	1.05	11.6
USTBB190-MW08	USTBB190-MW08	1/31/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW12	USTBB190-MW12	1/31/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW15	USTBB190-MW15	1/30/2009	<0.428	<0.391	<0.341	<0.778	<0.404	<0.973
USTBB190-MW16	USTBB190-MW16	1/30/2009	7.12	<1.27	53.6	<1.53	1.76J	4.76J
USTBB190-MW17	USTBB190-MW17	1/30/2009	<1.71	<1.56	29.1	<3.11	1.84J	35.4
PSWBB47	PSWBB47	1/30/2009	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886
DUPLICATE	DUPLICATE	1/30/2009	7.30	<1.96	55.0	<3.89	<2.02	9.39J
TRIP BLANK	TRIP BLANK	1/31/2009	<0.177	<0.253	<0.19	<0.306	<0.313	<0.886

TABLE 4-8
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
EPA METHOD 625

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		Acenaphthene	Anthracene	Bis(2-ethylhexyl)phthalate	Fluorene	Naphthalene	Phenanthrene	All Other Compounds	Tentatively Identified Compounds (TICs)
	Sample ID	Date Collected								
GCL (µg/L)			2,120	2,100	2,500	950	15,500	410	Varies	NA
2L GWQS (µg/L)			80	2,100	2.5	280	21	210	Varies	NA
USTBB190-MW01	USTBB190-MW01	1/29/2009	<0.863	<1.01	<0.475	<0.840	<1.05	<0.516	BQL	BQL
USTBB190-MW02	USTBB190-MW02	1/29/2009	0.882J	<0.965	<0.452	<0.799	<1.0	<0.491	BQL	BQL
USTBB190-MW03	USTBB190-MW03	1/29/2009	<0.806	<0.947	<0.444	<0.785	25.3	<0.482	BQL	262.57
USTBB190-MW07	USTBB190-MW07	1/30/2009	1.61J	1.82J	<0.439	2.09J	23	1.87J	BQL	343.3
USTBB190-MW08	USTBB190-MW08	1/31/2009	<0.829	<0.973	<0.456	<0.806	<1.01	<0.495	BQL	BQL
USTBB190-MW12	USTBB190-MW12	1/31/2009	<0.829	<0.973	<0.456	<0.806	<1.01	<0.495	BQL	BQL
USTBB190-MW15	USTBB190-MW15	1/30/2009	<0.754	<0.886	<0.415	<0.734	<0.921	<0.450	BQL	BQL
USTBB190-MW16	USTBB190-MW16	1/30/2009	2.15J	<1.05	<0.490	2.45J	145	2.63J	BQL	568.4
USTBB190-MW17	USTBB190-MW17	1/30/2009	1.15J	<0.955	<0.448	1.20J	48.4	1.04	BQL	516.6
PSWBB47	PSWBB47	1/30/2009	<0.841	<0.988	<0.463	<0.818	<1.03	<0.502	BQL	BQL
DUPLICATE	DUPLICATE	1/30/2009	2.09J	<0.914	<0.428	2.40J	136	2.66J	BQL	554.7

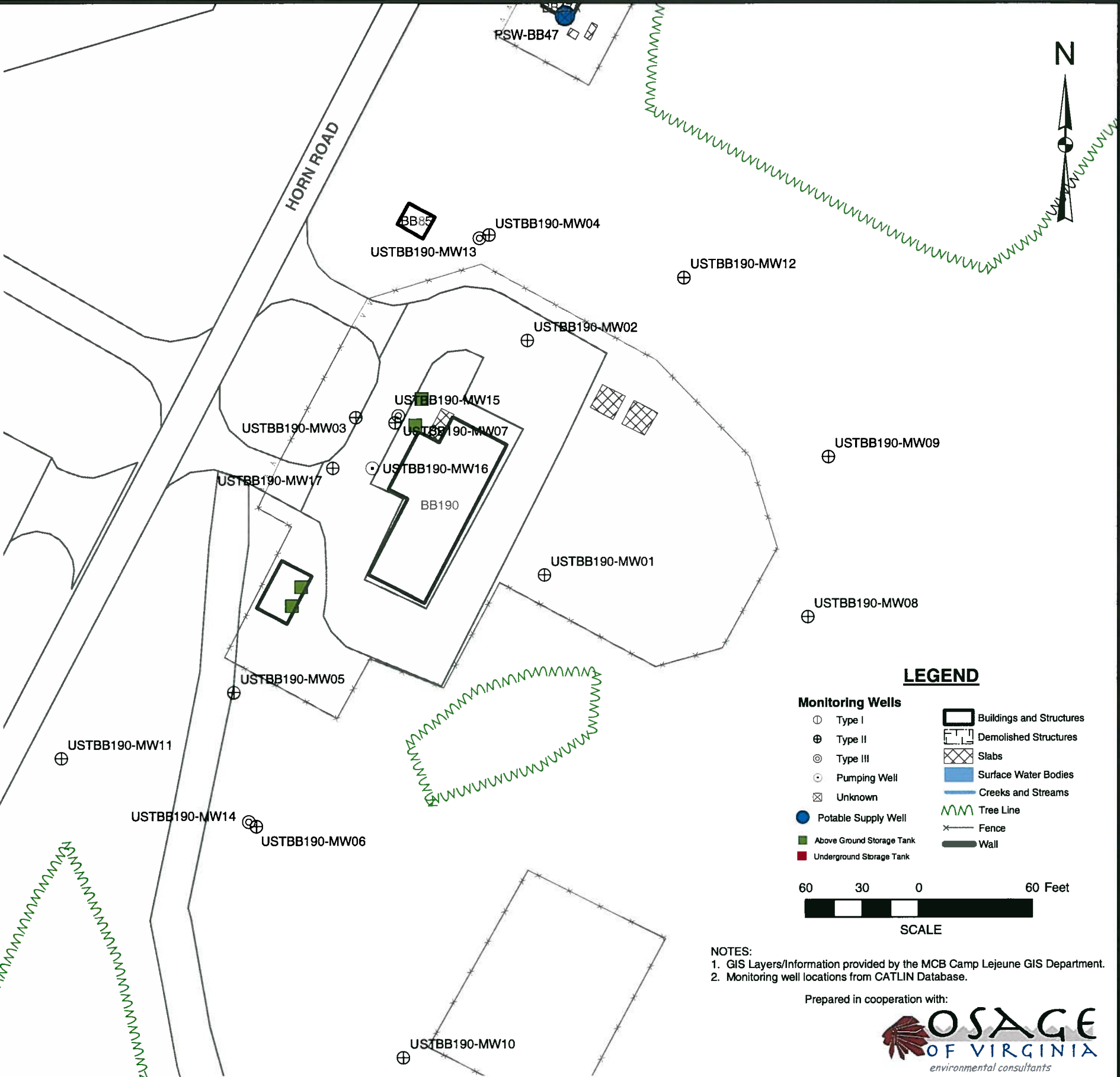
TABLE 4-10
SUMMARY OF GROUNDWATER LABORATORY RESULTS - JANUARY 2009
MADEP EPH/VPH COMPARED TO NCDENR 2L GWQS

Incident Name and No.: 22793 - Building BB-190

Well ID	Contaminant of Concern →		C5 - C8 Aliphatics	C9 - C18 Aliphatics	C9 - C22 Aromatics	C19-C36 Aliphatics
	Sample ID	Date Collected				
USTBB190-MW01	USTBB190-MW01	1/29/2009	<100	<200	<200	<100
USTBB190-MW02	USTBB190-MW02	1/29/2009	<100	<200	<200	<100
USTBB190-MW03	USTBB190-MW03	1/29/2009	<100	<224	505	<100
USTBB190-MW07	USTBB190-MW07	1/30/2009	436	<277	946	<100
USTBB190-MW08	USTBB190-MW08	1/31/2009	<100	<200	<200	<100
USTBB190-MW12	USTBB190-MW12	1/31/2009	<100	<200	<200	<100
USTBB190-MW15	USTBB190-MW15	1/30/2009	<100	<200	<200	<100
USTBB190-MW16	USTBB190-MW16	1/30/2009	753	<355	1,258	<100
USTBB190-MW17	USTBB190-MW17	1/30/2009	546	<382	1,154	<100
PSWBB47	PSWBB47	1/30/2009	<100	<200	<200	<100
DUPLICATE	DUPLICATE	1/30/2009	744	<362	1,242	<100
2L GWQS (µg/L)			420	4,200	210	42,000

TABLE NOTES:

All results in micrograms per liter (µg/L).
BQL = Below Quantitation Limits; see laboratory report for specific limits
Bold results indicate concentrations above 2L GWQS or GCL.
J = Estimated concentration, below calibration range and above Method Detection Limit (MDL)
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A-02L Groundwater Quality Standards
<# = less than the laboratory reporting limit
Duplicate sample obtained from MW16



NOTES:
1. GIS Layers/Information provided by the MCB Camp Lejeune GIS Department.
2. Monitoring well locations from CATLIN Database.

Prepared in cooperation with:



PROJECT
ANNUAL MONITORING REPORT
SITE BB-190
MARINE CORPS BASE
CAMP LEJEUNE, NC

TITLE
SITE MAP WITH JANUARY 2009
GROUNDWATER RESULTS

FIGURE

4-5

JOB NO.: 209-035 DATE: JUNE 2009 SCALE: AS SHOWN DRAWN BY: SAC CHECKED BY: NH

APPENDIX A

HISTORICAL DATA

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW01				USTBB190-MW02					USTBB190-MW03		
Sample Date			06/03/04	06/07/05	05/02/06	01/25/08	06/03/04	06/07/05	05/02/06	02/02/07	01/24/08	06/03/04	06/07/05	05/02/06
Chemical Name														
EPA 602 (ug/L)														
Benzene	1	5000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	550	29000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	1000	257500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Total Xylenes	530	87500	<3.00	<4.00	<3.00	<3.00	<3.00	<4.00	<3.00	<3.00	<3.00	<3.00	<4.00	<3.00
Total BTEX			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 625 (ug/L)														
Acenaphthene	80	2,120	<10	<10	<10	<10	4.4 J	12.5	4.9 J	6.2 J	13.1	<10	<10	<10
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Flourene	280	950	<10	<10	<10	<10	1.4 J	2.8 J	2.5 J	2.8 J	<10	<10	<10	<10
Naphthalene	21	15500	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenathrene	210	410	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TICs (total)			NR	9.52 J	NR	4.44	NR	5.18 J	NR	9.12	NR	NR	10.69 J	NR
MADEP VPH (ug/L)														
C5-C8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C9-C12 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C9-C10 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
MADEP EPH (ug/L)														
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C11-C22 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
MADEP VPH/EPH (ug/L)														
C9-C12 + C9-C18 Aliphatics	4200	NE		<200	<200	<200		<200	<200	<200	<200		<200	<200
C9-C10 + C11-C22 Aromatics	210	NE		<200	<200	<200		<200	<200	<200	<200		<200	<200

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
NR - not reported
J - reported value is estimated

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW04					USTBB190-MW05			USTBB190-MW06			
Sample Date			02/02/07	01/24/08	06/02/04	06/06/05	05/02/06	06/03/04	06/08/05	05/02/06	06/02/04	06/07/05	05/02/06	06/03/04
Chemical Name														
EPA 602 (ug/L)														
Benzene	1	5000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	4.81
Ethylbenzene	550	29000	<1.00	1.93	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	165
Toluene	1000	257500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	7.13
Total Xylenes	530	87500	<3.00	10.6	<3.00	<4.00	<3.00	<3.00	<4.00	<3.00	<3.00	<4.00	<3.00	418
Total BTEX			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	594.94
EPA 625 (ug/L)														
Acenaphthene	80	2,120	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2 J
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Flourene	280	950	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1.7 J
Naphthalene	21	15500	<10	1.5 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	96.5
Phenathrene	210	410	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TICs (total)			18.1	50.9	NR	NR	19.33	NR	55.1 J	13.55	NR	55.1 J	10.61	1372 J
MADEP VPH (ug/L)														
C5-C8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	310
C9-C12 Aliphatics			<100	279	<100	<100	<100	<100	<100	<100	<100	<100	<100	2000
C9-C10 Aromatics			<100	281	<100	<100	<100	<100	<100	<100	<100	<100	<100	1300
MADEP EPH (ug/L)														
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C11-C22 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	260
MADEP VPH/EPH (ug/L)														
C9-C12 + C9-C18 Aliphatics	4200	NE	<200	<379		<200	<200		<200	<200		<200	<200	2000
C9-C10 + C11-C22 Aromatics	210	NE	<200	<381		<200	<200		<200	<200		<200	<200	1580

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
NR - not reported
J - reported value is estimated

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW07				USTBB190-MW08				USTBB190-MW09			
Sample Date			06/07/05	05/02/06	02/02/07	01/24/08	06/03/04	06/06/05	05/02/06	02/02/07	01/25/08	06/02/04	06/06/05	05/02/06
Chemical Name														
EPA 602 (ug/L)														
Benzene	1	5000	2.86	<1.00	<1.00	2.6 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	550	29000	357	83.4	112	45.2	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	1000	257500	0.921 J	<1.00	<1.00	0.960 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Total Xylenes	530	87500	73.15	295.3	77.11	130	<3.00	<4.00	<3.00	<3.00	<3.00	<3.00	<4.00	<3.00
Total BTEX			433.93	378.7	189.11	178.76	ND	ND	ND	ND	ND	ND	ND	ND
EPA 625 (ug/L)														
Acenaphthene	80	2,120	<10	1.4 J	<10	12.5	<10	6.5 J	8.3 J	5 J	<10	<10	<10	<10
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Flourene	280	950	<10	2.5 J	67.5	2.3 J	<10	3.6 J	4.4 J	1.4 J	<10	<10	<10	<10
Naphthalene	21	15500	23.6	99.9	1.8 J	21	<10	<10	<10	1.3 J	<10	<10	<10	<10
Phenathrene	210	410	<10	1.6 J	1.8 J	<10	<10	1.9 J	1.9 J	<10	<10	<10	<10	<10
TICs (total)			439 J	1725.5	755.3	189.8	NR	9.15 J	17.34	7.44	4.26	NR	4.63 J	11.79
MADEP VPH (ug/L)														
C5-C8 Aliphatics	420	NE	130	430	640	244	<100	<100	<100	<100	<100	<100	<100	<100
C9-C12 Aliphatics			200	1000	1100	742	<100	<100	<100	<100	<100	<100	<100	<100
C9-C10 Aromatics			270	1300	1200	616	<100	<100	<100	<100	<100	<100	<100	<100
MADEP EPH (ug/L)														
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C11-C22 Aromatics			<100	340	120	260	<100	<100	<100	<100	<100	<100	<100	<100
MADEP VPH/EPH (ug/L)														
C9-C12 + C9-C18 Aliphatics	4200	NE	200	<1100	<1200	<842		<200	<200	<200	<200		<200	<200
C9-C10 + C11-C22 Aromatics	210	NE	270	1640	1320	876		<200	<200	<200	<200		<200	<200

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
NR - not reported
J - reported value is estimated

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW10			USTBB190-MW11			USTBB190-MW12						06/02/04
Sample Date			06/02/04	06/07/05	05/02/06	06/03/04	06/08/05	05/02/06	06/02/04	06/06/05	05/02/06	02/02/07	01/25/08		
Chemical Name															
EPA 602 (ug/L)															
Benzene	1	5000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Ethylbenzene	550	29000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Toluene	1000	257500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	
Total Xylenes	530	87500	<3.00	<4.00	<3.00	<3.00	<4.00	<3.00	<3.00	<4.00	<3.00	<3.00	<3.00	<3.00	
Total BTEX			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
EPA 625 (ug/L)															
Acenaphthene	80	2,120	<10	<10	<10	<10	<10	<10	2.1 J	1.7 J	5.1 J	2.3 J	13.2	<10	
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Flourene	280	950	<10	<10	<10	<10	<10	<10	<10	<10	1.3 J	<10	<10	<10	
Naphthalene	21	15500	<10	<10	<10	<10	<10	<10	<10	<10	3.8 J	<10	<10	<10	
Phenathrene	210	410	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
TICs (total)			NR	NR	8.58	NR	4.65 J	7.26	NR	5.16 J	6.57	10.2	4.89	8.1 J	
MADEP VPH (ug/L)															
C5-C8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
C9-C12 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
C9-C10 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
MADEP EPH (ug/L)															
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
C11-C22 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
MADEP VPH/EPH (ug/L)															
C9-C12 + C9-C18 Aliphatics	4200	NE		<200	<200		<200	<200		<200	<200	<200	<200	<200	
C9-C10 + C11-C22 Aromatics	210	NE		<200	<200		<200	<200		<200	<200	<200	<200	<200	

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
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J - reported value is estimated

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW13		USTBB190-MW14		USTBB190-MW15						USTBB190-MW16		
Sample Date			06/06/05	05/02/06	06/02/04	06/07/05	06/03/04	06/07/05	05/02/06	02/02/07	01/24/08	06/03/04	06/07/05	05/02/06	
Chemical Name															
EPA 602 (ug/L)															
Benzene	1	5000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	2.3	<25.0	<25.0	
Ethylbenzene	550	29000	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	267	151	214	
Toluene	1000	257500	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.97	<25.0	<25.0	
Total Xylenes	530	87500	<4.00	<3.00	<3.00	<4.00	<3.00	<4.00	<3.00	<3.00	<3.00	671	419.5	284.7	
Total BTEX			ND	ND	ND	ND	ND	ND	ND	ND	ND	944.27	570.5	498.7	
EPA 625 (ug/L)															
Acenaphthene	80	2,120	<10	<10	<10	<10	<10	<10	<10	<10	<10	2.2 J	<10	1.5 J	
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Flourene	280	950	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2.1 J	
Naphthalene	21	15500	<10	<10	<10	<10	<10	<10	<10	<10	<10	113	72.4	151	
Phenathrene	210	410	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
TICs (total)			5.24 J	5.27	NR	21.6 J	NR	12.8 J	NR	10.5	NR	1572 J	1127.3 J	2342	
MADEP VPH (ug/L)															
C5-C8 Aliphatics	420	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	350	<400	740	
C9-C12 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	3000	910	1500	
C9-C10 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	960	730	3100	
MADEP EPH (ug/L)															
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	190	400	<100	
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	
C11-C22 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	180	200	410	
MADEP VPH/EPH (ug/L)															
C9-C12 + C9-C18 Aliphatics	4200	NE	<200	<200		<200		<200	<200	<200	<200	3190	1310	<1600	
C9-C10 + C11-C22 Aromatics	210	NE	<200	<200		<200		<200	<200	<200	<200	1140	930	3510	

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
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J - reported value is estimated

Appendix A
Historical Data
Building BB-190
Marine Corps Base
Camp Lejeune, North Carolina

Sample Location	NC 2L	GCL	USTBB190-MW17						PSWBB47				
Sample Date			02/02/07	01/25/08	06/03/04	06/07/05	05/02/06	02/02/07	01/24/08	06/08/04	06/20/05	02/02/07	01/24/08
Chemical Name													
EPA 602 (ug/L)													
Benzene	1	5000	10.2	13.7	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	550	29000	108	45.7	<1.00	<1.00	1.29	<1.00	21.6	<1.00	<1.00	<1.00	<1.00
Toluene	1000	257500	<25.0	1.42	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Total Xylenes	530	87500	6.61 J	11.9	<3.00	<4.00	6.14	<3.00	78.8	<3.00	<4.00	<3.00	<3.00
Total BTEX			124.81	72.72	ND	ND	7.43	ND	100.4	ND	ND	ND	ND
EPA 625 (ug/L)													
Acenaphthene	80	2,120	2.4 J	<10	<10	<10	<10	<10	12.5	<10	<10	<10	<10
Benzo(a)pyrene	0.00479	1.5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Flourene	280	950	1.8 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	21	15500	68.3	44	<10	<10	<10	1.1 J	17.9	<10	<10	<10	<10
Phenathrene	210	410	1.4 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TICs (total)			356	257.2	NR	17.12 J	NR	10.3	191.5 J	NR	NR	24.1	NR
MADEP VPH (ug/L)													
C5-C8 Aliphatics	420	NE	360	460	<100	<100	<100	<100	214	<100	<100	<100	<100
C9-C12 Aliphatics			600	419	<100	<100	<100	<100	693	<100	<100	<100	<100
C9-C10 Aromatics			240	356	<100	<100	<100	<100	637	<100	<100	<100	<100
MADEP EPH (ug/L)													
C9-C18 Aliphatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C19-C36 Aliphatics	42,000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C11-C22 Aromatics			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
MADEP VPH/EPH (ug/L)													
C9-C12 + C9-C18 Aliphatics	4200	NE	<680	<519		<200	<200	<200	<793		<200	<200	<200
C9-C10 + C11-C22 Aromatics	210	NE	<330	568		<200	<200	<200	829		<200	<200	<200

Notes:
Bold Values Represent Laboratory Detection
Bold and Shaded Values Represent Exceedance of NC 2L Standard
NA - not analyzed
NE - not established
NR - not reported
J - reported value is estimated

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION FROM 2008-2009 SAMPLING EVENTS



Shaun Whitworth
Osage of Virginia
2618 A Colley Ave
Norfolk, VA 23517

Report Number: G649-60

Client Project: CTO 014

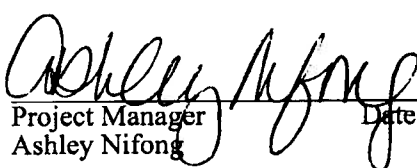
Dear Shaun Whitworth,

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

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

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

 9/15/08
Project Manager Date
Ashley Nifong



CASE NARRATIVE

Osage of Virginia
Project: CTO 014 BB190
SGS Laboratory Number: G649-60

DATE: September 15, 2008

Five water samples and a trip blank were received at the laboratory on August 29, 2008 at 1000 for analyses as indicated on the chain of custody. The samples arrived in good condition, with a temperature range of 3.2-4.8°C.

All extractions and analyses were completed within holding time limits, with the following quality control exceptions.

EPH Analysis

The aliphatic surrogate (Tricosane) recovered below acceptance criteria in the prep blank for batch 12312 extracted on 9/5/08. Although the target analytes were not detected in any of the samples in the aliphatic ranges, this factor may introduce a low bias. The samples were re-extracted within holding time in batch 12351 on 9/10/08. The aliphatic surrogate was within control limits in the prep blank, but recovered below acceptance criteria in the LCS and the C11-C22 aromatic range produced an RPD exceedance in the LCS/LCSD. The results from the re-extraction confirmed the results found in the originals. Both analytical runs have been included in the report.

 Date 9/15/08
Data Review



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

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: USTBB190-MW03

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 8/28/2008 16:40

Lab Sample ID: G649-60-1A

Date Received: 8/29/2008

Lab Project ID: G649-60

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	9/7/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/7/2008	
Ethylbenzene	20.9	1.00	0.19	1	9/7/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/7/2008	
Toluene	BQL	1.00	0.313	1	9/7/2008	
m/p-Xylene	53.8	2.00	0.481	1	9/7/2008	
o-Xylene	6.28	2.00	0.405	1	9/7/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	45.0	113

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW07

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 8/28/2008 17:16

Lab Sample ID: G649-60-2A

Date Received: 8/29/2008

Lab Project ID: G649-60

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	3.07	1.00	0.177	1	9/7/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/7/2008	
Ethylbenzene	28.7	1.00	0.19	1	9/7/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/7/2008	
Toluene	BQL	1.00	0.313	1	9/7/2008	
m/p-Xylene	40.0	2.00	0.481	1	9/7/2008	
o-Xylene	1.33	2.00	0.405	1	9/7/2008	J

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	45.7	114

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW16

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 8/28/2008 19:25

Lab Sample ID: G649-60-3B

Date Received: 8/29/2008

Lab Project ID: G649-60

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	23.6	4.00	0.708	4	9/8/2008	
Diisopropyl ether (DIPE)	BQL	4.00	1.01	4	9/8/2008	
Ethylbenzene	54.8	4.00	0.76	4	9/8/2008	
Methyl-tert butyl ether (MTBE)	BQL	8.00	1.22	4	9/8/2008	
Toluene	BQL	4.00	1.25	4	9/8/2008	
m/p-Xylene	20.8	8.00	1.92	4	9/8/2008	
o-Xylene	BQL	8.00	1.62	4	9/8/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	43.5	109

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-MW17

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 8/28/2008 15:37

Lab Sample ID: G649-60-4B

Date Received: 8/29/2008

Lab Project ID: G649-60

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	4.00	0.708	4	9/9/2008	
Diisopropyl ether (DIPE)	BQL	4.00	1.01	4	9/9/2008	
Ethylbenzene	58.6	4.00	0.76	4	9/9/2008	
Methyl-tert butyl ether (MTBE)	BQL	8.00	1.22	4	9/9/2008	
Toluene	BQL	4.00	1.25	4	9/9/2008	
m/p-Xylene	106	8.00	1.92	4	9/9/2008	
o-Xylene	BQL	8.00	1.62	4	9/9/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	45.0	113

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: Trip Blank
Client Project ID: CTO 014
Lab Sample ID: G649-60-5A
Lab Project ID: G649-60

Analyzed By: RSB
Date Collected: 8/28/2008 9:00
Date Received: 8/29/2008
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	9/7/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/7/2008	
Ethylbenzene	BQL	1.00	0.19	1	9/7/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/7/2008	
Toluene	BQL	1.00	0.313	1	9/7/2008	
m/p-Xylene	BQL	2.00	0.481	1	9/7/2008	
o-Xylene	BQL	2.00	0.405	1	9/7/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	43.4	109

Comments:

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

**Results for Volatiles**

by GC 602

Client Sample ID: USTBB190-Duplicate

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 8/28/2008 0:00

Lab Sample ID: G649-60-6B

Date Received: 8/29/2008

Lab Project ID: G649-60 *

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	23.7	4.00	0.708	4	9/9/2008	
Diisopropyl ether (DIPE)	BQL	4.00	1.01	4	9/9/2008	
Ethylbenzene	55.5	4.00	0.76	4	9/9/2008	
Methyl-tert butyl ether (MTBE)	BQL	8.00	1.22	4	9/9/2008	
Toluene	BQL	4.00	1.25	4	9/9/2008	
m/p-Xylene	21.5	8.00	1.92	4	9/9/2008	
o-Xylene	BQL	8.00	1.62	4	9/9/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	43.3	108

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1090708A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	9/7/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/7/2008	
Ethylbenzene	BQL	1.00	0.19	1	9/7/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/7/2008	
Toluene	BQL	1.00	0.313	1	9/7/2008	
m/p-Xylene	BQL	2.00	0.481	1	9/7/2008	
o-Xylene	BQL	2.00	0.405	1	9/7/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	42.5	106

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.



Summary Results for QC Check

Method: 602

Filename : 1090708/002R

Compound	SA	Result	Rec	QC Limits	
	ug/L	ug/L	(%) #	Lower	Upper
Benzene	20.0	20.4	101.9	77.0	123.0
Chlorobenzene	20.0	20.5	102.4	80.5	119.5
1,2-Dichlorobenzene	40.0	40.8	102.0	68.0	132.0
1,3-Dichlorobenzene	20.0	20.1	100.5	72.5	127.5
1,4-Dichlorobenzene	40.0	40.3	100.6	69.5	130.5
• Diisopropyl ether	20.0	21.2	106.1	43.1	156.9
Ethylbenzene	20.0	20.4	102.2	63.0	137.0
• MTBE	40.0	39.6	98.9	46.8	153.2
Toluene	20.0	20.6	103.1	77.5	127.0
• m,p-Xylene	40.0	40.9	102.1	11.2	188.8
• o-Xylene	40.0	40.6	101.6	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 1090708/003R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%) #	Lower	Upper
Benzene	10.0	9.6	95.6	39	150
Chlorobenzene	10.0	9.6	96.0	55	135
1,2-Dichlorobenzene	20.0	19.3	96.7	37	164
1,3-Dichlorobenzene	10.0	9.4	94.3	50	141
1,4-Dichlorobenzene	20.0	19.0	95.0	42	143
• Diisopropyl ether	10.0	9.8	98.2	30	170
Ethylbenzene	10.0	9.5	95.3	32	160
• MTBE	20.0	18.6	93.2	35	165
Toluene	10.0	9.7	96.8	46	148
• m,p-Xylene	20.0	19.1	95.3	D	239
• o-Xylene	20.0	18.9	94.4	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for MS-MSD

Sample: 1090708/016F::1090708/016R

MS: 1090708/018f::1090708/018R

MSD: 1090708/019f::1090708/019R

Compound	µg/L				REC(%)		REC Limits		RPD	
	SA	Sam.	MS	MSD	MS	MSD	Lower	Upper	(30%)	#
Benzene	10.0	26.1	10.0	10.1	100	101	39	150	1.1	
Chlorobenzene	10.0	ND	9.9	10.3	99	103	55	135	3.2	
1,2-Dichlorobenzene	20.0	ND	20.2	20.7	101	103	37	154	2.2	
1,3-Dichlorobenzene	10.0	ND	10.2	10.3	102	103	50	141	1.4	
1,4-Dichlorobenzene	20.0	ND	20.4	20.6	102	103	42	143	1.3	
• Diisopropyl ether	10.0	ND	9.9	10.5	99	105	30	170	6.3	
Ethylbenzene	10.0	ND	10.5	10.7	105	107	32	160	1.8	
• MTBE	20.0	ND	19.5	20.3	98	101	35	165	3.8	
Toluene	10.0	ND	10.0	10.5	100	105	46	148	4.2	
• m,p-Xylene	20.0	ND	20.5	20.9	102	104	D	239	1.8	
• o-Xylene	20.0	ND	19.9	20.3	100	102	36	164	2.2	

Flags:

+ = out of QC limits.
• = lab generated limits.
D = Detected
ND = None Detected
SA= Spike Added

Reviewed By: 

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1090808A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	9/8/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/8/2008	
Ethylbenzene	BQL	1.00	0.19	1	9/8/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/8/2008	
Toluene	BQL	1.00	0.313	1	9/8/2008	
m/p-Xylene	BQL	2.00	0.481	1	9/8/2008	
o-Xylene	BQL	2.00	0.405	1	9/8/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	43.8	109

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.



Summary Results for QC Check

Method: 602

Filename : 1090808/002R

Compound	SA	Result	Rec	QC Limits	
	ug/L	ug/L	(%) #	Lower	Upper
Benzene	20.0	17.8	88.8	77.0	123.0
Chlorobenzene	20.0	17.8	89.2	80.5	119.5
1,2-Dichlorobenzene	40.0	35.5	88.8	68.0	132.0
1,3-Dichlorobenzene	20.0	17.6	88.1	72.5	127.5
1,4-Dichlorobenzene	40.0	35.2	88.1	69.5	130.5
• Diisopropyl ether	20.0	17.8	89.2	43.1	156.9
Ethylbenzene	20.0	17.9	89.3	63.0	137.0
• MTBE	40.0	34.9	87.3	46.8	153.2
Toluene	20.0	18.0	89.9	77.5	127.0
• m,p-Xylene	40.0	35.9	89.8	11.2	188.8
• o-Xylene	40.0	35.6	89.1	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 1090808/003R

Compound	SA ug/L	Result ug/L	Rec (%)	#	LCS Limits	
					Lower	Upper
Benzene	10.0	10.0	99.7		39	150
Chlorobenzene	10.0	10.1	101.0		55	135
1,2-Dichlorobenzene	20.0	20.4	101.8		37	154
1,3-Dichlorobenzene	10.0	9.9	99.3		50	141
1,4-Dichlorobenzene	20.0	20.2	100.9		42	143
• Diisopropyl ether	10.0	10.0	100.4		30	170
Ethylbenzene	10.0	10.0	100.2		32	160
• MTBE	20.0	19.6	98.2		35	165
Toluene	10.0	10.2	102.2		46	148
• m,p-Xylene	20.0	20.1	100.6		D	239
• o-Xylene	20.0	19.9	99.4		36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for MS-MSD

Sample : 1090808/016F::1090808/016R

MS : 1090808/018f::1090808/018R

MSD : 1090808/019f::1090808/019R

Compound	SA	µg/L			REC(%)		REC Limits		RPD (30%) #
		Sam.	MS	MSD	MS	MSD	Lower	Upper	
Benzene	10.0	ND	10.2	10.4	102	104	39	150	2.1
Chlorobenzene	10.0	ND	10.2	10.4	102	104	55	135	1.7
1,2-Dichlorobenzene	20.0	ND	20.0	20.6	100	103	37	154	2.8
1,3-Dichlorobenzene	10.0	ND	10.0	10.1	100	101	50	141	1.4
1,4-Dichlorobenzene	20.0	ND	20.0	20.0	100	100	42	143	0.3
• Diisopropyl ether	10.0	ND	10.2	10.3	102	103	30	170	1.1
Ethylbenzene	10.0	ND	10.3	10.4	103	104	32	160	1.3
• MTBE	20.0	ND	19.8	20.2	99	101	35	165	2.2
Toluene	10.0	ND	10.3	10.5	103	105	46	148	1.7
• m,p-Xylene	20.0	ND	20.6	20.9	103	104	D	239	1.4
• o-Xylene	20.0	ND	19.9	20.3	100	102	36	164	2.1

Flags :

+ = out of QC limits.
♦ = lab generated limits.
D = Detected
ND = None Detected
SA= Spike Added

Reviewed By: 

**Results for Volatiles**

by GC 602

Client Sample ID: Method Blank

Analyzed By: RSB

Client Project ID:

Date Collected:

Lab Sample ID: VBLK1090908A

Date Received:

Lab Project ID:

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	9/9/2008	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	9/9/2008	
Ethylbenzene	BQL	1.00	0.19	1	9/9/2008	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	9/9/2008	
Toluene	BQL	1.00	0.313	1	9/9/2008	
m/p-Xylene	BQL	2.00	0.481	1	9/9/2008	
o-Xylene	BQL	2.00	0.405	1	9/9/2008	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	42.9	107

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.



Summary Results for QC Check

Method: 602

Filename : 1090908/002R

Compound	SA	Result	Rec	QC Limits	
	ug/L	ug/L	(%) #	Lower	Upper
Benzene	20.0	22.3	111.7	77.0	123.0
Chlorobenzene	20.0	22.4	112.2	80.5	119.5
1,2-Dichlorobenzene	40.0	44.9	112.2	68.0	132.0
1,3-Dichlorobenzene	20.0	22.1	110.5	72.5	127.5
1,4-Dichlorobenzene	40.0	43.7	109.2	69.5	130.5
• Diisopropyl ether	20.0	23.0	115.1	43.1	156.9
Ethylbenzene	20.0	22.7	113.5	63.0	137.0
• MTBE	40.0	43.5	108.8	46.8	153.2
Toluene	20.0	22.6	113.2	77.5	127.0
• m,p-Xylene	40.0	45.3	113.3	11.2	188.8
• o-Xylene	40.0	45.0	112.5	47.6	152.4

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for Laboratory Control Spike

Method: 602

Filename : 1090908/003R

Compound	SA	Result	Rec	LCS Limits	
	ug/L	ug/L	(%) #	Lower	Upper
Benzene	10.0	10.1	101.3	39	150
Chlorobenzene	10.0	10.3	103.4	55	135
1,2-Dichlorobenzene	20.0	20.8	104.2	37	154
1,3-Dichlorobenzene	10.0	10.1	101.2	50	141
1,4-Dichlorobenzene	20.0	19.9	99.7	42	143
• Diisopropyl ether	10.0	10.4	104.0	30	170
Ethylbenzene	10.0	10.4	103.8	32	160
• MTBE	20.0	20.0	99.9	35	165
Toluene	10.0	10.3	103.3	46	148
• m,p-Xylene	20.0	20.8	103.8	D	239
• o-Xylene	20.0	20.6	102.8	36	164

Flags :

- + = out of QC limits.
- = lab generated limits.
- D = Detected
- SA = Spiked Amount



Summary Results for MS-MSD

Sample : 1090908/016F::1090908/016R

MS : 1090908/018f::1090908/018R

MSD : 1090908/019f::1090908/019R

Compound	SA	µg/L			REC(%)		REC Limits		RPD	
		Sam.	MS	MSD	MS	MSD	Lower	Upper	(30%)	#
Benzene	10.0	68.5	6.3	9.3	63	93	39	160	38.5	+
Chlorobenzene	10.0	ND	11.2	11.5	112	115	55	135	2.4	
1,2-Dichlorobenzene	20.0	ND	4.1	4.1	20 +	21 +	37	154	0.8	
1,3-Dichlorobenzene	10.0	ND	12.1	12.1	121	121	60	141	0.5	
1,4-Dichlorobenzene	20.0	ND	24.7	24.8	123	124	42	143	0.4	
• Diisopropyl ether	10.0	1.8	8.9	9.4	89	94	30	170	6.3	
Ethylbenzene	10.0	10.6	11.2	11.6	112	116	32	160	3.7	
• MTBE	20.0	ND	20.5	21.5	103	108	35	165	4.6	
Toluene	10.0	ND	11.3	11.5	113	115	46	148	2.1	
• m,p-Xylene	20.0	10.3	23.9	24.3	119	122	D	239	1.7	
• o-Xylene	20.0	ND	23.7	23.9	118	119	36	164	0.9	

Flags :

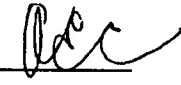
+ = out of QC limits.

• = lab generated limits.

D = Detected

ND = None Detected

SA= Spike Added

Reviewed By: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW03
Client Project ID: CTO 014
Lab Sample ID: G649-60-1J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 16:40
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 887 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	1.13	5.64	0.840	1	9/9/2008	J
Acenaphthylene	BQL	5.64	0.840	1	9/9/2008	
Anthracene	BQL	5.64	0.986	1	9/9/2008	
Benzo[a]anthracene	BQL	5.64	0.767	1	9/9/2008	
Benzo[a]pyrene	BQL	5.64	0.716	1	9/9/2008	
Benzo[b]fluoranthene	BQL	5.64	0.806	1	9/9/2008	
Benzo[g,h,i]perylene	BQL	5.64	0.693	1	9/9/2008	
Benzo[k]fluoranthene	BQL	5.64	0.620	1	9/9/2008	
Bis(2-chloroethoxy)methane	BQL	5.64	1.16	1	9/9/2008	
Bis(2-chloroethyl)ether	BQL	5.64	1.17	1	9/9/2008	
Bis(2-chloroisopropyl)ether	BQL	5.64	1.10	1	9/9/2008	
Bis(2-ethylhexyl)phthalate	2.31	5.64	0.462	1	9/9/2008	J
4-bromophenyl phenyl ether	BQL	5.64	0.879	1	9/9/2008	
Butylbenzylphthalate	BQL	5.64	0.502	1	9/9/2008	
2-Chloronaphthalene	BQL	5.64	0.975	1	9/9/2008	
2-Chlorophenol	BQL	5.64	1.32	1	9/9/2008	
4-Chloro-3-methylphenol	BQL	5.64	0.896	1	9/9/2008	
4-Chlorophenyl phenyl ether	BQL	5.64	3.67	1	9/9/2008	
Chrysene	BQL	5.64	0.626	1	9/9/2008	
Dibenzo[a,h]anthracene	BQL	5.64	0.496	1	9/9/2008	
Di-n-Butylphthalate	BQL	5.64	0.930	1	9/9/2008	
3,3'-Dichlorobenzidine	BQL	11.3	1.38	1	9/9/2008	
2,4-Dichlorophenol	BQL	5.64	1.26	1	9/9/2008	
Diethylphthalate	BQL	5.64	0.834	1	9/9/2008	
Dimethylphthalate	BQL	5.64	0.626	1	9/9/2008	
2,4-Dimethylphenol	BQL	5.64	1.83	1	9/9/2008	
Di-n-octylphthalate	BQL	5.64	0.654	1	9/9/2008	
4,6-Dinitro-2-methylphenol	BQL	28.2	0.620	1	9/9/2008	
2,4-Dinitrophenol	BQL	28.2	0.722	1	9/9/2008	
2,4-Dinitrotoluene	BQL	5.64	0.603	1	9/9/2008	
2,6-Dinitrotoluene	BQL	5.64	0.733	1	9/9/2008	
Diphenylamine *	BQL	5.64	0.643	1	9/9/2008	
Fluoranthene	BQL	5.64	0.795	1	9/9/2008	
Fluorene	1.47	5.64	0.817	1	9/9/2008	J
Hexachlorobenzene	BQL	5.64	0.569	1	9/9/2008	
Hexachlorobutadiene	BQL	5.64	0.857	1	9/9/2008	
Hexachlorocyclopentadiene	BQL	11.3	11.3	1	9/9/2008	
Hexachloroethane	BQL	5.64	0.840	1	9/9/2008	
Indeno(1,2,3-c,d)pyrene	BQL	5.64	2.58	1	9/9/2008	
Isophorone	BQL	5.64	0.998	1	9/9/2008	
Naphthalene	43.2	5.64	1.03	1	9/9/2008	
Nitrobenzene	BQL	5.64	1.18	1	9/9/2008	
2-Nitrophenol	BQL	5.64	1.39	1	9/9/2008	
4-Nitrophenol	BQL	28.2	1.22	1	9/9/2008	
N-Nitrosodi-n-propylamine	BQL	5.64	1.69	1	9/9/2008	
Pentachlorophenol	BQL	28.2	1.60	1	9/9/2008	
Phenanthrene	0.733	5.64	0.502	1	9/9/2008	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW03
Client Project ID: CTO 014
Lab Sample ID: G649-60-1J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 16:40
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 887 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.64	1.20	1	9/9/2008	
Pyrene	BQL	5.64	2.33	1	9/9/2008	
1,2,4-Trichlorobenzene	BQL	5.64	0.812	1	9/9/2008	
2,4,6-Trichlorophenol	BQL	5.64	1.04	1	9/9/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.8	98		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	9.6	96		
Phenol-d6		10	9	90		
2,4,6-Tribromophenol		10	9.4	94		
4-Terphenyl-d14		10	10.7	107		

Comments:**Flags:**

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

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW03
Client Project ID: CTO 014
Lab Sample ID: G649-60-1J
Lab Project ID: G649-60
Sample Wt/Vol: 887 ML
Dilution: 1

Analyzed By: DES
Date Collected: 8/28/2008 16:40
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Date Analyzed: 9/9/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	1,2,4-Trimethylbenzene	4.07	000095-36-3	97	99.6
2	Benzene, 2-ethenyl-1,4-dimethyl-	4.96	002039-89-6	95	76.2
3	Indane	4.18	000496-11-7	93	66.8
4	Benzene, 1,3-diethyl-	4.23	000141-93-5	97	41
5	Benzene, 2-ethyl-1,4-dimethyl-	4.43	001758-88-9	95	39.6
6	Benzene, 1,3-diethyl-	4.29	000141-93-5	95	34.3
7	2,3-Dihydro-1-methylindene	4.89	027133-93-3	94	32.1
8	Benzene, 1,2,4,5-tetramethyl-	4.74	000095-93-2	97	26.8
9					
10					

Comment:

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

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

Reviewed by: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW07
Client Project ID: CTO 014
Lab Sample ID: G649-60-2J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 17:16
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 934 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	2.94	5.35	0.798	1	9/9/2008	J
Acenaphthylene	BQL	5.35	0.798	1	9/9/2008	
Anthracene	BQL	5.35	0.937	1	9/9/2008	
Benzo[a]anthracene	BQL	5.35	0.728	1	9/9/2008	
Benzo[a]pyrene	BQL	5.35	0.680	1	9/9/2008	
Benzo[b]fluoranthene	BQL	5.35	0.766	1	9/9/2008	
Benzo[g,h,i]perylene	BQL	5.35	0.658	1	9/9/2008	
Benzo[k]fluoranthene	BQL	5.35	0.589	1	9/9/2008	
Bis(2-chloroethoxy)methane	BQL	5.35	1.10	1	9/9/2008	
Bis(2-chloroethyl)ether	BQL	5.35	1.11	1	9/9/2008	
Bis(2-chloroisopropyl)ether	BQL	5.35	1.04	1	9/9/2008	
Bis(2-ethylhexyl)phthalate	BQL	5.35	0.439	1	9/9/2008	
4-bromophenyl phenyl ether	BQL	5.35	0.835	1	9/9/2008	
Butylbenzylphthalate	BQL	5.35	0.476	1	9/9/2008	
2-Chloronaphthalene	BQL	5.35	0.926	1	9/9/2008	
2-Chlorophenol	BQL	5.35	1.25	1	9/9/2008	
4-Chloro-3-methylphenol	BQL	5.35	0.851	1	9/9/2008	
4-Chlorophenyl phenyl ether	BQL	5.35	3.49	1	9/9/2008	
Chrysene	BQL	5.35	0.594	1	9/9/2008	
Dibenzo[a,h]anthracene	BQL	5.35	0.471	1	9/9/2008	
Di-n-Butylphthalate	BQL	5.35	0.883	1	9/9/2008	
3,3'-Dichlorobenzidine	BQL	10.7	1.31	1	9/9/2008	
2,4-Dichlorophenol	BQL	5.35	1.20	1	9/9/2008	
Diethylphthalate	BQL	5.35	0.792	1	9/9/2008	
Dimethylphthalate	BQL	5.35	0.594	1	9/9/2008	
2,4-Dimethylphenol	BQL	5.35	1.73	1	9/9/2008	
Di-n-octylphthalate	BQL	5.35	0.621	1	9/9/2008	
4,6-Dinitro-2-methylphenol	BQL	26.8	0.589	1	9/9/2008	
2,4-Dinitrophenol	BQL	26.8	0.685	1	9/9/2008	
2,4-Dinitrotoluene	BQL	5.35	0.573	1	9/9/2008	
2,6-Dinitrotoluene	BQL	5.35	0.696	1	9/9/2008	
Diphenylamine *	BQL	5.35	0.610	1	9/9/2008	
Fluoranthene	BQL	5.35	0.755	1	9/9/2008	
Fluorene	4.12	5.35	0.776	1	9/9/2008	J
Hexachlorobenzene	BQL	5.35	0.541	1	9/9/2008	
Hexachlorobutadiene	BQL	5.35	0.814	1	9/9/2008	
Hexachlorocyclopentadiene	BQL	10.7	10.7	1	9/9/2008	
Hexachloroethane	BQL	5.35	0.798	1	9/9/2008	
Indeno(1,2,3-c,d)pyrene	BQL	5.35	2.45	1	9/9/2008	
Isophorone	BQL	5.35	0.948	1	9/9/2008	
Naphthalene	46.5	5.35	0.974	1	9/9/2008	
Nitrobenzene	BQL	5.35	1.12	1	9/9/2008	
2-Nitrophenol	BQL	5.35	1.32	1	9/9/2008	
4-Nitrophenol	BQL	26.8	1.16	1	9/9/2008	
N-Nitrosodi-n-propylamine	BQL	5.35	1.61	1	9/9/2008	
Pentachlorophenol	BQL	26.8	1.51	1	9/9/2008	
Phenanthrene	2.14	5.35	0.476	1	9/9/2008	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW07
Client Project ID: CTO 014
Lab Sample ID: G649-60-2J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 17:16
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 934 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.35	1.13	1	9/9/2008	
Pyrene	BQL	5.35	2.21	1	9/9/2008	
1,2,4-Trichlorobenzene	BQL	5.35	0.771	1	9/9/2008	
2,4,6-Trichlorophenol	BQL	5.35	0.990	1	9/9/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.5	95		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	9.5	94		
Phenol-d6		10	8.7	87		
2,4,6-Tribromophenol		10	9.1	91		
4-Terphenyl-d14		10	10.2	102		

Comments:**Flags:**

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

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW07
Client Project ID: CTO 014
Lab Sample ID: G649-60-2J
Lab Project ID: G649-60
Sample Wt/Vol: 934
Dilution: 1

Analyzed By: DES
Date Collected: 8/28/2008 17:16
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Date Analyzed: 9/9/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	1,2,4-Trimethylbenzene	4.07	000095-36-3	97	151
2	Alkane, Unknown	4.18			113
3	Benzene, 2-ethenyl-1,4-dimethyl-	4.96	002039-89-6	95	63.7
4	Benzene, 1,3-diethyl-	4.29	000141-93-5	97	57.4
5	Benzene, 1,3-diethyl-	4.23	000141-93-5	94	46.5
6	Benzene, 1-ethyl-2,3-dimethyl-	4.43	000933-98-2	95	39.7
7	1H-Indene, 2,3-dihydro-4-methyl-	4.89	000824-22-6	94	29.4
8					
9					
10					

Comment:

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

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

Reviewed by: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW16
Client Project ID: CTO 014
Lab Sample ID: G649-60-3J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 19:25
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 857 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	58.3	8.69	10	9/9/2008	
Acenaphthylene	BQL	58.3	8.69	10	9/9/2008	
Anthracene	BQL	58.3	10.2	10	9/9/2008	
Benzo[a]anthracene	BQL	58.3	7.93	10	9/9/2008	
Benzo[a]pyrene	BQL	58.3	7.41	10	9/9/2008	
Benzo[b]fluoranthene	BQL	58.3	8.34	10	9/9/2008	
Benzo[g,h,i]perylene	BQL	58.3	7.18	10	9/9/2008	
Benzo[k]fluoranthene	BQL	58.3	6.42	10	9/9/2008	
Bis(2-chloroethoxy)methane	BQL	58.3	12.0	10	9/9/2008	
Bis(2-chloroethyl)ether	BQL	58.3	12.1	10	9/9/2008	
Bis(2-chloroisopropyl)ether	BQL	58.3	11.4	10	9/9/2008	
Bis(2-ethylhexyl)phthalate	BQL	58.3	4.78	10	9/9/2008	
4-bromophenyl phenyl ether	BQL	58.3	9.10	10	9/9/2008	
Butylbenzylphthalate	BQL	58.3	5.19	10	9/9/2008	
2-Chloronaphthalene	BQL	58.3	10.1	10	9/9/2008	
2-Chlorophenol	BQL	58.3	13.7	10	9/9/2008	
4-Chloro-3-methylphenol	BQL	58.3	9.28	10	9/9/2008	
4-Chlorophenyl phenyl ether	BQL	58.3	38.0	10	9/9/2008	
Chrysene	BQL	58.3	6.48	10	9/9/2008	
Dibenzo[a,h]anthracene	BQL	58.3	5.13	10	9/9/2008	
Di-n-Butylphthalate	BQL	58.3	9.63	10	9/9/2008	
3,3'-Dichlorobenzidine	BQL	117	14.2	10	9/9/2008	
2,4-Dichlorophenol	BQL	58.3	13.1	10	9/9/2008	
Diethylphthalate	BQL	58.3	8.63	10	9/9/2008	
Dimethylphthalate	BQL	58.3	6.48	10	9/9/2008	
2,4-Dimethylphenol	BQL	58.3	18.9	10	9/9/2008	
Di-n-octylphthalate	BQL	58.3	6.77	10	9/9/2008	
4,6-Dinitro-2-methylphenol	BQL	292	6.42	10	9/9/2008	
2,4-Dinitrophenol	BQL	292	7.47	10	9/9/2008	
2,4-Dinitrotoluene	BQL	58.3	6.24	10	9/9/2008	
2,6-Dinitrotoluene	BQL	58.3	7.58	10	9/9/2008	
Diphenylamine *	BQL	58.3	6.65	10	9/9/2008	
Fluoranthene	BQL	58.3	8.23	10	9/9/2008	
Fluorene	BQL	58.3	8.46	10	9/9/2008	
Hexachlorobenzene	BQL	58.3	5.89	10	9/9/2008	
Hexachlorobutadiene	BQL	58.3	8.87	10	9/9/2008	
Hexachlorocyclopentadiene	BQL	117	117	10	9/9/2008	
Hexachloroethane	BQL	58.3	8.69	10	9/9/2008	
Indeno(1,2,3-c,d)pyrene	BQL	58.3	26.7	10	9/9/2008	
Isophorone	BQL	58.3	10.3	10	9/9/2008	
Naphthalene	163	58.3	10.6	10	9/9/2008	
Nitrobenzene	BQL	58.3	12.3	10	9/9/2008	
2-Nitrophenol	BQL	58.3	14.4	10	9/9/2008	
4-Nitrophenol	BQL	292	12.6	10	9/9/2008	
N-Nitrosodi-n-propylamine	BQL	58.3	17.5	10	9/9/2008	
Pentachlorophenol	BQL	292	16.5	10	9/9/2008	
Phenanthrene	BQL	58.3	5.19	10	9/9/2008	

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW16
Client Project ID: CTO 014
Lab Sample ID: G649-60-3J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 19:25
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

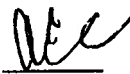
Initial/Final Amt: 857 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	58.3	12.4	10	9/9/2008	
Pyrene	BQL	58.3	24.1	10	9/9/2008	
1,2,4-Trichlorobenzene	BQL	58.3	8.40	10	9/9/2008	
2,4,6-Trichlorophenol	BQL	58.3	10.8	10	9/9/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		1	NA	NA		
2-Fluorophenol		1	NA	NA		
Nitrobenzene-d5		1	NA	NA		
Phenol-d6		1	NA	NA		
2,4,6-Tribromophenol		1	NA	NA		
4-Terphenyl-d14		1	NA	NA		

Comments:**Flags:**

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW16
Client Project ID: CTO 014
Lab Sample ID: G649-60-3J
Lab Project ID: G649-60
Sample Wt/Vol: 857 ML
Dilution: 10

Analyzed By: DES
Date Collected: 8/28/2008 19:25
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Date Analyzed: 9/9/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	1,2,4-Trimethylbenzene	4.07	000095-36-3	97	184
2	Indane	4.18	000496-11-7	93	175
3	Benzene, 2-ethenyl-1,4-dimethyl-	4.96	002039-89-6	95	90
4					
5					
6					
7					
8					
9					
10					

Comment:

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

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

Reviewed by: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW17
Client Project ID: CTO 014
Lab Sample ID: G649-60-4J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 15:37
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 965 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	2.02	5.18	0.772	1	9/9/2008	J
Acenaphthylene	BQL	5.18	0.772	1	9/9/2008	
Anthracene	BQL	5.18	0.907	1	9/9/2008	
Benzo[a]anthracene	BQL	5.18	0.705	1	9/9/2008	
Benzo[a]pyrene	BQL	5.18	0.658	1	9/9/2008	
Benzo[b]fluoranthene	BQL	5.18	0.741	1	9/9/2008	
Benzo[g,h,i]perylene	BQL	5.18	0.637	1	9/9/2008	
Benzo[k]fluoranthene	BQL	5.18	0.570	1	9/9/2008	
Bis(2-chloroethoxy)methane	BQL	5.18	1.07	1	9/9/2008	
Bis(2-chloroethyl)ether	BQL	5.18	1.08	1	9/9/2008	
Bis(2-chloroisopropyl)ether	BQL	5.18	1.01	1	9/9/2008	
Bis(2-ethylhexyl)phthalate	BQL	5.18	0.425	1	9/9/2008	
4-bromophenyl phenyl ether	BQL	5.18	0.808	1	9/9/2008	
Butylbenzylphthalate	BQL	5.18	0.461	1	9/9/2008	
2-Chloronaphthalene	BQL	5.18	0.896	1	9/9/2008	
2-Chlorophenol	BQL	5.18	1.21	1	9/9/2008	
4-Chloro-3-methylphenol	BQL	5.18	0.824	1	9/9/2008	
4-Chlorophenyl phenyl ether	BQL	5.18	3.37	1	9/9/2008	
Chrysene	BQL	5.18	0.575	1	9/9/2008	
Dibenzo[a,h]anthracene	BQL	5.18	0.456	1	9/9/2008	
Di-n-Butylphthalate	BQL	5.18	0.855	1	9/9/2008	
3,3'-Dichlorobenzidine	BQL	10.4	1.26	1	9/9/2008	
2,4-Dichlorophenol	BQL	5.18	1.16	1	9/9/2008	
Diethylphthalate	BQL	5.18	0.767	1	9/9/2008	
Dimethylphthalate	BQL	5.18	0.575	1	9/9/2008	
2,4-Dimethylphenol	BQL	5.18	1.68	1	9/9/2008	
Di-n-octylphthalate	BQL	5.18	0.601	1	9/9/2008	
4,6-Dinitro-2-methylphenol	BQL	25.9	0.570	1	9/9/2008	
2,4-Dinitrophenol	BQL	25.9	0.663	1	9/9/2008	
2,4-Dinitrotoluene	BQL	5.18	0.554	1	9/9/2008	
2,6-Dinitrotoluene	BQL	5.18	0.674	1	9/9/2008	
Diphenylamine *	BQL	5.18	0.591	1	9/9/2008	
Fluoranthene	BQL	5.18	0.731	1	9/9/2008	
Fluorene	2.44	5.18	0.751	1	9/9/2008	J
Hexachlorobenzene	BQL	5.18	0.523	1	9/9/2008	
Hexachlorobutadiene	BQL	5.18	0.788	1	9/9/2008	
Hexachlorocyclopentadiene	BQL	10.4	10.4	1	9/9/2008	
Hexachloroethane	BQL	5.18	0.772	1	9/9/2008	
Indeno(1,2,3-c,d)pyrene	BQL	5.18	2.37	1	9/9/2008	
Isophorone	BQL	5.18	0.917	1	9/9/2008	
Naphthalene	65.1	5.18	0.943	1	9/9/2008	
Nitrobenzene	BQL	5.18	1.09	1	9/9/2008	
2-Nitrophenol	BQL	5.18	1.27	1	9/9/2008	
4-Nitrophenol	BQL	25.9	1.12	1	9/9/2008	
N-Nitrosodi-n-propylamine	BQL	5.18	1.55	1	9/9/2008	
Pentachlorophenol	BQL	25.9	1.47	1	9/9/2008	
Phenanthrene	1.24	5.18	0.461	1	9/9/2008	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW17
Client Project ID: CTO 014
Lab Sample ID: G649-60-4J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 15:37
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 965 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.18	1.10	1	9/9/2008	
Pyrene	BQL	5.18	2.14	1	9/9/2008	
1,2,4-Trichlorobenzene	BQL	5.18	0.746	1	9/9/2008	
2,4,6-Trichlorophenol	BQL	5.18	0.959	1	9/9/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.6	96		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	9.3	93		
Phenol-d6		10	8.6	86		
2,4,6-Tribromophenol		10	8.7	87		
4-Terphenyl-d14		10	10.7	107		

Comments:**Flags:**

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

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-MW17
Client Project ID: CTO 014
Lab Sample ID: G649-60-4J
Lab Project ID: G649-60
Sample Wt/Vol: 965 ML
Dilution: 1

Analyzed By: DES
Date Collected: 8/28/2008 15:37
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Date Analyzed: 9/9/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	1,2,4-Trimethylbenzene	4.07	000095-36-3	97	143
2	Indane	4.18	000496-11-7	93	119
3	Benzene, 2-ethenyl-1,4-dimethyl-	4.96	002039-89-6	95	61
4	Benzene, 1,2-diethyl-	4.29	000135-01-3	97	54.8
5	Benzene, 1,3-diethyl-	4.23	000141-93-5	97	41.5
6	Benzene, 4-ethyl-1,2-dimethyl-	4.43	000934-80-5	95	37.4
7	2,3-Dihydro-1-methylindene	4.90	027133-93-3	95	26.4
8					
9					
10					

Comment:

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

Reviewed by: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-Duplicate
Client Project ID: CTO 014
Lab Sample ID: G649-60-6J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 0:00
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 848 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	59.0	8.79	10	9/9/2008	
Acenaphthylene	BQL	59.0	8.79	10	9/9/2008	
Anthracene	BQL	59.0	10.3	10	9/9/2008	
Benzo[a]anthracene	BQL	59.0	8.02	10	9/9/2008	
Benzo[a]pyrene	BQL	59.0	7.49	10	9/9/2008	
Benzo[b]fluoranthene	BQL	59.0	8.43	10	9/9/2008	
Benzo[g,h,i]perylene	BQL	59.0	7.25	10	9/9/2008	
Benzo[k]fluoranthene	BQL	59.0	6.49	10	9/9/2008	
Bis(2-chloroethoxy)methane	BQL	59.0	12.1	10	9/9/2008	
Bis(2-chloroethyl)ether	BQL	59.0	12.3	10	9/9/2008	
Bis(2-chloroisopropyl)ether	BQL	59.0	11.5	10	9/9/2008	
Bis(2-ethylhexyl)phthalate	BQL	59.0	4.83	10	9/9/2008	
4-bromophenyl phenyl ether	BQL	59.0	9.20	10	9/9/2008	
Butylbenzylphthalate	BQL	59.0	5.25	10	9/9/2008	
2-Chloronaphthalene	BQL	59.0	10.2	10	9/9/2008	
2-Chlorophenol	BQL	59.0	13.8	10	9/9/2008	
4-Chloro-3-methylphenol	BQL	59.0	9.37	10	9/9/2008	
4-Chlorophenyl phenyl ether	BQL	59.0	38.4	10	9/9/2008	
Chrysene	BQL	59.0	6.54	10	9/9/2008	
Dibenzo[a,h]anthracene	BQL	59.0	5.19	10	9/9/2008	
Di-n-Butylphthalate	BQL	59.0	9.73	10	9/9/2008	
3,3'-Dichlorobenzidine	BQL	118	14.4	10	9/9/2008	
2,4-Dichlorophenol	BQL	59.0	13.2	10	9/9/2008	
Diethylphthalate	BQL	59.0	8.73	10	9/9/2008	
Dimethylphthalate	BQL	59.0	6.54	10	9/9/2008	
2,4-Dimethylphenol	BQL	59.0	19.1	10	9/9/2008	
Di-n-octylphthalate	BQL	59.0	6.84	10	9/9/2008	
4,6-Dinitro-2-methylphenol	BQL	295	6.49	10	9/9/2008	
2,4-Dinitrophenol	BQL	295	7.55	10	9/9/2008	
2,4-Dinitrotoluene	BQL	59.0	6.31	10	9/9/2008	
2,6-Dinitrotoluene	BQL	59.0	7.67	10	9/9/2008	
Diphenylamine *	BQL	59.0	6.72	10	9/9/2008	
Fluoranthene	BQL	59.0	8.31	10	9/9/2008	
Fluorene	BQL	59.0	8.55	10	9/9/2008	
Hexachlorobenzene	BQL	59.0	5.96	10	9/9/2008	
Hexachlorobutadiene	BQL	59.0	8.96	10	9/9/2008	
Hexachlorocyclopentadiene	BQL	118	118	10	9/9/2008	
Hexachloroethane	BQL	59.0	8.79	10	9/9/2008	
Indeno(1,2,3-c,d)pyrene	BQL	59.0	26.9	10	9/9/2008	
Isophorone	BQL	59.0	10.4	10	9/9/2008	
Naphthalene	152	59.0	10.7	10	9/9/2008	
Nitrobenzene	BQL	59.0	12.4	10	9/9/2008	
2-Nitrophenol	BQL	59.0	14.5	10	9/9/2008	
4-Nitrophenol	BQL	295	12.7	10	9/9/2008	
N-Nitrosodi-n-propylamine	BQL	59.0	17.7	10	9/9/2008	
Pentachlorophenol	BQL	295	16.7	10	9/9/2008	
Phenanthrene	BQL	59.0	5.25	10	9/9/2008	

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-Duplicate
Client Project ID: CTO 014
Lab Sample ID: G649-60-6J
Lab Project ID: G649-60

Analyzed By: DES
Date Collected: 8/28/2008 0:00
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Matrix: Water

Initial/Final Amt: 848 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	59.0	12.5	10	9/9/2008	
Pyrene	BQL	59.0	24.4	10	9/9/2008	
1,2,4-Trichlorobenzene	BQL	59.0	8.49	10	9/9/2008	
2,4,6-Trichlorophenol	BQL	59.0	10.9	10	9/9/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		1	NA	NA		
2-Fluorophenol		1	NA	NA		
Nitrobenzene-d5		1	NA	NA		
Phenol-d6		1	NA	NA		
2,4,6-Tribromophenol		1	NA	NA		
4-Terphenyl-d14		1	NA	NA		

Comments:**Flags:**

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

Reviewed By: 

**Results of Library Search for Semivolatile Compounds**
by GCMS

Client Sample ID: USTBB190-Duplicate
Client Project ID: CTO 014
Lab Sample ID: G649-60-6J
Lab Project ID: G649-60
Sample Wt/Vol: 848 ML
Dilution: 10

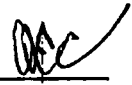
Analyzed By: DES
Date Collected: 8/28/2008 0:00
Date Received: 8/29/2008
Date Extracted: 9/4/2008
Date Analyzed: 9/9/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Benzene, 1,2,3-trimethyl-	4.07	000526-73-8	95	148
2	Alkane, Unknown	4.18	000496-11-7	87	141
3	Benzene, 2-ethenyl-1,4-dimethyl-	4.96	002039-89-6	95	75.3
4					
5					
6					
7					
8					
9					
10					

Comment:

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

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

Reviewed by: 

Results for Semivolatiles
by GCMS 625

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB12293

Lab Project ID:

Analyzed By: DES

Date Collected:

Date Received:

Date Extracted: 9/4/2008

Matrix: WATER

Initial/Final Amt: 1000 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.00	0.745	1	9/7/2008	
Acenaphthylene	BQL	5.00	0.745	1	9/7/2008	
Anthracene	BQL	5.00	0.875	1	9/7/2008	
Benzo[a]anthracene	BQL	5.00	0.680	1	9/7/2008	
Benzo[a]pyrene	BQL	5.00	0.635	1	9/7/2008	
Benzo[b]fluoranthene	BQL	5.00	0.715	1	9/7/2008	
Benzo[g,h,i]perylene	BQL	5.00	0.615	1	9/7/2008	
Benzo[k]fluoranthene	BQL	5.00	0.550	1	9/7/2008	
Bis(2-chloroethoxy)methane	BQL	5.00	1.03	1	9/7/2008	
Bis(2-chloroethyl)ether	BQL	5.00	1.04	1	9/7/2008	
Bis(2-chloroisopropyl)ether	BQL	5.00	0.975	1	9/7/2008	
Bis(2-ethylhexyl)phthalate	BQL	5.00	0.410	1	9/7/2008	
4-bromophenyl phenyl ether	BQL	5.00	0.780	1	9/7/2008	
Butylbenzylphthalate	BQL	5.00	0.445	1	9/7/2008	
2-Chloronaphthalene	BQL	5.00	0.865	1	9/7/2008	
2-Chlorophenol	BQL	5.00	1.17	1	9/7/2008	
4-Chloro-3-methylphenol	BQL	5.00	0.795	1	9/7/2008	
4-Chlorophenyl phenyl ether	BQL	5.00	3.25	1	9/7/2008	
Chrysene	BQL	5.00	0.555	1	9/7/2008	
Dibenzo[a,h]anthracene	BQL	5.00	0.440	1	9/7/2008	
Di-n-Butylphthalate	BQL	5.00	0.825	1	9/7/2008	
3,3'-Dichlorobenzidine	BQL	10.0	1.22	1	9/7/2008	
2,4-Dichlorophenol	BQL	5.00	1.12	1	9/7/2008	
Diethylphthalate	BQL	5.00	0.740	1	9/7/2008	
Dimethylphthalate	BQL	5.00	0.555	1	9/7/2008	
2,4-Dimethylphenol	BQL	5.00	1.62	1	9/7/2008	
Di-n-octylphthalate	BQL	5.00	0.580	1	9/7/2008	
4,6-Dinitro-2-methylphenol	BQL	25.0	0.550	1	9/7/2008	
2,4-Dinitrophenol	BQL	25.0	0.640	1	9/7/2008	
2,4-Dinitrotoluene	BQL	5.00	0.535	1	9/7/2008	
2,6-Dinitrotoluene	BQL	5.00	0.650	1	9/7/2008	
Diphenylamine *	BQL	5.00	0.570	1	9/7/2008	
Fluoranthene	BQL	5.00	0.705	1	9/7/2008	
Fluorene	BQL	5.00	0.725	1	9/7/2008	
Hexachlorobenzene	BQL	5.00	0.505	1	9/7/2008	
Hexachlorobutadiene	BQL	5.00	0.760	1	9/7/2008	
Hexachlorocyclopentadiene	BQL	10.0	10.0	1	9/7/2008	
Hexachloroethane	BQL	5.00	0.745	1	9/7/2008	
Indeno(1,2,3-c,d)pyrene	BQL	5.00	2.29	1	9/7/2008	
Isophorone	BQL	5.00	0.885	1	9/7/2008	
Naphthalene	BQL	5.00	0.910	1	9/7/2008	
Nitrobenzene	BQL	5.00	1.05	1	9/7/2008	
2-Nitrophenol	BQL	5.00	1.23	1	9/7/2008	
4-Nitrophenol	BQL	25.0	1.08	1	9/7/2008	
N-Nitrosodi-n-propylamine	BQL	5.00	1.50	1	9/7/2008	
Pentachlorophenol	BQL	25.0	1.41	1	9/7/2008	
Phenanthrene	BQL	5.00	0.445	1	9/7/2008	

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: Method Blank

Client Project ID:

Lab Sample ID: PB12293

Lab Project ID:

Analyzed By: DES

Date Collected:

Date Received:

Date Extracted: 9/4/2008

Matrix: WATER

Initial/Final Amt: 1000 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.00	1.06	1	9/7/2008	
Pyrene	BQL	5.00	2.07	1	9/7/2008	
1,2,4-Trichlorobenzene	BQL	5.00	0.720	1	9/7/2008	
2,4,6-Trichlorophenol	BQL	5.00	0.925	1	9/7/2008	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.4	94		
2-Fluorophenol		10	8.3	83		
Nitrobenzene-d5		10	9.8	98		
Phenol-d6		10	8.9	89		
2,4,6-Tribromophenol		10	8	80		
4-Terphenyl-d14		10	10.8	108		

Comments:**Flags:**

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 



Results for 625 Laboratory Control Spike Duplicate

Sample ID: LCSD12293

Date Analyzed: 09/07/08 16:56

Analyst: DES

File: 0907608.D

Matrix: Water

Inst: MSD6

Compound	Spiked (µg/L)	Measured (µg/L)	Recovery (%)	Limits (%)		RPD (%)	#	Limit (%)
				Lower	Upper			
Acenaphthene	10	9.30	93.0	47.0	145	2.0		30
Acenaphthylene	10	9.27	92.7	33.0	145	0.4		30
Anthracene	10	8.51	85.1	27.0	133	1.1		30
Benzo[a]anthracene	10	9.44	94.4	33.0	143	0.1		30
Benzo[a]pyrene	10	9.25	92.5	17.0	163	0.8		30
Benzo[b]fluoranthene	10	9.03	90.3	24.0	159	1.8		30
Benzo[g,h,i]perylene	10	10.44	104.4	D	219	3.6		30
Benzo[k]fluoranthene	10	11.67	116.7	11.0	162	2.4		30
Bis(2-chloroethoxy)methane	10	8.89	88.9	33.0	184	2.5		30
Bis(2-chloroethyl)ether	10	8.15	81.5	12.0	158	4.1		30
Bis(2-chloroisopropyl)ether	10	8.61	86.1	36.0	166	4.3		30
Bis(2-ethylhexyl)phthalate	10	10.37	103.7	8.0	158	2.9		30
4-bromophenyl phenyl ether	10	8.67	86.7	53.0	127	1.5		30
Butylbenzylphthalate	10	10.40	104.0	D	152	1.9		30
2-Chloronaphthalene	10	7.64	76.4	60.0	118	0.7		30
2-Chlorophenol	10	8.03	80.3	23.0	134	5.9		30
4-Chloro-3-methylphenol	10	8.93	89.3	22.0	147	2.5		30
4-Chlorophenyl phenyl ether	10	10.03	100.3	25.0	158	1.4		30
Chrysene	10	10.03	100.3	17.0	168	3.6		30
Dibenzo[a,h]anthracene	10	9.80	98.0	D	227	1.3		30
Di-n-Butylphthalate	10	9.71	97.1	1.0	118	0.9		30
3,3'-Dichlorobenzidine	10	7.95	79.5	D	262	0.3		30
2,4-Dichlorophenol	10	8.81	88.1	39.0	135	3.2		30
Diethylphthalate	10	9.75	97.5	D	114	1.0		30
Dimethylphthalate	10	9.49	94.9	D	112	0.3		30
2,4-Dimethylphenol	10	7.58	75.8	32.0	119	7.1		30
Di-n-octylphthalate	10	10.64	106.4	4.0	146	0.9		30
4,6-Dinitro-2-methylphenol	10	9.18	91.8	D	181	1.2		30
2,4-Dinitrophenol	10	9.52	95.2	D	191	1.6		30
2,4-Dinitrotoluene	10	9.94	99.4	39.0	139	0.9		30
2,6-Dinitrotoluene	10	9.36	93.6	50.0	158	3.2		30
Diphenylamine	10	9.02	90.2	63.8	100	0.9		30
Fluoranthene	10	9.23	92.3	26.0	137	0.1		30
Fluorene	10	10.69	106.9	59.0	121	2.5		30
Hexachlorobenzene	10	9.77	97.7	D	152	1.5		30
Hexachlorobutadiene	10	7.71	77.1	24.0	116	5.1		30
Hexachlorocyclopentadiene	10	6.53	65.3	D	417	9.3		30
Hexachloroethane	10	7.49	74.9	40.0	113	6.1		30
Indeno(1,2,3-c,d)pyrene	10	10.09	100.9	D	171	2.2		30
Isophorone	10	8.35	83.5	21.0	196	1.7		30
Naphthalene	10	8.95	89.5	21.0	133	2.3		30



Results for 625 Laboratory Control Spike Duplicate

Sample ID: LCSD12293

Analyst: DES

Matrix: Water

Date Analyzed: 09/07/08 16:56

File: 0907608.D

Inst: MSD6

Compound	Spiked (µg/L)	Measured (µg/L)	Recovery (%)	Limits (%)		RPD (%)	Limit # (%)
				Lower	Upper		
Nitrobenzene	10	8.88	88.8	35.0	180	3.7	30
2-Nitrophenol	10	8.74	87.4	29.0	182	4.8	30
4-Nitrophenol	10	6.76	67.6	D	132	1.3	30
N-Nitrosodi-n-propylamine	10	8.80	88.0	D	230	1.1	30
Pentachlorophenol	10	8.80	88.0	14.0	176	1.0	30
Phenanthrene	10	9.25	92.5	54.0	120	1.1	30
Phenol	10	8.10	81.0	5.0	112	2.8	30
Pyrene	10	10.22	102.2	52.0	115	0.1	30
1,2,4-Trichlorobenzene	10	8.00	80.0	44.0	142	5.4	30
2,4,6-Trichlorophenol	10	8.79	87.9	37.0	144	3.8	30

Surrogate Results Compound	Spiked (µg/L)	Measured (µg/L)	Recovery (%)	Limits (%)	
				Lower	Upper
2-Fluorobiphenyl	10	8.61	86.1	49.9	107
2-Fluorophenol	10	7.31	73.1	33.1	118
Nitrobenzene-d5	10	8.56	85.6	46.0	118
Phenol-d6	10	7.85	78.5	49.0	120
2,4,6-Tribromophenol	10	8.25	82.5	29.3	152
4-Terphenyl-d14	10	9.98	99.8	22.1	142

Flags: * = Out of limits.

NA = Not applicable

Reviewed By:



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/06/08 20:10 - 09/06/08 20:10
Date Analyzed	09/06/08 20:10 - 09/06/08 20:10
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	174	100	
C ₉ -C ₁₂ Aliphatics**	327	100	
C ₉ -C ₁₀ Aromatics**	1090	100	
		Percent Recovery	Flags
		Limits Lower Upper	
Surrogate % Recovery - PID		92.9	70 130
Surrogate % Recovery - FID		98.4	70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-60-1d	Lab Info: g649-60-1d
FID Info: VP090608/021F0101.D	PID Info: VP090608/021R0101.D

Reviewed By: 



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/06/08 20:37 - 09/06/08 20:37
Date Analyzed	09/06/08 20:37 - 09/06/08 20:37
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	345	100		
C ₉ -C ₁₂ Aliphatics**	261	100		
C ₉ -C ₁₀ Aromatics**	886	100		
	Percent Recovery	Flags	Limits	
			Lower	Upper
Surrogate % Recovery - PID	92.4		70	130
Surrogate % Recovery - FID	97.8		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-60-2d	Lab Info: g649-60-2d
FID Info: VP090608/022F0101.D	PID Info: VP090608/022R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/06/08 21:03 - 09/06/08 21:03
Date Analyzed	09/06/08 21:03 - 09/06/08 21:03
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	1180	100	
C ₉ -C ₁₂ Aliphatics**	333	100	
C ₉ -C ₁₀ Aromatics**	1150	100	
	Percent Recovery	Flags	Limits Lower Upper
	Surrogate % Recovery - PID	99.2	70 130
	Surrogate % Recovery - FID	104	70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-60-3d	Lab Info: g649-60-3d
FID Info: VP090608/023F0101.D	PID Info: VP090608/023R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/06/08 21:30 - 09/06/08 21:30
Date Analyzed	09/06/08 21:30 - 09/06/08 21:30
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	349	100	
C ₉ -C ₁₂ Aliphatics**	402	100	
C ₉ -C ₁₀ Aromatics**	1070	100	
	Percent Recovery	Flags	Limits Lower Upper
	Surrogate % Recovery - PID	92.6	70 130
	Surrogate % Recovery - FID	97.5	70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-60-4d	Lab Info: g649-60-4d
FID Info: VP090608/024F0101.D	PID Info: VP090608/024R0101.D

Reviewed By: 

**VPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/06/08 21:57 - 09/06/08 21:57
Date Analyzed	09/06/08 21:57 - 09/06/08 21:57
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	1180	100	
C ₉ -C ₁₂ Aliphatics**	330	100	
C ₉ -C ₁₀ Aromatics**	1150	100	
	Percent Recovery	Flags	Limits Lower Upper
	Surrogate % Recovery - PID	97.1	70 130
	Surrogate % Recovery - FID	102	70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-60-6d	Lab Info: g649-60-6d
FID Info: VP090608/025F0101.D	PID Info: VP090608/025R0101.D

Reviewed By: 



VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: _____

Project Name: _____

Sample Information	
Sample Identification	vblk4090608a
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	
Date Received	
Date Extracted	
Date Analyzed	09/06/08 12:42 - 09/06/08 12:42
Dry Weight	100
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	BQL	100	
C ₉ -C ₁₂ Aliphatics**	BQL	100	
C ₉ -C ₁₀ Aromatics**	BQL	100	
	Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID	88.4		70 130
Surrogate % Recovery - FID	94.5		70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: vblk4090608a	Lab Info: vblk4090608a
FID Info: VP090608/006F0101.D	PID Info: VP090608/006R0101.D

Reviewed By: 



SGS ENVIRONMENTAL SERVICES, INC.
LABORATORY CONTROL SPIKE RESULTS
by Method VPH

SGS Environmental Services, Inc.

Lab Sample ID: LCS4090608A
Lab Project ID: Batch QC
Report Basis: Wet

Analyzed By:
Matrix: Water
Percent Solids: NA %

Analytical QC Results Summary

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics		121				
C9-C12 Aliphatics		52.0				
C9-C10 Aromatics		40.9				
Total VPH	200	213	107	70.0	130	

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Surrogate - PID	1250	1128	90.2	70.0	130	
Surrogate - FID	1250	1209	96.7	70.0	130	

Reviewed By: _____



SGS ENVIRONMENTAL SERVICES, INC.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS
by Method VPH

SGS Environmental Services, Inc.

Lab Sample ID: g520-314-8e
MS Sample ID: g520-314-8e
MSD Sample ID: g520-314-8e
Lab Project ID: Batch QC for VP090608
Report Basis: Wet

Analyzed By: MJC
Matrix: Water
Percent Solids: NA %

Matrix Spike Results Summary

Analyte	Sample Amount µg/L	Spiked Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics	260.000	-	390.00	-	-	-	
C9-C12 Aliphatics	174.000	-	225.00	-	-	-	
C9-C10 Aromatics	56.200	-	76.20	-	-	-	
Total VPH	490.000	200.0	691.0	101.0	70	130	

Matrix Spike Duplicate Results Summary

Analyte	Spiked Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C5-C8 Aliphatics	-	370.00	-	-	-	
C9-C12 Aliphatics	-	221.00	-	-	-	
C9-C10 Aromatics	-	79.90	-	-	-	
Total VPH	200.0	671.0	90.5	70	130	

Analyte	MS Amount µg/L	MSD Amount µg/L	RPD Value (%)	RPD Limit (%)	Qualifier
C5-C8 Aliphatics	-	-	-	-	
C9-C12 Aliphatics	-	-	-	-	
C9-C10 Aromatics	-	-	-	-	
Total VPH	691.0	671.0	3	20	

Reviewed By: _____



Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 07/25/08PID Initial Calibration Date: 07/25/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	6.76	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	15.66	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 09/06/08Filename: VP090608/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	9.4	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-9.9	±25%
C ₉ -C ₁₀ Aromatics	200	16	-2.8	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve



Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 07/25/08PID Initial Calibration Date: 07/25/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	6.76	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	15.66	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 09/06/08Filename: VP090608/030F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	7.9	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-12.9	±25%
C ₉ -C ₁₀ Aromatics	200	16	2.3	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

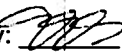
Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/05/08
Date Analyzed	09/08/08 16:28 - 09/08/08 16:57
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	825
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	389	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	81.0		40	140
Aromatic (ortho-terphenyl)	101		40	140
Fractionation 1 (2-bromonaphthalene)	106		40	140
Fractionation 2 (2-fluorobiphenyl)	97.6		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-1L	Lab Info: G649-60-1L
Aliphatic: EP090808/005F0301.D	Aromatic: EP090808/006F0401.D

Reviewed By: 

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/05/08
Date Analyzed	09/08/08 17:25 - 09/08/08 17:53
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	822
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	510	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	81.0		40	140
Aromatic (ortho-terphenyl)	90.9		40	140
Fractionation 1 (2-bromonaphthalene)	107		40	140
Fractionation 2 (2-fluorobiphenyl)	97.2		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-2L	Lab Info: G649-60-2L
Aliphatic: EP090808/007F0501.D	Aromatic: EP090808/008F0601.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

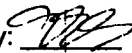
Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/05/08
Date Analyzed	09/08/08 18:22 - 09/08/08 18:50
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	873
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	568	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	99.8		40	140
Aromatic (ortho-terphenyl)	59.2		40	140
Fractionation 1 (2-bromonaphthalene)	91.6		40	140
Fractionation 2 (2-fluorobiphenyl)	78.3		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-3L	Lab Info: G649-60-3L
Aliphatic: EP090808/009F0701.D	Aromatic: EP090808/010F0801.D

Reviewed By: 

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/05/08
Date Analyzed	09/08/08 19:19 - 09/08/08 19:47
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	953
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	285	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	98.3		40	140
Aromatic (ortho-terphenyl)	72.4		40	140
Fractionation 1 (2-bromonaphthalene)	76.2		40	140
Fractionation 2 (2-fluorobiphenyl)	68.0		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-4L	Lab Info: G649-60-4L
Aliphatic: EP090808/011F0901.D	Aromatic: EP090808/012F1001.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

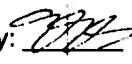
Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/05/08
Date Analyzed	09/08/08 20:16 - 09/08/08 20:44
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	853
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	569	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	90.9		40	140
Aromatic (ortho-terphenyl)	82.0		40	140
Fractionation 1 (2-bromonaphthalene)	83.7		40	140
Fractionation 2 (2-fluorobiphenyl)	72.9		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-6L	Lab Info: G649-60-6L
Aliphatic: EP090808/013F1101.D	Aromatic: EP090808/014F1201.D

Reviewed By: 

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**

Client Name: _____

Project Name: _____

Sample Information	
Sample Identification	PB12312
Sample Matrix	WATER
Date Collected	
Date Received	
Date Extracted	09/05/08
Date Analyzed	09/08/08 15:32 - 09/08/08 16:00
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	1000
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	32.6	****	40	140
Aromatic (ortho-terphenyl)	97.6		40	140
Fractionation 1 (2-bromonaphthalene)	102		40	140
Fractionation 2 (2-fluorobiphenyl)	93.6		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

**** = Low surrogate recovery failure.

Lab Info: PB12312	Lab Info: PB12312
Aliphatic: EP090808/003F0101.D	Aromatic: EP090808/004F0201.D

Reviewed By:



SGS ENVIRONMENTAL SERVICES, INC.

LABORATORY CONTROL SPIKE RESULTS

by Method EPH

SGS Environmental Services, Inc.

Lab Sample ID: LCS12312
Lab Project ID: Batch QC
Report Basis: Wet

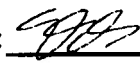
Analyzed By: EAW
Matrix: WATER
Percent Solids: NA %
Initial Amount: 1000 mL
Final Volume: 5.0 mL

Analytical QC Results Summary

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C9-C18 Aliphatics	50.0	21.2	42.4	40.0	140	
C19-C36 Aliphatics	50.0	55.6	111	40.0	140	
C11-C22 Aromatics	50.0	28.0	56.0	40.0	140	

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Aliphatic (COD)	40.0	35.6	89.0	40.0	140	
Aromatic (OTP)	40.0	26.0	65.0	40.0	140	
Frac1 (2-BRN)	100	62.0	62.0	40.0	140	
Frac2 (2-FBP)	100	56.7	56.7	40.0	140	

Fractionation Breakthrough	Aliphatic Fraction area	Aromatic Fraction area	Break through (%)	Limit (%)	Qualifier
Naphthalene	0	232	0.00	≤5	

Reviewed By: 



SGS ENVIRONMENTAL SERVICES, INC.

LABORATORY CONTROL SPIKE DUPLICATE RESULTS

by Method EPH

SGS Environmental Services, Inc.

Lab Sample ID: LCSD12312
Lab Project ID: Batch QC
Report Basis: Wet

Analyzed By: EAW
Matrix: WATER
Percent Solids: NA %
Initial Amount: 1000 mL
Final Volume: 10.0 mL

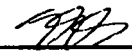
Analytical QC Results Summary

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C9-C18 Aliphatics	50	22.4	44.8	40.0	140	
C19-C36 Aliphatics	50	45.6	91.2	40.0	140	
C11-C22 Aromatics	50	31.7	63.4	40.0	140	

Analyte	LCS Amount µg/L	LCSD Amount µg/L	RPD Value (%)	RPD Limit (%)	Qualifier
C9-C18 Aliphatics	21.2	22.4	5.5	<25	
C19-C36 Aliphatics	56	45.6	19.8	<25	
C11-C22 Aromatics	28.0	31.7	12.4	<25	

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Aliphatic (COD)	40.0	36.0	90.0	40.0	140	
Aromatic (OTP)	40.0	26.1	65.3	40.0	140	
Frac1 (2-BRN)	100	82.6	82.6	40.0	140	
Frac2 (2-FBP)	100	78.6	78.6	40.0	140	

Fractionation Breakthrough	Aliphatic Fraction area	Aromatic Fraction area	Break through (%)	Limit (%)	Qualifier
Naphthalene		389.48	NA	≤5	

Reviewed By: 

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 08/19/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	5.17	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	5.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	3.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 09/08/08
09/08/08

Filenames: ep090808/001f0101.d
ep090808/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	3.8	±25%
C19-C36 Aliphatics	100	16.7	5.0	±25%
C11-C22 Aromatics	100	16.7	5.4	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 08/19/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	5.17	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	5.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	3.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 09/08/08
09/09/08

Filenames: ep090808/019f1701.d
ep090808/020f1801.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	7.4	±25%
C19-C36 Aliphatics	100	16.7	8.6	±25%
C11-C22 Aromatics	100	16.7	9.1	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/10/08
Date Analyzed	09/12/08 20:57 - 09/12/08 21:26
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	923
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	375	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	77.1		40	140
Aromatic (ortho-terphenyl)	92.8		40	140
Fractionation 1 (2-bromonaphthalene)	105		40	140
Fractionation 2 (2-fluorobiphenyl)	96.4		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-1M	Lab Info: G649-60-1M
Aliphatic: EP091208/019F1601.D	Aromatic: EP091208/020F1701.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/10/08
Date Analyzed	09/12/08 21:54 - 09/12/08 22:23
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	898
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	463	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	86.7		40	140
Aromatic (ortho-terphenyl)	78.9		40	140
Fractionation 1 (2-bromonaphthalene)	91.7		40	140
Fractionation 2 (2-fluorobiphenyl)	82.4		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-2M	Lab Info: G649-60-2M
Aliphatic: EP091208/021F1801.D	Aromatic: EP091208/022F1901.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/10/08
Date Analyzed	09/12/08 22:52 - 09/12/08 23:20
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	859
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	715	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	90.3		40	140
Aromatic (ortho-terphenyl)	91.5		40	140
Fractionation 1 (2-bromonaphthalene)	108		40	140
Fractionation 2 (2-fluorobiphenyl)	94.9		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-3M	Lab Info: G649-60-3M
Aliphatic: EP091208/023F2001.D	Aromatic: EP091208/024F2101.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/10/08
Date Analyzed	09/12/08 23:49 - 09/13/08 00:18
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	888
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	403	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	94.5		40	140
Aromatic (ortho-terphenyl)	87.1		40	140
Fractionation 1 (2-bromonaphthalene)	97.0		40	140
Fractionation 2 (2-fluorobiphenyl)	88.0		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-4M	Lab Info: G649-60-4M
Aliphatic: EP091208/025F2201.D	Aromatic: EP091208/026F2301.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	WATER
Date Collected	08/28/08
Date Received	08/29/08
Date Extracted	09/10/08
Date Analyzed	09/13/08 00:46 - 09/13/08 01:15
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	895
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	674	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	88.4		40	140
Aromatic (ortho-terphenyl)	88.5		40	140
Fractionation 1 (2-bromonaphthalene)	95.3		40	140
Fractionation 2 (2-fluorobiphenyl)	84.9		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-60-6M	Lab Info: G649-60-6M
Aliphatic: EP091208/027F2401.D	Aromatic: EP091208/028F2501.D

Reviewed By:

**EPH (Aliphatics/Aromatics) Laboratory Reporting Form**

Client Name: _____

Project Name: _____

Sample Information	
Sample Identification	PB12351
Sample Matrix	WATER
Date Collected	
Date Received	
Date Extracted	09/10/08
Date Analyzed	09/12/08 20:00 - 09/12/08 20:29
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	1000
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	42.3		40	140
Aromatic (ortho-terphenyl)	90.9		40	140
Fractionation 1 (2-bromonaphthalene)	92.5		40	140
Fractionation 2 (2-fluorobiphenyl)	85.4		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: PB12351	Lab Info: PB12351
Aliphatic: EP091208/017F1401.D	Aromatic: EP091208/018F1501.D

Reviewed By:



SGS ENVIRONMENTAL SERVICES, INC.

LABORATORY CONTROL SPIKE RESULTS
by Method EPH

SGS Environmental Services, Inc.

Lab Sample ID: LCS12351
Lab Project ID: Batch QC
Report Basis: WetAnalyzed By: EAW
Matrix: WATER
Percent Solids: NA %
Initial Amount: 1000 mL
Final Volume: 5.0 mL**Analytical QC Results Summary**

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C9-C18 Aliphatics	50.0	25.3	50.6	40.0	140	
C19-C36 Aliphatics	50.0	55.8	112	40.0	140	
C11-C22 Aromatics	50.0	44.0	88.0	40.0	140	

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Aliphatic (COD)	40.0	15.1	37.8	40.0	140	*
Aromatic (OTP)	40.0	36.6	91.5	40.0	140	
Frac1 (2-BRN)	100	101	101	40.0	140	
Frac2 (2-FBP)	100	93.5	93.5	40.0	140	

Fractionation Breakthrough	Aliphatic Fraction area	Aromatic Fraction area	Break through (%)	Limit (%)	Qualifier
Naphthalene	0	498	0.00	≤5	

Reviewed By: 



SGS ENVIRONMENTAL SERVICES, INC.

LABORATORY CONTROL SPIKE DUPLICATE RESULTS
by Method EPH

SGS Environmental Services, Inc.

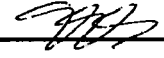
Lab Sample ID: LCSD12351
Lab Project ID: Batch QC
Report Basis: WetAnalyzed By: EAW
Matrix: WATER
Percent Solids: NA %
Initial Amount: 1000 mL
Final Volume: 10.0 mL**Analytical QC Results Summary**

Analyte	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
C9-C18 Aliphatics	50	23.5	47.0	40.0	140	
C19-C36 Aliphatics	50	45.6	91.2	40.0	140	
C11-C22 Aromatics	50	31.7	63.4	40.0	140	

Analyte	LCS Amount µg/L	LCSD Amount µg/L	RPD Value (%)	RPD Limit (%)	Qualifier
C9-C18 Aliphatics	25.3	23.5	7.4	<25	
C19-C36 Aliphatics	56	45.6	20.1	<25	
C11-C22 Aromatics	44.0	31.7	32.5	<25	*

Surrogate Standards	Expected Amount µg/L	Measured Amount µg/L	Percent Recovery (%)	Lower Limit (%)	Upper Limit (%)	Qualifier
Aliphatic (COD)	40.0	36.0	90.0	40.0	140	
Aromatic (OTP)	40.0	26.1	65.3	40.0	140	
Frac1 (2-BRN)	100	82.6	82.6	40.0	140	
Frac2 (2-FBP)	100	78.6	78.6	40.0	140	

Fractionation Breakthrough	Aliphatic Fraction area	Aromatic Fraction area	Break through (%)	Limit (%)	Qualifier
Naphthalene		389.48	NA	≤5	

Reviewed By: 

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 08/19/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	5.17	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	5.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	3.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 09/12/08
09/12/08

Filenames: ep091208/015f1201.d
ep091208/016f1301.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	8.6	±25%
C19-C36 Aliphatics	100	16.7	9.1	±25%
C11-C22 Aromatics	100	16.7	7.1	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 08/19/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	5.17	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	5.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	3.29	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 09/12/08
09/13/08

Filenames: ep091208/033f3001.d
ep091208/034f3101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	5.4	≤±25%
C19-C36 Aliphatics	100	16.7	5.8	≤±25%
C11-C22 Aromatics	100	16.7	5.2	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit

RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

CHAIN OF CUSTODY RECORD
SGS Environmental Services Inc.

Locations Nationwide

- Alaska
- Ohio
- New Jersey
- West Virginia
- Hawaii
- Maryland
- North Carolina

www.us.sgs.com

0872

1

CLIENT: OSAGE OF VIRGINIA

CONTACT: THERESA TELLERMAN PHONE NO.: 757 274-4449

PROJECT: CTO 014 SITE/PWSID#: BB190

REPORTS TO: Shawn Whitworth E-MAIL: FAX NO.: 757 440-0411

INVOICE TO: MIKE GREG 2618 A Collier Ave Norfolk, VA 23517 QUOTE # P.O. NUMBER CTO 014

2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX
1	UST BB190-MW03	8/28/08	1640	W
2	UST BB190-MW07	8/28/08	1716	W
3	UST BB190-MW16	8/29/08	1925	W
4	UST BB190-MW17	8/28/08	1537	W
5	TRIP BLANK	8/29/08	0900	W
6	UST BB190-Duplicate	8/28/08		

3

SGS Reference: 6649-60

PAGE 1 OF 1

4

CONTAINER	SAMPLE TYPE	Preservatives Used	Analysis Required										REMARKS
			HCl	None	HCl	H2							
3	C= COMP G= GRAB	3	602 + xylenes										
			625 + TICs										
			VPH										
			EPH										

5

Collected/Relinquished By: (1)	Date	Time	Received By:	Date	Time
<i>[Signature]</i>	8/28/08	8:28	Willard Hunt	8/29/08	8:28
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Willard Hunt	8/29/08	8:00	<i>[Signature]</i>	8/29/08	1000
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By:	Date	Time

6

Shipping Carrier: Courrier

Shipping Ticket No:

Special Deliverable Requirements: EDD Format

Special Instructions: Email results to: SWhitworth@osageva.com tellerman@osageva.com

Requested Turnaround Time: ☐ RUSH ☒ STD

Samples Received Cold? (Circle) YES NO

Temperature (C): 3.2, 4.80

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

N.C. CERTIFICATION #481

71 of 71

SGS ENVIRONMENTAL SERVICES, INC



Shaun Whitworth
Osage of Virginia
2618 A Colley Ave
Norfolk, VA 23517

Report Number: G649-102

Client Project: CTO 014

Dear Shaun Whitworth,

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

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

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

 Revised 5/4/09
Project Manager Date
Ashley Nifong

SGS Environmental Services, Inc.

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

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.

MI34.021808.4

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW01

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/29/2009 16:20

Lab Sample ID: G649-102-1A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/4/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/4/2009	
Ethylbenzene	BQL	1.00	0.341	1	2/4/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/4/2009	
Toluene	BQL	1.00	0.404	1	2/4/2009	
m/p-Xylene	BQL	2.00	0.671	1	2/4/2009	
o-Xylene	BQL	1.00	0.302	1	2/4/2009	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.0	97.4

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW02

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/29/2009 17:35

Lab Sample ID: G649-102-2A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/4/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/4/2009	
Ethylbenzene	BQL	1.00	0.341	1	2/4/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/4/2009	
Toluene	BQL	1.00	0.404	1	2/4/2009	
m/p-Xylene	BQL	2.00	0.671	1	2/4/2009	
o-Xylene	BQL	1.00	0.302	1	2/4/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.5	98.7

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW03

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/29/2009 18:30

Lab Sample ID: G649-102-3E

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/4/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/4/2009	
Ethylbenzene	8.23	1.00	0.341	1	2/4/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/4/2009	
Toluene	BQL	1.00	0.404	1	2/4/2009	
m/p-Xylene	18.7	2.00	0.671	1	2/4/2009	
o-Xylene	3.55	1.00	0.302	1	2/4/2009	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.8	104

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW07

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 15:30

Lab Sample ID: G649-102-4A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	2.22	1.00	0.428	1	2/5/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/5/2009	
Ethylbenzene	13.7	1.00	0.341	1	2/5/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/5/2009	
Toluene	1.05	1.00	0.404	1	2/5/2009	
m/p-Xylene	11.6	2.00	0.671	1	2/5/2009	
o-Xylene	BQL	1.00	0.302	1	2/5/2009	

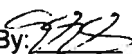
Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	44.0	110

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 
GC5_WA.XLS
Page 6 of 82

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW08

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/31/2009 11:35

Lab Sample ID: G649-102-5A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/5/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/5/2009	
Ethylbenzene	BQL	1.00	0.341	1	2/5/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/5/2009	
Toluene	BQL	1.00	0.404	1	2/5/2009	
m/p-Xylene	BQL	2.00	0.671	1	2/5/2009	
o-Xylene	BQL	1.00	0.302	1	2/5/2009	

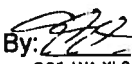
Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.4	98.5

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 
GC5_WA.XLS

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW12

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/31/2009 10:55

Lab Sample ID: G649-102-6A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/5/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/5/2009	
Ethylbenzene	BQL	1.00	0.341	1	2/5/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/5/2009	
Toluene	BQL	1.00	0.404	1	2/5/2009	
m/p-Xylene	BQL	2.00	0.671	1	2/5/2009	
o-Xylene	BQL	1.00	0.302	1	2/5/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.3	98.2

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 
GC5_WA.XLS

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW15

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 17:10

Lab Sample ID: G649-102-7A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.428	1	2/5/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.391	1	2/5/2009	
Ethylbenzene	BQL	1.00	0.341	1	2/5/2009	
Methyl-tert butyl ether (MTBE)	BQL	1.00	0.778	1	2/5/2009	
Toluene	BQL	1.00	0.404	1	2/5/2009	
m/p-Xylene	BQL	2.00	0.671	1	2/5/2009	
o-Xylene	BQL	1.00	0.302	1	2/5/2009	

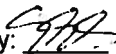
Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.4	98.4

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 
GC6_WA.XLS

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW16

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 18:30

Lab Sample ID: G649-102-8A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	7.12	5.00	0.885	5	2/10/2009	
Diisopropyl ether (DIPE)	BQL	5.00	1.27	5	2/10/2009	
Ethylbenzene	53.6	5.00	0.95	5	2/10/2009	
Methyl-tert butyl ether (MTBE)	BQL	10.0	1.53	5	2/10/2009	
Toluene	1.76	5.00	1.57	5	2/10/2009	J
m/p-Xylene	4.76	10.0	2.41	5	2/10/2009	J
o-Xylene	BQL	10.0	2.03	5	2/10/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.2	103

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

Reviewed By: 
GC-VOA_WA.XLS

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-MW17

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 18:00

Lab Sample ID: G649-102-9E

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	4.00	1.71	4	2/10/2009	
Diisopropyl ether (DIPE)	BQL	4.00	1.56	4	2/10/2009	
Ethylbenzene	29.1	4.00	1.36	4	2/10/2009	
Methyl-tert butyl ether (MTBE)	BQL	4.00	3.11	4	2/10/2009	
Toluene	1.84	4.00	1.62	4	2/10/2009	J
m/p-Xylene	35.4	8.00	2.68	4	2/10/2009	
o-Xylene	BQL	4.00	1.21	4	2/10/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	42.9	107

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: USTBB190-Duplicate

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 0:00

Lab Sample ID: G649-102-10A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	7.30	5.00	2.14	5	2/10/2009	
Diisopropyl ether (DIPE)	BQL	5.00	1.96	5	2/10/2009	
Ethylbenzene	55.0	5.00	1.71	5	2/10/2009	
Methyl-tert butyl ether (MTBE)	BQL	5.00	3.89	5	2/10/2009	
Toluene	BQL	5.00	2.02	5	2/10/2009	
m/p-Xylene	9.39	10.0	3.36	5	2/10/2009	J
o-Xylene	BQL	5.00	1.51	5	2/10/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.7	104

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: PSW-BB47

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 14:00

Lab Sample ID: G649-102-11A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	2/9/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	2/9/2009	
Ethylbenzene	BQL	1.00	0.19	1	2/9/2009	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	2/9/2009	
Toluene	BQL	1.00	0.313	1	2/9/2009	
m/p-Xylene	BQL	2.00	0.481	1	2/9/2009	
o-Xylene	BQL	2.00	0.405	1	2/9/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.1	100

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

SGS Environmental Services, Inc.

Results for Volatiles

by GC 602

Client Sample ID: Trip Blanks

Analyzed By: RSB

Client Project ID: CTO 014

Date Collected: 1/30/2009 0:00

Lab Sample ID: G649-102-12A

Date Received: 2/2/2009

Lab Project ID: G649-102

Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	2/9/2009	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	2/9/2009	
Ethylbenzene	BQL	1.00	0.19	1	2/9/2009	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	2/9/2009	
Toluene	BQL	1.00	0.313	1	2/9/2009	
m/p-Xylene	BQL	2.00	0.481	1	2/9/2009	
o-Xylene	BQL	2.00	0.405	1	2/9/2009	

Surrogate Spike Recoveries

	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.9	99.7

Comments:

All values corrected for dilution.

BQL = Below quantitation limit.

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

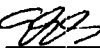
Sample Information	
Sample Identification	USTBB190-MW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/04/09 15:08 - 02/04/09 15:08
Date Analyzed	02/04/09 15:08 - 02/04/09 15:08
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	86.1		70	130
Surrogate % Recovery - FID	94.0		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-1d	Lab Info: g649-102-1d
FID Info: VP020409/016F0101.D	PID Info: VP020409/016R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

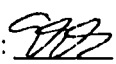
Sample Information	
Sample Identification	USTBB190-MW02
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/04/09 15:35 - 02/04/09 15:35
Date Analyzed	02/04/09 15:35 - 02/04/09 15:35
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C ₅ -C ₈ Aliphatics**	BQL	100	
C ₉ -C ₁₂ Aliphatics**	BQL	100	
C ₉ -C ₁₀ Aromatics**	BQL	100	
		Percent Recovery	Flags
		Limits Lower Upper	
Surrogate % Recovery - PID		99.5	70 130
Surrogate % Recovery - FID		107	70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-2d	Lab Info: g649-102-2d
FID Info: VP020409/017F0101.D	PID Info: VP020409/017R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/05/09 21:43 - 02/05/09 21:43
Date Analyzed	02/05/09 21:43 - 02/05/09 21:43
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	124	100		
C ₉ -C ₁₀ Aromatics**	334	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		91.5		70 130
Surrogate % Recovery - FID		97.8		70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-3d	Lab Info: g649-102-3d
FID Info: VP020509/027F0101.D	PID Info: VP020509/027R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/05/09 22:09 - 02/05/09 22:09
Date Analyzed	02/05/09 22:09 - 02/05/09 22:09
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	436	100		
C ₉ -C ₁₂ Aliphatics**	177	100		
C ₉ -C ₁₀ Aromatics**	576	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	95.6		70	130
Surrogate % Recovery - FID	102		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-4b	Lab Info: g649-102-4b
FID Info: VP020509/028F0101.D	PID Info: VP020509/028R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

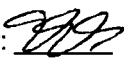
Sample Information	
Sample Identification	USTBB190-MW08
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/31/09
Date Received	02/02/09
Date Extracted	02/04/09 19:07 - 02/04/09 19:07
Date Analyzed	02/04/09 19:07 - 02/04/09 19:07
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	87.6		70	130
Surrogate % Recovery - FID	94.1		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-5d	Lab Info: g649-102-5d
FID Info: VP020409/025F0101.D	PID Info: VP020409/025R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

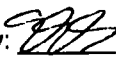
Sample Information	
Sample Identification	USTBB190-MW12
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/31/09
Date Received	02/02/09
Date Extracted	02/04/09 19:33 - 02/04/09 19:33
Date Analyzed	02/04/09 19:33 - 02/04/09 19:33
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	86.5		70	130
Surrogate % Recovery - FID	93.5		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-6d	Lab Info: g649-102-6d
FID Info: VP020409/026F0101.D	PID Info: VP020409/026R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

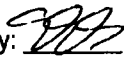
Sample Information	
Sample Identification	USTBB190-MW15
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 16:01 - 02/04/09 16:01
Date Analyzed	02/04/09 16:01 - 02/04/09 16:01
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	88.8		70	130
Surrogate % Recovery - FID	96.9		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-7d	Lab Info: g649-102-7d
FID Info: VP020409/018F0101.D	PID Info: VP020409/018R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

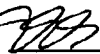
Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 19:59 - 02/04/09 19:59
Date Analyzed	02/04/09 19:59 - 02/04/09 19:59
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	753	100		
C ₉ -C ₁₂ Aliphatics**	255	100		
C ₉ -C ₁₀ Aromatics**	732	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	92.9		70	130
Surrogate % Recovery - FID	99.6		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-8d	Lab Info: g649-102-8d
FID Info: VP020409/027F0101.D	PID Info: VP020409/027R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

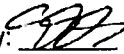
Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 20:26 - 02/04/09 20:26
Date Analyzed	02/04/09 20:26 - 02/04/09 20:26
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	546	100		
C ₉ -C ₁₂ Aliphatics**	282	100		
C ₉ -C ₁₀ Aromatics**	818	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		90.9		70 130
Surrogate % Recovery - FID		97.7		70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-9d	Lab Info: g649-102-9d
FID Info: VP020409/028F0101.D	PID Info: VP020409/028R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

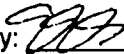
Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 20:53 - 02/04/09 20:53
Date Analyzed	02/04/09 20:53 - 02/04/09 20:53
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	744	100		
C ₉ -C ₁₂ Aliphatics**	262	100		
C ₉ -C ₁₀ Aromatics**	742	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	93.3		70	130
Surrogate % Recovery - FID	101		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-10d	Lab Info: g649-102-10d
FID Info: VP020409/029F0101.D	PID Info: VP020409/029R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	PSW-BB47
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 16:28 - 02/04/09 16:28
Date Analyzed	02/04/09 16:28 - 02/04/09 16:28
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
	Percent Recovery	Flags	Limits Lower Upper	
Surrogate % Recovery - PID	88.9		70	130
Surrogate % Recovery - FID	96.3		70	130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-11d	Lab Info: g649-102-11d
FID Info: VP020409/019F0101.D	PID Info: VP020409/019R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	Trip Blanks
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/04/09 18:40 - 02/04/09 18:40
Date Analyzed	02/04/09 18:40 - 02/04/09 18:40
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results				
Analyte	Result µg/L	Report Limit µg/L	Flags	
C ₅ -C ₈ Aliphatics**	BQL	100		
C ₉ -C ₁₂ Aliphatics**	BQL	100		
C ₉ -C ₁₀ Aromatics**	BQL	100		
		Percent Recovery	Flags	Limits Lower Upper
Surrogate % Recovery - PID		89.8		70 130
Surrogate % Recovery - FID		97.0		70 130

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

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-102-12d	Lab Info: g649-102-12d
FID Info: VP020409/024F0101.D	PID Info: VP020409/024R0101.D

Reviewed By: 

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 01/29/09PID Initial Calibration Date: 01/29/09

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.18	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	7.09	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 02/04/09Filename: VP020409/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	7.0	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-10.5	±25%
C ₉ -C ₁₀ Aromatics	200	16	-4.5	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date:

01/29/09

PID Initial Calibration Date:

01/29/09

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.18	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	7.09	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date:

02/04/09

Filename:

VP020409/021F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	-4.8	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-12.9	±25%
C ₉ -C ₁₀ Aromatics	200	16	-6.3	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 01/29/09PID Initial Calibration Date: 01/29/09

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.18	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	7.09	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 02/04/09Filename: VP020409/035F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	-7.0	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-15.1	±25%
C ₉ -C ₁₀ Aromatics	200	16	-4.0	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date:

01/29/09

PID Initial Calibration Date:

01/29/09

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.18	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	7.09	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date:

02/05/09

Filename:

VP020509/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	-5.4	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-18.7	±25%
C ₉ -C ₁₀ Aromatics	200	16	-16.5	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 01/29/09PID Initial Calibration Date: 01/29/09

Calibration Ranges and Limits

Range	MDL		ML		RL	
	($\mu\text{g/L}$)	(mg/Kg)	($\mu\text{g/L}$)	(mg/Kg)	($\mu\text{g/L}$)	(mg/Kg)
C ₅ -C ₈ Aliphatics	2.02	0.175	6.42	0.557	100	10
C ₉ -C ₁₂ Aliphatics	1.51	0.118	4.80	0.375	100	10
C ₉ -C ₁₀ Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels ($\mu\text{g/L}$)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₅ -C ₈ Aliphatics	10	0.8	5.18	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₂ Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C ₉ -C ₁₀ Aromatics	10	0.8	7.09	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 02/05/09Filename: VP020509/030F0101.d

Calibration Check

Range	Levels ($\mu\text{g/L}$)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C ₅ -C ₈ Aliphatics	200	16	-7.6	±25%
C ₉ -C ₁₂ Aliphatics	200	16	-12.0	±25%
C ₉ -C ₁₀ Aromatics	200	16	-1.0	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW01
Sample Matrix	WATER
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/04/09 12:10 - 02/04/09 12:10
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	875
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	105		40	140
Aromatic (ortho-terphenyl)	99.7		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-1L	Lab Info: G649-102-1L
Aliphatic: EP020409/003F0101.D	Aromatic: EP020409/003F0101.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia
 Project Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW02
Sample Matrix	WATER
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/04/09 12:38 - 02/04/09 12:38
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	940
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	87.9		40	140
Aromatic (ortho-terphenyl)	92.3		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-2L	Lab Info: G649-102-2L
Aliphatic: EP020409/004F0201.D	Aromatic: EP020409/004F0201.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW03
Sample Matrix	WATER
Date Collected	01/29/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/05/09 17:15 - 02/05/09 17:44
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	894
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	171	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	110		40	140
Aromatic (ortho-terphenyl)	103		40	140
Fractionation 1 (2-bromonaphthalene)	98.5		40	140
Fractionation 2 (2-fluorobiphenyl)	96.0		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-3L	Lab Info: G649-102-3L
Aliphatic: EP020509/013F0101.D	Aromatic: EP020509/014F0201.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW07
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/05/09 18:12 - 02/05/09 18:40
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	948
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	370	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	108		40	140
Aromatic (ortho-terphenyl)	104		40	140
Fractionation 1 (2-bromonaphthalene)	105		40	140
Fractionation 2 (2-fluorobiphenyl)	101		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-4L	Lab Info: G649-102-4L
Aliphatic: EP020509/015F0301.D	Aromatic: EP020509/016F0401.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW08
Sample Matrix	WATER
Date Collected	01/31/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/04/09 14:03 - 02/04/09 14:03
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	885
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	111		40	140
Aromatic (ortho-terphenyl)	105		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-5L	Lab Info: G649-102-5L
Aliphatic: EP020409/007F0501.D	Aromatic: EP020409/007F0501.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW12
Sample Matrix	WATER
Date Collected	01/31/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/04/09 14:31 - 02/04/09 14:31
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	908
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	111		40	140
Aromatic (ortho-terphenyl)	104		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-6L	Lab Info: G649-102-6L
Aliphatic: EP020409/008F0601.D	Aromatic: EP020409/008F0601.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW15
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/05/09
Date Analyzed	02/09/09 10:35 - 02/09/09 10:35
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	915
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	110		40	140
Aromatic (ortho-terphenyl)	104		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-7M	Lab Info: G649-102-7M
Aliphatic: EP020909/003F0101.D	Aromatic: EP020909/003F0101.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW16
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/05/09 13:18 - 02/05/09 13:45
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	864
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	526	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	104		40	140
Aromatic (ortho-terphenyl)	101		40	140
Fractionation 1 (2-bromonaphthalene)	104		40	140
Fractionation 2 (2-fluorobiphenyl)	99.7		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-8L	Lab Info: G649-102-8L
Aliphatic: EP020509/007F0501.D	Aromatic: EP020509/008F0601.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-MW17
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/05/09 14:14 - 02/05/09 14:42
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	905
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	336	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	105		40	140
Aromatic (ortho-terphenyl)	96.0		40	140
Fractionation 1 (2-bromonaphthalene)	99.9		40	140
Fractionation 2 (2-fluorobiphenyl)	96.3		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-9L	Lab Info: G649-102-9L
Aliphatic: EP020509/009F0701.D	Aromatic: EP020509/010F0801.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting FormClient Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	USTBB190-Duplicate
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/05/09 15:09 - 02/05/09 15:38
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	833
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	500	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	101		40	140
Aromatic (ortho-terphenyl)	92.9		40	140
Fractionation 1 (2-bromonaphthalene)	101		40	140
Fractionation 2 (2-fluorobiphenyl)	97.1		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-10L	Lab Info: G649-102-10L
Aliphatic: EP020509/011F0901.D	Aromatic: EP020509/012F1001.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of VirginiaProject Name: CTO 014

Sample Information	
Sample Identification	PSW-BB47
Sample Matrix	WATER
Date Collected	01/30/09
Date Received	02/02/09
Date Extracted	02/03/09
Date Analyzed	02/04/09 16:51 - 02/04/09 16:51
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	955
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	106		40	140
Aromatic (ortho-terphenyl)	99.9		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-102-11L	Lab Info: G649-102-11L
Aliphatic: EP020409/013F1101.D	Aromatic: EP020409/013F1101.D

Reviewed By: 

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/22/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	17.73	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	10.65	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	10.39	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 02/04/09
02/04/09Filenames: ep020409/001f0101.d
ep020409/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	8.9	±25%
C19-C36 Aliphatics	100	16.7	1.0	±25%
C11-C22 Aromatics	100	16.7	2.5	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

SGS Environmental Services, Inc.

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/22/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	17.73	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	10.65	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	10.39	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 02/05/09 Filenames: ep020509/001f0101.d
02/05/09 ep020509/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	7.6	≤±25%
C19-C36 Aliphatics	100	16.7	-0.3	≤±25%
C11-C22 Aromatics	100	16.7	6.9	≤±25%

MDL = Method Detection Limit
 ML = Minimum Limit
 RL = Reportable Limit

RPD = Relative Percent Difference
 %RSD = Percent Relative Standard Deviation
 CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/22/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	17.73	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	10.65	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	10.39	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 02/06/09
02/06/09Filenames: ep020609/001f0101.d
ep020609/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	1.5	±25%
C19-C36 Aliphatics	100	16.7	-10.6	±25%
C11-C22 Aromatics	100	16.7	-0.9	±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/22/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	17.73	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	10.65	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	10.39	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 02/09/09
02/09/09Filenames: ep020909/001f0102.d
ep020909/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	4.0	≤±25%
C19-C36 Aliphatics	100	16.7	-7.1	≤±25%
C11-C22 Aromatics	100	16.7	5.3	≤±25%

MDL = Method Detection Limit

ML = Minimum Limit

RL = Reportable Limit

RPD = Relative Percent Difference

%RSD = Percent Relative Standard Deviation

CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/22/08

Calibration Ranges and Limits

Range	MDL		ML		RL	
	(02/15/08) (µg/L)	(02/11/08) (mg/Kg)	(µg/L)	(mg/Kg)	(µg/L)	(mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C ₉ -C ₁₈ Aliphatics	200	33.3	17.73	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₉ -C ₃₆ Aliphatics	200	33.3	10.65	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C ₁₁ -C ₂₂ Aromatics	200	33.3	10.39	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 02/10/09
02/10/09Filenames: ep021009/001f0101.d
ep021009/002f0201.d

Calibration Check

Range	Levels		%Difference if CF %Drift if LR	Limits
	(µg/L)	(mg/Kg)		
C9-C18 Aliphatics	100	16.7	8.3	≤±25%
C19-C36 Aliphatics	100	16.7	-5.4	≤±25%
C11-C22 Aromatics	100	16.7	8.3	≤±25%

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

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW01
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-1J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/29/2009 16:20
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 863 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.79	0.863	1	2/8/2009	
Acenaphthylene	BQL	5.79	0.863	1	2/8/2009	
Anthracene	BQL	5.79	1.01	1	2/8/2009	
Benzo[a]anthracene	BQL	5.79	0.788	1	2/8/2009	
Benzo[a]pyrene	BQL	5.79	0.736	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.79	0.829	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.79	0.713	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.79	0.637	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.79	1.19	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.79	1.21	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.79	1.13	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.79	0.475	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.79	0.904	1	2/8/2009	
Butylbenzylphthalate	BQL	5.79	0.516	1	2/8/2009	
2-Chloronaphthalene	BQL	5.79	1.00	1	2/8/2009	
2-Chlorophenol	BQL	5.79	1.36	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.79	0.921	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.79	3.77	1	2/8/2009	
Chrysene	BQL	5.79	0.643	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.79	0.510	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.79	0.956	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.6	1.41	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.79	1.30	1	2/8/2009	
Diethylphthalate	BQL	5.79	0.857	1	2/8/2009	
Dimethylphthalate	BQL	5.79	0.643	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.79	1.88	1	2/8/2009	
Di-n-octylphthalate	BQL	5.79	0.672	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	29.0	0.637	1	2/8/2009	
2,4-Dinitrophenol	BQL	29.0	0.742	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.79	0.620	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.79	0.753	1	2/8/2009	
Diphenylamine *	BQL	5.79	0.660	1	2/8/2009	
Fluoranthene	BQL	5.79	0.817	1	2/8/2009	
Fluorene	BQL	5.79	0.840	1	2/8/2009	
Hexachlorobenzene	BQL	5.79	0.585	1	2/8/2009	
Hexachlorobutadiene	BQL	5.79	0.881	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.6	11.6	1	2/8/2009	
Hexachloroethane	BQL	5.79	0.863	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.79	2.65	1	2/8/2009	
Isophorone	BQL	5.79	1.03	1	2/8/2009	
Naphthalene	BQL	5.79	1.05	1	2/8/2009	
Nitrobenzene	BQL	5.79	1.22	1	2/8/2009	
2-Nitrophenol	BQL	5.79	1.43	1	2/8/2009	
4-Nitrophenol	BQL	29.0	1.25	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.79	1.74	1	2/8/2009	
Pentachlorophenol	BQL	29.0	1.64	1	2/8/2009	
Phenanthrene	BQL	5.79	0.516	1	2/8/2009	

SGS Environmental Services, Inc.

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW01
Client Project ID: CTO 014
Lab Sample ID: G649-102-1J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/29/2009 16:20
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 863 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.79	1.23	1	2/8/2009	
Pyrene	BQL	5.79	2.39	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.79	0.834	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.79	1.07	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.4	94		
2-Fluorophenol		10	8.4	84		
Nitrobenzene-d5		10	10.4	104		
Phenol-d6		10	9.1	91		
2,4,6-Tribromophenol		10	6.8	68		
4-Terphenyl-d14		10	10.1	101		

Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW01
Client Project ID: CTO 014
Lab Sample ID: G649-102-1J
Lab Project ID: G649-102
Sample Wt/Vol: 863 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/29/2009 16:20
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW02
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-2J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/29/2009 17:35
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 907 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	0.882	5.51	0.821	1	2/8/2009	J
Acenaphthylene	BQL	5.51	0.821	1	2/8/2009	
Anthracene	BQL	5.51	0.965	1	2/8/2009	
Benzo[a]anthracene	BQL	5.51	0.750	1	2/8/2009	
Benzo[a]pyrene	BQL	5.51	0.700	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.51	0.788	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.51	0.678	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.51	0.606	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.51	1.14	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.51	1.15	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.51	1.07	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.51	0.452	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.51	0.860	1	2/8/2009	
Butylbenzylphthalate	BQL	5.51	0.491	1	2/8/2009	
2-Chloronaphthalene	BQL	5.51	0.954	1	2/8/2009	
2-Chlorophenol	BQL	5.51	1.29	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.51	0.877	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.51	3.59	1	2/8/2009	
Chrysene	BQL	5.51	0.612	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.51	0.485	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.51	0.910	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.0	1.35	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.51	1.23	1	2/8/2009	
Diethylphthalate	BQL	5.51	0.816	1	2/8/2009	
Dimethylphthalate	BQL	5.51	0.612	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.51	1.79	1	2/8/2009	
Di-n-octylphthalate	BQL	5.51	0.639	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	27.6	0.606	1	2/8/2009	
2,4-Dinitrophenol	BQL	27.6	0.706	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.51	0.590	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.51	0.717	1	2/8/2009	
Diphenylamine *	BQL	5.51	0.628	1	2/8/2009	
Fluoranthene	BQL	5.51	0.777	1	2/8/2009	
Fluorene	BQL	5.51	0.799	1	2/8/2009	
Hexachlorobenzene	BQL	5.51	0.557	1	2/8/2009	
Hexachlorobutadiene	BQL	5.51	0.838	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.0	11.0	1	2/8/2009	
Hexachloroethane	BQL	5.51	0.821	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.51	2.52	1	2/8/2009	
Isophorone	BQL	5.51	0.976	1	2/8/2009	
Naphthalene	BQL	5.51	1.00	1	2/8/2009	
Nitrobenzene	BQL	5.51	1.16	1	2/8/2009	
2-Nitrophenol	BQL	5.51	1.36	1	2/8/2009	
4-Nitrophenol	BQL	27.6	1.19	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.51	1.65	1	2/8/2009	
Pentachlorophenol	BQL	27.6	1.56	1	2/8/2009	
Phenanthrene	BQL	5.51	0.491	1	2/8/2009	

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW02
Client Project ID: CTO 014
Lab Sample ID: G649-102-2J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/29/2009 17:35
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 907 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.51	1.17	1	2/8/2009	
Pyrene	BQL	5.51	2.28	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.51	0.794	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.51	1.02	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8.7	87		
2-Fluorophenol		10	7.3	74		
Nitrobenzene-d5		10	9.6	96		
Phenol-d6		10	8.7	87		
2,4,6-Tribromophenol		10	6.5	65		
4-Terphenyl-d14		10	8.2	82		

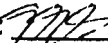
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW02
Client Project ID: CTO 014
Lab Sample ID: G649-102-2J
Lab Project ID: G649-102
Sample Wt/Vol: 907 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/29/2009 17:35
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW03
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-3J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/29/2009 18:30
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 924 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.41	0.806	1	2/8/2009	
Acenaphthylene	BQL	5.41	0.806	1	2/8/2009	
Anthracene	BQL	5.41	0.947	1	2/8/2009	
Benzo[a]anthracene	BQL	5.41	0.736	1	2/8/2009	
Benzo[a]pyrene	BQL	5.41	0.687	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.41	0.774	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.41	0.666	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.41	0.595	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.41	1.11	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.41	1.13	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.41	1.06	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.41	0.444	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.41	0.844	1	2/8/2009	
Butylbenzylphthalate	BQL	5.41	0.482	1	2/8/2009	
2-Chloronaphthalene	BQL	5.41	0.936	1	2/8/2009	
2-Chlorophenol	BQL	5.41	1.27	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.41	0.860	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.41	3.52	1	2/8/2009	
Chrysene	BQL	5.41	0.601	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.41	0.476	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.41	0.893	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	10.8	1.32	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.41	1.21	1	2/8/2009	
Diethylphthalate	BQL	5.41	0.801	1	2/8/2009	
Dimethylphthalate	BQL	5.41	0.601	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.41	1.75	1	2/8/2009	
Di-n-octylphthalate	BQL	5.41	0.628	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	27.1	0.595	1	2/8/2009	
2,4-Dinitrophenol	BQL	27.1	0.693	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.41	0.579	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.41	0.703	1	2/8/2009	
Diphenylamine *	BQL	5.41	0.617	1	2/8/2009	
Fluoranthene	BQL	5.41	0.763	1	2/8/2009	
Fluorene	BQL	5.41	0.785	1	2/8/2009	
Hexachlorobenzene	BQL	5.41	0.547	1	2/8/2009	
Hexachlorobutadiene	BQL	5.41	0.823	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	10.8	10.8	1	2/8/2009	
Hexachloroethane	BQL	5.41	0.806	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.41	2.47	1	2/8/2009	
Isophorone	BQL	5.41	0.958	1	2/8/2009	
Naphthalene	25.3	5.41	0.985	1	2/8/2009	
Nitrobenzene	BQL	5.41	1.14	1	2/8/2009	
2-Nitrophenol	BQL	5.41	1.33	1	2/8/2009	
4-Nitrophenol	BQL	27.1	1.17	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.41	1.62	1	2/8/2009	
Pentachlorophenol	BQL	27.1	1.53	1	2/8/2009	
Phenanthrene	BQL	5.41	0.482	1	2/8/2009	

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW03
Client Project ID: CTO 014
Lab Sample ID: G649-102-3J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/29/2009 18:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 924 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.41	1.15	1	2/8/2009	
Pyrene	BQL	5.41	2.23	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.41	0.779	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.41	1.00	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9	90		
2-Fluorophenol		10	9	90		
Nitrobenzene-d5		10	10.3	103		
Phenol-d6		10	9.8	98		
2,4,6-Tribromophenol		10	7.6	76		
4-Terphenyl-d14		10	10.3	103		

Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW03
Client Project ID: CTO 014
Lab Sample ID: G649-102-3J
Lab Project ID: G649-102
Sample Wt/Vol: 924 ML
Dilution: 1

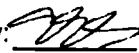
Analyzed By: DES
Date Collected: 1/29/2009 18:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Alkane, Unknown	4.38			56.4
2	1,2,4-Trimethylbenzene	4.26	95-36-3	97	50.5
3	Benzene, 1,2,4-trimethyl-	4.06	95-63-6	95	44.1
4	Benzene, 1-ethyl-2-methyl-	3.95	611-14-3	95	39.2
5	1H-Indene, 2,3-dihydro-4-methyl-	5.16			36.2
6	Unknown	5.10	767-58-8	91	14.4
7	Benzene, 1,2,3,5-tetramethyl-	4.92	527-53-7	95	11.9
8	Benzene, 1,2,4,5-tetramethyl-	4.94	95-93-2	97	9.87

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW07
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-4J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/30/2009 15:30
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 934 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	1.61	5.35	0.798	1	2/8/2009	J
Acenaphthylene	BQL	5.35	0.798	1	2/8/2009	
Anthracene	1.82	5.35	0.937	1	2/8/2009	J
Benzo[a]anthracene	BQL	5.35	0.728	1	2/8/2009	
Benzo[a]pyrene	BQL	5.35	0.680	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.35	0.766	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.35	0.658	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.35	0.589	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.35	1.10	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.35	1.11	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.35	1.04	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.35	0.439	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.35	0.835	1	2/8/2009	
Butylbenzylphthalate	BQL	5.35	0.476	1	2/8/2009	
2-Chloronaphthalene	BQL	5.35	0.926	1	2/8/2009	
2-Chlorophenol	BQL	5.35	1.25	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.35	0.851	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.35	3.49	1	2/8/2009	
Chrysene	BQL	5.35	0.594	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.35	0.471	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.35	0.883	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	10.7	1.31	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.35	1.20	1	2/8/2009	
Diethylphthalate	BQL	5.35	0.792	1	2/8/2009	
Dimethylphthalate	BQL	5.35	0.594	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.35	1.73	1	2/8/2009	
Di-n-octylphthalate	BQL	5.35	0.621	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	26.8	0.589	1	2/8/2009	
2,4-Dinitrophenol	BQL	26.8	0.685	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.35	0.573	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.35	0.696	1	2/8/2009	
Diphenylamine *	BQL	5.35	0.610	1	2/8/2009	
Fluoranthene	BQL	5.35	0.755	1	2/8/2009	
Fluorene	2.09	5.35	0.776	1	2/8/2009	J
Hexachlorobenzene	BQL	5.35	0.541	1	2/8/2009	
Hexachlorobutadiene	BQL	5.35	0.814	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	10.7	10.7	1	2/8/2009	
Hexachloroethane	BQL	5.35	0.798	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.35	2.45	1	2/8/2009	
Isophorone	BQL	5.35	0.948	1	2/8/2009	
Naphthalene	23.0	5.35	0.974	1	2/8/2009	
Nitrobenzene	BQL	5.35	1.12	1	2/8/2009	
2-Nitrophenol	BQL	5.35	1.32	1	2/8/2009	
4-Nitrophenol	BQL	26.8	1.16	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.35	1.61	1	2/8/2009	
Pentachlorophenol	BQL	26.8	1.51	1	2/8/2009	
Phenanthrene	1.87	5.35	0.476	1	2/8/2009	J

SGS Environmental Services, Inc.

Results for Semivolatiles by GCMS 625

Client Sample ID: USTBB190-MW07
Client Project ID: CTO 014
Lab Sample ID: G649-102-4J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 15:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 934 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.35	1.13	1	2/8/2009	
Pyrene	BQL	5.35	2.21	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.35	0.771	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.35	0.990	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8.9	89		
2-Fluorophenol		10	9.6	96		
Nitrobenzene-d5		10	10.6	106		
Phenol-d6		10	10.1	101		
2,4,6-Tribromophenol		10	8.1	81		
4-Terphenyl-d14		10	10.8	108		

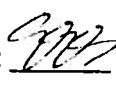
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW07
Client Project ID: CTO 014
Lab Sample ID: G649-102-4J
Lab Project ID: G649-102
Sample Wt/Vol: 934 ML
Dilution: 1

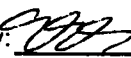
Analyzed By: DES
Date Collected: 1/30/2009 15:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Benzene, 1,2,4-trimethyl-	4.06	95-63-6	95	72
2	1,2,4-Trimethylbenzene	4.26	95-36-3	97	61.8
3	Alkane, Unknown	4.38			58
4	Benzene, 1,2-diethyl-	4.46	135-01-3	95	58
5	Benzene, 2-ethenyl-1,4-dimethyl-	5.17	2039-89-6	95	43.3
6	Naphthalene, 1,3-dimethyl-	6.89	575-41-7	98	18.9
7	2,3-Dihydro-1-methylindene	5.10	27133-93-3	94	17.6
8	Benzene, 1,2,3,4-tetramethyl-	4.91	488-23-3	95	13.7

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW08
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-5J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/31/2009 11:35
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 899 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.56	0.829	1	2/8/2009	
Acenaphthylene	BQL	5.56	0.829	1	2/8/2009	
Anthracene	BQL	5.56	0.973	1	2/8/2009	
Benzo[a]anthracene	BQL	5.56	0.756	1	2/8/2009	
Benzo[a]pyrene	BQL	5.56	0.706	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.56	0.795	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.56	0.684	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.56	0.612	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.56	1.15	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.56	1.16	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.56	1.08	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.56	0.456	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.56	0.868	1	2/8/2009	
Butylbenzylphthalate	BQL	5.56	0.495	1	2/8/2009	
2-Chloronaphthalene	BQL	5.56	0.962	1	2/8/2009	
2-Chlorophenol	BQL	5.56	1.30	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.56	0.884	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.56	3.62	1	2/8/2009	
Chrysene	BQL	5.56	0.617	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.56	0.489	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.56	0.918	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.1	1.36	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.56	1.25	1	2/8/2009	
Diethylphthalate	BQL	5.56	0.823	1	2/8/2009	
Dimethylphthalate	BQL	5.56	0.617	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.56	1.80	1	2/8/2009	
Di-n-octylphthalate	BQL	5.56	0.645	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	27.8	0.612	1	2/8/2009	
2,4-Dinitrophenol	BQL	27.8	0.712	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.56	0.595	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.56	0.723	1	2/8/2009	
Diphenylamine *	BQL	5.56	0.634	1	2/8/2009	
Fluoranthene	BQL	5.56	0.784	1	2/8/2009	
Fluorene	BQL	5.56	0.806	1	2/8/2009	
Hexachlorobenzene	BQL	5.56	0.562	1	2/8/2009	
Hexachlorobutadiene	BQL	5.56	0.845	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.1	11.1	1	2/8/2009	
Hexachloroethane	BQL	5.56	0.829	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.56	2.54	1	2/8/2009	
Isophorone	BQL	5.56	0.984	1	2/8/2009	
Naphthalene	BQL	5.56	1.01	1	2/8/2009	
Nitrobenzene	BQL	5.56	1.17	1	2/8/2009	
2-Nitrophenol	BQL	5.56	1.37	1	2/8/2009	
4-Nitrophenol	BQL	27.8	1.20	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.56	1.67	1	2/8/2009	
Pentachlorophenol	BQL	27.8	1.57	1	2/8/2009	
Phenanthrene	BQL	5.56	0.495	1	2/8/2009	

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW08
Client Project ID: CTO 014
Lab Sample ID: G649-102-5J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/31/2009 11:35
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 899 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.56	1.18	1	2/8/2009	
Pyrene	BQL	5.56	2.30	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.56	0.801	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.56	1.03	1	2/8/2009	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.1	91
2-Fluorophenol	10	8.2	82
Nitrobenzene-d5	10	10.2	102
Phenol-d6	10	9.4	94
2,4,6-Tribromophenol	10	6.6	66
4-Terphenyl-d14	10	10.8	108

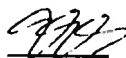
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW08
Client Project ID: CTO 014
Lab Sample ID: G649-102-5J
Lab Project ID: G649-102
Sample Wt/Vol: 899 ML
Dilution: 1

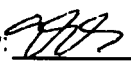
Analyzed By: DES
Date Collected: 1/31/2009 11:35
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW12
Client Project ID: CTO 014
Lab Sample ID: G649-102-6J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/31/2009 10:55
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 899 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.56	0.829	1	2/8/2009	
Acenaphthylene	BQL	5.56	0.829	1	2/8/2009	
Anthracene	BQL	5.56	0.973	1	2/8/2009	
Benzo[a]anthracene	BQL	5.56	0.756	1	2/8/2009	
Benzo[a]pyrene	BQL	5.56	0.706	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.56	0.795	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.56	0.684	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.56	0.612	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.56	1.15	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.56	1.16	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.56	1.08	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.56	0.456	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.56	0.868	1	2/8/2009	
Butylbenzylphthalate	BQL	5.56	0.495	1	2/8/2009	
2-Chloronaphthalene	BQL	5.56	0.962	1	2/8/2009	
2-Chlorophenol	BQL	5.56	1.30	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.56	0.884	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.56	3.62	1	2/8/2009	
Chrysene	BQL	5.56	0.617	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.56	0.489	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.56	0.918	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.1	1.36	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.56	1.25	1	2/8/2009	
Diethylphthalate	BQL	5.56	0.823	1	2/8/2009	
Dimethylphthalate	BQL	5.56	0.617	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.56	1.80	1	2/8/2009	
Di-n-octylphthalate	BQL	5.56	0.645	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	27.8	0.612	1	2/8/2009	
2,4-Dinitrophenol	BQL	27.8	0.712	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.56	0.595	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.56	0.723	1	2/8/2009	
Diphenylamine *	BQL	5.56	0.634	1	2/8/2009	
Fluoranthene	BQL	5.56	0.784	1	2/8/2009	
Fluorene	BQL	5.56	0.806	1	2/8/2009	
Hexachlorobenzene	BQL	5.56	0.562	1	2/8/2009	
Hexachlorobutadiene	BQL	5.56	0.845	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.1	11.1	1	2/8/2009	
Hexachloroethane	BQL	5.56	0.829	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.56	2.54	1	2/8/2009	
Isophorone	BQL	5.56	0.984	1	2/8/2009	
Naphthalene	BQL	5.56	1.01	1	2/8/2009	
Nitrobenzene	BQL	5.56	1.17	1	2/8/2009	
2-Nitrophenol	BQL	5.56	1.37	1	2/8/2009	
4-Nitrophenol	BQL	27.8	1.20	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.56	1.67	1	2/8/2009	
Pentachlorophenol	BQL	27.8	1.57	1	2/8/2009	
Phenanthrene	BQL	5.56	0.495	1	2/8/2009	

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW12
Client Project ID: CTO 014
Lab Sample ID: G649-102-6J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/31/2009 10:55
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 899 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.56	1.18	1	2/8/2009	
Pyrene	BQL	5.56	2.30	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.56	0.801	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.56	1.03	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9	90		
2-Fluorophenol		10	9.1	91		
Nitrobenzene-d5		10	10.5	105		
Phenol-d6		10	9.7	97		
2,4,6-Tribromophenol		10	6.8	68		
4-Terphenyl-d14		10	10.6	106		

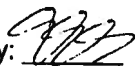
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW12
Client Project ID: CTO 014
Lab Sample ID: G649-102-6J
Lab Project ID: G649-102
Sample Wt/Vol: 899 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/31/2009 10:55
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW15
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-7J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/30/2009 17:10
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 988 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.06	0.754	1	2/8/2009	
Acenaphthylene	BQL	5.06	0.754	1	2/8/2009	
Anthracene	BQL	5.06	0.886	1	2/8/2009	
Benzo[a]anthracene	BQL	5.06	0.688	1	2/8/2009	
Benzo[a]pyrene	BQL	5.06	0.643	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.06	0.724	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.06	0.622	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.06	0.557	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.06	1.04	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.06	1.05	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.06	0.987	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.06	0.415	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.06	0.789	1	2/8/2009	
Butylbenzylphthalate	BQL	5.06	0.450	1	2/8/2009	
2-Chloronaphthalene	BQL	5.06	0.876	1	2/8/2009	
2-Chlorophenol	BQL	5.06	1.18	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.06	0.805	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.06	3.29	1	2/8/2009	
Chrysene	BQL	5.06	0.562	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.06	0.445	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.06	0.835	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	10.1	1.23	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.06	1.13	1	2/8/2009	
Diethylphthalate	BQL	5.06	0.749	1	2/8/2009	
Dimethylphthalate	BQL	5.06	0.562	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.06	1.64	1	2/8/2009	
Di-n-octylphthalate	BQL	5.06	0.587	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	25.3	0.557	1	2/8/2009	
2,4-Dinitrophenol	BQL	25.3	0.648	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.06	0.541	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.06	0.658	1	2/8/2009	
Diphenylamine *	BQL	5.06	0.577	1	2/8/2009	
Fluoranthene	BQL	5.06	0.714	1	2/8/2009	
Fluorene	BQL	5.06	0.734	1	2/8/2009	
Hexachlorobenzene	BQL	5.06	0.511	1	2/8/2009	
Hexachlorobutadiene	BQL	5.06	0.769	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	10.1	10.1	1	2/8/2009	
Hexachloroethane	BQL	5.06	0.754	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.06	2.31	1	2/8/2009	
Isophorone	BQL	5.06	0.896	1	2/8/2009	
Naphthalene	BQL	5.06	0.921	1	2/8/2009	
Nitrobenzene	BQL	5.06	1.06	1	2/8/2009	
2-Nitrophenol	BQL	5.06	1.24	1	2/8/2009	
4-Nitrophenol	BQL	25.3	1.09	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.06	1.52	1	2/8/2009	
Pentachlorophenol	BQL	25.3	1.43	1	2/8/2009	
Phenanthrene	BQL	5.06	0.450	1	2/8/2009	

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW15
Client Project ID: CTO 014
Lab Sample ID: G649-102-7J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 17:10
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 988 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.06	1.07	1	2/8/2009	
Pyrene	BQL	5.06	2.09	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.06	0.729	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.06	0.936	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.2	92		
2-Fluorophenol		10	9	90		
Nitrobenzene-d5		10	10.6	106		
Phenol-d6		10	9.5	95		
2,4,6-Tribromophenol		10	6.9	69		
4-Terphenyl-d14		10	11.2	112		

Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW15
Client Project ID: CTO 014
Lab Sample ID: G649-102-7J
Lab Project ID: G649-102
Sample Wt/Vol: 988 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/30/2009 17:10
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW16

Client Project ID: CTO 014

Lab Sample ID: G649-102-8J

Lab Project ID: G649-102

Initial/Final Amt: 837 mL / 5.0 mL

Analyzed By: DCS

Date Collected: 1/30/2009 18:30

Date Received: 2/2/2009

Date Extracted: 2/3/2009

Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	2.15	5.97	0.890	1	2/8/2009	J
Acenaphthylene	BQL	5.97	0.890	1	2/8/2009	
Anthracene	BQL	5.97	1.05	1	2/8/2009	
Benzo[a]anthracene	BQL	5.97	0.812	1	2/8/2009	
Benzo[a]pyrene	BQL	5.97	0.759	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.97	0.854	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.97	0.735	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.97	0.657	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.97	1.23	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.97	1.24	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.97	1.16	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.97	0.490	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.97	0.932	1	2/8/2009	
Butylbenzylphthalate	BQL	5.97	0.532	1	2/8/2009	
2-Chloronaphthalene	BQL	5.97	1.03	1	2/8/2009	
2-Chlorophenol	BQL	5.97	1.40	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.97	0.950	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.97	3.89	1	2/8/2009	
Chrysene	BQL	5.97	0.663	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.97	0.526	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.97	0.986	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.9	1.46	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.97	1.34	1	2/8/2009	
Diethylphthalate	BQL	5.97	0.884	1	2/8/2009	
Dimethylphthalate	BQL	5.97	0.663	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.97	1.94	1	2/8/2009	
Di-n-octylphthalate	BQL	5.97	0.693	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	29.9	0.657	1	2/8/2009	
2,4-Dinitrophenol	BQL	29.9	0.765	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.97	0.639	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.97	0.777	1	2/8/2009	
Diphenylamine *	BQL	5.97	0.681	1	2/8/2009	
Fluoranthene	BQL	5.97	0.842	1	2/8/2009	
Fluorene	2.45	5.97	0.866	1	2/8/2009	J
Hexachlorobenzene	BQL	5.97	0.603	1	2/8/2009	
Hexachlorobutadiene	BQL	5.97	0.908	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.9	11.9	1	2/8/2009	
Hexachloroethane	BQL	5.97	0.890	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.97	2.73	1	2/8/2009	
Isophorone	BQL	5.97	1.06	1	2/8/2009	
Naphthalene	145	5.97	1.09	1	2/8/2009	
Nitrobenzene	BQL	5.97	1.25	1	2/8/2009	
2-Nitrophenol	BQL	5.97	1.47	1	2/8/2009	
4-Nitrophenol	BQL	29.9	1.29	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.97	1.79	1	2/8/2009	
Pentachlorophenol	BQL	29.9	1.69	1	2/8/2009	
Phenanthrene	2.63	5.97	0.532	1	2/8/2009	J

SGS Environmental Services, Inc.

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-MW16
Client Project ID: CTO 014
Lab Sample ID: G649-102-8J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 18:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 837 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.97	1.27	1	2/8/2009	
Pyrene	BQL	5.97	2.47	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.97	0.860	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.97	1.11	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9	90		
2-Fluorophenol		10	9.4	94		
Nitrobenzene-d5		10	10.3	103		
Phenol-d6		10	9.8	98		
2,4,6-Tribromophenol		10	8.1	81		
4-Terphenyl-d14		10	9.8	98		

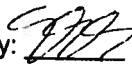
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW16
Client Project ID: CTO 014
Lab Sample ID: G649-102-8J
Lab Project ID: G649-102
Sample Wt/Vol: 837 ML
Dilution: 1

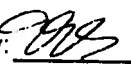
Analyzed By: DES
Date Collected: 1/30/2009 18:30
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Alkane, Unknown	4.38			192
2	Benzene, 1,2,3-trimethyl-	4.26	526-73-8	95	180
3	Dimethylbenzene, Isomer of	5.16			75
4	Benzene, 1,3-diethyl-	4.42	141-93-5	95	34.2
5	1H-Indene, 2,3-dihydro-4-methyl-	5.10	824-22-6	95	30.1
6	Naphthalene, 2,3-dimethyl-	6.88	581-40-8	98	20.8
7	Benzene, 1,2,3,5-tetramethyl-	4.91	527-53-7	96	20.3
8	Naphthalene, 2,6-dimethyl-	6.81	581-42-0	98	16

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW17

Client Project ID: CTO 014

Lab Sample ID: G649-102-9J

Lab Project ID: G649-102

Initial/Final Amt: 916 mL / 5.0 mL

Analyzed By: DCS

Date Collected: 1/30/2009 18:00

Date Received: 2/2/2009

Date Extracted: 2/3/2009

Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	1.15	5.46	0.813	1	2/8/2009	J
Acenaphthylene	BQL	5.46	0.813	1	2/8/2009	
Anthracene	BQL	5.46	0.955	1	2/8/2009	
Benzo[a]anthracene	BQL	5.46	0.742	1	2/8/2009	
Benzo[a]pyrene	BQL	5.46	0.693	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.46	0.781	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.46	0.671	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.46	0.600	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.46	1.12	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.46	1.14	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.46	1.06	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.46	0.448	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.46	0.852	1	2/8/2009	
Butylbenzylphthalate	BQL	5.46	0.486	1	2/8/2009	
2-Chloronaphthalene	BQL	5.46	0.944	1	2/8/2009	
2-Chlorophenol	BQL	5.46	1.28	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.46	0.868	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.46	3.55	1	2/8/2009	
Chrysene	BQL	5.46	0.606	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.46	0.480	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.46	0.901	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	10.9	1.33	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.46	1.22	1	2/8/2009	
Diethylphthalate	BQL	5.46	0.808	1	2/8/2009	
Dimethylphthalate	BQL	5.46	0.606	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.46	1.77	1	2/8/2009	
Di-n-octylphthalate	BQL	5.46	0.633	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	27.3	0.600	1	2/8/2009	
2,4-Dinitrophenol	BQL	27.3	0.699	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.46	0.584	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.46	0.710	1	2/8/2009	
Diphenylamine *	BQL	5.46	0.622	1	2/8/2009	
Fluoranthene	BQL	5.46	0.770	1	2/8/2009	
Fluorene	1.20	5.46	0.791	1	2/8/2009	J
Hexachlorobenzene	BQL	5.46	0.551	1	2/8/2009	
Hexachlorobutadiene	BQL	5.46	0.830	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	10.9	10.9	1	2/8/2009	
Hexachloroethane	BQL	5.46	0.813	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.46	2.49	1	2/8/2009	
Isophorone	BQL	5.46	0.966	1	2/8/2009	
Naphthalene	48.4	5.46	0.993	1	2/8/2009	
Nitrobenzene	BQL	5.46	1.15	1	2/8/2009	
2-Nitrophenol	BQL	5.46	1.34	1	2/8/2009	
4-Nitrophenol	BQL	27.3	1.18	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.46	1.64	1	2/8/2009	
Pentachlorophenol	BQL	27.3	1.54	1	2/8/2009	
Phenanthrene	1.04	5.46	0.486	1	2/8/2009	J

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-MW17
Client Project ID: CTO 014
Lab Sample ID: G649-102-9J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 18:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 916 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.46	1.16	1	2/8/2009	
Pyrene	BQL	5.46	2.25	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.46	0.786	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.46	1.01	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9	90		
2-Fluorophenol		10	8.9	89		
Nitrobenzene-d5		10	10.4	104		
Phenol-d6		10	10	100		
2,4,6-Tribromophenol		10	8	80		
4-Terphenyl-d14		10	9.7	97		

Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-MW17
Client Project ID: CTO 014
Lab Sample ID: G649-102-9J
Lab Project ID: G649-102
Sample Wt/Vol: 916 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/30/2009 18:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Benzene, 1,2,3-trimethyl-	4.27	526-73-8	95	115
2	Alkane, Unknown	4.38			90.8
3	Benzene, 2-ethenyl-1,4-dimethyl-	5.17	2039-89-6	95	63.6
4	Benzene, 1-ethyl-4-methyl-	3.95	622-96-8	94	60.5
5	Benzene, 1,2,4-trimethyl-	4.06	95-63-6	95	51.6
6	Benzene, 1,2-diethyl-	4.49	135-01-3	95	44.4
7	Benzene, 1,3-diethyl-	4.42	141-93-5	95	41.7
8	1H-Indene, 2,3-dihydro-4-methyl-	5.10	824-22-6	94	26.2
9	Benzene, 1,2,3,5-tetramethyl-	4.92	527-53-7	96	22.8

Comment:

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

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: USTBB190-Duplicate
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-10J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/30/2009 0:00
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 957 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	2.09	5.22	0.778	1	2/8/2009	J
Acenaphthylene	BQL	5.22	0.778	1	2/8/2009	
Anthracene	BQL	5.22	0.914	1	2/8/2009	
Benzo[a]anthracene	BQL	5.22	0.711	1	2/8/2009	
Benzo[a]pyrene	BQL	5.22	0.664	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.22	0.747	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.22	0.643	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.22	0.575	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.22	1.08	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.22	1.09	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.22	1.02	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.22	0.428	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.22	0.815	1	2/8/2009	
Butylbenzylphthalate	BQL	5.22	0.465	1	2/8/2009	
2-Chloronaphthalene	BQL	5.22	0.904	1	2/8/2009	
2-Chlorophenol	BQL	5.22	1.22	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.22	0.831	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.22	3.40	1	2/8/2009	
Chrysene	BQL	5.22	0.580	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.22	0.460	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.22	0.862	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	10.4	1.27	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.22	1.17	1	2/8/2009	
Diethylphthalate	BQL	5.22	0.773	1	2/8/2009	
Dimethylphthalate	BQL	5.22	0.580	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.22	1.69	1	2/8/2009	
Di-n-octylphthalate	BQL	5.22	0.606	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	26.1	0.575	1	2/8/2009	
2,4-Dinitrophenol	BQL	26.1	0.669	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.22	0.559	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.22	0.679	1	2/8/2009	
Diphenylamine *	BQL	5.22	0.596	1	2/8/2009	
Fluoranthene	BQL	5.22	0.737	1	2/8/2009	
Fluorene	2.40	5.22	0.758	1	2/8/2009	J
Hexachlorobenzene	BQL	5.22	0.528	1	2/8/2009	
Hexachlorobutadiene	BQL	5.22	0.794	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	10.4	10.4	1	2/8/2009	
Hexachloroethane	BQL	5.22	0.778	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.22	2.39	1	2/8/2009	
Isophorone	BQL	5.22	0.925	1	2/8/2009	
Naphthalene	136	5.22	0.951	1	2/8/2009	
Nitrobenzene	BQL	5.22	1.10	1	2/8/2009	
2-Nitrophenol	BQL	5.22	1.29	1	2/8/2009	
4-Nitrophenol	BQL	26.1	1.13	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.22	1.57	1	2/8/2009	
Pentachlorophenol	BQL	26.1	1.48	1	2/8/2009	
Phenanthrene	2.66	5.22	0.465	1	2/8/2009	J

SGS Environmental Services, Inc.

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: USTBB190-Duplicate
Client Project ID: CTO 014
Lab Sample ID: G649-102-10J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 0:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 957 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.22	1.11	1	2/8/2009	
Pyrene	BQL	5.22	2.16	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.22	0.752	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.22	0.967	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	8.6	86		
2-Fluorophenol		10	8.9	89		
Nitrobenzene-d5		10	9.9	99		
Phenol-d6		10	9.6	96		
2,4,6-Tribromophenol		10	8.3	83		
4-Terphenyl-d14		10	10.3	103		

Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: USTBB190-Duplicate
Client Project ID: CTO 014
Lab Sample ID: G649-102-10J
Lab Project ID: G649-102
Sample Wt/Vol: 957 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/30/2009 0:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Alkane, Unknown	4.38			195
2	Benzene, 1,2,3-trimethyl-	4.27	526-73-8	95	182
3	Benzene, 2-ethenyl-1,4-dimethyl-	5.16	2039-89-6	95.5	72.8
4	Benzene, 1,3-diethyl-	4.43	141-93-5	94	30.1
5	2,3-Dihydro-1-methylindene	5.10	27133-93-3	97	24.6
6	Naphthalene, 2,3-dimethyl-	6.89	581-40-8	98	18.8
7	Benzene, 1,2,4,5-tetramethyl-	4.92	95-93-2	97	16
8	Naphthalene, 2,6-dimethyl-	6.81	581-42-0	98	15.4

Comment:

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

Reviewed by: 

SGS Environmental Services, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: PSW-BB47
 Client Project ID: CTO 014
 Lab Sample ID: G649-102-11J
 Lab Project ID: G649-102

Analyzed By: DCS
 Date Collected: 1/30/2009 14:00
 Date Received: 2/2/2009
 Date Extracted: 2/3/2009
 Matrix: Water

Initial/Final Amt: 886 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.64	0.841	1	2/8/2009	
Acenaphthylene	BQL	5.64	0.841	1	2/8/2009	
Anthracene	BQL	5.64	0.988	1	2/8/2009	
Benzo[a]anthracene	BQL	5.64	0.767	1	2/8/2009	
Benzo[a]pyrene	BQL	5.64	0.717	1	2/8/2009	
Benzo[b]fluoranthene	BQL	5.64	0.807	1	2/8/2009	
Benzo[g,h,i]perylene	BQL	5.64	0.694	1	2/8/2009	
Benzo[k]fluoranthene	BQL	5.64	0.621	1	2/8/2009	
Bis(2-chloroethoxy)methane	BQL	5.64	1.16	1	2/8/2009	
Bis(2-chloroethyl)ether	BQL	5.64	1.17	1	2/8/2009	
Bis(2-chloroisopropyl)ether	BQL	5.64	1.10	1	2/8/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.64	0.463	1	2/8/2009	
4-bromophenyl phenyl ether	BQL	5.64	0.880	1	2/8/2009	
Butylbenzylphthalate	BQL	5.64	0.502	1	2/8/2009	
2-Chloronaphthalene	BQL	5.64	0.976	1	2/8/2009	
2-Chlorophenol	BQL	5.64	1.32	1	2/8/2009	
4-Chloro-3-methylphenol	BQL	5.64	0.897	1	2/8/2009	
4-Chlorophenyl phenyl ether	BQL	5.64	3.67	1	2/8/2009	
Chrysene	BQL	5.64	0.626	1	2/8/2009	
Dibenzo[a,h]anthracene	BQL	5.64	0.497	1	2/8/2009	
Di-n-Butylphthalate	BQL	5.64	0.931	1	2/8/2009	
3,3'-Dichlorobenzidine	BQL	11.3	1.38	1	2/8/2009	
2,4-Dichlorophenol	BQL	5.64	1.26	1	2/8/2009	
Diethylphthalate	BQL	5.64	0.835	1	2/8/2009	
Dimethylphthalate	BQL	5.64	0.626	1	2/8/2009	
2,4-Dimethylphenol	BQL	5.64	1.83	1	2/8/2009	
Di-n-octylphthalate	BQL	5.64	0.655	1	2/8/2009	
4,6-Dinitro-2-methylphenol	BQL	28.2	0.621	1	2/8/2009	
2,4-Dinitrophenol	BQL	28.2	0.722	1	2/8/2009	
2,4-Dinitrotoluene	BQL	5.64	0.604	1	2/8/2009	
2,6-Dinitrotoluene	BQL	5.64	0.734	1	2/8/2009	
Diphenylamine *	BQL	5.64	0.643	1	2/8/2009	
Fluoranthene	BQL	5.64	0.796	1	2/8/2009	
Fluorene	BQL	5.64	0.818	1	2/8/2009	
Hexachlorobenzene	BQL	5.64	0.570	1	2/8/2009	
Hexachlorobutadiene	BQL	5.64	0.858	1	2/8/2009	
Hexachlorocyclopentadiene	BQL	11.3	11.3	1	2/8/2009	
Hexachloroethane	BQL	5.64	0.841	1	2/8/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.64	2.58	1	2/8/2009	
Isophorone	BQL	5.64	0.999	1	2/8/2009	
Naphthalene	BQL	5.64	1.03	1	2/8/2009	
Nitrobenzene	BQL	5.64	1.19	1	2/8/2009	
2-Nitrophenol	BQL	5.64	1.39	1	2/8/2009	
4-Nitrophenol	BQL	28.2	1.22	1	2/8/2009	
N-Nitrosodi-n-propylamine	BQL	5.64	1.69	1	2/8/2009	
Pentachlorophenol	BQL	28.2	1.60	1	2/8/2009	
Phenanthrene	BQL	5.64	0.502	1	2/8/2009	

SGS Environmental Services, Inc.

**Results for Semivolatiles
by GCMS 625**

Client Sample ID: PSW-BB47
Client Project ID: CTO 014
Lab Sample ID: G649-102-11J
Lab Project ID: G649-102

Analyzed By: DCS
Date Collected: 1/30/2009 14:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Matrix: Water

Initial/Final Amt: 886 mL / 5.0 mL

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.64	1.20	1	2/8/2009	
Pyrene	BQL	5.64	2.33	1	2/8/2009	
1,2,4-Trichlorobenzene	BQL	5.64	0.813	1	2/8/2009	
2,4,6-Trichlorophenol	BQL	5.64	1.04	1	2/8/2009	
		Spike Added	Spike Result	Percent Recovered		
2-Fluorobiphenyl		10	9.5	95		
2-Fluorophenol		10	9.8	98		
Nitrobenzene-d5		10	10.7	107		
Phenol-d6		10	9.8	98		
2,4,6-Tribromophenol		10	7.3	73		
4-Terphenyl-d14		10	10.4	104		

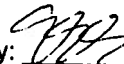
Comments:

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

Flags:

BQL = Below Quantitation Limits.

J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds
by GCMS

Client Sample ID: PSW-BB47
Client Project ID: CTO 014
Lab Sample ID: G649-102-11J
Lab Project ID: G649-102
Sample Wt/Vol: 886 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/30/2009 14:00
Date Received: 2/2/2009
Date Extracted: 2/3/2009
Date Analyzed: 2/8/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
	No TICs present				

Comment:

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

Reviewed by: 



SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

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www.us.sgs.com

1 CLIENT: <u>OSAGE of VIRGINIA</u>					SGS Reference #: <u>6649-102</u>					page <u>1</u> of <u>2</u>									
CONTACT: <u>Theresa Eberman</u> PHONE NO: <u>757-274-4949</u>																			
PROJECT: <u>CTO 014</u> SITE/PWSID#: <u>BB190</u>																			
REPORTS TO: <u>Shaun Whitworth</u> EMAIL: <u>swhitworth@osageva.com</u>																			
INVOICE TO: <u>Mike Cree</u> QUOTE #: <u>CTO 014</u>																			
					# C O N T A I N E R S	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	HU	HU	HCI	None								
							Analysis Required												
LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE															REMARKS/ LOC ID
	USTBB190-MW01	1/29/09	1620	W	9		X	X	X	X									
	USTBB190-MW02	1/29/09	1735	W	9		X	X	X	X									
	USTBB190-MW03	1/29/09	1830	W	9		X	X	X	X									
	USTBB190-MW07	1/30/09	1530	W	9		X	X	X	X									
	USTBB190-MW08	1/31/09	1135	W	9		X	X	X	X									
	USTBB190-MW12	1/31/09	1055	W	9		X	X	X	X									
	USTBB190-MW15	1/30/09	1710	W	9		X	X	X	X									
	USTBB190-MW16	1/30/09	1830	W	9		X	X	X	X									
	USTBB190-MW17	1/30/09	1800	W	9		X	X	X	X									
	USTBB190-DUPLICATE	1/30/09	-	W	9		X	X	X	X									
5 Collected/Relinquished By: (1) <u>[Signature]</u> Date <u>1/31/09</u> Time <u>1700</u> Received By: <u>[Signature]</u>					4 DOD Project? <u>YES</u> NO					Special Deliverable Requirements: <u>EDD Format</u>									
Relinquished By: (2) <u>[Signature]</u> Date <u>2/2/09</u> Time <u>8/D</u> Received By: <u>[Signature]</u>					Cooler ID _____					Requested Turnaround Time and-or Special Instructions: <u>Standard Turn</u> <u>Email results to: swhitworth@osageva.com</u> <u>teberman@osageva.com</u>									
Relinquished By: (3) _____ Date _____ Time _____ Received By: _____					Samples Received Cold? <u>YES</u> NO					Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT									
Relinquished By: (4) _____ Date _____ Time _____ Received For Laboratory By: _____					Temperature: <u>26.3</u> Cooler TB <u>4.3, 4.7, 3.5, 3.3, 3.0</u>														

SGS Environmental Services Inc. CHAIN OF CUSTODY RECORD

Locations Nationwide

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- North Carolina
- West Virginia
- Maryland
- New York
- Ohio

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[illegible]