

**2007 ANNUAL MONITORING REPORT
BUILDING AS4141 (JP-5 LINE AREA)
MARINE CORPS BASE CAMP LEJEUNE
ONSLOW COUNTY, NORTH CAROLINA**

Prepared for:

DEPARTMENT OF THE NAVY
Contract No. N62470-02-D-3260



Naval Facilities Engineering Command
Mid-Atlantic
6506 Hampton Boulevard
Building A (South East Wing) 3rd Floor
Norfolk, Virginia 24311-6287

Prepared by:



500 East Main Street, Suite 1630
Norfolk, VA 23510

Task Order 0061/Shaw Project No. 119909
May 2007

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Mid-Atlantic
6506 Hampton Boulevard
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Norfolk, Virginia 24311-6287

Submitted by:

Shaw Environmental, Inc.
500 East Main Street, Suite 1630
Norfolk, Virginia 23508-1273



Licensed Professional Engineer Number 2069

A handwritten signature in cursive script, reading "Joseph W. Colella".

Joseph W. Colella, P.E.
Project Manager

A handwritten signature in cursive script, reading "James A. Dunn Jr.".

James A. Dunn Jr., P.E.
Program Manager

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LIST OF ACRONYMS

AFVR	Aggressive Fluid Vapor Recovery
bls	Below Land Surface
DRO	Diesel Range Organics
DWM	Division of Waste Management
EPA	Environmental Protection Agency
FID	Flame Ionization Detector
GRO	Gasoline Range Organics
IDW	Investigation Derived Waste
NAVFAC	Naval Facilities Engineering Command, Atlantic Division
MCB	Marine Corps Base
NCAC	North Carolina Administrative Code
PAHs	Poly Aromatic Hydrocarbons
PVC	Poly Vinyl Chloride
Shaw	Shaw Environmental, Inc.
SVOCs	Semi-Volatile Organic Compounds
TCLP	Toxic Characteristic Leachability Procedure
TPH	Total Petroleum Hydrocarbons
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

Shaw Environmental Inc. (Shaw) has been tasked by the Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC MIDLANT) under Contract Number N62470-02-D-3260, Task Order 0061 to prepare this Annual Monitoring Report for the Building AS-4141 (JP-5 Line Area) site located at the Marine Corps Air Station (MCAS), New River, in Onslow County North Carolina. The purpose of this report is to present the findings and recommendations associated with the groundwater monitoring activities performed in October 2006 and March 2007. This report and the methods used to acquire the data in support of this report have been prepared in accordance with the North Carolina Department of Environmental and Natural Resources (NCDENR), Division of Waste Management (DWM), Underground Storage Tank (UST) Section guidelines.

1.1 MCB CAMP LEJEUNE LOCATION AND DESCRIPTION

Located in Onslow County, North Carolina, Marine Corps Base (MCB) Camp Lejeune is a training base for the United States Marine Corps. The base covers approximately 236 square miles (153,000 acres) and includes 14 miles of coastline. MCB Camp Lejeune is bound to the southeast by the Atlantic Ocean and to the northeast by State Route 24. Wooded areas are located north, east, and west of the site. The town of Jacksonville, North Carolina is located north of the Base (**Figure 1.1**).

Building AS-4141 is located at the MCAS New River, North Carolina (**Figure 1.2**). The site is directly west of the airfield and is divided by White Street and consists of several parking lots and a helicopter hanger. An underground pipeline that transports JP-5 fuel from the Campbell Street Fuel Farm to the flight line transects the subject site. Building AS-4141 is located at the west central portion of the site. The mission of the fuel transfer pipeline at MCAS New River is to transfer JP-5 fuel from the Campbell Street Bulk Fuel Farm to four Underground Storage Tanks at the rapid jet systems A & B and C & D. JP-5 fuel is transferred to the C & D rapid jet system via approximately 4,000 feet of singlewall fiberglass, underground piping. Its general routing is along White Street and then under the aircraft parking ramp MAT-7. Six valve pits with new block and bleed valves are located along the fiberglass portion of this piping system. The transfer pipeline transitions to 8-inch stainless steel just prior to entering valve box #6 and approximately 1,000 feet of 8 inch stainless steel transfer line continues to the A & B

The nearest surface water body is a pond located approximately 800 feet northeast of the site. No active drinking water supply wells are within 1,500 feet of the site. The nearest drinking water supply well, AS-4150, is located approximately 2,200 feet southwest of the site and was taken offline and shut down.

The objective of the Annual Monitoring Report and associated sampling activity is to document the weekly gauging of 10 wells, aggressive fluid vapor recovery (AFVR) events conducted in wells with free phase product, as well as evaluate the extent of dissolved phase contamination at the site from the two semi-annual sampling events conducted in October 2006 and March 2007. The report also provides a brief environmental history of the site, summarizes the corrective action plan, and describes the installation and operation of the recommended remedial alternative. The report provides a discussion of monitoring results and the status of groundwater quality.

1.2 SITE HISTORY

In the early 1980s, several environmental investigations completed at the site, identified leaks in the JP-5 fuel line. Upon discovery of the leak the pipeline was shut down and fuel was trucked from the fuel farm to day tanks at the flight line. During the summer of 1984 the pipeline was replaced. Results of these investigations identified both dissolved phase contamination and free phase product in the vicinity of the JP-5 fuel line.

In May of 1986 a site assessment was conducted by ATEC Associates, Inc. to identify the extent of JP-5 fuel contamination in the JP-5 Line Area. Monitoring wells W-2, W-7, W-8, W-10, and W-13 were installed as part of this investigation. An interim remedial system to remove free phase product from the area was installed in October 1986. Operation of the interim system was terminated in 1987 due to hangar construction activities. A total of 4,043 gallons of JP-5 fuel was recovered by the interim system.

In September 1989 O'Brian & Gere Engineers (OBG) installed monitoring wells OBG-1 through OBG-6 to assist with further delineation of the groundwater contamination to develop a Corrective Action Plan (CAP) dated June 1991. Based upon the recommendations of the CAP, a free phase product recovery system and a groundwater extraction and treatment system were installed in February of 1994. A long-term monitoring (LTM) program was also recommended in the CAP.

The following three remedial goals were developed for the site:

- Remove free phase product from the subsurface to the extent practicable,
- Prevent further migration of contaminated groundwater,
- Rehabilitate the groundwater by removing any dissolved petroleum constituents in concentrations exceeding North Carolina's groundwater quality standards.

From February 1998 through April 2002, J.A. Jones Environmental Services Company (J.A. Jones) implemented the selected approach as outlined in the CAP for the JP-5 Line Area. Starting in August 1999, AFVR actions were conducted at the recovery wells to enhance the removal of free phase product. AFVR events were completed if free phase product thickness was equal to or greater than 0.1 feet in a recovery well. The recovery wells RW-1 and RW-2 were gauged weekly for free phase product thickness. The monitoring requirements of the JP-5 Line Area included monthly monitoring of free phase product levels in 11 wells and quarterly groundwater sampling and analysis from five wells. Between April 1999 and December 2002 approximately 51,450 gallons of groundwater from monitoring well development and AFVR events had been transported and disposed.

The recovery system at the JP-5 Line Area was in operation from February 1994 to July 2000. The remedial system was designed to recover free phase product and to remediate contaminated groundwater. The free phase product recovery system consisted of two recovery wells (RW-1 and RW-2) located within the contaminant plume. The recovery wells were designed to prevent the migration of contamination, recover free phase product, and extract contaminated groundwater. Free phase product was recovered from the recovery wells through the use of pneumatic pumps. A controller that established pumping rates and optimized free product recovery set the operation cycle of the pumps. Groundwater was recovered from the two wells; treated using an oil/water separator, air stripping, followed by carbon adsorption; and discharged to the MCB wastewater treatment plant (WWTP). On July 19, 2000 J.A. Jones shut down the treatment system based on recommendations provided by Radian under the JP-5 Treatment System Optimization Study.

On August 7, 2000 a passive product skimmer was installed in recovery well RW-1 to assist with free phase product recovery. On October 17, 2000 J.A. Jones completed the closure of the abandoned fuel line and a closure report was completed February 13, 2001.

Shaw Environmental, Inc. (Shaw) prepared an Annual Monitoring Report dated January 2004 that documented J.A. Jones' activities between 1998 and April 2002 and operated, monitored and maintained the subject site after J.A. Jones until early 2003. Engineering and Environment, Inc. (E&E) took over these operations from early 2003 until March 2005 and documented their activities in a report entitled Annual Groundwater Monitoring Report 2004-2005, dated July 29, 2005.

In December 2004, CATLIN Engineers and Scientists (CATLIN) completed an RAO & RCAP, which recommended additional investigations to effectively evaluate the AFVR remedial approach. Based on CATLIN's RAO & RCAP, the extent of free phase product needed to be delineated, the horizontal extent of groundwater contamination needed to be better defined and the vertical extent of groundwater contamination needed to be established.

In April 2005, Shaw took over operations for the site which included free phase product recovery using AFVR events, monitoring the free phase product thicknesses, and sampling of the monitoring wells at the subject site. In October 2005 Shaw installed one Type III monitoring well (MW14) and two Type II monitoring wells (MW15 and OBG03R) to evaluate the extent of dissolved phase contamination. In addition, Shaw installed five piezometers (TP-1 through TP-5) to delineate the free phase product at the site. In December 2005 Shaw completed one groundwater sample collection and analysis event from select monitoring wells to track free phase product and dissolved hydrocarbon contamination occurrence. Shaw prepared a 2005 Annual Monitoring Report dated June 2006 that documented these activities.

In December 2005, CATLIN conducted soil sampling with thirteen hand augered borings in areas of previously referenced TPH contamination. All soil sample results were below Residential and Industrial/Commercial maximum soil contaminant concentrations (MSCCs). In February and March 2006, CATLIN installed four Type II monitoring wells (MW16 through MW19) to evaluate the extent of dissolved phase contamination. These new wells were gauged and monitoring wells MW16 and MW17 detected 0.30 feet and 0.20 feet of free phase product, respectively.

CATLIN prepared a revision for the RAO & RCAP in June 2006 and included the 2005 activities conducted by CATLIN. Since AFVR events have not been effectively removing free phase product from the Building AS4141 site, CATLIN evaluated five alternative technologies for removal of free phase product from the Building AS4141 site. These included a Skimmer System, Excavation and Treatment, a Groundwater Depression System, a Dual Phase Extraction System, and the continued use of AFVR events. CATLIN recommended the Dual Phase Extraction System (DPE) to effectively remove free phase product from the site.

In August 2006, CATLIN installed two Type II monitoring wells (MW20 and MW21) to evaluate the extent of free phase product recovery efforts in pilot tests conducted in December 2006 and January 2007. These pilot tests were used to aid in the feasibility of the DPE technology recommended for the remediation of free phase product from the Building AS4141 site. CATLIN recommended that 8-hour AFVR events should continue once a month until implementation of the DPE system to continue to contain the migration of the free phase product plume. CATLIN prepared a Summary of Aggressive Fluid Vapor Recovery Pilot Test for Building AS4141 Report dated March 14, 2007 that documented these activities.

This 2007 Annual Monitoring Report documents the October 2006 and March 2007 gauging of 17 to 25 monitoring wells and sampling of 10 to 12 selected monitoring wells. The maximum concentrations of the chemicals of concern for 2005, 2006, and 2007 with the revised site rehabilitation goals for detected chemicals of concern are presented in **Table 1.1**.

2.0 GROUNDWATER AND FREE PHASE PRODUCT MONITORING

2.1 GROUNDWATER MONITORING SUMMARY

Groundwater elevations and free phase product thicknesses were measured weekly from November 2005 to February 2007 in each of 5 groundwater monitoring wells (USTAS4141-MW14, USTAS4141-MW15, USTAS4141-OBG03R, USTAS4141-OBG06, and USTAS4141-RW01) and 5 piezometers (AS3905-TP-1 through AS3905-TP-5) by Shaw. The weekly groundwater elevation and free phase product thickness data for November 2005 to February 2007 are presented in **Appendix A**. The groundwater sample collection field logs for the two semi-annual groundwater gauging and sampling from October 2006 and March 2007 are provided in **Appendix B**. The original monitoring wells designated as “W” have been changed to “MW” to be consistent with the monitoring well numbering scheme at the site.

2.2 OCTOBER 2006 GAUGING EVENT

In October 2006 the depth to groundwater from top of casing was gauged in 10 monitoring wells (USTAS4141-MW02, USTAS4141-MW14, USTAS4141-MW15, USTAS4141-MW17, USTAS4141-MW19, USTAS4141-MW20, USTAS4141-MW21, USTAS4141-RW01, USTAS4141-OBG03R, and USTAS4141-OBG06) and five piezometers (AS3905-TP1 through AS3905-TP5) at the site. The depth to groundwater ranged from 3.47 feet bls in monitoring well USTAS4141-MW15 to 7.75 feet bls in piezometer AS3905-TP5. Groundwater elevations ranged from 12.51 feet National Geodetic Vertical Datum (NGVD) in piezometer AS3905-TP5 to 16.98 feet NGVD in monitoring well USTAS4141-MW02. The shallow groundwater flows from the northwest to the southeast at a horizontal hydraulic gradient of 0.015 ft/ft from USTAS4141-MW02 to USTAS4141-OBG03R (**Figure 2.1**). Detectable thickness of free phase product was observed in piezometers AS3905-TP1, AS3905-TP3, AS3905-TP4, and AS3905-TP5, and recovery well USTAS4141-RW01 (**Figure 2.2**). Free phase product thicknesses ranged from 0.10 feet in USTAS4141-RW01 to 1.45 feet in AS3905-TP5.

2.3 MARCH 2007 GAUGING EVENT

In March 2007 the depth to groundwater from top of casing was gauged in 20 monitoring wells (USTAS4141-MW02, USTAS4141-MW07, USTAS4141-MW08, USTAS4141-

MW10, USTAS4141-MW13, USTAS4141-MW14, USTAS4141-MW15, USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW18, USTAS4141-MW19, USTAS4141-MW20, USTAS4141-MW21, USTAS4141-RW01, USTAS4141-RW02, USTAS4141-OBG02, USTAS4141-OBG03R, USTAS4141-OBG04, USTAS4141-OBG05, and USTAS4141-OBG06) and five piezometers (AS3905-TP1 through AS3905-TP5) at the site. The depth to groundwater ranged from 2.20 feet bls in monitoring well USTAS4141-MW15 to 10.93 feet bls in monitoring well USTAS4141-MW08. Groundwater elevations ranged from 10.79 feet NGVD in piezometer AS3905-TP3 to 18.16 feet NGVD in monitoring well USTAS4141-OBG02. The shallow groundwater flows from the northwest to the southeast at a horizontal hydraulic gradient of 0.013 ft/ft from USTAS4141-MW02 to USTAS4141-OBG03R (**Figure 2.3**). Detectable thickness of free phase product was observed in piezometers AS3905-TP1, AS3905-TP3, AS3905-TP4, and AS3905-TP5, monitoring wells USTAS4141-MW20, USTAS4141-MW21, USTAS4141-OBG03R, and recovery well USTAS4141-RW01 (**Figure 2.4**). Free phase product thicknesses ranged from 0.25 feet in USTAS4141-RW01 to 3.81 feet in AS3905-TP3.

During the past several years the groundwater flow direction has been to the north and northeast, however during the October 2006 and March 2007 monitoring events the groundwater flow direction has been to the southeast. There could be surveying errors in the newly installed monitoring wells and Shaw recommends that the whole Building AS4141 site be resurveyed to correct for these errors.

2.4 FREE PHASE PRODUCT THICKNES AND RECOVERY SUMMARY

An interim remedial system to remove free product from the area was installed in October 1986. Operation of the interim system was terminated in 1987 due to hangar construction activities. A total of 4,043 gallons of JP-5 fuel was recovered by the interim system.

Starting in August 1999, AFVR actions were conducted at the recovery wells to enhance the removal of free product. AFVR events were completed if product thickness was equal to or greater than 0.1 feet in a recovery well. The recovery wells USTAS4141-RW01 and USTAS4141-RW02 were gauged weekly for product thickness. The monitoring requirements of the JP-5 Line Area included monthly monitoring of free product levels in 11 wells and quarterly groundwater sampling and analysis from five wells. Between April 1999 and December 2002 approximately 51,450 gallons of

groundwater from monitoring well development and AFVR events had been transported and disposed.

The recovery system at the JP-5 Line Area was in operation from February 1994 to July 2000. The remedial system was designed to recover free product and to remediate contaminated groundwater. The free product recovery system consisted of two recovery wells (USTAS4141-RW01 and USTAS4141-RW02) located within the contaminant plume. The recovery wells were designed to prevent the migration of contamination, recover free product, and extract contaminated groundwater. Free product was recovered from the recovery wells through the use of pneumatic pumps. A controller that established pumping rates and optimized free product recovery set the operation cycle of the pumps. Groundwater was recovered from the two wells; treated using an oil/water separator, air stripping, followed by carbon adsorption; and discharged to the MCB wastewater treatment plant (WWTP). On July 19, 2000 J.A. Jones shut down the treatment system based on recommendations provided by Radian under the JP-5 Treatment System Optimization Study. On August 7, 2000 a passive product skimmer was installed in recovery well RW-1 to assist with free product recovery.

Dating back to 1998 free phase product has been observed in three on-site wells (W-10, USTAS4141-RW01 and USTAS4141-RW02). Monitoring well W-10 displayed approximately 0.9 feet from April through July 1998. By September 1998 AFVR events conducted at W-10 had removed product from the well. Product has not been measured in monitoring well W-10 since October 1998. Recovery well USTAS4141-RW02 consistently displayed product from April 1998 to July 1999. Measured product thickness ranged from 0.02 feet in July 1999 to 4.3 feet in April 1998. Recovery well USTAS4141-RW01 consistently displayed the presence of free product from April 1998 through April 2002. Measured product thickness has decreased from a high of 7.8 feet in April 1998 to 0.6 feet in April 2002. Free phase product was monitored on a monthly basis starting in April 1998 to April 2002 by J.A. Jones. During this time period free phase product was detected at the following thicknesses in April 1998: W-10 at 0.87 ft, USTAS4141-RW01 at 7.79 ft, and USTAS4141-RW02 at 4.31 ft. In May 1999 free phase product was no longer detected in W-10, but was detected in USTAS4141-RW01 at 3.69 ft and USTAS4141-RW02 at 0.02 ft. In April 2000 free phase product was no longer detected in USTAS4141-RW02, but was detected in USTAS4141-RW01 at 1.10 ft. In April 2001 free phase product was detected in USTAS4141-RW01 at 0.35 ft. In April 2002 free phase product was detected in USTAS4141-RW01 at 0.57 ft.

E&E took over monitoring free phase product measurements from early 2003 until March 2005. The E&E activities are documented in a report entitled Annual Groundwater Monitoring Report 2004-2005, dated July 29, 2005. Shaw conducted seven AFVR events from monitoring wells USTAS4141-OBG06 and USTAS4141-RW01 during July 2003 to March 2005 with approximately 596 gallons of fluids recovered of which consisted of 63.3 gallons of gasoline.

In April 2005 to February 2007, Shaw took over operations for the site which included free phase product recovery using AFVR events and monitoring the free phase product thicknesses. During November 2005 to August 2006, a total of eight AFVR events were completed at the JP-5 Fuel Line Area. Recovery well USTAS4141-RW1 required three AFVR events and monitoring well USTAS4141-OBG03R required five AFVR events. A total of 20 gallons of product was recovered from USTAS4141-RW1 and 52.5 gallons of product was recovered from USTAS4141-OBG03R since the well was installed in October 2005. Shaw conducted four AFVR events from monitoring well USTAS4141-RW01 during December 2006 to January 2007 for CATLIN's pilot tests with approximately 33 gallons of gasoline recovered.

Free phase product was monitored on a weekly basis starting in November 2005 to February 2007 by Shaw. During this time period free phase product was detected at the following thicknesses in November 2005: AS3905-TP3 at 0.35 ft, AS3905-TP5 at 0.01 ft, USTAS4141-OBG03R at 1.42 ft, and USTAS4141-RW01 at 0.16 ft. In April 2006 free phase product thickness was detected in AS3905-TP1 at 0.50 ft, AS3905-TP3 at 3.56 ft, AS3905-TP5 at 2.54 ft, USTAS4141-OBG03R at 0.23 ft, and USTAS4141-RW01 at 0.86 ft. In July 2006 free phase product thickness was detected in AS3905-TP1 at 0.19 ft, AS3905-TP3 at 1.47 ft, AS3905-TP5 at 2.46 ft, USTAS4141-OBG03R at 0.68 ft, and USTAS4141-RW01 at 0.25 ft. In October 2006 free phase product thickness was detected in AS3905-TP1 at 0.38 ft, AS3905-TP3 at 2.45 ft, AS3905-TP4 at 0.35 ft, AS3905-TP5 at 1.51 ft, USTAS4141-OBG03R at 0.47 ft, and USTAS4141-RW01 at 0.04 ft. In February 2007 free phase product thickness was detected in AS3905-TP1 at 0.36 ft, AS3905-TP3 at 3.22 ft, AS3905-TP4 at 0.26 ft, AS3905-TP5 at 2.26 ft, USTAS4141-OBG03R at 0.64 ft, and USTAS4141-RW01 at 0.17 ft. Free phase product measurements from November 2005 to February 2007 are presented in **Appendix B**.

The historical thickness of free phase product indicates that AFVR events have not been effectively removing free phase product from the Building AS4141 site due to the surrounding low permeability soils consisting of a high plasticity clay layer.

3.0 GROUNDWATER ANALYTICAL RESULTS SUMMARY

3.1 GROUNDWATER SAMPLING SUMMARY (1998-2005)

Groundwater samples were collected quarterly from the site monitoring wells between March 1998 and March 2002 by J.A. Jones. Groundwater samples were collected from monitoring wells USTAS4141-OBG04, USTAS4141-OBG05, USTAS4141-MW07, USTAS4141-MW08, and USTAS4141-MW13. Based on laboratory analytical results Volatile Organic Compounds (VOCs) were below the quantitation limit (BQL) in all of the groundwater samples dating back to March 1998.

Bis(2-ethylhexyl)phthalate, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene were the only Semi-Volatile Organic Compounds (SVOCs) detected in groundwater samples collected from the five wells and these compounds have not been detected since the September 23, 1998 sampling event. Bis(2-ethylhexyl)phthalate is primarily used as a plasticizer in polyvinyl chloride resins and as a non plasticizer used as a replacement for PCBs in dielectric fluids for electric capacitors. It is also found in analytical results as a false positive caused by one of the following sources: sample containers, handling plastics during extractions, plastic sheeting and gloves used in the field and laboratory, plastic wrapping of pipets and other lab supplies, and tygon tubing. Also, the occurrence of the compound appears to be inconsistent for individual wells. For this reason, Shaw does not believe that the source of bis(2-ethylhexyl)phthalate is related to the JP-5 Fuel Line area.

Groundwater samples were collected from the site monitoring wells in March 2003 and June 2004 by E&E. Groundwater samples were collected from monitoring wells USTAS4141-OBG04, USTAS4141-OBG05, USTAS4141-MW07, USTAS4141-MW08, and USTAS4141-MW13. Based on laboratory analytical results obtained in March 2003, Benzene, Ethylbenzene, Toluene, and total xylenes were detected above the quantitation limit at maximum concentrations of 52.7 µg/l, 8.6 µg/l, 24.7 µg/l, and 60.3 µg/l, respectively. VOCs were BQL in all of the groundwater samples in June 2004. Bis(2-ethylhexyl)phthalate, naphthalene, and benzo(a)anthracene were the only Semi-Volatile Organic Compounds (SVOCs) detected in groundwater samples collected from the five wells in the March 2003 and June 2004 sampling events.

In December 2005, groundwater samples were collected from monitoring wells USTAS4141-OBG06, USTAS4141-RW02, USTAS4141-MW02, USTAS4141-MW14, and USTAS4141-MW15. Analytical results from the groundwater samples did not detect VOC compounds above NC 2L Groundwater Quality Standards (GWQS) in any of the monitoring wells. Analytical results from the groundwater samples did not detect PAH compounds above NC 2L GWQS in any of the monitoring wells with the exception of USTAS4141-MW15 (2-methylnaphthalene, 36.2 µg/l). Analytical results from the groundwater samples detected lead in excess of North Carolina 2L GWQS in monitoring wells USTAS4141-MW02 (102 µg/l) and USTAS4141-MW15 (19.9 µg/l).

3.2 GROUNDWATER SAMPLING (OCTOBER 2006)

Groundwater samples were collected from monitoring wells USTAS4141-MW02, USTAS4141-MW10, USTAS4141-MW14, USTAS4141-MW15, USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW18, USTAS4141-MW19, USTAS4141-MW20, USTAS4141-MW21, USTAS4141-OBG03R, and USTAS4141-OBG06 on October 19 through October 23, 2006 and February 12, 2007. A minimum of three well volumes was purged from each monitoring well prior to groundwater sample collection using low flow methods. The samples were placed in preserved containers supplied by the laboratory. The collected samples were immediately placed in a cooler with ice and sent via overnight courier to Accutest Laboratory located in Orlando, Florida. The samples were analyzed for VOCs using EPA Method 602 with xylenes, polynuclear aromatic hydrocarbons (PAHs) only using EPA Method 625, and lead using EPA Method 3030C.

Of the 12 monitoring wells sampled, the following seven wells displayed compounds in excess of North Carolina's Groundwater Quality Standards.

- USTAS4141-MW16 [2-methylnaphthalene, 39.7 µg/l; naphthalene 68.3 µg/l; and lead, 34 µg/l]
- USTAS4141-MW17 [benzene, 5.7 µg/l; 1,2-Dichlorobenzene, 60.6 µg/l; 1,4-Dichlorobenzene, 20.6 µg/l; 2-methylnaphthalene, 589 µg/l; and naphthalene 461 µg/l]
- USTAS4141-MW18 [lead, 68 µg/l]
- USTAS4141-MW19 [lead, 43.8 µg/l]
- USTAS4141-MW20 [benzene, 13.5 µg/l; 1,2-Dichlorobenzene, 48.9 µg/l; 2-methylnaphthalene, 231 µg/l; naphthalene, 301 µg/l; and lead, 26.5 µg/l]
- USTAS4141-MW21 [benzene, 9.9 µg/l; 1,2-Dichlorobenzene, 58.7 µg/l; 2-methylnaphthalene, 257 µg/l; naphthalene, 369 µg/l; and lead, 29.5 µg/l]

- USTAS4141- OBG03R [2-methylnaphthalene, 155 µg/l; and naphthalene 239 µg/l]

Groundwater analytical results from the 12 monitoring wells for the October 2006 sampling event are presented in **Table 3.1 and Figure 3.1**. Copies of the groundwater sample collection field logs are provided in **Appendix B** and the laboratory analytical reports are provided in **Appendix C**.

3.2 GROUNDWATER SAMPLING (MARCH 2007)

Groundwater samples were collected from monitoring wells USTAS4141-MW02, USTAS4141-MW07, USTAS4141-MW10, USTAS4141-MW14, USTAS4141-MW15, USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW18, USTAS4141-MW19, and USTAS4141-OBG06 on March 13 through March 17, 2007. A minimum of three well volumes was purged from each monitoring well prior to groundwater sample collection using low flow methods. The samples were placed in preserved containers supplied by the laboratory. The collected samples were immediately placed in a cooler with ice and sent via overnight courier to Accutest Laboratory located in Orlando, Florida. The samples were analyzed for VOCs using EPA Method 602 with xylenes, PAHs only using EPA Method 625, and lead using EPA Method 3030C.

Of the 10 monitoring wells sampled, the following two wells displayed compounds in excess of North Carolina's Groundwater Quality Standards.

- USTAS4141-MW16 [1,2-Dichlorobenzene, 42.6 µg/l; 1,4-Dichlorobenzene, 9.1 µg/l; 2-methylnaphthalene, 55 µg/l; and naphthalene 68.4 µg/l]
- USTAS4141-MW17 [benzene, 6.0 µg/l; 1,2-Dichlorobenzene, 57.0 µg/l; 2-methylnaphthalene, 87.6 µg/l; and naphthalene 257 µg/l]

Groundwater analytical results from the 10 monitoring wells for the March 2007 sampling event are presented in **Table 3.2 and Figure 3.2**. Copies of the groundwater sample collection field logs are provided in **Appendix B** and the laboratory analytical reports are provided in **Appendix C**.

4.0 CONCLUSIONS AND RECOMMENDATIONS

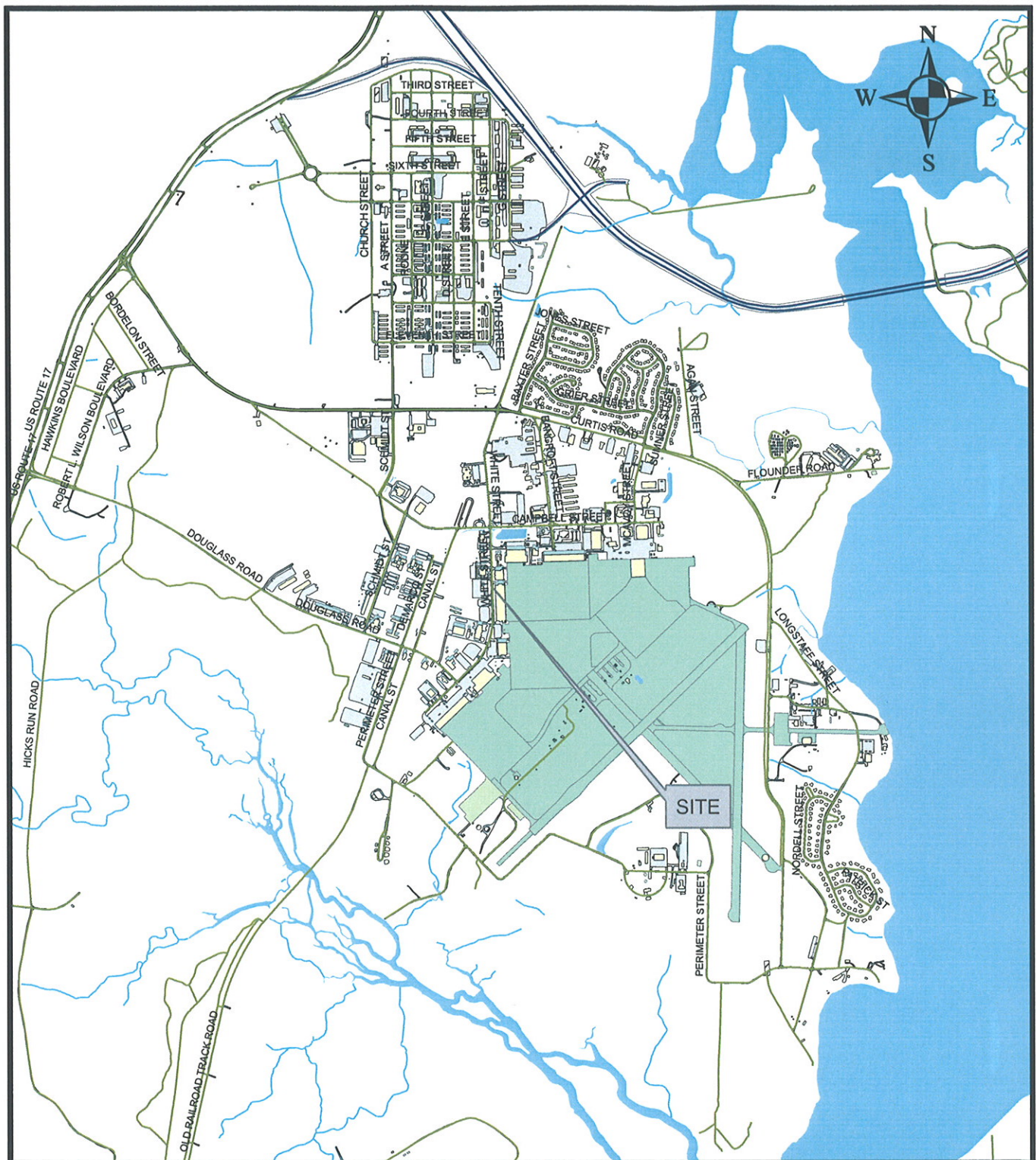
Additional assessment work was conducted in 2006 to delineate the horizontal extent of free phase product in the vicinity of monitoring wells USTAS4141-OBG03R, USTAS4141-RW01, and piezometers AS3905-TP1, AS3905-TP3, AS3905-TP05. Installation of shallow monitoring wells USTAS4141-MW16 through USTAS4141-MW19 in February and March 2006 detected free phase product measurements in USTAS4141-MW16 (0.30 ft) and USTAS4141-MW17 (0.20 ft) initially after installation. In addition, shallow monitoring wells USTAS4141-MW20 and USTAS4141-MW21 installed in August 2006 detected free phase product measurements of 1.74 ft and 2.04 ft, respectively in the March 2007 sampling event. The persistent presence of measurable free phase product in monitoring wells USTAS4141-OBG03R, USTAS4141-RW01, and piezometers AS3905-TP1, AS3905-TP3, AS3905-TP4, and AS3905-TP5 as well as the presence of measurable free phase product in the new monitoring wells USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW20 and USTAS4141-MW21 requires that free product recovery efforts be continued at the Building AS4141 in the JP-5 Line Area. During the past year free phase product thicknesses have fluctuated and some wells have actually increased free phase product thicknesses. Use of AFVR events at the site have not proven to be the most effective and efficient method to remove free phase product at the site due to the surrounding low permeability soils consisting of high plasticity clays. Since AFVR events have not been effectively removing free phase product from the Building AS4141 site, CATLIN recommended installing a Dual Phase Extraction System (DPE) to effectively remove free phase product from the site.

Shaw recommends that groundwater and free phase product measurements be recorded on a monthly basis at monitoring wells USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW20, USTAS4141-MW21, USTAS4141-OBG03R, USTAS4141-RW01, and piezometers AS3905-TP1 through AS3905-TP5. When free phase product is observed in a well at a thickness greater than 0.1 feet, an AFVR event will be completed at the well. AFVR events should continue once a month until implementation of the DPE system to continue to contain the migration of the free phase product plume.

During the past several years the groundwater flow direction has been to the north and northeast, however during the October 2006 and March 2007 monitoring events the groundwater flow direction has been to the southeast. There could be surveying errors in the newly installed monitoring wells and Shaw recommends that the Building AS4141 in the JP-5 Line Area be resurveyed to correct for these errors.

Shaw recommends semi-annual groundwater sample collection and analysis from 12 monitoring wells (USTAS4141-MW02, USTAS4141-MW07, USTAS4141-MW10, USTAS4141-MW14, USTAS4141-MW15, USTAS4141-MW16, USTAS4141-MW17, USTAS4141-MW18, USTAS4141-MW19, USTAS4141-RW01, USTAS4141-OBG03R, and USTAS4141-OBG06). Sample only those monitoring wells where free phase product is not detected. The samples will be analyzed for VOCs using USEPA Method 602/w xylenes, USEPA Method 625 (PAHs only), and lead using USEPA Method 3030C.

FIGURES

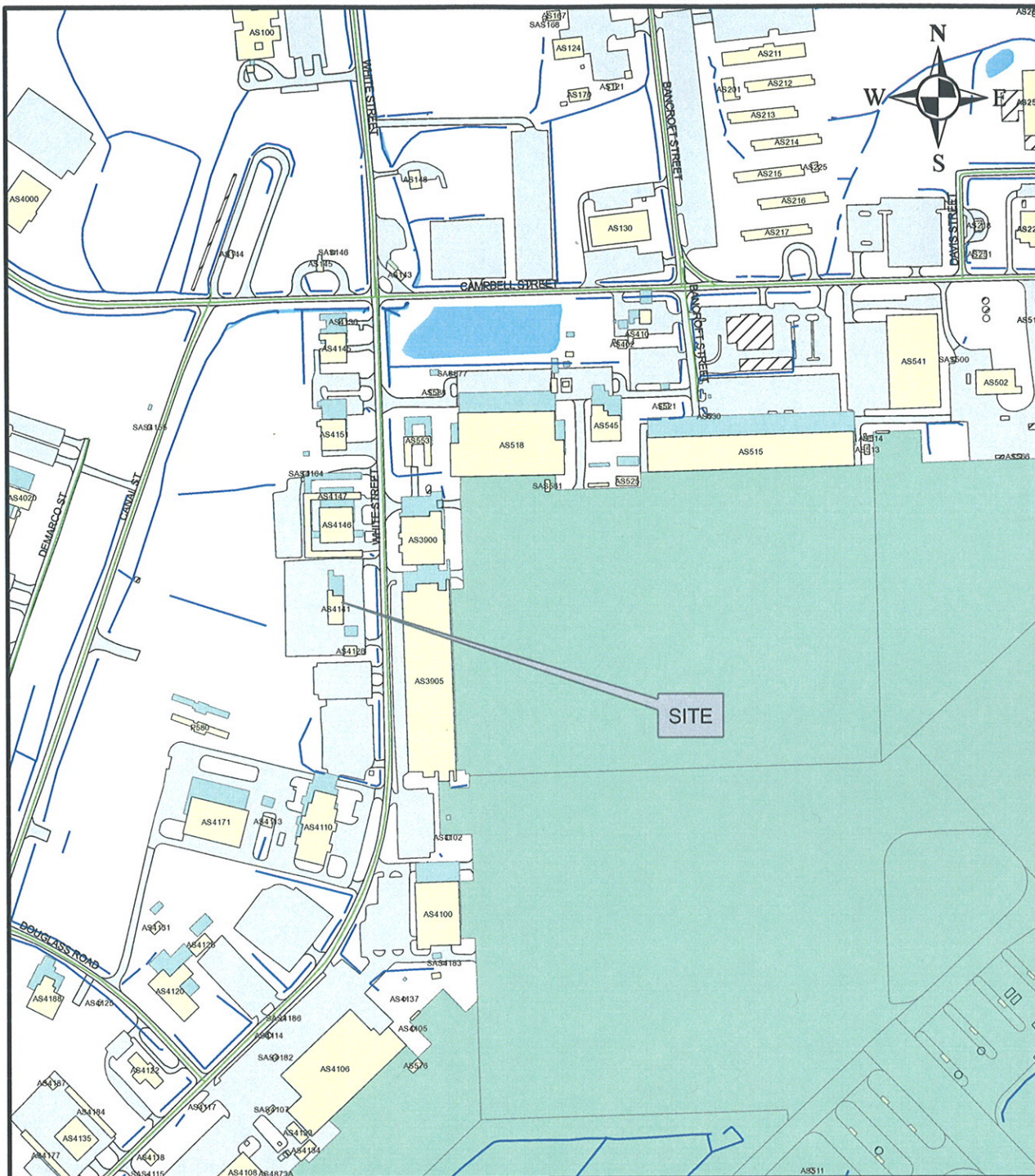


0 850 1,700 3,400 5,100 6,800
Feet



Shaw Environmental & Infrastructure, Inc.

FIGURE 1.1
VICINITY MAP
JP-5 LINE AREA
MARINE CORPS AIR STATION
CAMP LEJEUNE, NORTH CAROLINA



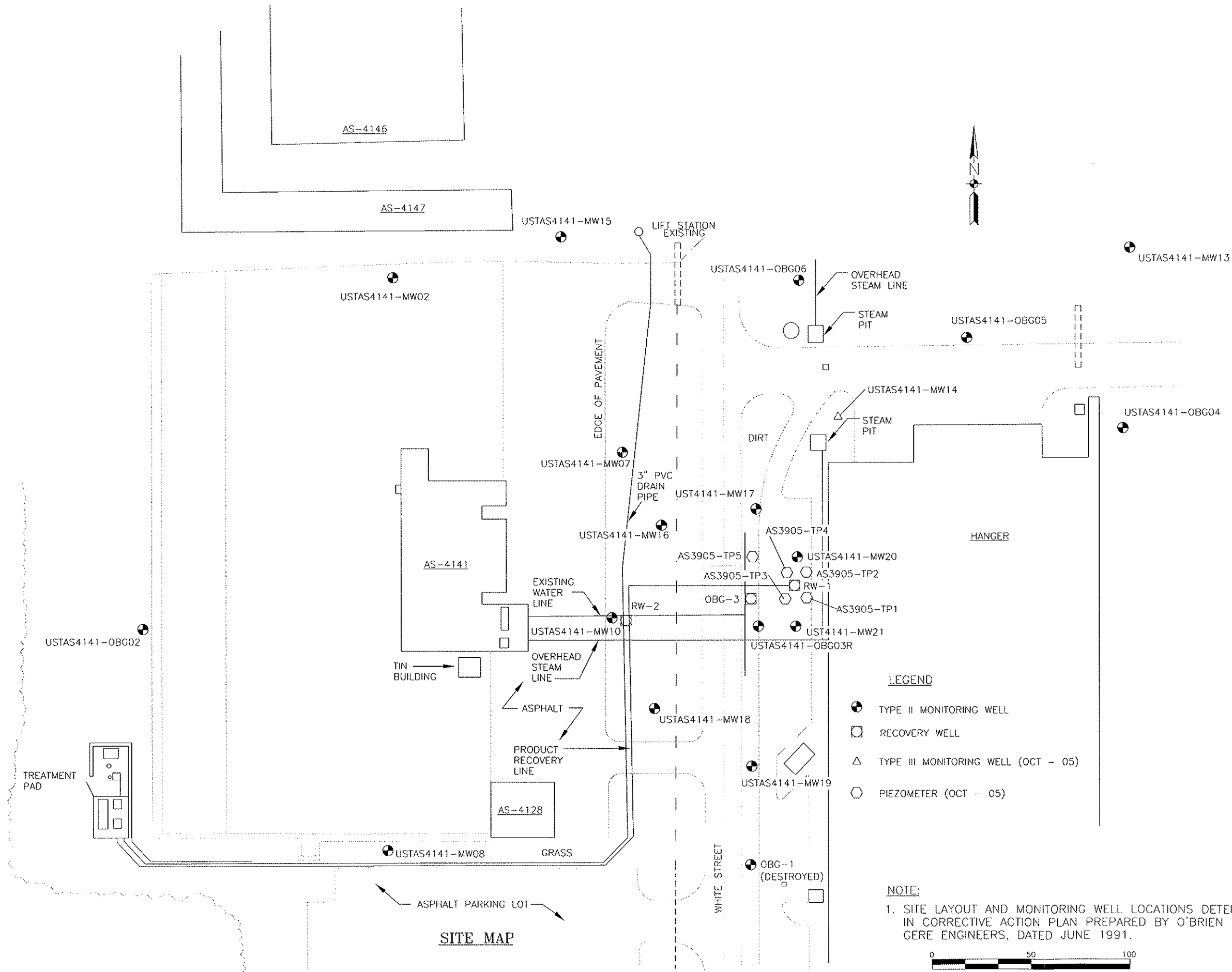
0 187.5 375 750 1,125 1,500
 Feet



Shaw Environmental & Infrastructure, Inc.

FIGURE 1.2
LOCATION MAP
 JP-5 LINE AREA
 MARINE CORPS AIR STATION
 CAMP LEJEUNE, NORTH CAROLINA

\\01\LEGUNE-6-05\AVC\WTO-46-RAPID REFUELER\JP-5 ANNUAL REPORT\MAR-07\JP-5-LINE-FG 1-3-SITE.dwg
Plot Date/Time: May 14, 2007 - 2:56pm
Xref:
Plotted By: John Longe



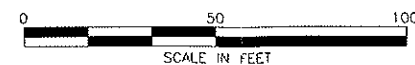
SITE MAP

LEGEND

- TYPE II MONITORING WELL
- RECOVERY WELL
- △ TYPE III MONITORING WELL (OCT - 05)
- PIEZOMETER (OCT - 05)

NOTE:

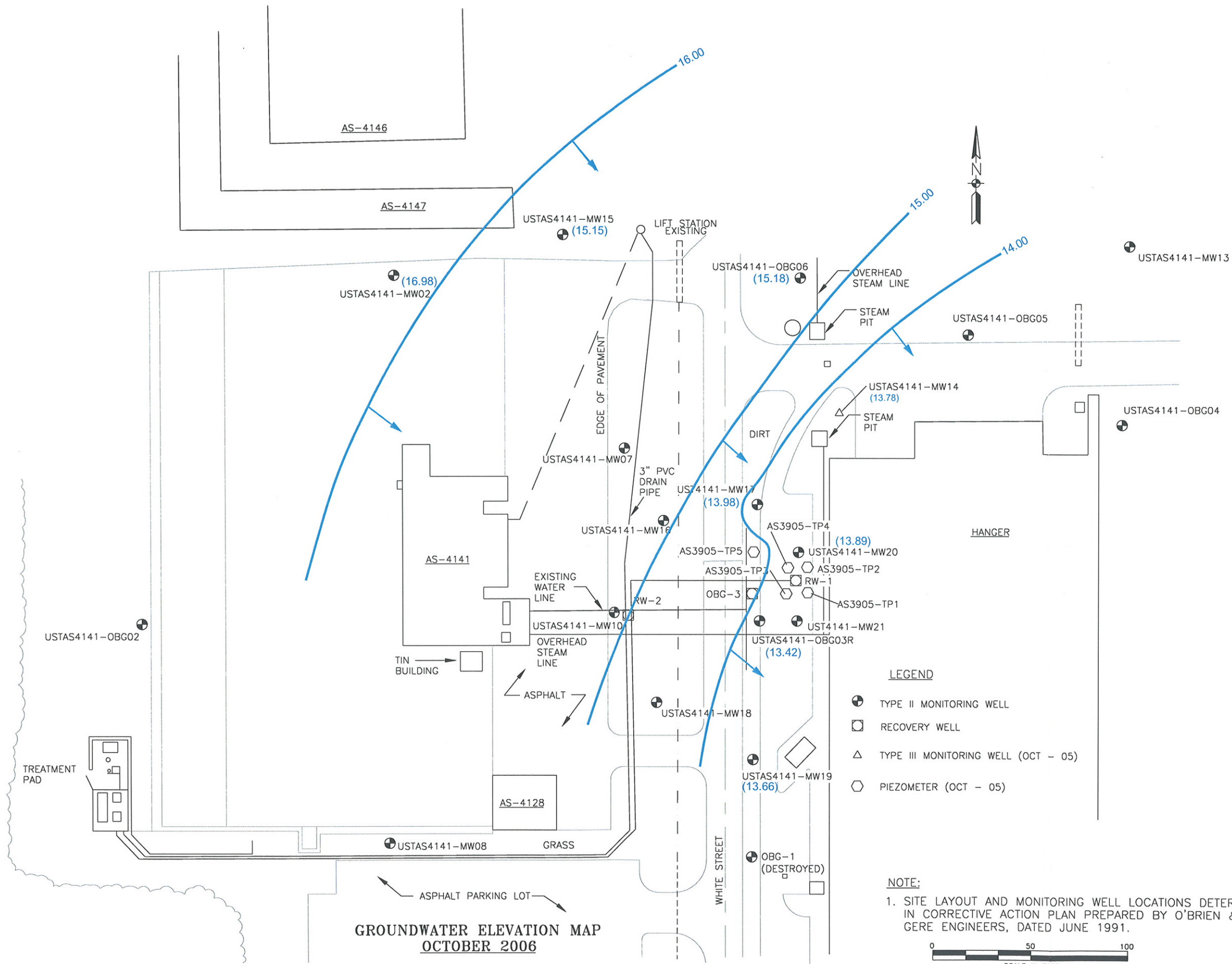
1. SITE LAYOUT AND MONITORING WELL LOCATIONS DETERMINED IN CORRECTIVE ACTION PLAN PREPARED BY O'BRIEN & GERE ENGINEERS, DATED JUNE 1991.



REFERENCE: J. A. JONES MONITORING REPORT.

DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND		NORFOLK, VIRGINIA	
NAVAL STATION		ATLANTIC DIVISION		BUILDING AS-4141	
				JP-5 LINE AREA SITE MAP	
SCALE:	AS SHOWN	SHEET I.D.	1.3	PROJECT NO.	845823
TASK ORDER NO.	046	DESIGNED BY	RBK	CHECKED BY	RBK
CONSTR. CONTRACT NO.	N62470-02-D-3260	DRAWN BY	JEL	APPROVED BY	
NAVFAC DRAWING NO.		DATE		REV	
		BY	CHK'D	APR'00	
					REVISIONS

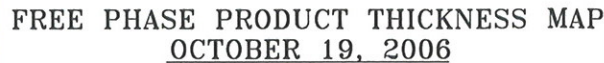
File: Q:\LEJUNE-6-05\RAC_IV\T0_46_RAPID_FEFUELER\JP-5 ANNUAL_REPORT_MAR-07\JP-5-LINE-FIG 2-1-GW.dwg
 Xref:
 Plot Date/Time: Apr 30, 2007 - 8:02am
 Plotted By: john.lange
 Image:



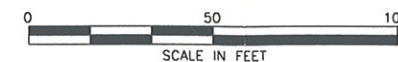
REFERENCE: J. A. JONES MONITORING REPORT

DEPARTMENT OF THE NAVY						NAVAL FACILITIES ENGINEERING COMMAND					
NAVAL STATION						NORFOLK, VIRGINIA					
ATLANTIC DIVISION											
BUILDING AS-4141											
JP-5 LINE AREA SITE MAP											
GROUNDWATER ELEVATION MAP											
OCTOBER 2006											
SCALE: AS SHOWN						SIZE:					
TASK ORDER NO. 046											
CONSTR. CONTRACT NO. N62470-02-D-3260											
NAVFAC DRAWING NO.											
SHEET I.D.											
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1. SITE LAYOUT AND MONITORING WELL LOCATIONS DETERMINED IN CORRECTIVE ACTION PLAN PREPARED BY O'BRIEN & GERE ENGINEERS, DATED JUNE 1991.



BUILDING AS-4141
UP-5 LINE AREA SITE MAP

FREE PHASE PRODUCT THICKNESS MAP
OCTOBER 2006

SHEET I.D.

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C. PROJECT NO. 845823

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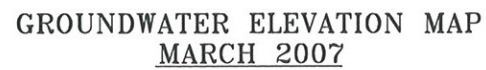
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1. SITE LAYOUT AND MONITORING WELL LOCATIONS DETERMINED IN CORRECTIVE ACTION PLAN PREPARED BY O'BRIEN & GERE ENGINEERS, DATED JUNE 1991.

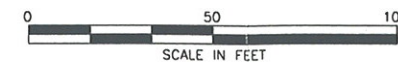


DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND	
NAVAL STATION		NORFOLK, VIRGINIA	
ATLANTIC DIVISION		BUILDING AS-4141	
		JP-5 LINE AREA SITE MAP	
		GROUNDWATER ELEVATION MAP	
		MARCH 2007	
SCALE: AS SHOWN		SIZE:	
TASK ORDER NO. 046			
CONSTR. CONTRACT NO. N62470-02-D-3260			
NAVFAC DRAWING NO.			
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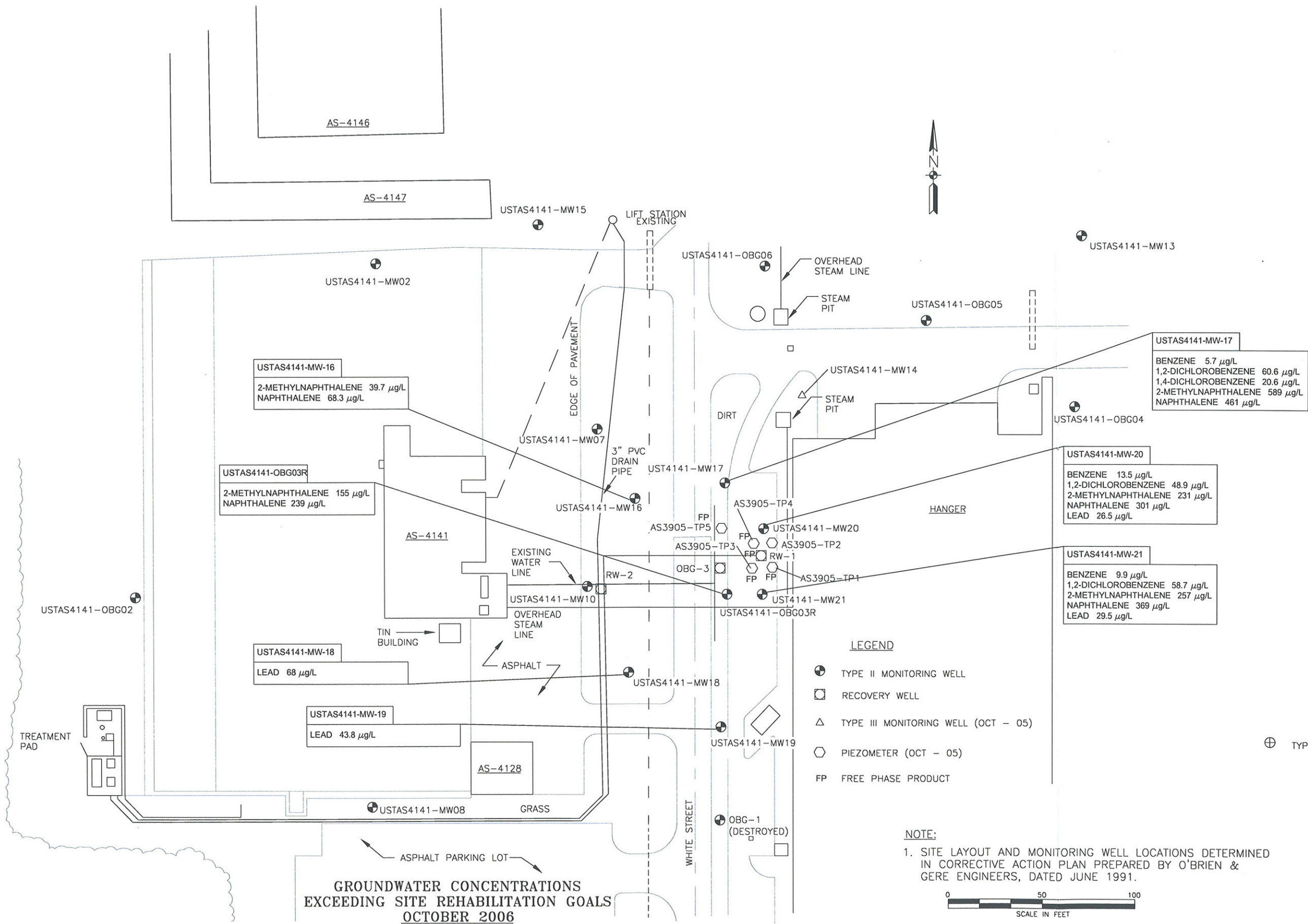


1. SITE LAYOUT AND MONITORING WELL LOCATIONS DETERMINED IN CORRECTIVE ACTION PLAN PREPARED BY O'BRIEN & GERE ENGINEERS, DATED JUNE 1991.



DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND		NORFOLK, VIRGINIA	
NAVAL STATION		ATLANTIC DIVISION			
SCALE: AS SHOWN		BUILDING AS-4141			
TASK ORDER NO. 046		JP-5 LINE AREA SITE MAP			
CONSTR. CONTRACT NO. N62470-02-D-3260		FREE PHASE PRODUCT THICKNESS MAP			
NAVFAC DRAWING NO.		MARCH 2007			
SHEET 1.D.		2.4			

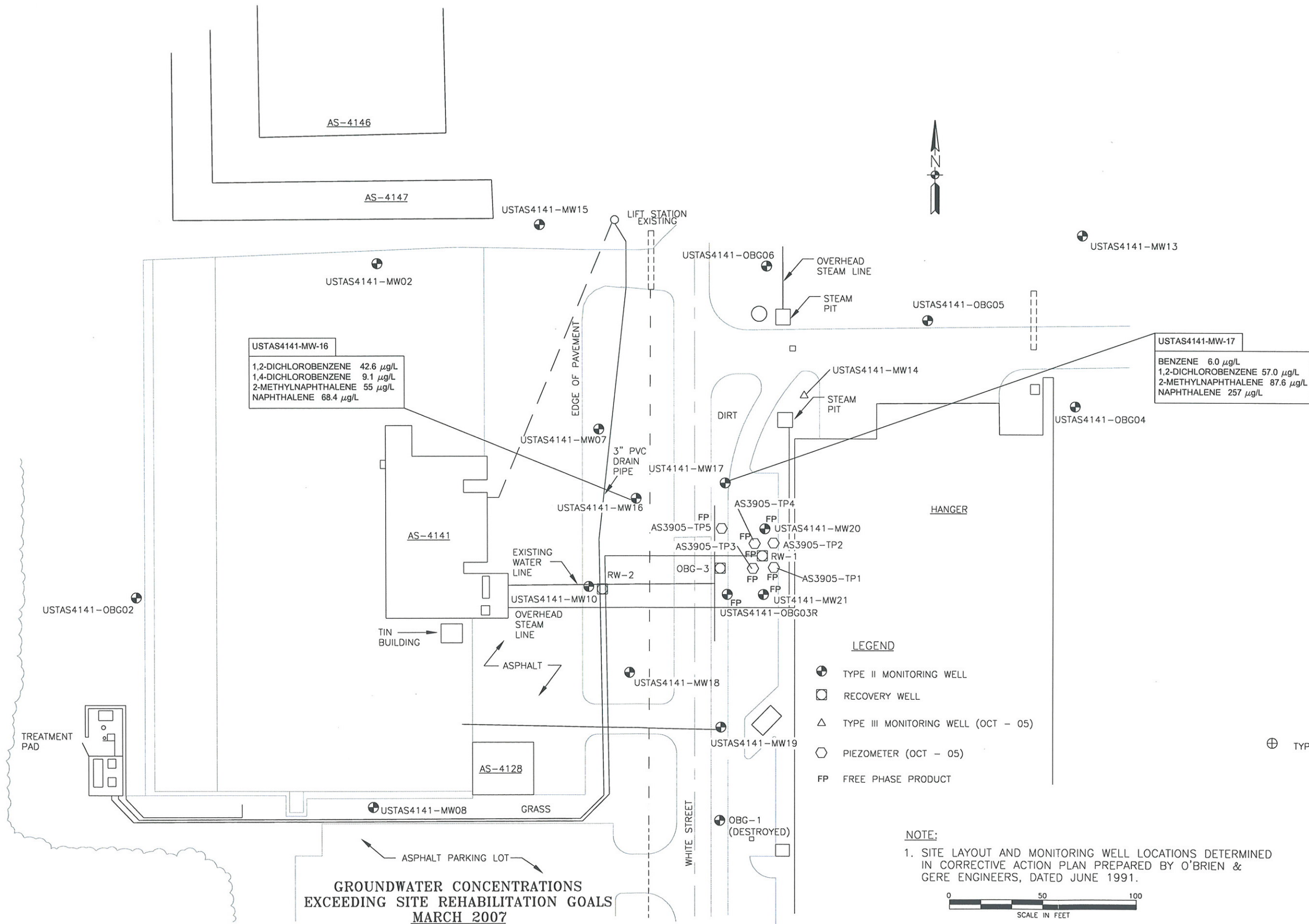
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Plot Date/Time: Apr 26, 2007 - 3:09pm
Plotted By: john.lange



DEPARTMENT OF THE NAVY		NAVAL FACILITIES ENGINEERING COMMAND		NAVAL STATION		ATLANTIC DIVISION		NORFOLK, VIRGINIA		PROJECT NO. 845823		CHECKED BY RBK		APPROVED BY		DESIGNED BY RBK		DRAWN BY JEL		REV		DATE		BY		CHK'D		APR'D		DESCRIPTION/ISSUE		REVISIONS	
NAVAL FACILITIES ENGINEERING COMMAND		NAVAL STATION		ATLANTIC DIVISION		NORFOLK, VIRGINIA		BUILDING AS-4141		JP-5 LINE AREA SITE MAP		GROUNDWATER ANALYTICAL RESULTS		OCTOBER 2006																			
SCALE:		AS SHOWN		TASK ORDER NO.		046		CONSTR. CONTRACT NO.		N62470-02-D-3260		NAVFAC DRAWING NO.		SHEET I.D.		3.1																	

REFERENCE: J. A. JONES MONITORING REPORT.

File: Q:\LEJUNE-6-05\TRAC_IV\TO_46_RAPID_FEFUELER\JP-5 ANNUAL_REPORT_MAR-07\JP-5-LINE-FIG 3-2-CONT-07.dwg
Plot Date/Time: Apr 30, 2007 - 8:06am
Xref:
Plotted By: john.lange



DEPARTMENT OF THE NAVY										NAVAL FACILITIES ENGINEERING COMMAND										ATLANTIC DIVISION										NAVAL STATION										NORFOLK, 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TABLES

TABLE 1.1

**MCB CAMP LEJEUNE
AS4141 (JP-5 LINE AREA) ANNUAL REPORT
GROUNDWATER
REVISED SITE REHABILITATION GOALS
FOR DETECTED CHEMICAL OF CONCERN**

ANALYTE	2005 MAXIMUM CONC	2006 MAXIMUM CONC	2007 MAXIMUM CONC	TARGET CONCENTRATION (NORTH CAROLINA STANDARDS)*
Benzene	<1.0 ppb	13.5 ppb	6.0 ppb	1 ppb
Methyl Tert-Butyl Ether	<1.0 ppb	<1.0 ppb	<1.0 ppb	200 ppb
Toluene	<1.0 ppb	3.2 ppb	<1.0 ppb	1000 ppb
Ethylbenzene	1.6 ppb	52.1 ppb	16.7 ppb	29 ppb
Xylenes	<3.0 ppb	171 ppb	21 ppb	530 ppb
Lead	105 ppb	68 ppb	<100 ppb	15 ppb
Naphthalene	18.1 ppb	461 ppb	257 ppb	21 ppb
1-Methylnaphthalene	38.9 ppb	466 ppb	120 ppb	Detection Limit
2-Methylnaphthalene	36.2 ppb	589 ppb	87.6 ppb	14 ppb

ppb

parts per billion

*

Goals of remediation are to achieve target concentrations or less

Table 2.1
Building AS4141 (JP-5 Area)
Groundwater Elevations

Well ID	Date		10/19/2006					3/13/2007				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW02	18.92	23.48	6.50	0	0	16.98		6.80	0	0	16.68	
MW07	15.54	NM	NM	0	0	NM		3.10	0	0	NM	
MW08	16.58	25.62	NM	0	0	NM		10.93	0	0	14.69	
MW10	14.88	21.56	NM	0	0	NM		4.67	0	0	16.89	
MW13	15.56	18.87	NM	0	0	NM		5.12	0	0	13.75	
MW14	24.81	19.56	5.78	0	0	13.78		5.70	0	0	13.86	
MW15	12.79	18.62	3.47	0	0	15.15		2.20	0	0	16.42	
MW16	14.47	NM	NM	0	0	NM		6.35	0	0	NM	
MW17	14.45	19.78	5.80	0	0	13.98		5.82	0	0	13.96	
MW18	15.07	NM	NM	0	0	NM		6.70	0	0	NM	
MW19	14.57	19.76	6.10	0	0	13.66		5.82	0	0	13.94	
MW20	12.93	NM	5.90	0	0	NM		7.45	5.71	1.74	NM	
MW21	12.23	NM	7.40	0	0	NM		7.74	5.70	2.04	NM	
RW01	23.93	NM	5.29	5.19	0.10	NM		5.38	5.13	0.25	NM	
RW02	21.00	NM	NM	0	0	NM		8.62	0	0	NM	
OBG02	12.57	23.85	NM	0	0	NM		5.69	0	0	18.16	
OBG03R	12.70	20.64	7.22	0	0	13.42		7.10	6.46	0.64	13.54	
OBG04	17.14	20.28	NM	0	0	NM		6.35	0	0	13.93	
OBG05	14.15	19.55	NM	0	0	NM		5.13	0	0	14.42	
OBG06	17.30	20.88	5.70	0	0	15.18		5.21	0	0	15.67	
TP-1	12.62	20.40	6.71	6.45	0.26	13.69		6.68	6.42	0.26	13.72	
TP-2	12.73	20.24	6.35	0	0	13.89		5.79	0	0	14.45	
TP-3	12.60	20.37	7.29	6.24	1.05	13.08		9.58	5.77	3.81	10.79	
TP-4	12.62	20.17	5.91	5.50	0.41	14.26		6.48	6.15	0.33	13.69	
TP-5	12.56	20.26	7.75	6.3	1.45	12.51		7.66	5.21	2.45	12.60	

NM = Not Measured

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Table 3.1
JP5 Line Area (Building AS-4141)
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 4/23/2007			Incident Number and Name: 119909 JP 5 Wells									
Analytical Method:			EPA 602									
Contaminant of Concern			Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Ethylbenzene	Methyl Tert Butyl Ether	Toluene	Xylenes (total)	
Sample ID	Date Collected	Sample Depth (ft bgs)										
USTASS4141-MW10	10/19/2006	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTASS4141-OBG-03R	10/19/2006	N/A	0.7 J	<1.0	<44	<1.0	<1.0	14.3	<1.0	<1.0	<1.0	63
USTASS4141-MW14	10/19/2006	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTASS4141-OBG-06	10/19/2006	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTASS4141-MW02	10/20/2006	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTASS4141-MW15	10/20/2006	N/A	<1.0	<1.0	2.6	<1.0	<1.0	<1.0	0.55 J	<1.0	<1.0	<3.0
USTASS4141-MW19	10/23/2006	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTASS4141-MW21	10/23/2006	N/A	9.9	<1.0	58.7	<1.0	<1.0	50.5	<1.0	1.8	171	
USTASS4141-MW20	10/23/2006	N/A	13.5	<1.0	48.9	<1.0	<1.0	52.1	<1.0	3.2	119	
USTASS4141-MW17	10/23/2006	N/A	5.7	<1.0	60.6	21.3	20.6	31.4	<1.0	0.68 J	50.5	
USTASS4141-MW16	2/12/2007	N/A	0.60 J	<1.0	<1.0	<1.0	<1.0	4.5	<1.0	<1.0	<1.0	3.5
USTASS4141-MW18	2/12/2007	N/A	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
GWQS (ug/L)			1	50	24	170	1.4	550	200	1000	530	
GCL (ug/L)			5000	50000	72500	61500	39500	29000	200000	257500	87500	

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

List any contaminant detected above the method detection limit

Detected concentration exceeds GWQS

GWQS = Groundwater Quality Standard NC Administrative Code Title 15A Subchapter 2L - Groundwater Classifications and Standards 12/01/05

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

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

Table 3.1
JP5 Line Area (Building AS-4141)
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 4/23/2007			Incident Number and Name: 119909 JP 5 Wells																		
Analytical Method:			3030C	EPA 625																	
Contaminant of Concern			Lead	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
Sample ID	Date Collected	Sample Depth (ft bgs)																			
USTASS4141-MW10	10/19/2006	N/A	<3.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
USTASS4141-OBG-03R	10/19/2006	N/A	<3.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.1 J	<5.0	150	155	239	<5.0	<5.0
USTASS4141-MW14	10/19/2006	N/A	<3.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.9 J	1.8 J	<5.0	<5.0	<5.0
USTASS4141-OBG-06	10/19/2006	N/A	5.7 B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
USTASS4141-MW02	10/20/2006	N/A	2.4 B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
USTASS4141-MW15	10/20/2006	N/A	<1.7	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	2.2 J	1.1 J	<4.9	<4.9
USTASS4141-MW19	10/23/2006	N/A	43.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTASS4141-MW21	10/23/2006	N/A	29.5	1.2 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.7 J	<5.0	187	257	369	<5.0	<5.0
USTASS4141-MW20	10/23/2006	N/A	26.5	1.1 J	1.3 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.4 J	<5.0	172	231	301	<5.0	<5.0
USTASS4141-MW17	10/23/2006	N/A	3.2 B	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	466	589	461	<98	<98
USTASS4141-MW16	2/12/2007	N/A	34	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	61.7	39.7	68.3	<4.9	<4.9
USTASS4141-MW18	2/12/2007	N/A	68	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	1.6 J	1.2 J	2.5 J	<4.8	<4.8
GWQS (ug/L)			15	80	210	2100	0.0479	0.00479	0.0479	210	0.479	4.79	0.0047	280	280	0.0479	NS	14	21	210	210
GCL (ug/L)			15000	2120	1965	2100	22	1.5	0.6	210	0.47	5	0.25	280	950	31	NS	12500	15500	410	210

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

List any contaminant detected above the method detection limit

Detected concentration exceeds GWQS

GWQS = Groundwater Quality Standard NC Administrative Code Title 15A Subchapter 2L - Groundwater Classifications and Standards 12/01/05

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

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

B Indicates a result ≥ Instrument detection limit but < reporting limit

Table 3.2
JP5 Line Area (Building AS-4141)
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 4/23/2007			Incident Number and Name: 119909 AS4141-JP 5 Wells								
Analytical Method:			EPA 602								
Contaminant of Concern			Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Ethylbenzene	Methyl Tert Butyl Ether	Toluene	Xylenes (total)
Sample ID	Date Collected	Sample Depth (ft bgs)									
USTAS4141-MW02	3/13/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW07	3/14/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW10	3/14/2007	N/A	<1.0	<1.0	9.1	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW14	3/17/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW15	3/13/2007	N/A	<1.0	<1.0	5.9	<1.0	<1.0	<1.0	0.52 J	<1.0	<3.0
USTAS4141-MW16	3/13/2007	N/A	0.57 J	<1.0	42.6	<1.0	9.1	3.3	<1.0	<1.0	2.2 J
USTAS4141-MW17	3/16/2007	N/A	6.0	<1.0	57.0	<1.0	<1.0	16.7	<1.0	<1.0	21.0
USTAS4141-MW18	3/14/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW19	3/16/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-OBG06	3/17/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
USTAS4141-MW17-DUP	3/16/2007	N/A	5.9	<1.0	58.8	<1.0	<1.0	17.1	<1.0	<1.0	21.8
USTAS4141-TB	3/14/2007	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
GWQS (ug/L)			1	50	24	170	1.4	550	200	1000	530
GCL (ug/L)			5000	50000	24000	61500	39500	84500	200000	257500	87500

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

List any contaminant detected above the method detection limit

Detected concentration exceeds GWQS

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

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

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

B Indicates a result > =Instrument detection limit but < reporting limit

Table 3.2
JP5 Line Area (Building AS-4141)
Groundwater Analytical Results
VOC, SVOC (PAHs Only) and Lead

Date: 4/23/2007			Incident Number and Name: 119909 AS4141-JP 5 Wells																																				
Analytical Method:			3030C	EPA 625																																			
Contaminant of Concern			Lead	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene																		
Sample ID	Date Collected	Sample Depth (ft bgs)																				<10	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
USTAS4141-MW02	3/13/2007	N/A																				<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
USTAS4141-MW07	3/14/2007	N/A																				<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	3.6 J	<5.0	2.1 J	<5.0
USTAS4141-MW10	3/14/2007	N/A																				<20	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTAS4141-MW14	3/17/2007	N/A																				<20	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8
USTAS4141-MW15	3/13/2007	N/A																				<20	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	1.4 J	1.6 J	<4.8	<4.8
USTAS4141-MW16	3/13/2007	N/A																				<50	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	62	55	68.4	<5.0
USTAS4141-MW17	3/16/2007	N/A																				<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	120	87.6	257	<5.0
USTAS4141-MW18	3/14/2007	N/A	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0																			
USTAS4141-MW19	3/16/2007	N/A	<20	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0																			
USTAS4141-OBG06	3/17/2007	N/A	<5.0	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8	<4.8																			
USTAS4141-MW17-DUP	3/16/2007	N/A	<20	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9	118	85.3	250	<4.9																			
GWQS (ug/L)			15	80	210	2100	0.0479	0.00479	0.0479	210	0.479	4.79	0.0047	280	280	0.047	NS	14	21	210	210																		
GCL (ug/L)			15000	2120	1965	2000000	22	1.5	0.6	210	0.4	0.8	0.25	280	950	31	NS	12500	15500	410	210																		

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

List any contaminant detected above the method detection limit

Detectable concentration exceeds GWQS

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

GCL = Gross Contamination Level

Results must be reported in ug/L

ug/L = micrograms per liter

NA = not applicable

NS = no standard

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

B Indicates a result > Instrument detection limit but < reporting limit

APPENDIX A

**HISTORICAL GROUNDWATER ELEVATIONS AND
FREE PHASE PRODUCT THICKNESSES**

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		11/22/2005					11/30/2005					1/6/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.62	0	0	13.62		5.57	0	0	13.67		5.28	0	0	13.96	
MW-15	12.79	18.62	1.27	0	0	17.35		2.78	0	0	15.84		3.15	0	0	15.47	
TP-1	12.25	20.09	6.35	0	0	13.74		6.3	0	0	13.79		6.09	0	0	14	
TP-2	12.96	19.92	6.31	0	0	13.61		6.24	0	0	13.68		5.98	0	0	13.94	
TP-3	12.59	20.06	6.72	6.37	0.35	13.34		6.75	6.3	0.45	13.31		6.53	5.81	0.72	13.53	
TP-4	12.61	19.87	5.66	0	0	14.21		5.65	0	0	14.22		5.59	0	0	14.28	
TP-5	12.32	19.98	6.68	6.67	0.01	13.3		6.35	6.3	0.05	13.63		6.69	6.014	0.55	13.29	
OBG-03R	12.71	20.35	8.23	6.81	1.42	12.12		8.15	6.37	1.78	12.2		7.74	5.71	2.03	12.61	81
RW-1	21.48	NM	5.01	4.85	0.16	NM		4.99	4.89	0.1	NM		4.89	4.62	0.27	NM	
OBG-06	17.39	21.63	3.67	0	0	17.96		3.83	0	0	17.8		4.54	0	0	17.09	
																gas	11.1

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		1/11/2006					1/16/2006					1/23/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.49	0	0	13.75		5.54	0	0	13.7		5.5	0	0	13.74	
MW-15	12.79	18.62	3.26	0	0	15.36		3.03	0	0	15.59		2.82	0	0	15.8	
TP-1	12.25	20.09	6.19	6.17	0.02	13.9		6.51	6.15	0.36	13.58	5	6.35	6.31	0.04	13.74	5
TP-2	12.96	19.92	6.11	0	0	13.81		6.15	0	0	13.77		6.11	0	0	13.81	
TP-3	12.59	20.06	6.65	5.9	0.75	13.41		7.69	5.93	1.76	12.37	5	6.83	6.11	0.72	13.23	5
TP-4	12.61	19.87	5.64	0	0	14.23		5.63	0	0	14.24		5.62	0	0	14.25	
TP-5	12.32	19.98	6.84	6.18	0.66	13.14		7.13	6.26	0.87	12.85	5	6.65	6.3	0.35	13.33	5
OBG-03R	12.71	20.35	8.3	5.85	2.45	12.05		7.34	6.19	1.16	13.01	81	6.81	6.15	0.66	13.54	126
RW-1	21.48	NM	4.78	4.6	0.18	NM		5.19	4.64	0.55	NM		5.14	4.6	0.54	NM	
OBG-06	17.39	21.63	4.67	0	0	16.96		4.47	0	0	17.16		4.92	0	0	16.71	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		2/6/2006					2/16/2006					2/20/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.5	0	0	13.74		5.61	0	0	13.63		5.68	0	0	13.56	
MW-15	12.79	18.62	3.07	0	0	15.55		3.02	0	0	15.6		3.13	0	0	15.49	
TP-1	12.25	20.09	6.5	6.3	0.2	13.59		6.73	6.36	0.37	13.36		6.77	6.45	0.32	13.32	
TP-2	12.96	19.92	6.14	0	30	13.78		6.23	0	0	13.69		6.28	0	0	13.64	
TP-3	12.59	20.06	7.01	6.07	0.94	13.05		7.45	6.08	1.37	12.61		7.6	6.15	1.45	12.46	
TP-4	12.61	19.87	5.64	0	0	14.23		5.64	0	0	14.23		5.64	0	0	14.23	
TP-5	12.32	19.98	6.35	6.11	0.24	13.63		6.98	6.18	0.8	13		7.51	6.27	1.24	12.47	
OBG-03R	12.71	20.35	6.63	6.15	0.48	13.72	75	6.75	6.31	0.44	13.6	59.2	6.83	6.4	0.43	13.52	
RW-1	21.48	NM	4.81	4.6	0.21	NM		4.69	0	0	NM		4.79	4.75	0.04	NM	
OBG-06	17.39	21.63	4.33	0	0	17.3		5.06	0	0	16.57		5.22	0	0	16.41	
						gas	12				gas	9.4					

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		3/14/2006					3/21/2006					3/28/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.7	0	0	13.54		5.86	0	0	13.38		6.02	0	0	13.22	
MW-15	12.79	18.62	3.1	0	0	15.52		3.23	0	0	15.39		2.96	0	0	15.66	
TP-1	12.25	20.09	6.82	6.48	0.34	13.27		7.02	6.56	0.46	13.07		7.24	6.76	0.48	12.85	
TP-2	12.96	19.92	6.33	0	0	13.59		6.51	0	0	13.41		6.58	0	0	13.34	
TP-3	12.59	20.06	8.25	6.02	2.23	11.81		8.3	6.17	2.13	11.76		8.93	6.24	2.69	11.13	
TP-4	12.61	19.87	5.63	0	0	14.24		5.86	0	0	14.01		5.7	0	0	14.17	
TP-5	12.32	19.98	8.07	6.3	1.77	11.91		8.14	6.23	1.91	11.84		8.31	6.3	2.01	11.67	
OBG-03R	12.71	20.35	6.83	6.48	0.35	13.52		7.01	6.54	0.47	13.34		7.22	6.82	0.4	13.13	
RW-1	21.48	NM	5.54	4.78	0.76	NM		5.81	4.9	0.91	NM		5.85	5.08	0.77	NM	
OBG-06	17.39	21.63	5.18	0	0	16.45		5.29	0	0	16.34		5.68	0	0	15.95	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

	Date		4/6/2006					4/12/2006					4/18/2006				
Well ID	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	6.1	0	0	13.14		6.12	0	0	13.12		6.04	0	0	13.2	
MW-15	12.79	18.62	3.2	0	0	15.42		4.33	0	0	14.29		4.17	0	0	14.45	
TP-1	12.25	20.09	7.38	6.81	0.57	12.71		7.52	6.86	0.66	12.57		7.28	6.78	0.5	12.81	
TP-2	12.96	19.92	6.68	0	0	13.24		6.84	6.36	0.48	13.08		6.68	0	0	13.24	
TP-3	12.59	20.06	9.33	6.25	3.08	10.73		9.48	6.23	3.25	10.58		9.69	6.13	3.56	10.37	
TP-4	12.61	19.87	5.7	0	0	14.17		5.71	0	0	14.16		5.56	0	0	14.31	
TP-5	12.32	19.98	8.88	6.51	2.37	11.1		8.78	6.46	2.32	11.2		9.09	6.55	2.54	10.89	
OBG-03R	12.71	20.35	7.35	6.93	0.42	13		7.34	6.95	0.39	13.01		6.9	6.67	0.23	13.45	
RW-1	21.48	NM	5.29	5.16	0.13	NM		6	5.48	0.52	NM		5.96	5.1	0.86	NM	41.6
OBG-06	17.39	21.63	5.67	0	0	15.96		5.66	0	0	15.97		6.28	0	0	15.35	
																gas	6.6

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

	Date		5/2/2006					5/9/2006					5/15/2006				
Well ID	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.8	0	0	13.44		5.77	0	0	13.47		5.86	5.85	0.01	13.38	
MW-15	12.79	18.62	2.6	0	0	16.02		1.74	0	0	16.88		2.63	2.62	0.01	15.99	
TP-1	12.25	20.09	6.7	6.6	0.1	13.39		6.85	6.57	0.28	13.24		6.82	6.61	0.21	13.27	
TP-2	12.96	19.92	6.4	0	0	13.52		6.75	0	0	13.17		6.55	6.43	0.12	13.37	
TP-3	12.59	20.06	7.29	6.34	0.95	12.77		7.14	6.38	0.76	12.92		7.45	6.4	1.05	12.61	
TP-4	12.61	19.87	5.64	0	0	14.23		5.67	0	0	14.2		5.69	5.68	0.01	14.18	
TP-5	12.32	19.98	7.31	6.47	0.84	12.67		7.16	6.55	0.61	12.82		7.56	6.59	0.97	12.42	
OBG-03R	12.71	20.35	6.69	6.63	0.06	13.66		6.98	6.63	0.36	13.37		7.29	6.75	0.54	13.06	
RW-1	21.48	NM	5.03	4.99	0.04	NM		4.91	4.84	0.07	NM		5.1	5.01	0.09	NM	
OBG-06	17.39	21.63	4.64	0	0	16.99		3.89	0	0	17.74		4.85	4.78	0.07	16.78	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Date		TOC Elevation	5/24/2006					6/1/2006					6/5/2006				
Well ID	DTB		DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	6.03	0	0	13.21		6.03	0	0	13.21		6.04	0	0	13.2	
MW-15	12.79	18.62	2.99	0	0	15.63		3.48	0	0	15.14		3.58	0	0	15.04	
TP-1	12.25	20.09	7.17	6.78	0.39	12.92		7.1	6.83	0.27	12.99		7.21	6.82	0.39	12.88	
TP-2	12.96	19.92	6.63	0	0	13.29		6.64	0	0	13.28		6.67	0	0	13.25	
TP-3	12.59	20.06	7.74	6.52	1.22	12.32		7.9	6.5	1.4	12.16		8.05	6.5	1.55	12.01	
TP-4	12.61	19.87	5.68	0	0	14.19		5.73	0	0	14.14		5.71	0	0	14.16	
TP-5	12.32	19.98	7.96	6.76	1.2	12.02		8.2	6.82	1.38	11.78		8.19	6.72	1.47	11.79	
OBG-03R	12.71	20.35	7.04	6.72	0.32	13.31		6.42	5.99	0.43	13.93		7.33	6.94	0.39	13.02	
RW-1	21.48	NM	5.33	5.2	0.13	NM		5.34	5.2	0.14	NM		5.39	5.24	0.15	NM	
OBG-06	17.39	21.63	5.58	0	0	16.05		5.55	0	0	16.08		5.64	0	0	15.99	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Date		TOC Elevation	6/12/2006					6/19/2006					6/27/2006				
Well ID	DTB		DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.91	0	0	13.33		5.69	0	0	13.55		3.25	0	0	15.99	
MW-15	12.79	18.62	3.43	0	0	15.19		3.29	0	0	15.33		3.6	0	0	15.02	
TP-1	12.25	20.09	6.86	6.68	0.18	13.23		6.54	6.42	0.12	13.55		6.24	6.13	0.11	13.85	
TP-2	12.96	19.92	6.59	6.58	0.01	13.33		6.25	0	0	13.67		6.27	0	0	13.65	
TP-3	12.59	20.06	8.09	6.31	1.78	11.97		7.8	6.04	1.76	12.26		7.29	5.73	1.56	12.77	
TP-4	12.61	19.87	5.71	0	0	14.16		5.7	0	0	14.17		5.43	0	0	14.44	
TP-5	12.32	19.98	8.08	6.68	1.4	11.9		7.95	6.35	1.6	12.03		7.76	6.12	1.64	12.22	
OBG-03R	12.71	20.35	7.27	6.84	0.43	13.08		6.99	6.54	0.45	13.36		6.83	6.4	0.43	13.52	
RW-1	21.48	NM	5.26	5.07	0.19	NM		4.96	4.8	0.16	NM		4.73	4.52	0.21	NM	
OBG-06	17.39	21.63	3.75	0	0	17.88		4.45	0	0	17.18		3.38	0	0	18.25	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		7/6/2006					7/12/2006					7/19/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.32	0	0	13.92		5.67	0	0	13.57		5.76	0	0	13.48	
MW-15	12.79	18.62	3.72	0	0	14.9		3.8	0	0	14.82		3.61	0	0	15.01	
TP-1	12.25	20.09	6.41	6.13	0.28	13.68		6.75	6.43	0.32	13.34		6.72	6.55	0.17	13.37	
TP-2	12.96	19.92	5.97			13.95		6.3	0	0	13.62		6.39	0	0	13.53	
TP-3	12.59	20.06	7.91	5.7	2.21	12.15		8.54	5.95	2.59	11.52		8.17	5.6	2.57	11.89	
TP-4	12.61	19.87	5.64	0	0	14.23		5.68	0	0	14.19		5.64	0	0	14.23	
TP-5	12.32	19.98	8.09	6.01	2.08	11.89		8.7	6.3	2.4	11.28		8.8	6.4	2.4	11.18	
OBG-03R	12.71	20.35	6.94	6.42	0.52	13.41		7.12	6.6	0.52	13.23		7.14	6.61	0.53	13.21	
RW-1	21.48	NM	4.57	4.52	0.05	NM		5.05	4.85	0.2	NM		5.14	4.91	0.23	NM	
OBG-06	17.39	21.63	4.67	0	0	16.96		5.72	0	0	15.91		4.12	0	0	17.51	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		7/24/2006					8/2/2006					8/7/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.63	0	0	13.61		4.07	0	0	15.17		5.32	0	0	13.92	
MW-15	12.79	18.62	3.48	0	0	15.14		3.3	0	0	15.32		3.36	0	0	15.26	
TP-1	12.25	20.09	6.56	6.37	0.19	13.53		6.18	6.05	0.13	13.91		6.46	6.25	0.21	13.63	
TP-2	12.96	19.92	6.21			13.71		5.93	0	0	13.99		6.1	0	0	13.82	
TP-3	12.59	20.06	7.19	5.72	1.47	12.87		8.32	5.52	2.8	11.74		6.86	6.11	0.75	13.2	
TP-4	12.61	19.87	5.66	0	0	14.21		5.63	0	0	14.24		5.66	0	0	14.21	
TP-5	12.32	19.98	8.57	6.11	2.46	11.41		8.33	5.8	2.53	11.65		6.95	6.03	0.92	13.03	
OBG-03R	12.71	20.35	7.11	6.43	0.68	13.24		6.95	6.45	0.5	13.4		7.08	6.38	0.7	13.27	
RW-1	21.48	NM	5.01	4.76	0.25	NM		4.65	4.44	0.21	NM		4.89	4.62	0.27	NM	
OBG-06	17.39	21.63	3.63	0	0	18		4.01	0	0	17.62		4.61	0	0	17.02	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		8/14/2006					8/21/2006					8/28/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.52	0	0	13.72		5.71	0	0	13.53		4.98	0	0	14.26	
MW-15	12.79	18.62	2.48	0	0	16.14		2.73	0	0	15.89		2.94	0	0	15.68	
TP-1	12.25	20.09	6.5	6.32	0.18	13.59		6.69	6.48	0.21	13.4		6.25	6.11	0.14	13.84	
TP-2	12.96	19.92	6.18	0	0	13.74		6.38	0	0	13.54		5.98	0	0	13.94	
TP-3	12.59	20.06	6.91	6.09	0.82	13.15		6.95	6.24	0.71	13.11		6.78	5.98	0.8	13.28	
TP-4	12.61	19.87	5.65	0	0	14.22		5.6	0	0	14.27		5.64	0	0	14.23	
TP-5	12.32	19.98	7.15	6.42	0.73	12.83		7.51	6.88	0.63	12.47		6.99	6.22	0.77	12.99	
OBG-03R	12.71	20.35	7.12	6.37	0.75	13.23		7.04	6.32	0.72	13.31		6.96	6.09	0.87	13.39	
RW-1	21.48	NM	4.98	4.67	0.31	NM		5.14	4.88	0.26	NM		4.78	4.46	0.32	NM	
OBG-06	17.39	21.63	4.22	0	0	17.41		5	0	0	16.63		4.27	0	0	17.36	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		9/5/2006					9/12/2006					9/20/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	4.85	0	0	14.39		4.95	0	0	14.29		5.04	0	0	14.2	
MW-15	12.79	18.62	3.08	0	0	15.54		3.28	0	0	15.34		3.12	0	0	15.5	
TP-1	12.25	20.09	6.64	6.57	0.07	13.45		5.79	5.61	0.18	14.3		5.92	5.82	0.1	14.17	
TP-2	12.96	19.92	5.54	0	0	14.38		5.63	0	0	14.29		5.71	0	0	14.21	
TP-3	12.59	20.06	6.42	5.52	0.9	13.64		6.4	5.62	0.78	13.66		6.62	5.77	0.85	13.44	
TP-4	12.61	19.87	5.52	5.47	0.28	14.35		5.75	5.47	0.28	14.12		5.82	5.52	0.3	14.05	
TP-5	12.32	19.98	6.48	5.65	0.83	13.5		6.9	5.66	1.24	13.08		6.63	5.81	0.82	13.35	
OBG-03R	12.71	20.35	6.02	5.77	0.25	14.33		6.41	5.91	0.5	13.94		6.15	5.93	0.22	14.2	
RW-1	21.48	NM	4.3	3.97	0.33	NM		4.18	4.17	0.01	NM		4.34	4.32	0.02	NM	
OBG-06	17.39	21.63	3.5	0	0	18.13		4.67	0	0	16.96		4.92	0	0	16.71	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		9/27/2006					10/3/2006					10/10/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.31	0	0	13.93		5.62	0	0	13.62		5.55	0	0	13.69	
MW-15	12.79	18.62	3.01	0	0	15.61		3.43	0	0	15.19		3.35	0	0	15.27	
TP-1	12.25	20.09	6.27	6.14	0.13	13.82		6.58	6.43	0.15	13.51		6.4	6.35	0.05	13.69	
TP-2	12.96	19.92	6.01	0	0	13.91		6.29	0	0	13.63		6.02	0	0	13.9	
TP-3	12.59	20.06	7	5.95	1.05	13.06		7.28	6.21	1.07	12.78		7.11	6.15	0.96	12.95	
TP-4	12.61	19.87	5.86	5.51	0.35	14.01		6.12	5.51	0.61	13.75		6.06	5.51	0.55	13.81	
TP-5	12.32	19.98	7.23	6.18	1.05	12.75		7.76	6.52	1.24	12.22		7.25	6.75	0.5	12.73	
OBG-03R	12.71	20.35	6.23	6	0.23	14.12		7.23	6.52	0.71	13.12		7	6.4	0.6	13.35	
RW-1	21.48	NM	4.59	4.58	0.01	NM		4.92	4.88	0.04	NM		4.83	4.74	0.09	NM	
OBG-06	17.39	21.63	5.17	0	0	16.46		5.54	0	0	16.09		3.95	0	0	17.68	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		10/25/2006					10/30/2006					11/9/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.49	0	0	13.75		5.74	0	0	13.5		5.71	0	0	13.53	
MW-15	12.79	18.62	3.35	0	0	15.27		1.86	0	0	16.76		3.1	0	0	15.52	
TP-1	12.25	20.09	7.03	6.65	0.38	13.06		6.6	6.45	0.15	13.49		6.63	6.54	0.09	13.46	
TP-2	12.96	19.92	6.53	0	0	13.39		6.25	0	0	13.67		6.36	0	0	13.56	
TP-3	12.59	20.06	8.86	6.41	2.45	11.2		7.69	6.23	1.46	12.37		7.48	6.28	1.2	12.58	
TP-4	12.61	19.87	5.86	5.51	0.35	14.01		6.12	5.5	0.62	13.75		5.68	5.57	0.11	14.19	
TP-5	12.32	19.98	8.13	6.62	1.51	11.85		7.63	6.46	1.17	12.35		6.88	6.23	0.65	13.1	
OBG-03R	12.71	20.35	7.3	6.83	0.47	13.05		7.05	6.61	0.44	13.3		7.05	6.61	0.44	13.3	
RW-1	21.48	NM	5.14	5.1	0.04	NM		5.34	5.23	0.11	NM		5.08	4.95	0.13	NM	
OBG-06	17.39	21.63	5.41	0	0	16.22		4.35	0	0	17.28		4.16	0	0	17.47	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		11/15/2006					11/28/2006					12/5/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.78	0	0	13.46		4.01	0	0	15.23		5.45	0	0	13.79	
MW-15	12.79	18.62	2.81	0	0	15.81		2.73	0	0	15.89		2.84	0	0	15.78	
TP-1	12.25	20.09	6.76	6.59	0.17	13.33		6.11	6.08	0.03	13.98		6.4	6.28	0.12	13.69	
TP-2	12.96	19.92	6.43	0	0	13.49		5.92	0	0	14		6.12	0	0	13.8	
TP-3	12.59	20.06	7.63	6.31	1.32	12.43		6.9	5.78	1.12	13.16		7.62	5.96	1.66	12.44	
TP-4	12.61	19.87	5.78	0	0	14.09		5.82	5.56	0.26	14.05		5.88	5.54	0.34	13.99	
TP-5	12.32	19.98	7.4	6.55	0.85	12.58		5.98	5.74	0.24	14		7.1	6.02	1.08	12.88	
OBG-03R	12.71	20.35	7.12	6.65	0.47	13.23		6.5	6.04	0.46	13.85		6.82	6.34	0.48	13.53	
RW-1	21.48	NM	5.13	4.96	0.17	NM		4.74	0	0	NM		4.82	4.63	0.19	NM	
OBG-06	17.39	21.63	4.85	0	0	16.78		4.57	0	0	17.06		5.22	0	0	16.41	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

Well ID	Date		12/13/2006					12/19/2006					12/27/2006				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.69	0	0	13.55		5.96	0	0	13.28		5.15	0	0	14.09	
MW-15	12.79	18.62	3.04	0	0	15.58		3.16	0	0	15.46		3.15	0	0	15.47	
TP-1	12.25	20.09	6.84	5.52	1.32	13.25		6.92	6.74	0.18	13.17		6.08	6.06	0.02	14.01	
TP-2	12.96	19.92	6.38	0	0	13.54		6.56	6.55	0.01	13.36		5.96	0	0	13.96	
TP-3	12.59	20.06	8.19	6.15	2.04	11.87		8.39	6.34	2.05	11.67		7.82	5.8	2.02	12.24	
TP-4	12.61	19.87	5.9	5.55	0.35	13.97		5.85	5.56	0.29	14.02		5.74	5.53	0.21	14.13	
TP-5	12.32	19.98	7.64	6.3	1.34	12.34		7.96	6.54	1.42	12.02		5.85	5.04	0.81	14.13	
OBG-03R	12.71	20.35	7.15	6.61	0.54	13.2		7.41	6.85	0.56	12.94		6.68	6.15	0.53	13.67	
RW-1	21.48	NM	5.5	5.29	0.21	NM		5.19	5.16	0.03	NM		4.9	4.89	0.01	NM	
OBG-06	17.39	21.63	5.42	0	0	16.21		5.64	0	0	15.99		4.03	0	0	17.6	

DTB = Depth to bottom of well (feet)

DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		1/2/2007					1/11/2007					1/15/2007				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.4	0	0	13.84		5.25	0	0	13.99		5.34	0	0	13.9	
MW-15	12.79	18.62	2.71	0	0	15.91		2.91	0	0	15.71		2.83	0	0	15.79	
TP-1	12.25	20.09	6.27	6.23	0.04	13.82		6.19	6.02	0.17	13.9		6.2	6.04	0.16	13.89	
TP-2	12.96	19.92	6.01	0	0	13.91		5.91	0	0	14.01		5.88	0	0	14.04	
TP-3	12.59	20.06	7.92	5.81	2.11	12.14		7.9	5.63	2.27	12.16		8	5.77	2.23	12.06	
TP-4	12.61	19.87	5.56	5.5	0.06	14.31		5.93	5.55	0.38	13.94		5.72	5.5	0.22	14.15	
TP-5	12.32	19.98	7.03	5.77	1.26	12.95		7.29	5.64	1.65	12.69		7.25	5.75	1.5	12.73	
OBG-03R	12.71	20.35	6.63	6.2	0.43	13.72		6.5	5.99	0.51	13.85		6.5	6.07	0.43	13.85	
RW-1	21.48	NM	4.68	4.65	0.03	NM		4.8	4.75	0.05	NM		4.78	4.76	0.02	NM	
OBG-06	17.39	21.63	4.43	0	0	17.2		4.25	0	0	17.38		4.68	0	0	16.95	

DTB = Depth to bottom of well (feet)
DTP = Depth to product (feet)

Well ID	Date		1/23/2007					1/30/2007					2/6/2007				
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.29	0	0	13.95		5.39	0	0	13.85		5.33	0	0	13.91	
MW-15	12.79	18.62	3	0	0	15.62		3.01	0	0	15.61		2.95	0	0	15.67	
TP-1	12.25	20.09	6.19	6.03	0.16	13.9		6.45	6.18	0.27	13.64		6.32	6.09	0.23	13.77	
TP-2	12.96	19.92	5.88	0	0	14.04		6.06	6.55	0.01	13.86		5.99	0	0	13.93	
TP-3	12.59	20.06	8.13	5.56	2.57	11.93		8.51	5.69	2.82	11.55		8.53	5.55	2.98	11.53	
TP-4	12.61	19.87	5.72	5.54	0.18	14.15		6.05	5.55	0.5	13.82		5.75	5.49	0.26	14.12	
TP-5	12.32	19.98	7.37	5.66	1.71	12.61		7.73	5.78	1.95	12.25		7.61	5.66	1.95	12.37	
OBG-03R	12.71	20.35	6.45	6	0.45	13.9		6.7	6.18	0.52	13.65		6.58	6.03	0.55	13.77	
RW-1	21.48	NM	4.79	4.78	0.01	NM		5.05	4.95	0.1	NM		5.03	4.83	0.2	NM	
OBG-06	17.39	21.63	4.04	0	0	17.59		4.79	0	0	16.84		4.87	0	0	16.76	

DTB = Depth to bottom of well (feet)
DTP = Depth to product (feet)

JP-5 Line Area (Building AS4141)
Well Gauging Total Fluids Recovery

Well ID	Date		2/14/2007					2/20/2007									
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24	5.39	0	0	13.85		3.15	0	0	16.09						
MW-15	12.79	18.62	3.06	0	0	15.56		5.64	0	0	12.98						
TP-1	12.25	20.09	6.25	6.14	0.11	13.84		6.73	6.37	0.36	13.36						
TP-2	12.96	19.92	6.05	0	0	13.87		6.29	0	0	13.63						
TP-3	12.59	20.06	8.7	6.58	2.12	11.36		9.05	5.83	3.22	11.01						
TP-4	12.61	19.87	5.85	5.5	0.35	14.02		5.76	5.5	0.26	14.11						
TP-5	12.32	19.98	7.99	5.8	2.19	11.99		8.25	5.99	2.26	11.73						
OBG-03R	12.71	20.35	6.65	6.13	0.52	13.7		7.04	6.4	0.64	13.31						
RW-1	21.48	NM	5	4.85	0.15	NM		5.32	5.15	0.17	NM						
OBG-06	17.39	21.63	4.85	0	0	16.78		5.25	0	0	16.38						

DTB = Depth to bottom of well (feet)
DTP = Depth to product (feet)

Well ID	Date																
	DTB	TOC Elevation	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)	DTW	DTP	Product Thickness	Groundwater Elevation	Total Fluids Recovery (gal)
MW-14	24.82	19.24															
MW-15	12.79	18.62															
TP-1	12.25	20.09															
TP-2	12.96	19.92															
TP-3	12.59	20.06															
TP-4	12.61	19.87															
TP-5	12.32	19.98															
OBG-03R	12.71	20.35															
RW-1	21.48	NM															
OBG-06	17.39	21.63															

DTB = Depth to bottom of well (feet)
DTP = Depth to product (feet)

APPENDIX B

GROUNDWATER SAMPLE COLLECTION FIELD LOGS

USTAS 4141 - MW02

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: JP-5
			WELL NO. ~~UST JPS~~ MW 2
			SAMPLE NO. UST ~~4141~~ MW 2
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser	DATE: 10/20/2006
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser	TIME: 0845
PHONE: 910-451-2390		WEATHER:	
LEL:			Well Locked: [X] Yes
PID:		Sampling Device: Bailor	No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	25.16			25.43		(°C)
Specific Conductivity	0.210			0.211		(mS/cm ²)
Dissolved Oxygen (DO)	1.23			1.64		(mg/L)
PH	5.27			5.74		(STD)
ORP	121.8			38.6		mV
Turbidity (Turb)	247.6			181.0		(NTU)

Depth to Bottom	230.40	(In) (Minus)	Depth to Water	78.00	(In) =	152.40	HT (in)
Depth to Bottom	174.40	(Ft) (Minus)	Depth to Water	67.20	(Ft) =	127.20	HT (ft)
	16.20			6.50		10.60	
	19.2					12.70	

MEASUREMENTS (IN INCHES)											
d = 2											
r = 1											
d/2 = 1											
	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS	Purge Vol.	Vol. Purged	
TOP			127.20	1	3.14	399	.0043	1.7	6.2	5	
Middle			152.40		3.14	497	.0043	2.1			
Bottom					3.14		.0043				
Total					3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: Readings Standardized			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: [X]
OTHER:			



Shaw Environmental & Infrastructure, Inc.

WELL OR
GROUND WATER
DATA SHEET

USTAS4141-MWT0

PROJECT NUMBER: 119909

PROJECT NAME: BM-820 AS4141 JP-5

WELL NO. MWT0

SAMPLE NO. UST AS4141-MWT0

PROJECT LOCATION: Camp Lejeune	LOGGER: Mark Martin/James Mauser	DATE 10/19/2006
PROJECT CONTACT: Mark Martin	SAMPLER: Mark Martin/James Mauser	TIME 0900
PHONE: 910-451-2390	WEATHER:	
LEL:	Well Locked: [X] Yes	
PID:	Sampling Device: Bailor	☐ No

FIELD MEASUREMENTS

	1	2	3	4	
Temperature (Temp)	25.67			25.31	(°C)
Specific Conductivity	0.445			0.958	(mS/cm)
Dissolved Oxygen (DO)	10.39			8.60	(mg/L)
PH	6.14			6.26	(STD)
ORP	-59.4			-41.1	mV
Turbidity (Turb)	876.6			6.6	(NTU)

Depth to Bottom	(In) (Minus)	Depth to Water	(In) =	HT (in)
Depth to Bottom	(Ft) (Minus)	Depth to Water	(Ft) =	HT (ft)

d = 2	MEASUREMENTS (IN INCHES)									
r = 1	Multiply Together					Vol.				
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	II	Cubic in.	Conversion Factor	EST. GALLONS	Purge Vol.	Vol. Purged
TOP				1	3.14		.0043			
Middle					3.14		.0043			
Bottom					3.14		.0043			
Total					3.14		.0043			

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS:			
PURGE DISCHARGED:	DRUM: ☐	DRUM#	SITE TREATMENT: [X]
OTHER: ☐			

U5TA54141- MW14

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: BM 820 JP-5
			WELL NO. MW14
			SAMPLE NO. UST 154141- MW14
PROJECT LOCATION: Camp Lejeune		LOGGER: Mark Martin/James Mauser	DATE: 10/19/2006
PROJECT CONTACT: Mark Martin		SAMPLER: Mark Martin/James Mauser	TIME: 1115
PHONE: 910-451-2390		WEATHER:	
LEL:			Well Locked: [X] Yes
PID:		Sampling Device: Bailer	☐ No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	24.32			24.85		(°C)
Specific Conductivity	0.493			0.862		(mS/cm)
Dissolved Oxygen (DO)	6.93			2.85		(mg/L)
PH	6.30			6.77		(STD)
ORP	-86.9			-21.0		mV
Turbidity (Turb)	15.9			6.3		(NTU)

Depth to Bottom	297.60	(In) (Minus)	Depth to Water	68.40	(In)	=	229.20	HT (in)
Depth to Bottom	5.7	(Ft) (Minus)	Depth to Water	24.8	(Ft)	=	19.10	HT (ft)

d = 2	MEASUREMENTS (IN INCHES)									
r = 1	Multiply Together					Vol.				
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	II	Cubic in.	Conversion Factor	EST. GALLONS	Purge Vol.	Vol. Purged
TOP			229.20	1	3.14	720	.0043	3.1	9.3	10
Middle					3.14		.0043			
Bottom					3.14		.0043			
Total					3.14		.0043			

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: Readings stabilized			
PURGE DISCHARGED:	DRUM: ☐	DRUM#	SITE TREATMENT: [X]
OTHER: ☐			

USTAS 4/4/1-MW15

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: JP-5
			WELL NO. <i>SP5 MW15</i>
			SAMPLE NO. UST <i>4/4/1-MW15</i>
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser	DATE <i>10/20/2006</i>
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser	TIME <i>0945</i>
PHONE: 910-451-2390		WEATHER:	
LEL:			Well Locked: [X] Yes
PID:		Sampling Device: Bailer	No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	<i>29.84</i>			<i>29.81</i>		(°C)
Specific Conductivity	<i>0.594</i>			<i>0.583</i>		(mS/cm ²)
Dissolved Oxygen (DO)	<i>0.76</i>			<i>0.71</i>		(mg/L)
PH	<i>6.34</i>			<i>6.48</i>		(STD)
ORP	<i>-67.2</i>			<i>-68.3</i>		mV
Turbidity (Turb)	<i>110.3</i>			<i>117.6</i>		(NTU)

Depth to Bottom	<i>157.20</i>	(In) (Minus)	Depth to Water	<i>126.00</i>	(In) =	<i>31.20</i>	HT (in)
Depth to Bottom	<i>13.10</i>	(Ft) (Minus)	Depth to Water	<i>10.50</i>	(Ft) =	<i>2.6</i>	HT (ft)

d = <u>2</u> MEASUREMENTS (IN INCHES)											
r = 1 Multiply Together						Vol.					
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS			
	TOP		<i>31.20</i>	1	3.14	<i>98</i>	.0043	<i>0.4</i>	<i>1.3</i>	<i>2</i>	
	Middle				3.14		.0043				
	Bottom				3.14		.0043				
	Total				3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: <i>Readings Standardized</i>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: [X]
OTHER:			

016TAS 4141-MW17

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: JP-5
			WELL NO. <i>JP5-MW17</i>
			SAMPLE NO. UST 4141-MW17
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser	DATE <i>10/23/06</i>
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser	TIME <i>1155</i>
PHONE: 910-451-2390		WEATHER:	
LEL:		Well Locked: [X] Yes	
PID:		Sampling Device: Bailor	No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	<i>22.28</i>			<i>23.63</i>		(°C)
Specific Conductivity	<i>0.879</i>			<i>0.846</i>		(mS/cm°)
Dissolved Oxygen (DO)	<i>0.07</i>			<i>0.35</i>		(mg/L)
PH	<i>6.63</i>			<i>6.72</i>		(STD)
ORP	<i>-83.8</i>			<i>-92.9</i>		mV
Turbidity (Turb)	<i>313.6</i>			<i>1101.8</i>		(NTU)

Depth to Bottom	<i>171.60</i>	(In) (Minus)	Depth to Water	<i>69.60</i>	(In) =	<i>102.00</i>	HT (in)
Depth to Bottom	<i>14.30</i>	(Ft) (Minus)	Depth to Water	<i>5.80</i>	(Ft) =	<i>8.50</i>	HT (ft)

d = <i>2</i>	MEASUREMENTS (IN INCHES)										
r = <i>1</i>	Multiply Together						Vol.				
d/2 = <i>1</i>	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
	TOP		<i>102</i>	<i>1</i>	<i>3.14</i>	<i>320</i>	<i>.0043</i>	<i>1.4</i>		<i>4.1</i>	<i>5</i>
	Middle				<i>3.14</i>		<i>.0043</i>				
	Bottom				<i>3.14</i>		<i>.0043</i>				
	Total				<i>3.14</i>		<i>.0043</i>				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: <i>Readings Stabilized</i>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: [X]
OTHER:			

USTP5 4141-MW19

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: JP-5
			WELL NO. JP5 MW19
			SAMPLE NO. UST 4141-MW19
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser	DATE 10/23/2006
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser	TIME 0925
PHONE: 910-451-2390		WEATHER:	
LBL:			Well Locked: [X] Yes
PID:		Sampling Device: Bailer	No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	22.73			23.16		(°C)
Specific Conductivity	0.263			0.246		(mS/cm ⁶)
Dissolved Oxygen (DO)	0.28			0.53		(mg/L)
PH	5.60			5.51		(STD)
ORP	62.3			73.1		mV
Turbidity (Turb)	1097.8			1106.8		(NTU)

Depth to Bottom	176.40	(In) (Minus)	Depth to Water	73.20	(In) =	103.20	HT (in)
Depth to Bottom	14.70	(Ft) (Minus)	Depth to Water	6.10	(Ft) =	8.60	HT (ft)

d = 2 MEASUREMENTS (IN INCHES)											
r = 1 Multiply Together						Vol.					
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
	TOP		103.20	1	3.14	324	.0043	1.4		4.2	5
	Middle				3.14		.0043				
	Bottom				3.14		.0043				
	Total				3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: Readings standardized			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: [X]
OTHER:			

U5TA64141-MW20

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: JP-5
			WELL NO. <i>JP5-MW20</i>
			SAMPLE NO. UST <i>4141-MW20</i>
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser	DATE <i>10/23/06</i>
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser	TIME <i>1130</i>
PHONE: 910-451-2390		WEATHER:	
LEL:			Well Locked: ☒ Yes
PID:		Sampling Device: Bailer	No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	<i>21.95</i>			<i>22.97</i>		(°C)
Specific Conductivity	<i>0.145</i>			<i>0.062</i>		(mS/cm)
Dissolved Oxygen (DO)	<i>0.52</i>			<i>0.55</i>		(mg/L)
PH	<i>6.17</i>			<i>5.57</i>		(STD)
ORP	<i>25.7</i>			<i>103.5</i>		mV
Turbidity (Turb)	<i>748.6</i>			<i>966.5</i>		(NTU)

Depth to Bottom	<i>154.80</i>	(In) (Minus)	Depth to Water	<i>70.80</i>	(In) =	<i>84.00</i>	HT (in)
Depth to Bottom	<i>12.90</i>	(Ft) (Minus)	Depth to Water	<i>5.90</i>	(Ft) =	<i>7.00</i>	HT (ft)

d = <u>2</u>	MEASUREMENTS (IN INCHES)										
r = <u>1</u>	Multiply Together					Vol.					
d/2 = <u>1</u>	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
	TOP		<i>84.00</i>	1	3.14	<i>264</i>	.0043	<i>1.1</i>		<i>3.4</i>	<i>5</i>
	Middle				3.14		.0043				
	Bottom				3.14		.0043				
	Total				3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: <i>Readings Serialized</i>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: ☒
OTHER:			

USTAS 4/41 - MW21

 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909	
			PROJECT NAME: JP-5	
			WELL NO. <u>JP5-MW21</u>	
			SAMPLE NO. <u>UST 4141 - MW21</u>	
PROJECT LOCATION: Camp Lejeune		LOGGER: Kenny Jones/James Mauser		DATE <u>10/29/2006</u>
PROJECT CONTACT: Mark Martin		SAMPLER: Kenny Jones/James Mauser		TIME <u>0950</u>
PHONE: 910-451-2390		WEATHER:		
LEL:				Well Locked: ☒ Yes
PID:		Sampling Device: Bailer		No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	12.77			22.53		(°C)
Specific Conductivity	0.426			0.329		(mS/cm)
Dissolved Oxygen (DO)	0.31			0.24		(mg/L)
PH	6.10			6.46		(STD)
ORP	-26.4			-70.3		mV
Turbidity (Turb)	1080.4			354.1		(NTU)

Depth to Bottom	171.60	(In) (Minus)	Depth to Water	88.80	(In) =	82.80	HT (in)
Depth to Bottom	14.30	(Ft) (Minus)	Depth to Water	7.40	(Ft) =	6.90	HT (ft)

d = <u>2</u>	MEASUREMENTS (IN INCHES)										
r = <u>1</u>	Multiply Together					Vol.					
d/2 = <u>1</u>	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
	TOP		82.80	1	3.14	260	.0043	1.1		3.4	5
	Middle				3.14		.0043				
	Bottom				3.14		.0043				
	Total				3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: <u>Readings standardized</u>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: ☒
OTHER:			

U5TA34141-0063A

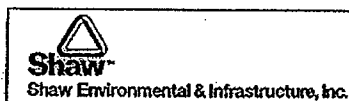
 Shaw Environmental & Infrastructure, Inc.	WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER: 119909
			PROJECT NAME: ~~DM-320~~ JP-5
			WELL NO. 08603A
			SAMPLE NO. UST A54141-08603A
PROJECT LOCATION: Camp Lejeune		LOGGER: Mark Martin/James Mauser	DATE: 10/19/2006
PROJECT CONTACT: Mark Martin		SAMPLER: Mark Martin/James Mauser	TIME: 1045
PHONE: 910-451-2390		WEATHER:	
LEL:			Well Locked: ☒ Yes
PID:		Sampling Device: Bailor	☐ No

FIELD MEASUREMENTS						
	1	2	3	4		
Temperature (Temp)	24.40			24.37		(°C)
Specific Conductivity	0.239			0.227		(mS/cm)
Dissolved Oxygen (DO)	4.06			3.80		(mg/L)
PH	6.41			6.42		(STD)
ORP	-64.3			-66.6		mV
Turbidity (Turb)	55.1			4.8		(NTU)

Depth to Bottom		(In) (Minus)	Depth to Water		(In) =	HT (in)
Depth to Bottom		(Ft) (Minus)	Depth to Water		(Ft) =	HT (ft)

d = 2	MEASUREMENTS (IN INCHES)									
r = 1	Multiply Together					Vol.				
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS	Purge Vol.	Vol. Purged
TOP				1	3.14		.0043			
Middle					3.14		.0043			
Bottom					3.14		.0043			
Total					3.14		.0043			

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS:			
PURGE DISCHARGED:	DRUM: ☐	DRUM#	SITE TREATMENT: ☒
OTHER: ☐			



WELL OR GROUND WATER DATA SHEET

PROJECT NUMBER: 119909
PROJECT NAME: BM-820 JP-5
WELL NO. 08606
SAMPLE NO. USTAS4141-08606

PROJECT LOCATION: Camp Lejeune
PROJECT CONTACT: Mark Martin
PHONE: 910-451-2390
LOGGER: Mark Martin/James Mauser
SAMPLER: Mark Martin/James Mauser
WEATHER:
DATE: 10/19/2006
TIME: 1200
LEL:
Well Locked: [X] Yes
PID:
Sampling Device: Bailer
[] No

FIELD MEASUREMENTS

	1	2	3	4	
Temperature (Temp)	23.76			23.92	(°C)
Specific Conductivity	0.272			0.268	(mS/cm)
Dissolved Oxygen (DO)	2.61			2.40	(mg/L)
PH	6.28			5.41	(STD)
ORP	23.9			123.2	mV
Turbidity (Turb)	101.8			15.7	(NTU)

Depth to Bottom	176.40	(In) (Minus)	Depth to Water	68.40	(In) =	108.00	HT (in)
Depth to Bottom	1470	(Ft) (Minus)	Depth to Water	5.7	(Ft) =	9.00	HT (ft)

d = 2	MEASUREMENTS (IN INCHES)										
r = 1	Multiply Together						Vol.				
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
TOP			108	1	3.14	339	.0043	1.5		4.4	5
Middle					3.14		.0043				
Bottom					3.14		.0043				
Total					3.14		.0043				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
COMMENTS: Readings Stabilized			
PURGE DISCHARGED:	DRUM: []	DRUM#	SITE TREATMENT: [X]
OTHER: []			

		WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER:	
				PROJECT NAME:	
				WELL NO. <u>AS 4141-MW16</u>	
				SAMPLE NO. <u>MW16</u>	
PROJECT LOCATION: <u>Camp Lejeune, NC</u>		LOGGER: <u>M. MARTIN</u>		DATE <u>2/12/07</u>	
PROJECT CONTACT:		SAMPLER: <u>M. MARTIN</u>		TIME	
PHONE: <u>910-451-2390</u>		WEATHER: <u>*</u>			
LEL:				Well Locked: ☒ Yes	
PID:		Sampling Device:			No

FIELD MEASUREMENTS						
	1	2	3	4		
PH	<u>7.14</u>			<u>6.08</u>		(STD)
Specific Conductivity	<u>0.568</u>			<u>0.568</u>		(m S/cm)
Turbidity (Turb)	<u>0.0</u>			<u>0.0</u>		(NTU)
Dissolved Oxygen (DO)	<u>8.29</u>			<u>0.19</u>		(mg/l)
Temperature (Temp)	<u>21.08</u>			<u>19.87</u>		(°C)
ORP	<u>23.9</u>			<u>-47.4</u>		

Depth to Bottom	<u>123.64</u>	(In) (Minus)	Depth to Water	<u>77.76</u>	(In) =	<u>95.88</u>	HT (in)
Depth to Bottom	<u>14.47</u>	(Ft) (Minus)	Depth to Water	<u>6.48</u>	(Ft) =	<u>7.99</u>	HT (ft)

d = <u>2</u>	MEASUREMENTS (IN INCHES)										
r = <u>1</u>	Multiply Together					Vol.					
d/2 = <u>1</u>	BOTTOM	TOP	Layer Thickness	r ²	II	Cubic in.	Conversion Factor	EST. GALLONS		Purge Vol.	Vol. Purged
	TOP		<u>95.88</u>	<u>1</u>	<u>3.14</u>	<u>301</u>	<u>.0043</u>	<u>1.3</u>		<u>3.9</u>	<u>5</u>
	Middle				<u>3.14</u>		<u>.0043</u>				
	Bottom				<u>3.14</u>		<u>.0043</u>				
	Total				<u>3.14</u>		<u>.0043</u>				

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
VOC 602	See Sample Number Above	3- 40 ml Vial	HCL
PAH 610	See Sample Number Above	1-1 Liter Amber	4° C
COMMENTS: <u>Readings stabilized before sampling</u>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: ☒ [X]
OTHER:			

		WELL OR GROUND WATER DATA SHEET		PROJECT NUMBER:	
				PROJECT NAME:	
				WELL NO. <u>UST454141-MW18</u>	
				SAMPLE NO. <u>MW-18</u>	
PROJECT LOCATION: Camp Lejeune, NC		LOGGER: <u>M. MARTIN</u>		DATE <u>2/12/07</u>	
PROJECT CONTACT:		SAMPLER: <u>M. MARTIN</u>		TIME	
PHONE: 910-451-2390		WEATHER:			
LEL:				Well Locked: [X] Yes	
PID:		Sampling Device:			No

FIELD MEASUREMENTS						
	1	2	3	4		
PH	7.29			6.07		(STD)
Specific Conductivity	6.719			0.719		(m S/cm)
Turbidity (Turb)	63			0.0		(NTU)
Dissolved Oxygen (DO)	8.17			0.36		(mg/l)
Temperature (Temp)	19.29			19.07		(°C)
ORP	38.2			-63.4		

Depth to Bottom	<u>180.94</u>	(In) (Minus)	Depth to Water	<u>81.96</u>	(In) =	<u>98.88</u>	HT (in)
Depth to Bottom	<u>15.07</u>	(Ft) (Minus)	Depth to Water	<u>6.83</u>	(Ft) =	<u>8.24</u>	HT (ft)

d = <u>2</u>	MEASUREMENTS (IN INCHES)									
r = 1	Multiply Together					Vol.				
d/2 = 1	BOTTOM	TOP	Layer Thickness	r ²	Π	Cubic in.	Conversion Factor	EST. GALLONS	Purge Vol.	Vol. Purged
TOP			<u>98.88</u>		3.14	<u>310</u>	.0043	<u>1.3</u>	<u>4.0</u>	<u>4</u>
Middle					3.14		.0043			
Bottom					3.14		.0043			
Total					3.14		.0043			

ANALYTE	CONTAINER NUMBER	SIZE	PRESERVATIVE
VOC 602	See Sample Number Above	3- 40 ml Vial	HCL
PAH 610	See Sample Number Above	1-1 Liter Amber	4° C
COMMENTS: <u>Readings stabilized</u>			
PURGE DISCHARGED:	DRUM:	DRUM#	SITE TREATMENT: [X]
OTHER:			

Project Number:	CTO 001	Well ID:	MW02
Project Name:	AS4141	Sample ID:	USTAS4141-MW02
Date:	3/13/2007	Well Condition:	Good
Weather:	70s/Clear		

Protective Casing Diameter (inch):	4"	Water Column (feet):	12.12
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.97
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1543
Initial Depth to Water from TOC (feet):	6.80	Total Volume Purged (gal):	3
Product Thickness (feet):	N/A	Sample Time/Date	1635
Total Depth from TOC (feet):	18.92	Sampler Name:	TE

[illegible]

Note: Stick up well (4"dia) above 2" well casing. Total depth/depth to water was taken from the top of the 4" outter casing. Turbidity would drop below 20 NTUs; purge water cloudy.

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW07
Project Name:	AS4141	Sample ID:	USTAS4141-MW07
Date:	3/14/2007	Well Condition:	Good
Weather:	60s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	12.44
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	2.02
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	0756
Initial Depth to Water from TOC (feet):	3.10	Total Volume Purged (gal):	3.5
Product Thickness (feet):	N/A	Sample Time/Date	0842
Total Depth from TOC (feet):	15.54	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm ^c)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
0822	200	2	5.82	0.300	17.39	0.78	44.1	-30.8	
0825			6.4	0.310	17.35	1.02	30.8	-31.4	
0828			5.92	0.312	17.41	1.76	20.1	-29.1	
0831			6.32	0.311	17.45	1.73	18.5	-29.4	
0833			5.96	0.311	17.38	1.62	14.1	-29.8	
0836			5.86	0.311	17.37	1.60	11.7	-29.9	
0839		3.5	5.80	0.310	17.38	1.62	12.0	-30.1	

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Purge water orange in color (iron deposits); After 1st readings, PH/DO were erratic, reading were up/down and not stable.

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW10
Project Name:	AS4141	Sample ID:	USTAS4141-MW10
Date:	3/14/2007	Well Condition:	Good
Weather:	60s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	10.21
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.66
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	0809
Initial Depth to Water from TOC (feet):	4.67	Total Volume Purged (gal):	3
Product Thickness (feet):	N/A	Sample Time/Date	0858
Total Depth from TOC (feet):	14.88	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm °C)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
0845	200	2	6.01	0.548	17.58	1.14	2.35	-51.5	
0848			6.01	0.550	17.51	0.97	2.47	-49.9	
0851			6.01	0.550	17.52	0.97	2.91	-49.5	
0854		3	6.01	0.550	17.54	0.96	3.22	-49.1	

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Oily sheen on purge water

Project Number:	CTO 001	Well ID:	MW14
Project Name:	AS4141	Sample ID:	USTAS4141-MW14
Date:	3/16/2007	Well Condition:	Good
Weather:	60s/Clear		

Protective Casing Diameter (inch):	N/A	Water Column (feet):	19.11
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	3.11
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	O839
Initial Depth to Water from TOC (feet):	5.70	Total Volume Purged (gal):	4.5
Product Thickness (feet):	N/A	Sample Time/Date	O950
Total Depth from TOC (feet):	24.81	Sampler Name:	TE

[illegible]

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW15
Project Name:	AS4141	Sample ID:	USTAS4141-MW15
Date:	3/13/2007	Well Condition:	Fair
Weather:	70s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	10.59
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.72
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1439
Initial Depth to Water from TOC (feet):	2.20	Total Volume Purged (gal):	3
Product Thickness (feet):	N/A	Sample Time/Date	1525
Total Depth from TOC (feet):	12.79	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm ^c)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
1508	200	2	6.26	0.508	22.75	0.47	39.5	-60.3	
1511			6.27	0.511	22.72	0.45	39.3	-60.0	
1514			6.26	0.513	22.71	0.42	33.7	-59.6	
1517			6.26	0.515	22.65	0.41	32.3	-59.6	
1520		3	6.26	0.515	22.67	0.40	25.7	-59.9	

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Purge water murky-needs to be redeveloped; could not get turbidity under 20 NTUs

Project Number:	CTO 001	Well ID:	MW16
Project Name:	AS4141	Sample ID:	USTAS4141-MW16
Date:	3/13/2007	Well Condition:	Good
Weather:	70s/Clear		

Protective Casing Diameter (inch):	N/A	Water Column (feet):	8.12
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.32
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1658
Initial Depth to Water from TOC (feet):	6.35	Total Volume Purged (gal):	2
Product Thickness (feet):	N/A	Sample Time/Date	1734
Total Depth from TOC (feet):	14.47	Sampler Name:	TE

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Project Number:	CTO 001	Well ID:	MW17
Project Name:	AS4141	Sample ID:	USTAS4141-MW17
Date:	3/16/2007	Well Condition:	Good
Weather:	60s/Clear		

Protective Casing Diameter (inch):	N/A	Water Column (feet):	8.63
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.40
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1001
Initial Depth to Water from TOC (feet):	5.82	Total Volume Purged (gal):	3
Product Thickness (feet):	N/A	Sample Time/Date	1046
Total Depth from TOC (feet):	14.45	Sampler Name:	TE

[illegible]

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW18
Project Name:	AS4141	Sample ID:	USTAS4141-MW18
Date:	3/14/2007	Well Condition:	Good
Weather:	80s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	8.37
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.36
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1431
Initial Depth to Water from TOC (feet):	6.70	Total Volume Purged (gal):	2.25
Product Thickness (feet):	N/A	Sample Time/Date	1515
Total Depth from TOC (feet):	15.07	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm ^{°C})	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
1501	200	1.5	6.03	0.674	18.65	0.47	6.96	-57.9	
1504			6.03	0.675	18.75	0.47	3.16	-58.5	
1507			6.03	0.676	18.77	0.46	2.79	-58.1	
1510		2.25	6.03	0.678	18.74	0.45	2.49	-58.5	

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW19
Project Name:	AS4141	Sample ID:	USTAS4141-MW19
Date:	3/16/2007	Well Condition:	Good
Weather:	60s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	8.75
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	1.42
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	N/A	Start Purge Date/Time:	1120
Initial Depth to Water from TOC (feet):	5.82	Total Volume Purged (gal):	2.25
Product Thickness (feet):	N/A	Sample Time/Date	1155
Total Depth from TOC (feet):	14.57	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm ^C)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments
1140	200	1.5	5.37	0.290	17.64	0.28	16.9	12.9	
1143			5.36	0.287	17.67	0.27	13.7	11.2	
1146			5.36	0.285	17.70	0.27	8.96	8.8	
1149		2.25	5.36	0.284	17.71	0.25	7.31	7.3	

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Project Number:	CTO 001	Well ID:	MW20
Project Name:	AS4141	Sample ID:	USTAS4141-MW20
Date:	3/13/2007	Well Condition:	
Weather:	70s/Clear		

Protective Casing Diameter (inch):	N/A	Water Column (feet):	
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	5.71	Start Purge Date/Time:	
Initial Depth to Water from TOC (feet):	7.45	Total Volume Purged (gal):	
Product Thickness (feet):	1.74	Sample Time/Date	
Total Depth from TOC (feet):	12.93	Sampler Name:	TE

[illegible]

Note: By direction of PM, wells containing free product would not be sampled.

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	MW21
Project Name:	AS4141	Sample ID:	USTAS4141-MW21
Date:	3/13/2007	Well Condition:	
Weather:	70s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	
Depth to Product from TOC (feet):	5.70	Purge/Sample Method:	Low Flow Method
Initial Depth to Water from TOC (feet):	7.74	Start Purge Date/Time:	
Product Thickness (feet):	2.04	Total Volume Purged (gal):	
Total Depth from TOC (feet):	12.23	Sample Time/Date	
		Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm ^{°C})	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Note: By direction of PM, wells containing free product would not be sampled.

Project Number:	CTO 001	Well ID:	RW01
Project Name:	AS4141	Sample ID:	USTAS4141-RW01
Date:	3/13/2007	Well Condition:	
Weather:	70s/Clear		

Protective Casing Diameter (inch):	N/A	Water Column (feet):	
Inner Casing Diameter (inch):	6" (1.469)	Casing Volume (gal):	
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	5.13	Start Purge Date/Time:	
Initial Depth to Water from TOC (feet):	5.38	Total Volume Purged (gal):	
Product Thickness (feet):	0.25	Sample Time/Date	
Total Depth from TOC (feet):	23.93	Sampler Name:	TE

[illegible]

Note: By direction of PM, wells containing free product would not be sampled.

PURGING AND BAILING GROUNDWATER SAMPLING FORM

MCB Camp LeJeune and New River MCAS

Project Number:	CTO 001	Well ID:	OBG03R
Project Name:	AS4141	Sample ID:	USTAS4141-OBG03R
Date:	3/13/2007	Well Condition:	
Weather:	70s/Clear		

ALL DEPTHS ARE TO BE COLLECTED FROM THE TOP OF THE CASING.

Protective Casing Diameter (inch):	N/A	Water Column (feet):	
Inner Casing Diameter (inch):	2" (0.163)	Casing Volume (gal):	
		Purge/Sample Method:	Low Flow Method
Depth to Product from TOC (feet):	6.46	Start Purge Date/Time:	
Initial Depth to Water from TOC (feet):	7.10	Total Volume Purged (gal):	
Product Thickness (feet):	0.64	Sample Time/Date	
Total Depth from TOC (feet):	12.70	Sampler Name:	TE

Time	Rate (ml/min) 200-500ml	Cumulative Gallons Purged	pH	Specific Conductivity (mS/cm °C)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Comments

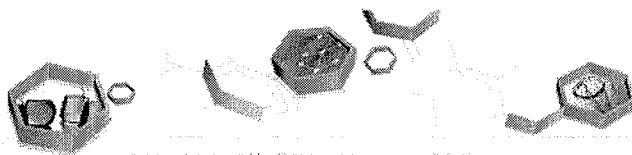
Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings, or change in pump interval setting):

Note: By direction of PM, wells containing free product would not be sampled.

Project Number:	CTO 001
Project Name:	AS4141
Date:	3/16/2007
Weather:	60s/Clear

APPENDIX C

GROUNDWATER SAMPLE LABORATORY ANALYTICAL REPORTS



IT'S ALL IN THE CHEMISTRY

11/14/06

Technical Report for

Shaw E & I, Inc.

Camp Lejeune-JP-5 Wells

119909

Accutest Job Number: F44610

Sampling Date: 10/19/06

Report to:

Shaw E & I, Inc.

natasha.sullivan@shawgrp.com

ATTN: Natasha Sullivan

Total number of pages in report: 36



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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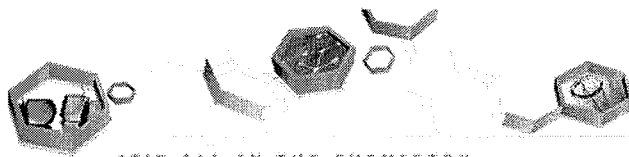
Sample Summary

Shaw E & I, Inc.

Job No: F44610

Camp Lejeune-JP-5 Wells
Project No: 119909

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F44610-1	10/19/06	09:00 KJ	10/20/06	AQ Ground Water	USTASS4141-MW10
F44610-2	10/19/06	10:45 KJ	10/20/06	AQ Ground Water	USTASS4141-OBG-03R
F44610-3	10/19/06	11:15 KJ	10/20/06	AQ Ground Water	USTASS4141-MW14
F44610-4	10/19/06	12:00 KJ	10/20/06	AQ Ground Water	USTASS4141-OBG-06



IT'S ALL IN THE CHEMISTRY

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-MW10
 Lab Sample ID: F44610-1
 Matrix: AQ - Ground Water
 Method: EPA 625 SW846 3510C
 Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/19/06
 Date Received: 10/20/06
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05544.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.99	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.99	ug/l	
120-12-7	Anthracene	ND	5.0	0.99	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.99	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.99	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.99	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.99	ug/l	
218-01-9	Chrysene	ND	5.0	0.99	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.99	ug/l	
86-73-7	Fluorene	ND	5.0	0.99	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	0.99	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.99	ug/l	
129-00-0	Pyrene	ND	5.0	0.99	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	81%		49-119%
321-60-8	2-Fluorobiphenyl	80%		45-118%
1718-51-0	Terphenyl-d14	64%		46-135%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW10	Date Sampled:	10/19/06
Lab Sample ID:	F44610-1	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ019642.D	1	10/25/06	AF	n/a	n/a	GQQ757
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		71-130%
98-08-8	aaa-Trifluorotoluene	102%		71-124%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

2.1
2

Client Sample ID:	USTASS4141-MW10	Date Sampled:	10/19/06
Lab Sample ID:	F44610-1	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	Camp Lejeune-JP-5 Wells		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	3.4 U	10	3.4	ug/l	1	10/23/06	10/21/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5298

(2) Prep QC Batch: MP10552

(a) Elevated RL/MDL due to CRIA exceeding acceptance criteria.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-OBG-03R	Date Sampled:	10/19/06
Lab Sample ID:	F44610-2	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05545.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2	R05588.D	5	10/27/06	NJ	10/25/06	OP18281	SR263

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	1.1	5.0	1.0	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	150 ^a	25	5.0	ug/l	
91-57-6	2-Methylnaphthalene	155 ^a	25	5.0	ug/l	
91-20-3	Naphthalene	239 ^a	25	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	86%	70%	49-119%
321-60-8	2-Fluorobiphenyl	78%	76%	45-118%
1718-51-0	Terphenyl-d14	77%	71%	46-135%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-OBG-03R	Date Sampled:	10/19/06
Lab Sample ID:	F44610-2	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ019595.D	1	10/24/06	AF	n/a	n/a	GQQ756
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.70	1.0	0.50	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene ^b	ND	44	44	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	14.3	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	63.0	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	110%		71-130%
98-08-8	aaa-Trifluorotoluene	83%		71-124%

(a) All hits confirmed by GC/MS.

(b) Elevated reporting limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-OBG-03R
Lab Sample ID: F44610-2
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/19/06
Date Received: 10/20/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	3.4 U	10	3.4	ug/l	1	10/23/06	10/21/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5298

(2) Prep QC Batch: MP10552

(a) Elevated RL/MDL due to CRIA exceeding acceptance criteria.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW14	Date Sampled:	10/19/06
Lab Sample ID:	F44610-3	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05546.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	1.9	5.0	1.0	ug/l	J
91-57-6	2-Methylnaphthalene	1.8	5.0	1.0	ug/l	J
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		49-119%
321-60-8	2-Fluorobiphenyl	72%		45-118%
1718-51-0	Terphenyl-d14	76%		46-135%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW14	Date Sampled:	10/19/06
Lab Sample ID:	F44610-3	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ019643.D	1	10/25/06	AF	n/a	n/a	GQQ757
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	95%		71-130%
98-08-8	aaa-Trifluorotoluene	102%		71-124%

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-MW14
Lab Sample ID: F44610-3
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/19/06
Date Received: 10/20/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	3.4 U	10	3.4	ug/l	1	10/23/06	10/21/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5298

(2) Prep QC Batch: MP10552

(a) Elevated RL/MDL due to CRIA exceeding acceptance criteria.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-OBG-06	Date Sampled:	10/19/06
Lab Sample ID:	F44610-4	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05547.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68%		49-119%
321-60-8	2-Fluorobiphenyl	70%		45-118%
1718-51-0	Terphenyl-d14	68%		46-135%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-OBG-06	Date Sampled:	10/19/06
Lab Sample ID:	F44610-4	Date Received:	10/20/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ019644.D	1	10/25/06	AF	n/a	n/a	GQQ757
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	94%		71-130%
98-08-8	aaa-Trifluorotoluene	103%		71-124%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-OBG-06
Lab Sample ID: F44610-4
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/19/06
Date Received: 10/20/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	5.7 B	10	3.4	ug/l	1	10/23/06	10/21/06 RS	SW846 6010B ¹	SM 3030C ²

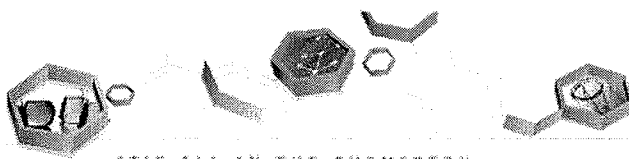
(1) Instrument QC Batch: MA5298

(2) Prep QC Batch: MP10552

(a) Elevated RL/MDL due to CRIA exceeding acceptance criteria.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

COC Number:
119909-820-101908-1



CHAIN-OF-CUSTODY RECORD

F44610

Shaw E & I - Piney Green Rd. Lot 203 Bld 626 - 910-451-2390										Receiving LAB: Accutest										
Project Name					Project Location					Analysis Desired										
CAMP LEJEUNE - JP 5					CAMP LEJEUNE, NC															
Project Number		Contact			P.O. Number			Reviewed by												
119909		Mark Martin			200935															
Client Rep					Project Manager															
US NAVY - LANTDIV					Ron Kenyon															
Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description	Number of Containers	Voas +Xylenes 602	PAHs 625	Total Lead by 3030C										
①	USTASS4141-MW10	10/19/06	9:00		X	USTASS4141-MW10	6	X	X	X										
②	USTASS4141-OBG-03R	10/19/06	10:45		X	USTASS4141-OBG-03R	6	X	X	X										
③	USTASS4141-MW14	10/19/06	11:15		X	USTASS4141-MW14	6	X	X	X										
④	USTASS4141-OBG-06	10/19/06	12:00		X	USTASS4141-OBG-06	6	X	X	X										
5																				
6																				
7																				
8																				
9																				
10																				

Transfer Number	Item Number	Transfers Relinquished By	Transfers Accepted By	Date	Time	Remarks
1	1 - 4	<i>[Signature]</i>	FedEx 8545 9102 0583		16:00	14 Day TAT NEESA LEVEL C
2		Ex	<i>George Canal</i>	10-20-06	09:00	
3						

2.4, 3.2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F44610 CLIENT: SHAW PROJECT: CAMP LEJEUNE - JPS
 DATE/TIME RECEIVED: 10-20-06 09:20 # OF COOLERS RECEIVED: 2 COOLER TEMPS: 2-4 3-2
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: 8545 9102 0594

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☒ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 0
 NUMBER OF 5035 FIELD KITS ? 0
 NUMBER OR LAB FILTERED METALS ? 0

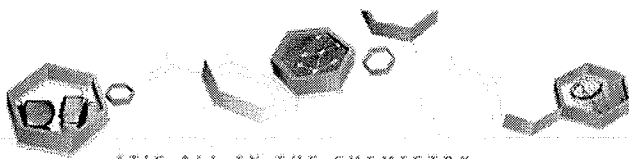
SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
 - ☐ CORRECT NUMBER OF CONTAINERS USED
 - ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
 - ☐ INSUFFICIENT VOLUME FOR ANALYSIS
 - ☒ TIMES ON COC DOES NOT MATCH LABEL(S)
 - ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
 - ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
 - ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
 - ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
 - ☐ UNCLEAR FILTERING INSTRUCTIONS
 - ☐ UNCLEAR COMPOSITING INSTRUCTIONS
 - ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
 - ☐ % SOLIDS JAR NOT RECEIVED
 - ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
 - ☐ RESIDUAL CHLORINE PRESENT
- (APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS: FOR SAMPLE #1 TIME ON COC is 9:00 ON LABEL is 9:15
11 11 #2 11 11 10:45 11 11 11:00
11 11 #3 11 11 11:15 11 11 11:30

TECHNICIAN SIGNATURE/DATE JE 10-20-06 TECHNICIAN SIGNATURE/DATE _____ ASD 10/03/06

F44610: Chain of Custody
 Page 2 of 2



IT'S ALL IN THE CHEMISTRY

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05543.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44610-1, F44610-2, F44610-3, F44610-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	69% 49-119%
321-60-8	2-Fluorobiphenyl	67% 45-118%
1718-51-0	Terphenyl-d14	81% 46-135%

Method Blank Summary

Page 1 of 1

Job Number: F44610
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05587.D	1	10/27/06	NJ	10/25/06	OP18281	SR263

The QC reported here applies to the following samples:

Method: EPA 625

F44610-1, F44610-2, F44610-3, F44610-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	62% 49-119%
321-60-8	2-Fluorobiphenyl	65% 45-118%
1718-51-0	Terphenyl-d14	84% 46-135%

Blank Spike Summary

Page 1 of 1

Job Number: F44610
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-BS	R05542.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44610-1, F44610-2, F44610-3, F44610-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	39.0	78	67-101
208-96-8	Acenaphthylene	50	37.9	76	65-100
120-12-7	Anthracene	50	41.6	83	71-103
56-55-3	Benzo(a)anthracene	50	40.9	82	71-105
50-32-8	Benzo(a)pyrene	50	41.5	83	67-106
205-99-2	Benzo(b)fluoranthene	50	41.0	82	68-108
191-24-2	Benzo(g,h,i)perylene	50	43.1	86	65-110
207-08-9	Benzo(k)fluoranthene	50	42.3	85	69-110
218-01-9	Chrysene	50	42.3	85	71-105
53-70-3	Dibenzo(a,h)anthracene	50	42.5	85	61-112
206-44-0	Fluoranthene	50	43.1	86	71-108
86-73-7	Fluorene	50	40.1	80	68-102
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.3	85	66-112
90-12-0	1-Methylnaphthalene	50	35.9	72	58-101
91-57-6	2-Methylnaphthalene	50	38.7	77	62-105
91-20-3	Naphthalene	50	35.1	70	56-99
85-01-8	Phenanthrene	50	41.9	84	71-104
129-00-0	Pyrene	50	41.1	82	67-108

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	74%	49-119%
321-60-8	2-Fluorobiphenyl	74%	45-118%
1718-51-0	Terphenyl-d14	82%	46-135%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44610
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MS	R05549.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
OP18281-MSD	R05550.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
F44611-1	R05548.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

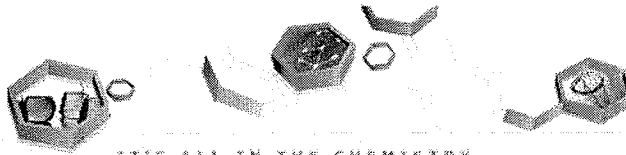
The QC reported here applies to the following samples:

Method: EPA 625

F44610-1, F44610-2, F44610-3, F44610-4

CAS No.	Compound	F44611-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		96.2	83.4	87	74.7	78	11	58-109/18
208-96-8	Acenaphthylene	ND		96.2	81.5	85	73.4	76	10	59-103/18
120-12-7	Anthracene	ND		96.2	89.2	93	82.1	85	8	65-108/16
56-55-3	Benzo(a)anthracene	ND		96.2	89.3	93	81.0	84	10	68-106/17
50-32-8	Benzo(a)pyrene	ND		96.2	87.9	91	81.4	85	8	61-108/18
205-99-2	Benzo(b)fluoranthene	ND		96.2	88.4	92	81.8	85	8	65-109/18
191-24-2	Benzo(g,h,i)perylene	ND		96.2	92.9	97	84.2	88	10	60-114/19
207-08-9	Benzo(k)fluoranthene	ND		96.2	89.7	93	81.4	85	10	66-111/17
218-01-9	Chrysene	ND		96.2	91.2	95	83.4	87	9	69-106/17
53-70-3	Dibenzo(a,h)anthracene	ND		96.2	92.7	96	84.0	87	10	59-112/18
206-44-0	Fluoranthene	ND		96.2	92.0	96	85.7	89	7	68-110/18
86-73-7	Fluorene	ND		96.2	86.8	90	79.2	82	9	62-106/17
193-39-5	Indeno(1,2,3-cd)pyrene	ND		96.2	93.5	97	83.6	87	11	61-115/19
90-12-0	1-Methylnaphthalene	ND		96.2	75.1	78	67.6	70	11	52-106/22
91-57-6	2-Methylnaphthalene	ND		96.2	80.6	84	72.1	75	11	53-112/22
91-20-3	Naphthalene	ND		96.2	73.8	77	66.7	69	10	49-104/24
85-01-8	Phenanthrene	ND		96.2	88.8	92	81.5	85	9	67-108/17
129-00-0	Pyrene	ND		96.2	88.3	92	79.2	82	11	65-108/18

CAS No.	Surrogate Recoveries	MS	MSD	F44611-1	Limits
4165-60-0	Nitrobenzene-d5	76%	69%	71%	49-119%
321-60-8	2-Fluorobiphenyl	80%	71%	71%	45-118%
1718-51-0	Terphenyl-d14	89%	80%	82%	46-135%



GC Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44610
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ756-MB	QQ019591.D1		10/24/06	AF	n/a	n/a	GQQ756

The QC reported here applies to the following samples:

Method: EPA 601/602

F44610-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	98% 71-130%
98-08-8	aaa-Trifluorotoluene	83% 71-124%

Method Blank Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ757-MB	QQ019630.D1		10/25/06	AF	n/a	n/a	GQQ757

The QC reported here applies to the following samples:

Method: SW846 8021B

F44610-1, F44610-3, F44610-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	98% 71-130%
98-08-8	aaa-Trifluorotoluene	106% 71-124%

Blank Spike Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ756-BS	QQ019590.D1		10/24/06	AF	n/a	n/a	GQQ756

The QC reported here applies to the following samples:

Method: EPA 601/602

F44610-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.7	99	81-121
108-90-7	Chlorobenzene	20	19.6	98	76-120
95-50-1	1,2-Dichlorobenzene	20	18.7	94	63-127
541-73-1	1,3-Dichlorobenzene	20	19.6	98	70-124
106-46-7	1,4-Dichlorobenzene	20	20.1	101	68-121
100-41-4	Ethylbenzene	20	20.1	101	79-124
1634-04-4	Methyl Tert Butyl Ether	20	17.6	88	73-118
108-88-3	Toluene	20	19.8	99	79-122
1330-20-7	Xylenes (total)	60	60.1	100	79-121

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	107%	71-130%
98-08-8	aaa-Trifluorotoluene	83%	71-124%

Blank Spike Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ757-BS	QQ019629.D1		10/25/06	AF	n/a	n/a	GQQ757

The QC reported here applies to the following samples:

Method: EPA 601/602

F44610-1, F44610-3, F44610-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.2	96	81-121
108-90-7	Chlorobenzene	20	18.8	94	76-120
95-50-1	1,2-Dichlorobenzene	20	18.4	92	63-127
541-73-1	1,3-Dichlorobenzene	20	18.2	91	70-124
106-46-7	1,4-Dichlorobenzene	20	19.6	98	68-121
100-41-4	Ethylbenzene	20	19.3	97	79-124
1634-04-4	Methyl Tert Butyl Ether	20	16.9	85	73-118
108-88-3	Toluene	20	19.1	96	79-122
1330-20-7	Xylenes (total)	60	57.4	96	79-121

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	71-130%
98-08-8	aaa-Trifluorotoluene	103%	71-124%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F44539-1MS	QQ019614.D 1		10/25/06	AF	n/a	n/a	GQQ756
F44539-1MSD	QQ019615.D 1		10/25/06	AF	n/a	n/a	GQQ756
F44539-1 ^a	QQ019601.D 1		10/25/06	AF	n/a	n/a	GQQ756

The QC reported here applies to the following samples:

Method: EPA 601/602

F44610-2

CAS No.	Compound	F44539-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.1		20	19.9	94	19.8	94	1	74-126/11
108-90-7	Chlorobenzene	ND		20	19.5	98	19.3	97	1	72-124/8
95-50-1	1,2-Dichlorobenzene	76.7		20	78.2	8* b	78.0	6* b	0	55-136/13
541-73-1	1,3-Dichlorobenzene	18.5		20	31.7	66	32.8	72	3	65-132/16
106-46-7	1,4-Dichlorobenzene	ND		20	40.0	200*	42.0	210*	5	61-133/11
100-41-4	Ethylbenzene	57.2		20	78.4	106	77.9	104	1	71-131/8
1634-04-4	Methyl Tert Butyl Ether	ND		20	17.7	89	17.8	89	1	63-130/11
108-88-3	Toluene	165	E	20	207	210* b	205	200* b	1	69-132/7
1330-20-7	Xylenes (total)	1800	E	60	1850	83	1830	50* b	1	71-127/8

CAS No.	Surrogate Recoveries	MS	MSD	F44539-1	Limits
460-00-4	4-Bromofluorobenzene	136%*	134%*	130%	71-130%
98-08-8	aaa-Trifluorotoluene	88%	83%	84%	71-124%

(a) All hits confirmed by GC/MS.

(b) Outside control limits due to high level in sample relative to spike amount.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44610

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F44610-4MS	QQ019655.D 1		10/26/06	AF	n/a	n/a	GQQ757
F44610-4MSD	QQ019656.D 1		10/26/06	AF	n/a	n/a	GQQ757
F44610-4	QQ019644.D 1		10/25/06	AF	n/a	n/a	GQQ757

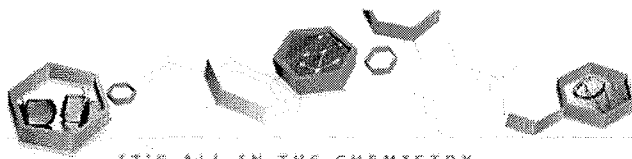
The QC reported here applies to the following samples:

Method: EPA 601/602

F44610-1, F44610-3, F44610-4

CAS No.	Compound	F44610-4 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	19.7	99	19.4	97	2	74-126/11
108-90-7	Chlorobenzene	ND	20	19.1	96	18.9	95	1	72-124/8
95-50-1	1,2-Dichlorobenzene	ND	20	18.2	91	18.0	90	1	55-136/13
541-73-1	1,3-Dichlorobenzene	ND	20	18.3	92	18.1	91	1	65-132/16
106-46-7	1,4-Dichlorobenzene	ND	20	19.5	98	19.5	98	0	61-133/11
100-41-4	Ethylbenzene	ND	20	19.6	98	19.4	97	1	71-131/8
1634-04-4	Methyl Tert Butyl Ether	ND	20	17.8	89	17.9	90	1	63-130/11
108-88-3	Toluene	ND	20	19.6	98	19.4	97	1	69-132/7
1330-20-7	Xylenes (total)	ND	60	58.0	97	57.5	96	1	71-127/8

CAS No.	Surrogate Recoveries	MS	MSD	F44610-4	Limits
460-00-4	4-Bromofluorobenzene	100%	100%	94%	71-130%
98-08-8	aaa-Trifluorotoluene	103%	103%	103%	71-124%



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Metals Analysis



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F44610
Account: ITVAVAB - Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10552
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/23/06

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	.4		
Beryllium	4.0	.4		
Cadmium	5.0	.2		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	.6		
Copper	25	.9		
Iron	300	12		
Lead	10	1.7	1.9	<10
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	.8		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP10552: F44610-1, F44610-2, F44610-3, F44610-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F44610
Account: ITVAVAB - Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10552
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date:

10/23/06

10/23/06

Metal	F44610-1 Original	DUP	RPD	QC Limits	F44610-1 Original MS	Spikelot MPFLICP1 % Rec	QC Limits
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead	0.0	0.0 (a)	NC	0-20	0.0	522	500
Magnesium							
Manganese							
Molybdenum							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Tin							
Vanadium							
Zinc							

Associated samples MP10552: F44610-1, F44610-2, F44610-3, F44610-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Elevated RL/MDL due to CRIA exceeding acceptance criteria.

6.12
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F44610
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10552
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/23/06

Metal	BSP Result	Spikelot MPFLICP1 % Rec	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead	534	500	106.8 80-120
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Tin			
Vanadium			
Zinc			

Associated samples MP10552: F44610-1, F44610-2, F44610-3, F44610-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3
6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F44610
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10552
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/23/06

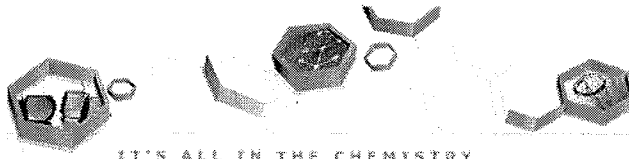
Metal	F44610-1 Original	SDL 1:5	RPD	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.00	8.78		0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP10552: F44610-1, F44610-2, F44610-3, F44610-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.4

6



11/14/06

Technical Report for

Shaw E & I, Inc.

Camp Lejeune-JP-5 Wells

119909

Accutest Job Number: F44642

Sampling Date: 10/20/06



Report to:

Shaw E & I, Inc.

natasha.sullivan@shawgrp.com

ATTN: Natasha Sullivan

Total number of pages in report: 27



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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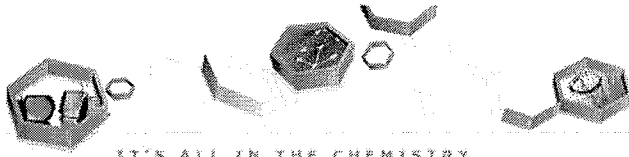
Sample Summary

Shaw E & I, Inc.

Job No: F44642

Camp Lejeune-JP-5 Wells
Project No: 119909

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F44642-1	10/20/06	08:45 KJ	10/21/06	AQ Ground Water	USTASS4141-MW02
F44642-2	10/20/06	09:45 KJ	10/21/06	AQ Ground Water	USTASS4141-MW15



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Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW02	Date Sampled:	10/20/06
Lab Sample ID:	F44642-1	Date Received:	10/21/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05556.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		49-119%
321-60-8	2-Fluorobiphenyl	69%		45-118%
1718-51-0	Terphenyl-d14	76%		46-135%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW02	Date Sampled:	10/20/06
Lab Sample ID:	F44642-1	Date Received:	10/21/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ019713.D	1	10/27/06	AF	n/a	n/a	GQQ759
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	95%		71-130%
98-08-8	aaa-Trifluorotoluene	102%		71-124%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-MW02
Lab Sample ID: F44642-1
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/20/06
Date Received: 10/21/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	2.4 B	5.0	1.7	ug/l	1	10/23/06	10/23/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5304

(2) Prep QC Batch: MP10559

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW15	Date Sampled:	10/20/06
Lab Sample ID:	F44642-2	Date Received:	10/21/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05557.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.97	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.97	ug/l	
120-12-7	Anthracene	ND	4.9	0.97	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.97	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.97	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.97	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.97	ug/l	
218-01-9	Chrysene	ND	4.9	0.97	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.97	ug/l	
86-73-7	Fluorene	ND	4.9	0.97	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	1.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.97	ug/l	
91-57-6	2-Methylnaphthalene	2.2	4.9	0.97	ug/l	J
91-20-3	Naphthalene	1.1	4.9	0.97	ug/l	J
85-01-8	Phenanthrene	ND	4.9	0.97	ug/l	
129-00-0	Pyrene	ND	4.9	0.97	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		49-119%
321-60-8	2-Fluorobiphenyl	75%		45-118%
1718-51-0	Terphenyl-d14	69%		46-135%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTASS4141-MW15	Date Sampled:	10/20/06
Lab Sample ID:	F44642-2	Date Received:	10/21/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ019714.D	1	10/27/06	AF	n/a	n/a	GQQ759
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	2.6	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.55	1.0	0.50	ug/l	J
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		71-130%
98-08-8	aaa-Trifluorotoluene	108%		71-124%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTASS4141-MW15
Lab Sample ID: F44642-2
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/20/06
Date Received: 10/21/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.7 U	5.0	1.7	ug/l	1	10/23/06	10/23/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5304

(2) Prep QC Batch: MP10559

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL



IT'S ALL IN THE CHEMISTRY

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

COC Number:
119909-JP5-102006-1

F44642
Shaw
Shaw Environmental & Infrastructure, Inc

CHAIN-OF-CUSTODY RECORD

Shaw E & I - Piney Green Rd. Lot 203 Bld 626 - 910-451-2390										Receiving LAB: Accutest									
Project Name CAMP LEJEUNE - JP 5					Project Location CAMP LEJEUNE, NC					Analysis Desired									
Project Number 119909		Contact Mark Martin			P.O. Number 200935			Reviewed by											
Client Rep US NAVY - LANTDIV					Project Manager Ron Canyon														
Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description		Number of Containers	Voas + Xylenes 602	PAHs 625	Total Lead by 3030C								
1	USTASS4141-MW02	10/20/06	8:45		X	USTASS4141-MW02		6	X	X	X								
2	USTASS4141-MW15	10/20/06	9:45		X	USTASS4141-MW15		6	X	X	X								
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Transfer Number	Item Number	Transfers Relinquished By	Transfers Accepted By	Date	Time	Remarks
1	1 -- 2	<i>[Signature]</i>	FedEx 8580 9991 6051	10/20/06	16:00	14 Day TAT NEESA LEVEL C
2		<i>[Signature]</i>	<i>[Signature]</i>	10/24/06	11:00	

2.4

F44642: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F44642 CLIENT: Shaw PROJECT: Cumpleseune
 DATE/TIME RECEIVED: 10/24/06 9:00 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 2.4
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: 8580 99916051

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☒ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 2
 NUMBER OF 5035 FIELD KITS ? 2
 NUMBER OF LAB FILTERED METALS ? 2

SUMMARY OF COMMENTS: Sample 7 one Amber received broken

SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
 - ☐ CORRECT NUMBER OF CONTAINERS USED
 - ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
 - ☐ INSUFFICIENT VOLUME FOR ANALYSIS
 - ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
 - ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
 - ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
 - ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
 - ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
 - ☐ UNCLEAR FILTERING INSTRUCTIONS
 - ☐ UNCLEAR COMPOSITING INSTRUCTIONS
 - ☒ SAMPLE CONTAINER(S) RECEIVED BROKEN
 - ☐ % SOLIDS JAR NOT RECEIVED
 - ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOURS
 - ☐ RESIDUAL CHLORINE PRESENT
- (APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE [Signature] 10/24/06 TECHNICIAN SIGNATURE/DATE _____ ASD 10/03/06



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44642

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05543.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44642-1, F44642-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	69% 49-119%
321-60-8	2-Fluorobiphenyl	67% 45-118%
1718-51-0	Terphenyl-d14	81% 46-135%

Method Blank Summary

Page 1 of 1

Job Number: F44642
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05587.D	1	10/27/06	NJ	10/25/06	OP18281	SR263

The QC reported here applies to the following samples:

Method: EPA 625

F44642-1, F44642-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	62% 49-119%
321-60-8	2-Fluorobiphenyl	65% 45-118%
1718-51-0	Terphenyl-d14	84% 46-135%

Blank Spike Summary

Page 1 of 1

Job Number: F44642
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-BS	R05542.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44642-1, F44642-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	39.0	78	67-101
208-96-8	Acenaphthylene	50	37.9	76	65-100
120-12-7	Anthracene	50	41.6	83	71-103
56-55-3	Benzo(a)anthracene	50	40.9	82	71-105
50-32-8	Benzo(a)pyrene	50	41.5	83	67-106
205-99-2	Benzo(b)fluoranthene	50	41.0	82	68-108
191-24-2	Benzo(g,h,i)perylene	50	43.1	86	65-110
207-08-9	Benzo(k)fluoranthene	50	42.3	85	69-110
218-01-9	Chrysene	50	42.3	85	71-105
53-70-3	Dibenzo(a,h)anthracene	50	42.5	85	61-112
206-44-0	Fluoranthene	50	43.1	86	71-108
86-73-7	Fluorene	50	40.1	80	68-102
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.3	85	66-112
90-12-0	1-Methylnaphthalene	50	35.9	72	58-101
91-57-6	2-Methylnaphthalene	50	38.7	77	62-105
91-20-3	Naphthalene	50	35.1	70	56-99
85-01-8	Phenanthrene	50	41.9	84	71-104
129-00-0	Pyrene	50	41.1	82	67-108

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	74%	49-119%
321-60-8	2-Fluorobiphenyl	74%	45-118%
1718-51-0	Terphenyl-d14	82%	46-135%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44642
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MS	R05549.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
OP18281-MSD	R05550.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
F44611-1	R05548.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

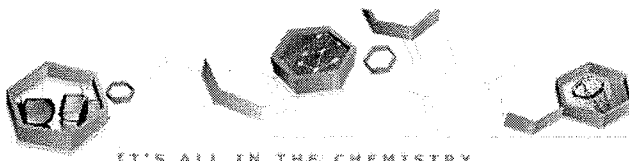
The QC reported here applies to the following samples:

Method: EPA 625

F44642-1, F44642-2

CAS No.	Compound	F44611-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		96.2	83.4	87	74.7	78	11	58-109/18
208-96-8	Acenaphthylene	ND		96.2	81.5	85	73.4	76	10	59-103/18
120-12-7	Anthracene	ND		96.2	89.2	93	82.1	85	8	65-108/16
56-55-3	Benzo(a)anthracene	ND		96.2	89.3	93	81.0	84	10	68-106/17
50-32-8	Benzo(a)pyrene	ND		96.2	87.9	91	81.4	85	8	61-108/18
205-99-2	Benzo(b)fluoranthene	ND		96.2	88.4	92	81.8	85	8	65-109/18
191-24-2	Benzo(g,h,i)perylene	ND		96.2	92.9	97	84.2	88	10	60-114/19
207-08-9	Benzo(k)fluoranthene	ND		96.2	89.7	93	81.4	85	10	66-111/17
218-01-9	Chrysene	ND		96.2	91.2	95	83.4	87	9	69-106/17
53-70-3	Dibenzo(a,h)anthracene	ND		96.2	92.7	96	84.0	87	10	59-112/18
206-44-0	Fluoranthene	ND		96.2	92.0	96	85.7	89	7	68-110/18
86-73-7	Fluorene	ND		96.2	86.8	90	79.2	82	9	62-106/17
193-39-5	Indeno(1,2,3-cd)pyrene	ND		96.2	93.5	97	83.6	87	11	61-115/19
90-12-0	1-Methylnaphthalene	ND		96.2	75.1	78	67.6	70	11	52-106/22
91-57-6	2-Methylnaphthalene	ND		96.2	80.6	84	72.1	75	11	53-112/22
91-20-3	Naphthalene	ND		96.2	73.8	77	66.7	69	10	49-104/24
85-01-8	Phenanthrene	ND		96.2	88.8	92	81.5	85	9	67-108/17
129-00-0	Pyrene	ND		96.2	88.3	92	79.2	82	11	65-108/18

CAS No.	Surrogate Recoveries	MS	MSD	F44611-1	Limits
4165-60-0	Nitrobenzene-d5	76%	69%	71%	49-119%
321-60-8	2-Fluorobiphenyl	80%	71%	71%	45-118%
1718-51-0	Terphenyl-d14	89%	80%	82%	46-135%



GC Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44642
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ759-MB	QQ019691.D1		10/26/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

Method: EPA 601/602

F44642-1, F44642-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	94% 71-130%
98-08-8	aaa-Trifluorotoluene	103% 71-124%

Blank Spike Summary

Page 1 of 1

Job Number: F44642

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ759-BS	QQ019690.D1		10/26/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

Method: EPA 601/602

F44642-1, F44642-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.8	99	81-121
108-90-7	Chlorobenzene	20	19.4	97	76-120
95-50-1	1,2-Dichlorobenzene	20	18.1	91	63-127
541-73-1	1,3-Dichlorobenzene	20	18.2	91	70-124
106-46-7	1,4-Dichlorobenzene	20	19.6	98	68-121
100-41-4	Ethylbenzene	20	19.7	99	79-124
1634-04-4	Methyl Tert Butyl Ether	20	18.2	91	73-118
108-88-3	Toluene	20	19.6	98	79-122
1330-20-7	Xylenes (total)	60	58.6	98	79-121

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	104%	71-130%
98-08-8	aaa-Trifluorotoluene	107%	71-124%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44642
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F44539-6MS	QQ019697.D1		10/27/06	AF	n/a	n/a	GQQ759
F44539-6MSD	QQ019698.D1		10/27/06	AF	n/a	n/a	GQQ759
F44539-6 ^a	QQ019693.D1		10/27/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

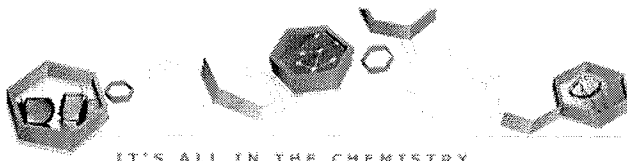
Method: EPA 601/602

F44642-1, F44642-2

CAS No.	Compound	F44539-6 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	96	19.0	95	1	74-126/11
108-90-7	Chlorobenzene	ND		20	94	18.7	94	1	72-124/8
95-50-1	1,2-Dichlorobenzene	ND		20	90	17.7	89	1	55-136/13
541-73-1	1,3-Dichlorobenzene	ND		20	90	17.7	89	1	65-132/16
106-46-7	1,4-Dichlorobenzene	ND		20	97	19.3	97	0	61-133/11
100-41-4	Ethylbenzene	ND		20	96	19.1	96	1	71-131/8
1634-04-4	Methyl Tert Butyl Ether	0.96	J	20	86	18.6	88	2	63-130/11
108-88-3	Toluene	ND		20	96	19.0	95	1	69-132/7
1330-20-7	Xylenes (total)	ND		60	95	56.6	94	1	71-127/8

CAS No.	Surrogate Recoveries	MS	MSD	F44539-6	Limits
460-00-4	4-Bromofluorobenzene	100%	103%	93%	71-130%
98-08-8	aaa-Trifluorotoluene	103%	106%	101%	71-124%

(a) All hits confirmed by dual column analysis.



IT'S ALL IN THE CHEMISTRY

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F44642
Account: ITVAVAB - Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10559
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/23/06

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	.4		
Beryllium	4.0	.4		
Cadmium	5.0	.2		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	.6		
Copper	25	.9		
Iron	300	12		
Lead	5.0	1.7	2.8	<5.0
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	.8		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP10559: F44642-1, F44642-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F44642
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10559
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/23/06 10/23/06

Metal	F44641-1 Original	DUP	RPD	QC Limits	F44641-1 Original MS	Spikelot MPFLICPl	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	0.0	0.0	NC	0-20	0.0	407	500	81.4
Magnesium								
Manganese								
Molybdenum								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Tin								
Vanadium								
Zinc								

Associated samples MP10559: F44642-1, F44642-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.12
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F44642
 Account: ITVAYAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10559
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/23/06

Metal	BSP Result	Spikelot MPFLICP1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	518	500	103.6	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP10559: F44642-1, F44642-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F44642
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10559
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

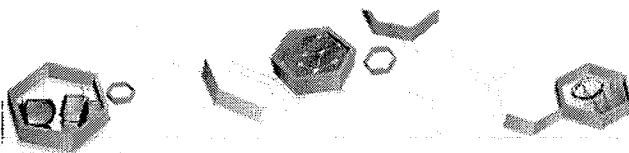
Prep Date: 10/23/06

Metal	F44641-1			QC
	Original	SDL 1:5	RPD	Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.00	0.00	NC	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP10559: F44642-1, F44642-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.4
6



11/16/06

Technical Report for

Shaw E & I, Inc.

Camp Lejeune-JP-5 Wells

119909

Accutest Job Number: F44667

Sampling Date: 10/23/06

Report to:

Shaw E & I, Inc.

natasha.sullivan@shawgrp.com

ATTN: Natasha Sullivan

Total number of pages in report: 36



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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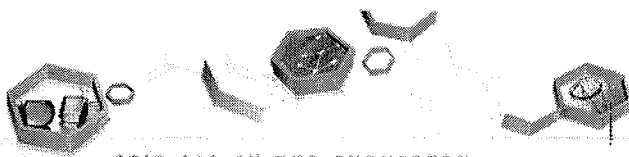
Sample Summary

Shaw E & I, Inc.

Job No: F44667

Camp Lejeune-JP-5 Wells
Project No: 119909

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F44667-1	10/23/06	09:25 MM	10/24/06	AQ Ground Water	USTASS4141-MW19
F44667-2	10/23/06	09:50 MM	10/24/06	AQ Ground Water	USTASS4141-MW21
F44667-3	10/23/06	11:30 MM	10/24/06	AQ Ground Water	USTASS4141-MW20
F44667-4	10/23/06	11:55 MM	10/24/06	AQ Ground Water	USTASS4141-MW17



IT'S ALL IN THE CHEMISTRY

Sample Results

Report of Analysis

Report of Analysis

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Client Sample ID: USTASS4141-MW19
 Lab Sample ID: F44667-1
 Matrix: AQ - Ground Water
 Method: EPA 625 EPA 625
 Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
 Date Received: 10/24/06
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05558.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2 ^a	R05739.D	1	11/03/06	NJ	10/30/06	OP18332	SR270

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2	1050 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.95	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.95	ug/l	
120-12-7	Anthracene	ND	4.8	0.95	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.95	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.95	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.95	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.95	ug/l	
218-01-9	Chrysene	ND	4.8	0.95	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.95	ug/l	
86-73-7	Fluorene	ND	4.8	0.95	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	1.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.95	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.95	ug/l	
91-20-3	Naphthalene	ND	4.8	0.95	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.95	ug/l	
129-00-0	Pyrene	ND	4.8	0.95	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%	61%	49-119%
321-60-8	2-Fluorobiphenyl	67%	54%	45-118%
1718-51-0	Terphenyl-d14	38% ^b	41%	46-135%

(a) Confirmation run.

(b) Confirmed by re-extraction and reanalysis beyond holdtime.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	USTASS4141-MW19	Date Sampled:	10/23/06
Lab Sample ID:	F44667-1	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ019715.D	1	10/27/06	AF	n/a	n/a	GQQ759
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	89%		71-130%
98-08-8	aaa-Trifluorotoluene	96%		71-124%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2

Client Sample ID: USTASS4141-MW19
Lab Sample ID: F44667-1
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
Date Received: 10/24/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	43.8	5.0	1.7	ug/l	1	10/25/06	10/25/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5309

(2) Prep QC Batch: MP10573

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

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Client Sample ID:	USTASS4141-MW21	Date Sampled:	10/23/06
Lab Sample ID:	F44667-2	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 EPA 625		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05559.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2	R05590.D	5	10/27/06	NJ	10/25/06	OP18281	SR263
Run #3 ^a	R05740.D	5	11/03/06	NJ	10/30/06	OP18332	SR270

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml
Run #3	1040 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.2	5.0	1.0	ug/l	J
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	1.7	5.0	1.0	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	187 ^b	25	5.0	ug/l	
91-57-6	2-Methylnaphthalene	257 ^b	25	5.0	ug/l	
91-20-3	Naphthalene	369 ^b	25	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	102%	83%	62%	49-119%
321-60-8	2-Fluorobiphenyl	62%	63%	51%	45-118%
1718-51-0	Terphenyl-d14	30% ^c	31% ^c	33%	46-135%

(a) Confirmation run.

(b) Result is from Run# 2

(c) Confirmed by re-extraction and reanalysis beyond holdtime.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	USTASS4141-MW21	Date Sampled:	10/23/06
Lab Sample ID:	F44667-2	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ019755.D	1	10/28/06	AF	n/a	n/a	GQQ761
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	9.9	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	58.7	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	50.5	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	1.8	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	171	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		71-130%
98-08-8	aaa-Trifluorotoluene	99%		71-124%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: USTASS4141-MW21
Lab Sample ID: F44667-2
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
Date Received: 10/24/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	29.5	5.0	1.7	ug/l	1	10/25/06	10/25/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5309

(2) Prep QC Batch: MP10573

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL

Report of Analysis

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Client Sample ID: USTASS4141-MW20
 Lab Sample ID: F44667-3
 Matrix: AQ - Ground Water
 Method: EPA 625 EPA 625
 Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
 Date Received: 10/24/06
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R05560.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
Run #2	R05591.D	5	10/27/06	NJ	10/25/06	OP18281	SR263
Run #3 ^a	R05741.D	5	11/03/06	NJ	10/30/06	OP18332	SR270

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml
Run #3	1030 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	1.1	5.0	1.0	ug/l	J
208-96-8	Acenaphthylene	1.3	5.0	1.0	ug/l	J
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	1.4	5.0	1.0	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	172 ^b	25	5.0	ug/l	
91-57-6	2-Methylnaphthalene	231 ^b	25	5.0	ug/l	
91-20-3	Naphthalene	301 ^b	25	5.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	76%	63%	98%	49-119%
321-60-8	2-Fluorobiphenyl	55%	55%	58%	45-118%
1718-51-0	Terphenyl-d14	34% ^c	33% ^c	33%	46-135%

(a) Confirmation run.

(b) Result is from Run# 2

(c) Confirmed by re-extraction and reanalysis beyond holdtime.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	USTASS4141-MW20	Date Sampled:	10/23/06
Lab Sample ID:	F44667-3	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ019759.D	1	10/28/06	AF	n/a	n/a	GQQ761
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	13.5	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	48.9	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	52.1	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	3.2	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	119	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%		71-130%
98-08-8	aaa-Trifluorotoluene	101%		71-124%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: USTASS4141-MW20
Lab Sample ID: F44667-3
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
Date Received: 10/24/06
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	26.5	5.0	1.7	ug/l	1	10/25/06	10/25/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5309

(2) Prep QC Batch: MP10573

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

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Client Sample ID:	USTASS4141-MW17	Date Sampled:	10/23/06
Lab Sample ID:	F44667-4	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	Camp Lejeune JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	R05592.D	20	10/27/06	NJ	10/25/06	OP18281	SR263
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	98	20	ug/l	
208-96-8	Acenaphthylene	ND	98	20	ug/l	
120-12-7	Anthracene	ND	98	20	ug/l	
56-55-3	Benzo(a)anthracene	ND	98	20	ug/l	
50-32-8	Benzo(a)pyrene	ND	98	20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	98	20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	98	39	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	98	20	ug/l	
218-01-9	Chrysene	ND	98	20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	98	39	ug/l	
206-44-0	Fluoranthene	ND	98	20	ug/l	
86-73-7	Fluorene	ND	98	20	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	98	39	ug/l	
90-12-0	1-Methylnaphthalene	466	98	20	ug/l	
91-57-6	2-Methylnaphthalene	589	98	20	ug/l	
91-20-3	Naphthalene	461	98	20	ug/l	
85-01-8	Phenanthrene	ND	98	20	ug/l	
129-00-0	Pyrene	ND	98	20	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	0% ^b		49-119%
321-60-8	2-Fluorobiphenyl	0% ^b		45-118%
1718-51-0	Terphenyl-d14	0% ^b		46-135%

(a) Dilution required due to matrix interference.

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	USTASS4141-MW17	Date Sampled:	10/23/06
Lab Sample ID:	F44667-4	Date Received:	10/24/06
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-JP-5 Wells		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ019758.D	1	10/28/06	AF	n/a	n/a	GQQ761
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.7	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	60.6	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	21.3	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	20.6	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	31.4	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	0.68	1.0	0.50	ug/l	J
1330-20-7	Xylenes (total)	50.5	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		71-130%
98-08-8	aaa-Trifluorotoluene	99%		71-124%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: USTASS4141-MW17
Lab Sample ID: F44667-4
Matrix: AQ - Ground Water
Project: Camp Lejeune-JP-5 Wells

Date Sampled: 10/23/06
Date Received: 10/24/06
Percent Solids: n/a

Metals Analysis

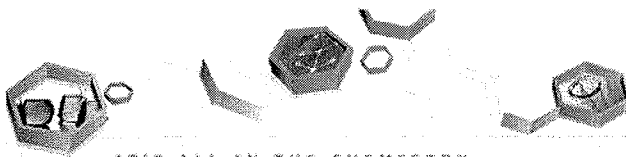
Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	3.2 B	5.0	1.7	ug/l	1	10/25/06	10/25/06 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5309

(2) Prep QC Batch: MP10573

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL



IT'S ALL IN THE CHEMISTRY

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

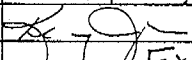
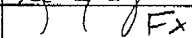
- Chain of Custody



Shaw
Shaw Environmental & Infrastructure, Inc.

F44667

Piney Green Rd. Lot 203 Bld 626 - 910-451-2390													Receiving LAB: Accutest									
Project Name				Project Location				Analysis Desired														
CAMP LEJEUNE - JP 5				CAMP LEJEUNE, NC																		
Project Number		Contact		P.O. Number		Reviewed by																
119909		Mark Martin		200935																		
Project Rep				Project Manager																		
US NAVY - LANTDIV				Ron Kenyon																		
Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description		Number of Containers	Voas + Xylenes 602	PAHs 625	Total Lead by 3030C											
1	USTASS4141-MW19	10/23/06	9:25		X	USTASS4141-MW19		6	X	X	X											
2	USTASS4141-MW21	10/23/06	9:50		X	USTASS4141-MW21		6	X	X	X											
3	USTASS4141-MW20	10/23/06	11:30		X	USTASS4141-MW20		6	X	X	X											
4	USTASS4141-MW17	10/23/06	11:55		X	USTASS4141-MW17		6	X	X	X											
5																						
6																						
7																						
8																						
9																						
10																						

Transfer Number	Item Number	Transfers Relinquished By	Transfers Accepted By	Date	Time	Remarks
1	1 -- 4		FedEx 8580 9991 6073	10/23/06	15:00	
2		 Fx	Household	10-24-06	09:00	

14 Day TAT
NEESA LEVEL C

20

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F44667 09:00 CLIENT: SHAW PROJECT: CAMP LEJEUNE - JPS
 DATE/TIME RECEIVED: 10-24-06 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 2.0
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: 8580 9991 6073

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☒ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 0
 NUMBER OF 5035 FIELD KITS ? 0
 NUMBER OR LAB FILTERED METALS ? 0

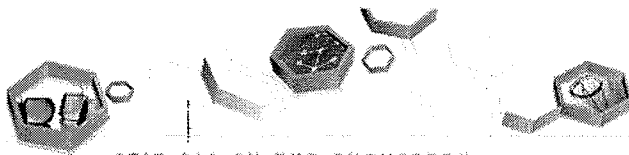
SUMMARY OF COMMENTS: RECEIVED ONLY 2 VIALS FOR SAMPLE #2

SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
- ☒ CORRECT NUMBER OF CONTAINERS USED
- ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
- ☐ INSUFFICIENT VOLUME FOR ANALYSIS
- ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
- ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
- ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- ☐ UNCLEAR FILTERING INSTRUCTIONS
- ☐ UNCLEAR COMPOSITING INSTRUCTIONS
- ☒ SAMPLE CONTAINER(S) RECEIVED BROKEN
- ☐ % SOLIDS JAR NOT RECEIVED
- ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
- ☐ RESIDUAL CHLORINE PRESENT

(APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE jc 10-24-06 TECHNICIAN SIGNATURE/DATE _____ ASD 10/03/06



IT'S ALL IN THE CHEMISTRY

Section 4

4

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05543.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44667-1, F44667-2, F44667-3, F44667-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	69% 49-119%
321-60-8	2-Fluorobiphenyl	67% 45-118%
1718-51-0	Terphenyl-d14	81% 46-135%

Method Blank Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MB	R05587.D	1	10/27/06	NJ	10/25/06	OP18281	SR263

The QC reported here applies to the following samples:

Method: EPA 625

F44667-1, F44667-2, F44667-3, F44667-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	62% 49-119%
321-60-8	2-Fluorobiphenyl	65% 45-118%
1718-51-0	Terphenyl-d14	84% 46-135%

Blank Spike Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-BS	R05542.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

The QC reported here applies to the following samples:

Method: EPA 625

F44667-1, F44667-2, F44667-3, F44667-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	39.0	78	67-101
208-96-8	Acenaphthylene	50	37.9	76	65-100
120-12-7	Anthracene	50	41.6	83	71-103
56-55-3	Benzo(a)anthracene	50	40.9	82	71-105
50-32-8	Benzo(a)pyrene	50	41.5	83	67-106
205-99-2	Benzo(b)fluoranthene	50	41.0	82	68-108
191-24-2	Benzo(g,h,i)perylene	50	43.1	86	65-110
207-08-9	Benzo(k)fluoranthene	50	42.3	85	69-110
218-01-9	Chrysene	50	42.3	85	71-105
53-70-3	Dibenzo(a,h)anthracene	50	42.5	85	61-112
206-44-0	Fluoranthene	50	43.1	86	71-108
86-73-7	Fluorene	50	40.1	80	68-102
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.3	85	66-112
90-12-0	1-Methylnaphthalene	50	35.9	72	58-101
91-57-6	2-Methylnaphthalene	50	38.7	77	62-105
91-20-3	Naphthalene	50	35.1	70	56-99
85-01-8	Phenanthrene	50	41.9	84	71-104
129-00-0	Pyrene	50	41.1	82	67-108

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	74%	49-119%
321-60-8	2-Fluorobiphenyl	74%	45-118%
1718-51-0	Terphenyl-d14	82%	46-135%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18281-MS	R05549.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
OP18281-MSD	R05550.D	1	10/26/06	NJ	10/25/06	OP18281	SR262
F44611-1	R05548.D	1	10/26/06	NJ	10/25/06	OP18281	SR262

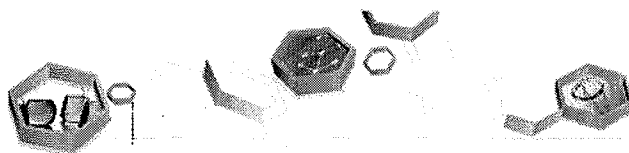
The QC reported here applies to the following samples:

Method: EPA 625

F44667-1, F44667-2, F44667-3, F44667-4

CAS No.	Compound	F44611-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	96.2	83.4	87	74.7	78	11	58-109/18
208-96-8	Acenaphthylene	ND	96.2	81.5	85	73.4	76	10	59-103/18
120-12-7	Anthracene	ND	96.2	89.2	93	82.1	85	8	65-108/16
56-55-3	Benzo(a)anthracene	ND	96.2	89.3	93	81.0	84	10	68-106/17
50-32-8	Benzo(a)pyrene	ND	96.2	87.9	91	81.4	85	8	61-108/18
205-99-2	Benzo(b)fluoranthene	ND	96.2	88.4	92	81.8	85	8	65-109/18
191-24-2	Benzo(g,h,i)perylene	ND	96.2	92.9	97	84.2	88	10	60-114/19
207-08-9	Benzo(k)fluoranthene	ND	96.2	89.7	93	81.4	85	10	66-111/17
218-01-9	Chrysene	ND	96.2	91.2	95	83.4	87	9	69-106/17
53-70-3	Dibenzo(a,h)anthracene	ND	96.2	92.7	96	84.0	87	10	59-112/18
206-44-0	Fluoranthene	ND	96.2	92.0	96	85.7	89	7	68-110/18
86-73-7	Fluorene	ND	96.2	86.8	90	79.2	82	9	62-106/17
193-39-5	Indeno(1,2,3-cd)pyrene	ND	96.2	93.5	97	83.6	87	11	61-115/19
90-12-0	1-Methylnaphthalene	ND	96.2	75.1	78	67.6	70	11	52-106/22
91-57-6	2-Methylnaphthalene	ND	96.2	80.6	84	72.1	75	11	53-112/22
91-20-3	Naphthalene	ND	96.2	73.8	77	66.7	69	10	49-104/24
85-01-8	Phenanthrene	ND	96.2	88.8	92	81.5	85	9	67-108/17
129-00-0	Pyrene	ND	96.2	88.3	92	79.2	82	11	65-108/18

CAS No.	Surrogate Recoveries	MS	MSD	F44611-1	Limits
4165-60-0	Nitrobenzene-d5	76%	69%	71%	49-119%
321-60-8	2-Fluorobiphenyl	80%	71%	71%	45-118%
1718-51-0	Terphenyl-d14	89%	80%	82%	46-135%



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Section 5

GC Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F44667
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ759-MB	QQ019691.D1		10/26/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	94% 71-130%
98-08-8	aaa-Trifluorotoluene	103% 71-124%

Method Blank Summary

Page 1 of 1

Job Number: F44667
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ761-MB	QQ019752.D1		10/28/06	AF	n/a	n/a	GQQ761

The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-2, F44667-3, F44667-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	91% 71-130%
98-08-8	aaa-Trifluorotoluene	99% 71-124%

Blank Spike Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ759-BS	QQ019690.D1		10/26/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.8	99	81-121
108-90-7	Chlorobenzene	20	19.4	97	76-120
95-50-1	1,2-Dichlorobenzene	20	18.1	91	63-127
541-73-1	1,3-Dichlorobenzene	20	18.2	91	70-124
106-46-7	1,4-Dichlorobenzene	20	19.6	98	68-121
100-41-4	Ethylbenzene	20	19.7	99	79-124
1634-04-4	Methyl Tert Butyl Ether	20	18.2	91	73-118
108-88-3	Toluene	20	19.6	98	79-122
1330-20-7	Xylenes (total)	60	58.6	98	79-121

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	104%	71-130%
98-08-8	aaa-Trifluorotoluene	107%	71-124%

Blank Spike Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ761-BS	QQ019751.D1		10/28/06	AF	n/a	n/a	GQQ761

The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-2, F44667-3, F44667-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.1	96	81-121
108-90-7	Chlorobenzene	20	18.8	94	76-120
95-50-1	1,2-Dichlorobenzene	20	18.0	90	63-127
541-73-1	1,3-Dichlorobenzene	20	18.1	91	70-124
106-46-7	1,4-Dichlorobenzene	20	19.4	97	68-121
100-41-4	Ethylbenzene	20	19.3	97	79-124
1634-04-4	Methyl Tert Butyl Ether	20	17.3	87	73-118
108-88-3	Toluene	20	19.2	96	79-122
1330-20-7	Xylenes (total)	60	57.0	95	79-121

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	100%	71-130%
98-08-8	aaa-Trifluorotoluene	102%	71-124%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44667
Account: ITVAVAB Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F44539-6MS	QQ019697.D 1		10/27/06	AF	n/a	n/a	GQQ759
F44539-6MSD	QQ019698.D 1		10/27/06	AF	n/a	n/a	GQQ759
F44539-6 ^a	QQ019693.D 1		10/27/06	AF	n/a	n/a	GQQ759

The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-1

CAS No.	Compound	F44539-6 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	19.2	96	19.0	95	1 74-126/11
108-90-7	Chlorobenzene	ND		20	18.8	94	18.7	94	1 72-124/8
95-50-1	1,2-Dichlorobenzene	ND		20	17.9	90	17.7	89	1 55-136/13
541-73-1	1,3-Dichlorobenzene	ND		20	17.9	90	17.7	89	1 65-132/16
106-46-7	1,4-Dichlorobenzene	ND		20	19.3	97	19.3	97	0 61-133/11
100-41-4	Ethylbenzene	ND		20	19.2	96	19.1	96	1 71-131/8
1634-04-4	Methyl Tert Butyl Ether	0.96	J	20	18.2	86	18.6	88	2 63-130/11
108-88-3	Toluene	ND		20	19.2	96	19.0	95	1 69-132/7
1330-20-7	Xylenes (total)	ND		60	57.0	95	56.6	94	1 71-127/8

CAS No.	Surrogate Recoveries	MS	MSD	F44539-6	Limits
460-00-4	4-Bromofluorobenzene	100%	103%	93%	71-130%
98-08-8	aaa-Trifluorotoluene	103%	106%	101%	71-124%

(a) All hits confirmed by dual column analysis.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F44667

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-JP-5 Wells

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F44722-1MS	QQ019766.D1		10/28/06	AF	n/a	n/a	GQQ761
F44722-1MSD	QQ019767.D1		10/28/06	AF	n/a	n/a	GQQ761
F44722-1	QQ019762.D1		10/28/06	AF	n/a	n/a	GQQ761

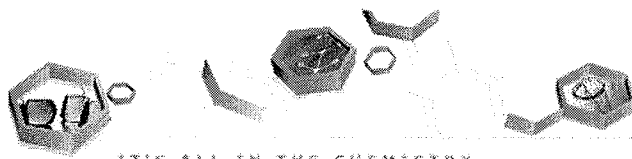
The QC reported here applies to the following samples:

Method: EPA 601/602

F44667-2, F44667-3, F44667-4

CAS No.	Compound	F44722-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	13.4	67*	17.1	86	24*	74-126/11
108-90-7	Chlorobenzene	ND	20	13.1	66*	16.7	84	24*	72-124/8
95-50-1	1,2-Dichlorobenzene	ND	20	12.6	63	15.9	80	23*	55-136/13
541-73-1	1,3-Dichlorobenzene	ND	20	12.6	63*	15.8	79	23*	65-132/16
106-46-7	1,4-Dichlorobenzene	ND	20	13.5	68	17.0	85	23*	61-133/11
100-41-4	Ethylbenzene	ND	20	13.3	67*	16.9	85	24*	71-131/8
1634-04-4	Methyl Tert Butyl Ether	ND	20	11.9	60*	15.7	79	28*	63-130/11
108-88-3	Toluene	ND	20	13.4	67*	17.0	85	24*	69-132/7
1330-20-7	Xylenes (total)	ND	60	39.5	66*	50.5	84	24*	71-127/8

CAS No.	Surrogate Recoveries	MS	MSD	F44722-1	Limits
460-00-4	4-Bromofluorobenzene	99%	98%	94%	71-130%
98-08-8	aaa-Trifluorotoluene	101%	99%	100%	71-124%



IT'S ALL IN THE CHEMISTRY

Metals Analysis



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F44667
Account: ITVAVAB - Shaw E & I, Inc.
Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10573
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 10/25/06

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	.4		
Beryllium	4.0	.4		
Cadmium	5.0	.2		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	.6		
Copper	25	.9		
Iron	300	12		
Lead	5.0	1.7	0.91	<5.0
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	.8		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP10573: F44667-1, F44667-2, F44667-3, F44667-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F44667
 Account: ITVAVAB Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10573
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/25/06 10/25/06

Metal	F44667-1 Original	DUP	RPD	QC Limits	F44667-1 Original MS	Spikelot MPFLICPl % Rec	QC Limits
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead	43.8	42.3	3.5	0-20	43.8	539	500
Magnesium							
Manganese							
Molybdenum							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Tin							
Vanadium							
Zinc							

Associated samples MP10573: F44667-1, F44667-2, F44667-3, F44667-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F44667
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10573
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/25/06

Metal	BSP Result	Spikelot MPFLICP1 & Rec	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead	505	500	101.0 80-120
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Tin			
Vanadium			
Zinc			

Associated samples MP10573: F44667-1, F44667-2, F44667-3, F44667-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F44667
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-JP-5 Wells

QC Batch ID: MP10573
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 10/25/06

Metal	F44667-1			QC	
	Original	SDL 1:5	RPD	Limits	
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead	43.8	50.9	16.3 (a)	0-10	
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver					
Sodium					
Thallium					
Tin					
Vanadium					
Zinc					

Associated samples MP10573: F44667-1, F44667-2, F44667-3, F44667-4

Results < IDL are shown as zero for calculation purposes

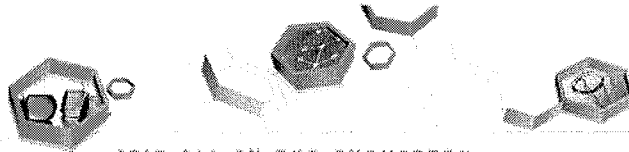
(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

6.1.4

6



IT'S ALL IN THE CHEMISTRY

03/22/07

Technical Report for

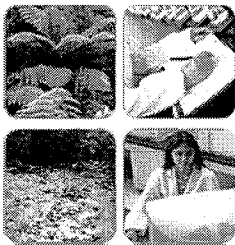
Shaw E & I, Inc.

Camp Lejeune-67F-JP-5

119909

Accutest Job Number: F47212

Sampling Date: 02/12/07



Report to:

Shaw E & I, Inc.

natasha.sullivan@shawgrp.com

ATTN: Natasha Sullivan

Total number of pages in report: 27



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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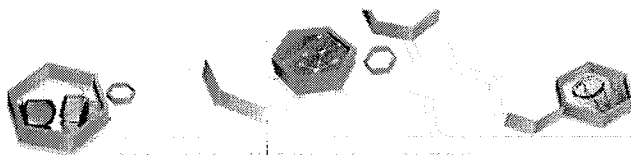
Sample Summary

Shaw E & I, Inc.

Job No: F47212

Camp Lejeune-67F-JP-5
Project No: 119909

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F47212-1	02/12/07	15:00 MM	02/14/07	AQ Ground Water	USTAS4151-MW16
F47212-2	02/12/07	15:30 MM	02/14/07	AQ Ground Water	USTAS4151-MW18
F47212-3	02/12/07	00:00 MM	02/14/07	AQ Trip Blank Water	USTAS4151-TB



IT'S ALL IN THE CHEMISTRY

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4151-MW16	Date Sampled:	02/12/07
Lab Sample ID:	F47212-1	Date Received:	02/14/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 EPA 625		
Project:	Camp Lejeune-67F-JP-5		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R07072.D	1	02/19/07	NJ	02/19/07	OP19559	SR330
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.97	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.97	ug/l	
120-12-7	Anthracene	ND	4.9	0.97	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.97	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.97	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.97	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.97	ug/l	
218-01-9	Chrysene	ND	4.9	0.97	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.97	ug/l	
86-73-7	Fluorene	ND	4.9	0.97	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	1.9	ug/l	
90-12-0	1-Methylnaphthalene	61.7	4.9	0.97	ug/l	
91-57-6	2-Methylnaphthalene	39.7	4.9	0.97	ug/l	
91-20-3	Naphthalene	68.3	4.9	0.97	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.97	ug/l	
129-00-0	Pyrene	ND	4.9	0.97	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	70%		42-108%
321-60-8	2-Fluorobiphenyl	72%		40-106%
1718-51-0	Terphenyl-d14	77%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4151-MW16	Date Sampled:	02/12/07
Lab Sample ID:	F47212-1	Date Received:	02/14/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-67F-JP-5		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ022931.D	1	02/22/07	AF	n/a	n/a	GQQ872
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.60	1.0	0.50	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	4.5	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	3.5	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		70-120%
98-08-8	aaa-Trifluorotoluene	98%		73-118%

(a) Confirmed by GC/MS.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTAS4151-MW16
Lab Sample ID: F47212-1
Matrix: AQ - Ground Water
Project: Camp Lejeune-67F-JP-5

Date Sampled: 02/12/07
Date Received: 02/14/07
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	34 U	50	34	ug/l	1	02/14/07	02/14/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5507

(2) Prep QC Batch: MP11259

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4151-MW18	Date Sampled:	02/12/07
Lab Sample ID:	F47212-2	Date Received:	02/14/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 EPA 625		
Project:	Camp Lejeune-67F-JP-5		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R07073.D	1	02/19/07	NJ	02/19/07	OP19559	SR330
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.95	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.95	ug/l	
120-12-7	Anthracene	ND	4.8	0.95	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.95	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.95	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.95	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.95	ug/l	
218-01-9	Chrysene	ND	4.8	0.95	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.95	ug/l	
86-73-7	Fluorene	ND	4.8	0.95	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	1.9	ug/l	
90-12-0	1-Methylnaphthalene	1.6	4.8	0.95	ug/l	J
91-57-6	2-Methylnaphthalene	1.2	4.8	0.95	ug/l	J
91-20-3	Naphthalene	2.5	4.8	0.95	ug/l	J
85-01-8	Phenanthrene	ND	4.8	0.95	ug/l	
129-00-0	Pyrene	ND	4.8	0.95	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		42-108%
321-60-8	2-Fluorobiphenyl	68%		40-106%
1718-51-0	Terphenyl-d14	60%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4151-MW18	Date Sampled:	02/12/07
Lab Sample ID:	F47212-2	Date Received:	02/14/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-67F-JP-5		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ022932.D	1	02/22/07	AF	n/a	n/a	GQQ872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	1.1	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%		70-120%
98-08-8	aaa-Trifluorotoluene	98%		73-118%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: USTAS4151-MW18
Lab Sample ID: F47212-2
Matrix: AQ - Ground Water
Project: Camp Lejeune-67F-JP-5

Date Sampled: 02/12/07
Date Received: 02/14/07
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	68 U	100	68	ug/l	1	02/14/07	02/14/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5507

(2) Prep QC Batch: MP11259

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result >= MDL but < RL

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4151-TB	Date Sampled:	02/12/07
Lab Sample ID:	F47212-3	Date Received:	02/14/07
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	Camp Lejeune-67F-JP-5		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ022935.D	1	02/22/07	AF	n/a	n/a	GQQ872
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	97%		70-120%
98-08-8	aaa-Trifluorotoluene	97%		73-118%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



IT'S ALL IN THE CHEMISTRY



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

F47212

COC Number:
119909-JP5-021207

Shaw Environmental & Infrastructure, Inc.

CHAIN-OF-CUSTODY RECORD

Shaw E & I - Piney Green Rd. Lot 203 Bld 626 - 910-451-2390										Receiving LAB: ACCUTEST									
Project Name					Project Location					Analysis Desired									
CAMP LEJEUNE -67F-JP-5					CAMP LEJEUNE, NC														
Project Number		Contact			P.O. Number		Reviewed by												
119909		Mark Martin																	
Client Rep					Project Manager														
US NAVY - LANTDIV					Ron Kenyon														
Item No.	Sample Number	Date	Time	Comp	Grab	Sample Description		Number of Containers		VOC 602	PAH 625	Total Lead By 3030C							
①	USTAS4151-MW16	2/12/07	15:00		X	USTAS4151-MW16		6		X	X	X							
②	USTAS4151-MW18	2/12/07	15:30		X	USTAS4151-MW18		6		X	X	X							
③	USTAS4151-TB-	2/12/07			X	Trip Blank		2		X									
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Transfer Number	Item Number	Transfers Relinquished By	Transfers Accepted By	Date	Time	Remarks
1	1 - 3	<i>[Signature]</i>	FedEx 8559 3385 1030	2/13/07	16:00	14 Day TAT
2			<i>[Signature]</i>	2-14-07	9:45	
3						

1.8

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F47212 CLIENT: SHAW PROJECT: Camp Lejeune - 67 F-SP-5
 DATE/TIME RECEIVED: 2-14-07 9:45 # OF COOLERS RECEIVED: 1 COOLER TEMPS: 1-8
 METHOD OF DELIVERY: FEDER UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: 8559 3385 1030

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☐ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 0
 NUMBER OF 5035 FIELD KITS ? 0
 NUMBER OR LAB FILTERED METALS ? 0

SUMMARY OF COMMENTS:

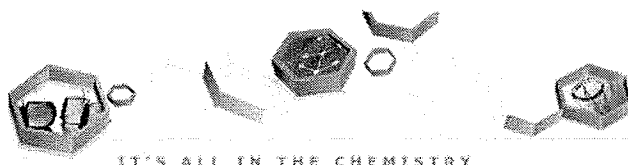
SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
- ☐ CORRECT NUMBER OF CONTAINERS USED
- ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
- ☐ INSUFFICIENT VOLUME FOR ANALYSIS
- ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
- ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
- ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- ☐ UNCLEAR FILTERING INSTRUCTIONS
- ☐ UNCLEAR COMPOSITING INSTRUCTIONS
- ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
- ☐ % SOLIDS JAR NOT RECEIVED
- ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
- ☐ RESIDUAL CHLORINE PRESENT

(APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE Jmc 2-14-07 TECHNICIAN SIGNATURE/DATE R 02-14-07 ASBD 10/03/06

F47212: Chain of Custody
 Page 2 of 2



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19559-MB	R07065.D	1	02/19/07	NJ	02/19/07	OP19559	SR330

The QC reported here applies to the following samples:

Method: EPA 625

F47212-1, F47212-2

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	40%	14-62%
4165-62-2	Phenol-d5	23%	10-40%
118-79-6	2,4,6-Tribromophenol	77%	33-118%
4165-60-0	Nitrobenzene-d5	62%	42-108%
321-60-8	2-Fluorobiphenyl	70%	40-106%
1718-51-0	Terphenyl-d14	85%	39-121%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Semi-Volatile ^a		0	ug/l	

(a) No TICs detected.

Blank Spike Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19559-BS	R07064.D	1	02/19/07	NJ	02/19/07	OP19559	SR330

The QC reported here applies to the following samples:

Method: EPA 625

F47212-1, F47212-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	38.1	76	58-106
208-96-8	Acenaphthylene	50	37.9	76	58-105
120-12-7	Anthracene	50	40.0	80	65-108
56-55-3	Benzo(a)anthracene	50	39.1	78	63-111
50-32-8	Benzo(a)pyrene	50	38.6	77	62-106
205-99-2	Benzo(b)fluoranthene	50	39.2	78	63-109
191-24-2	Benzo(g,h,i)perylene	50	43.1	86	61-111
207-08-9	Benzo(k)fluoranthene	50	38.1	76	64-111
218-01-9	Chrysene	50	40.7	81	64-111
53-70-3	Dibenzo(a,h)anthracene	50	41.9	84	62-112
206-44-0	Fluoranthene	50	40.3	81	65-114
86-73-7	Fluorene	50	38.6	77	61-106
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.2	84	61-113
90-12-0	1-Methylnaphthalene	50	34.4	69	52-102
91-57-6	2-Methylnaphthalene	50	34.7	69	56-112
91-20-3	Naphthalene	50	34.6	69	50-104
85-01-8	Phenanthrene	50	40.4	81	65-108
129-00-0	Pyrene	50	38.2	76	60-113

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	34%	14-62%
4165-62-2	Phenol-d5	24%	10-40%
118-79-6	2,4,6-Tribromophenol	74%	33-118%
4165-60-0	Nitrobenzene-d5	69%	42-108%
321-60-8	2-Fluorobiphenyl	70%	40-106%
1718-51-0	Terphenyl-d14	72%	39-121%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19559-MS	R07070.D	1	02/19/07	NJ	02/19/07	OP19559	SR330
OP19559-MSD	R07071.D	1	02/19/07	NJ	02/19/07	OP19559	SR330
F47288-1	R07069.D	1	02/19/07	NJ	02/19/07	OP19559	SR330

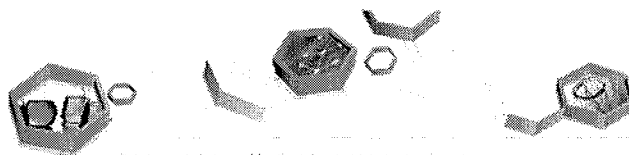
The QC reported here applies to the following samples:

Method: EPA 625

F47212-1, F47212-2

CAS No.	Compound	F47288-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND	100	79.4	79	87.3	87	9	58-106/21
208-96-8	Acenaphthylene	ND	100	78.9	79	87.7	88	11	58-105/21
120-12-7	Anthracene	ND	100	81.8	82	89.3	89	9	65-108/19
56-55-3	Benzo(a)anthracene	ND	100	81.3	81	88.1	88	8	63-111/19
50-32-8	Benzo(a)pyrene	ND	100	80.5	81	86.3	86	7	62-106/20
205-99-2	Benzo(b)fluoranthene	ND	100	80.5	81	87.0	87	8	63-109/20
191-24-2	Benzo(g,h,i)perylene	ND	100	89.9	90	98.1	98	9	61-111/21
207-08-9	Benzo(k)fluoranthene	ND	100	81.7	82	88.2	88	8	64-111/20
218-01-9	Chrysene	ND	100	84.7	85	90.6	91	7	64-111/19
53-70-3	Dibenzo(a,h)anthracene	ND	100	86.0	86	94.5	95	9	62-112/20
206-44-0	Fluoranthene	ND	100	83.4	83	89.4	89	7	65-114/21
86-73-7	Fluorene	ND	100	80.8	81	86.8	87	7	61-106/19
193-39-5	Indeno(1,2,3-cd)pyrene	ND	100	87.7	88	95.9	96	9	61-113/20
90-12-0	1-Methylnaphthalene	12.1	100	81.0	69	91.3	79	12	52-102/25
91-57-6	2-Methylnaphthalene	6.2	100	78.3	72	87.2	81	11	56-112/26
91-20-3	Naphthalene	21.1	100	89.6	69	102	81	13	50-104/28
85-01-8	Phenanthrene	ND	100	82.4	82	89.5	90	8	65-108/20
129-00-0	Pyrene	ND	100	79.0	79	87.0	87	10	60-113/20

CAS No.	Surrogate Recoveries	MS	MSD	F47288-1	Limits
367-12-4	2-Fluorophenol	56%	65%*	41%	14-62%
4165-62-2	Phenol-d5	49%*	55%*	25%	10-40%
118-79-6	2,4,6-Tribromophenol	76%	81%	82%	33-118%
4165-60-0	Nitrobenzene-d5	76%	83%	73%	42-108%
321-60-8	2-Fluorobiphenyl	73%	80%	76%	40-106%
1718-51-0	Terphenyl-d14	71%	75%	75%	39-121%



IT'S ALL IN THE CHEMISTRY

GC Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ872-MB	QQ022924.D 1		02/22/07	AF	n/a	n/a	GQQ872

The QC reported here applies to the following samples:

Method: EPA 601/602

F47212-1, F47212-2, F47212-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	96% 70-120%
98-08-8	aaa-Trifluorotoluene	98% 73-118%

Blank Spike Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ872-BS	QQ022923.D 1		02/22/07	AF	n/a	n/a	GQQ872

The QC reported here applies to the following samples:

Method: EPA 601/602

F47212-1, F47212-2, F47212-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.6	103	80-120
108-90-7	Chlorobenzene	20	20.4	102	79-118
95-50-1	1,2-Dichlorobenzene	20	19.8	99	76-117
541-73-1	1,3-Dichlorobenzene	20	19.9	100	78-120
106-46-7	1,4-Dichlorobenzene	20	19.8	99	78-117
100-41-4	Ethylbenzene	20	20.2	101	79-121
1634-04-4	Methyl Tert Butyl Ether	20	20.3	102	72-113
108-88-3	Toluene	20	20.3	102	79-121
1330-20-7	Xylenes (total)	60	60.8	101	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	70-120%
98-08-8	aaa-Trifluorotoluene	99%	73-118%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F47212

Account: ITVAVAB Shaw E & I, Inc.

Project: Camp Lejeune-67F-JP-5

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F47362-1MS	QQ022929.D 1		02/22/07	AF	n/a	n/a	GQQ872
F47362-1MSD	QQ022930.D 1		02/22/07	AF	n/a	n/a	GQQ872
F47362-1	QQ022926.D 1		02/22/07	AF	n/a	n/a	GQQ872

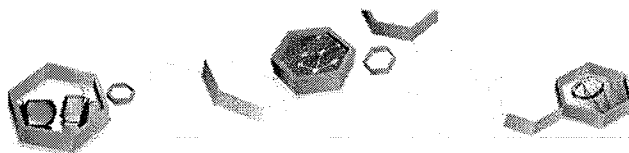
The QC reported here applies to the following samples:

Method: EPA 601/602

F47212-1, F47212-2, F47212-3

CAS No.	Compound	F47362-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	20	21.3	107	20.9	105	2	80-120/10
108-90-7	Chlorobenzene	1.0 U	20	21.2	106	21.0	105	1	79-118/10
95-50-1	1,2-Dichlorobenzene	1.0 U	20	20.6	103	21.0	105	2	76-117/18
541-73-1	1,3-Dichlorobenzene	1.0 U	20	20.9	105	20.8	104	0	78-120/13
106-46-7	1,4-Dichlorobenzene	1.0 U	20	20.8	104	20.8	104	0	78-117/11
100-41-4	Ethylbenzene	1.0 U	20	21.0	105	20.7	104	1	79-121/9
1634-04-4	Methyl Tert Butyl Ether	1.0 U	20	20.3	102	21.0	105	3	72-113/13
108-88-3	Toluene	1.0 U	20	21.2	106	20.9	105	1	79-121/10
1330-20-7	Xylenes (total)	3.0 U	60	63.2	105	62.5	104	1	80-119/8

CAS No.	Surrogate Recoveries	MS	MSD	F47362-1	Limits
460-00-4	4-Bromofluorobenzene	104%	104%	102%	70-120%
98-08-8	aaa-Trifluorotoluene	100%	99%	102%	73-118%



IT'S ALL IN THE CHEMISTRY

Metals Analysis



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F47212
Account: ITVAVAB - Shaw E & I, Inc.
Project: Camp Lejeune-67F-JP-5

QC Batch ID: MP11259
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 02/14/07

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	5		
Beryllium	4.0	1		
Cadmium	5.0	1		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	1		
Copper	25	.9		
Iron	300	12		
Lead	5.0	1.7	0.25	<5.0
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	1		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP11259: F47212-1, F47212-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F47212
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-67F-JP-5

QC Batch ID: MP11259
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 02/14/07 02/14/07

Metal	F47213-1 Original DUP		RPD	QC Limits	F47213-1 Original MS		Spikelot MPFLICP1 % Rec	QC Limits
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	0.0	0.0	NC	0-20	0.0	528	500	105.6 80-120
Magnesium								
Manganese								
Molybdenum								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Tin								
Vanadium								
Zinc								

Associated samples MP11259: F47212-1, F47212-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

6.12
6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F47212
 Account: ITVAYAB - Shaw E & I, Inc.
 Project: Camp Lejeune-67F-JP-5

QC Batch ID: MP11259
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 02/14/07

Metal	BSP Result	Spikelot MPFLICP1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	515	500	103.0	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP11259: F47212-1, F47212-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.13
6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F47212
 Account: ITVAVAB - Shaw E & I, Inc.
 Project: Camp Lejeune-67F-JP-5

QC Batch ID: MP11259
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

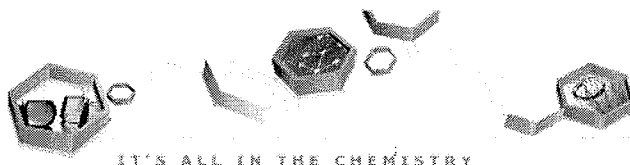
Prep Date: 02/14/07

F47212-1		QC	
Metal	Original SDL 1:5	RPD	Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead	0.00	0.00	NC 0-10
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Tin			
Vanadium			
Zinc			

Associated samples MP11259: F47212-1, F47212-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.4
 6



04/02/07

Technical Report for

Osage of Virginia

CTO 0001: AS4141/JP5 MCAS

CTO 0001

Accutest Job Number: F47956

Sampling Dates: 03/13/07 - 03/14/07



Report to:

Osage of Virginia

mcree@osageva.com

ATTN: Mike Cree

Total number of pages in report: 40



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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Sample Summary

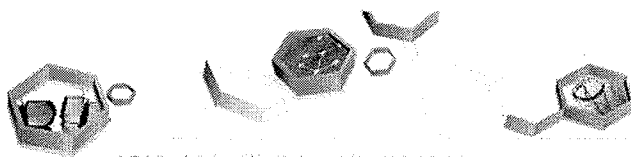
Osage of Virginia

Job No: F47956

CTO 0001: AS4141/JP5 MCAS

Project No: CTO 0001

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F47956-1	03/13/07	16:35 TE	03/15/07	AQ	Ground Water	USTAS4141-MW02
F47956-2	03/14/07	08:42 TE	03/15/07	AQ	Ground Water	USTAS4141-MW07
F47956-3	03/14/07	08:58 TE	03/15/07	AQ	Ground Water	USTAS4141-MW10
F47956-4	03/13/07	15:25 TE	03/15/07	AQ	Ground Water	USTAS4141-MW15
F47956-5	03/13/07	17:34 TE	03/15/07	AQ	Ground Water	USTAS4141-MW16
F47956-6	03/14/07	15:15 TE	03/15/07	AQ	Ground Water	USTAS4141-MW18
F47956-7	03/14/07	00:00 TE	03/15/07	AQ	Trip Blank Water	TRIP BLANK



IT'S ALL IN THE CHEMISTRY

Sample Results

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Client Sample ID: USTAS4141-MW02
 Lab Sample ID: F47956-1
 Matrix: AQ - Ground Water
 Method: EPA 625 SW846 3510C
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/13/07
 Date Received: 03/15/07
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001633.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.98	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.98	ug/l	
120-12-7	Anthracene	ND	4.9	0.98	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.98	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.98	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.98	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.98	ug/l	
218-01-9	Chrysene	ND	4.9	0.98	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	2.0	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.98	ug/l	
86-73-7	Fluorene	ND	4.9	0.98	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.98	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.98	ug/l	
91-20-3	Naphthalene	ND	4.9	0.98	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.98	ug/l	
129-00-0	Pyrene	ND	4.9	0.98	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		42-108%
321-60-8	2-Fluorobiphenyl	68%		40-106%
1718-51-0	Terphenyl-d14	67%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: USTAS4141-MW02
 Lab Sample ID: F47956-1
 Matrix: AQ - Ground Water
 Method: EPA 601/602
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/13/07
 Date Received: 03/15/07
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023692.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		70-120%
98-08-8	aaa-Trifluorotoluene	90%		73-118%

(a) Sample was treated with an anti-foaming agent.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-MW02

Lab Sample ID: F47956-1

Matrix: AQ - Ground Water

Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/13/07

Date Received: 03/15/07

Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	<10	10	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

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Client Sample ID:	USTAS4141-MW07	Date Sampled:	03/14/07
Lab Sample ID:	F47956-2	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001634.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		42-108%
321-60-8	2-Fluorobiphenyl	61%		40-106%
1718-51-0	Terphenyl-d14	60%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	USTAS4141-MW07	Date Sampled:	03/14/07
Lab Sample ID:	F47956-2	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023686.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%		70-120%
98-08-8	aaa-Trifluorotoluene	96%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: USTAS4141-MW07	Date Sampled: 03/14/07
Lab Sample ID: F47956-2	Date Received: 03/15/07
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: CTO 0001: AS4141/JP5 MCAS	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 20	20	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	USTAS4141-MW10	Date Sampled:	03/14/07
Lab Sample ID:	F47956-3	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001635.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	3.6	5.0	1.0	ug/l	J
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	2.1	5.0	1.0	ug/l	J
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		42-108%
321-60-8	2-Fluorobiphenyl	62%		40-106%
1718-51-0	Terphenyl-d14	56%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-MW10
 Lab Sample ID: F47956-3
 Matrix: AQ - Ground Water
 Method: EPA 601/602
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/14/07
 Date Received: 03/15/07
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023682.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	9.1	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	108%		70-120%
98-08-8	aaa-Trifluorotoluene	93%		73-118%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2.3

2

Client Sample ID: USTAS4141-MW10

Lab Sample ID: F47956-3

Matrix: AQ - Ground Water

Date Sampled: 03/14/07

Date Received: 03/15/07

Percent Solids: n/a

Project: CTO 0001: AS4141/JP5 MCAS

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 50	50	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

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2

Client Sample ID:	USTAS4141-MW15	Date Sampled:	03/13/07
Lab Sample ID:	F47956-4	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001636.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.95	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.95	ug/l	
120-12-7	Anthracene	ND	4.8	0.95	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.95	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.95	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.95	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.95	ug/l	
218-01-9	Chrysene	ND	4.8	0.95	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.95	ug/l	
86-73-7	Fluorene	ND	4.8	0.95	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	1.9	ug/l	
90-12-0	1-Methylnaphthalene	1.4	4.8	0.95	ug/l	J
91-57-6	2-Methylnaphthalene	1.6	4.8	0.95	ug/l	J
91-20-3	Naphthalene	ND	4.8	0.95	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.95	ug/l	
129-00-0	Pyrene	ND	4.8	0.95	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61%		42-108%
321-60-8	2-Fluorobiphenyl	59%		40-106%
1718-51-0	Terphenyl-d14	60%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	USTAS4141-MW15	Date Sampled:	03/13/07
Lab Sample ID:	F47956-4	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023683.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	5.9	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.52	1.0	0.50	ug/l	J
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	111%		70-120%
98-08-8	aaa-Trifluorotoluene	99%		73-118%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2.4

2

Client Sample ID: USTAS4141-MW15
Lab Sample ID: F47956-4
Matrix: AQ - Ground Water
Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/13/07
Date Received: 03/15/07
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	<20	20	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	USTAS4141-MW16	Date Sampled:	03/13/07
Lab Sample ID:	F47956-5	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001637.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.99	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.99	ug/l	
120-12-7	Anthracene	ND	5.0	0.99	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.99	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.99	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.99	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.99	ug/l	
218-01-9	Chrysene	ND	5.0	0.99	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.99	ug/l	
86-73-7	Fluorene	ND	5.0	0.99	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	62.0	5.0	0.99	ug/l	
91-57-6	2-Methylnaphthalene	55.0	5.0	0.99	ug/l	
91-20-3	Naphthalene	68.4	5.0	0.99	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.99	ug/l	
129-00-0	Pyrene	ND	5.0	0.99	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	62%		42-108%
321-60-8	2-Fluorobiphenyl	58%		40-106%
1718-51-0	Terphenyl-d14	63%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	USTAS4141-MW16	Date Sampled:	03/13/07
Lab Sample ID:	F47956-5	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023684.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.57	1.0	0.50	ug/l	J
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	42.6	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	9.1	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	3.3	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	2.2	3.0	1.0	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	109%		70-120%
98-08-8	aaa-Trifluorotoluene	92%		73-118%

(a) All hits confirmed by dual column analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2

Client Sample ID: USTAS4141-MW16

Lab Sample ID: F47956-5

Matrix: AQ - Ground Water

Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/13/07

Date Received: 03/15/07

Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 50	50	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	USTAS4141-MW18	Date Sampled:	03/14/07
Lab Sample ID:	F47956-6	Date Received:	03/15/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001638.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.99	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.99	ug/l	
120-12-7	Anthracene	ND	5.0	0.99	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.99	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.99	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.99	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.99	ug/l	
218-01-9	Chrysene	ND	5.0	0.99	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.99	ug/l	
86-73-7	Fluorene	ND	5.0	0.99	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	0.99	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.99	ug/l	
129-00-0	Pyrene	ND	5.0	0.99	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		42-108%
321-60-8	2-Fluorobiphenyl	66%		40-106%
1718-51-0	Terphenyl-d14	43%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-MW18
 Lab Sample ID: F47956-6
 Matrix: AQ - Ground Water
 Method: EPA 601/602
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/14/07
 Date Received: 03/15/07
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023685.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	109%		70-120%
98-08-8	aaa-Trifluorotoluene	98%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2.6
2

Client Sample ID: USTAS4141-MW18

Lab Sample ID: F47956-6

Matrix: AQ - Ground Water

Date Sampled: 03/14/07

Date Received: 03/15/07

Percent Solids: n/a

Project: CTO 0001: AS4141/JP5 MCAS

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 100	100	ug/l	1	03/15/07	03/15/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5566

(2) Prep QC Batch: MP11486

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	03/14/07
Lab Sample ID:	F47956-7	Date Received:	03/15/07
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023696.D	1	03/19/07	AF	n/a	n/a	GQQ899
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

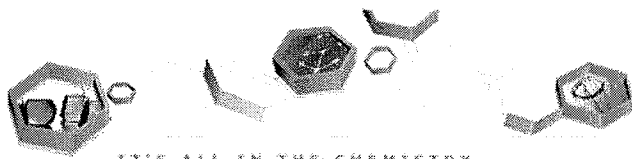
Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	105%		70-120%
98-08-8	aaa-Trifluorotoluene	94%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #:

~~F47958~~

ACCUTEST QUOTE #:

CLIENT INFORMATION			FACILITY INFORMATION			ANALYTICAL INFORMATION												MATRIX CODES			
OSAGE OF VIRGINIA NAME 2618 A Colley Ave ADDRESS Norfolk VA 23517 CITY STATE ZIP			PROJECT NAME CTD 0001 AS4141/JPS MCAS LOCATION CTD 0001 PROJECT NO. FAX # (757) 440-0411															DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OI - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID			
SEND REPORT TO: PHONE # (757) 440-0400			COLLECTION DATE TIME SAMPLED BY: MATRIX # OF BOTTLES PRESERVATION HCl NON-HCl NH ₄ O ₃ HNO ₃ H ₂ SO ₄ NONE																		
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION		DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	HCl	NON-HCl	NH ₄ O ₃	HNO ₃	H ₂ SO ₄	NONE								
1	USTAS4141-MW02		3/13/07	1635	TE	GN	6	X	X	X				X	X	X					
2	USTAS4141-MW01		3/14/07	0842	TE	GN	6	X	X	X				X	X	X					
3	USTAS4141-MW10		3/14/07	0858	TE	GN	6	X	X	X				X	X	X					
4	USTAS4141-MW15		3/13/07	1525	TE	GN	6	X	X	X				X	X	X					
5	USTAS4141-MW16		3/13/07	1734	TE	GN	6	X	X	X				X	X	X					
6	USTAS4141-MW18		3/14/07	1515	TE	GN	6	X	X	X				X	X	X					
7	TRIP BLANKS		3/14/07	LAB	LAB	W	2	X						X							
	TEMP BLANK		3/14/07	LAB	LAB	W	2														
DATA TURNAROUND INFORMATION			DATA DELIVERABLE INFORMATION			COMMENTS/REMARKS															
☒ STANDARD APPROVED BY: _____ ☐ 48 HOUR RUSH ☐ 24 HOUR EMERGENCY ☐ OTHER _____ EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED			☐ STANDARD ☐ COMMERCIAL "B" ☐ DISK DELIVERABLE ☐ STATE FORMS ☒ OTHER (SPECIFY) <u>EDD FORMAT</u>			Email results in EDD Format to: <u>MCREE@OSAGEVA.COM</u> <u>JAMES.WILSON@SHAWGRP.COM</u> <u>MAEL.MARTIN@SHAWGRP.COM</u>															
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																					
RELINQUISHED BY: 1. <u>[Signature]</u>	DATE TIME: 1700 3/14/07	RECEIVED BY: 1. <u>[Signature]</u>	DATE TIME: 1700 3/14/07	RELINQUISHED BY: 2. <u>FX</u>	DATE TIME: 3-15-07 4:00	RECEIVED BY: 2. <u>[Signature]</u>	DATE TIME: 3-15-07 4:00														
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	DATE TIME:	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.	DATE TIME:														
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	DATE TIME:	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE	TEMPERATURE														

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ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F47956 CLIENT Sage of Virginia PROJECT: CIO 0001
 DATE/TIME RECEIVED: 9:00 3-15-07 # OF COOLERS RECEIVED: 2 COOLER TEMPS: 0.6 0.8
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: _____

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☐ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 0
 NUMBER OF 5035 FIELD KITS ? 0
 NUMBER OR LAB FILTERED METALS ? 0

SUMMARY OF COMMENTS: _____

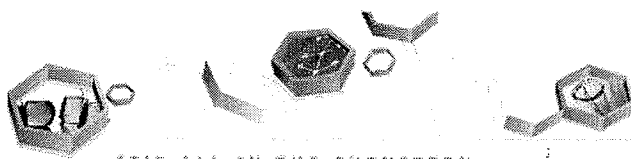
TECHNICIAN SIGNATURE/DATE Jmc 3-15-07 TECHNICIAN SIGNATURE/DATE JC 03-15-07 ASBD 10/03/06

SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
- ☐ CORRECT NUMBER OF CONTAINERS USED
- ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
- ☐ INSUFFICIENT VOLUME FOR ANALYSIS
- ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
- ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
- ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- ☐ UNCLEAR FILTERING INSTRUCTIONS
- ☐ UNCLEAR COMPOSITING INSTRUCTIONS
- ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
- ☐ % SOLIDS JAR NOT RECEIVED
- ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
- ☐ RESIDUAL CHLORINE PRESENT

(APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

F47956: Chain of Custody
 Page 2 of 2



GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MB	U001629.D	1	03/26/07	RB	03/20/07	OP19878	SU80

The QC reported here applies to the following samples:

Method: EPA 625

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	63% 42-108%
321-60-8	2-Fluorobiphenyl	57% 40-106%
1718-51-0	Terphenyl-d14	73% 39-121%

Method Blank Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MB	R07320.D	1	03/27/07	RB	03/20/07	OP19878	SR342

The QC reported here applies to the following samples:

Method: EPA 625

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	63% 42-108%
321-60-8	2-Fluorobiphenyl	63% 40-106%
1718-51-0	Terphenyl-d14	85% 39-121%

Blank Spike Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-BS	U001628.D	1	03/26/07	RB	03/20/07	OP19878	SU80

The QC reported here applies to the following samples:

Method: EPA 625

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	34.8	70	58-106
208-96-8	Acenaphthylene	50	34.8	70	58-105
120-12-7	Anthracene	50	38.6	77	65-108
56-55-3	Benzo(a)anthracene	50	38.0	76	63-111
50-32-8	Benzo(a)pyrene	50	37.3	75	62-106
205-99-2	Benzo(b)fluoranthene	50	36.9	74	63-109
191-24-2	Benzo(g,h,i)perylene	50	38.6	77	61-111
207-08-9	Benzo(k)fluoranthene	50	35.5	71	64-111
218-01-9	Chrysene	50	38.0	76	64-111
53-70-3	Dibenzo(a,h)anthracene	50	41.1	82	62-112
206-44-0	Fluoranthene	50	44.5	89	65-114
86-73-7	Fluorene	50	38.4	77	61-106
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.1	84	61-113
90-12-0	1-Methylnaphthalene	50	31.4	63	52-102
91-57-6	2-Methylnaphthalene	50	33.1	66	56-112
91-20-3	Naphthalene	50	29.3	59	50-104
85-01-8	Phenanthrene	50	37.9	76	65-108
129-00-0	Pyrene	50	35.4	71	60-113

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	60%	42-108%
321-60-8	2-Fluorobiphenyl	58%	40-106%
1718-51-0	Terphenyl-d14	70%	39-121%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MS	U001644.D	1	03/26/07	RB	03/20/07	OP19878	SU80
OP19878-MSD	U001645.D	1	03/26/07	RB	03/20/07	OP19878	SU80
F47956-4	U001636.D	1	03/26/07	RB	03/20/07	OP19878	SU80

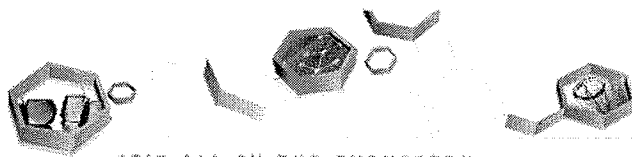
The QC reported here applies to the following samples:

Method: EPA 625

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

CAS No.	Compound	F47956-4 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		100	76.8	77	82.1	82	7	58-106/21
208-96-8	Acenaphthylene	ND		100	77.7	78	83.6	84	7	58-105/21
120-12-7	Anthracene	ND		100	79.4	79	84.5	85	6	65-108/19
56-55-3	Benzo(a)anthracene	ND		100	78.5	79	83.2	83	6	63-111/19
50-32-8	Benzo(a)pyrene	ND		100	77.2	77	81.7	82	6	62-106/20
205-99-2	Benzo(b)fluoranthene	ND		100	82.1	82	86.4	86	5	63-109/20
191-24-2	Benzo(g,h,i)perylene	ND		100	73.7	74	78.1	78	6	61-111/21
207-08-9	Benzo(k)fluoranthene	ND		100	73.4	73	76.8	77	5	64-111/20
218-01-9	Chrysene	ND		100	78.3	78	82.8	83	6	64-111/19
53-70-3	Dibenzo(a,h)anthracene	ND		100	79.1	79	85.0	85	7	62-112/20
206-44-0	Fluoranthene	ND		100	87.8	88	96.4	96	9	65-114/21
86-73-7	Fluorene	ND		100	81.2	81	87.3	87	7	61-106/19
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	81.7	82	86.6	87	6	61-113/20
90-12-0	1-Methylnaphthalene	1.4	J	100	74.1	73	79.8	78	7	52-102/25
91-57-6	2-Methylnaphthalene	1.6	J	100	78.6	77	85.3	84	8	56-112/26
91-20-3	Naphthalene	ND		100	71.7	72	78.9	79	10	50-104/28
85-01-8	Phenanthrene	ND		100	79.3	79	84.2	84	6	65-108/20
129-00-0	Pyrene	ND		100	77.5	78	77.7	78	0	60-113/20

CAS No.	Surrogate Recoveries	MS	MSD	F47956-4	Limits
4165-60-0	Nitrobenzene-d5	69%	75%	61%	42-108%
321-60-8	2-Fluorobiphenyl	67%	72%	59%	40-106%
1718-51-0	Terphenyl-d14	74%	74%	60%	39-121%



GC Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ899-MB	QQ023681.D	1	03/19/07	AF	n/a	n/a	GQQ899

The QC reported here applies to the following samples:

Method: EPA 601/602

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6, F47956-7

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	101% 70-120%
98-08-8	aaa-Trifluorotoluene	92% 73-118%

Blank Spike Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ899-BS	QQ023680.D1		03/19/07	AF	n/a	n/a	GQQ899

The QC reported here applies to the following samples:

Method: EPA 601/602

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6, F47956-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	16.3	82	80-120
108-90-7	Chlorobenzene	20	17.8	89	79-118
95-50-1	1,2-Dichlorobenzene	20	18.8	94	76-117
541-73-1	1,3-Dichlorobenzene	20	18.7	94	78-120
106-46-7	1,4-Dichlorobenzene	20	19.0	95	78-117
100-41-4	Ethylbenzene	20	17.3	87	79-121
1634-04-4	Methyl Tert Butyl Ether	20	18.2	91	72-113
108-88-3	Toluene	20	16.6	83	79-121
1330-20-7	Xylenes (total)	60	52.0	87	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	108%	70-120%
98-08-8	aaa-Trifluorotoluene	95%	73-118%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F47956

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F47909-3MS	QQ023693.D 1		03/19/07	AF	n/a	n/a	GQQ899
F47909-3MSD	QQ023694.D 1		03/19/07	AF	n/a	n/a	GQQ899
F47909-3	QQ023689.D 1		03/19/07	AF	n/a	n/a	GQQ899

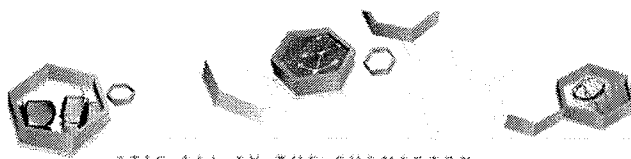
The QC reported here applies to the following samples:

Method: EPA 601/602

F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6, F47956-7

CAS No.	Compound	F47909-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U	20	17.1	86	17.1	86	0	80-120/10
108-90-7	Chlorobenzene	1.0 U	20	18.7	94	18.8	94	1	79-118/10
95-50-1	1,2-Dichlorobenzene	1.0 U	20	19.9	100	20.2	101	1	76-117/18
541-73-1	1,3-Dichlorobenzene	1.0 U	20	19.8	99	20.2	101	2	78-120/13
106-46-7	1,4-Dichlorobenzene	1.0 U	20	20.2	101	20.4	102	1	78-117/11
100-41-4	Ethylbenzene	1.0 U	20	18.0	90	18.1	91	1	79-121/9
1634-04-4	Methyl Tert Butyl Ether	1.0 U	20	19.0	95	18.9	95	1	72-113/13
108-88-3	Toluene	1.0 U	20	17.4	87	17.5	88	1	79-121/10
1330-20-7	Xylenes (total)	3.0 U	60	54.5	91	54.9	92	1	80-119/8

CAS No.	Surrogate Recoveries	MS	MSD	F47909-3	Limits
460-00-4	4-Bromofluorobenzene	110%	110%	103%	70-120%
98-08-8	aaa-Trifluorotoluene	96%	96%	93%	73-118%



IT'S ALL IN THE CHEMISTRY

Metals Analysis



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F47956
Account: OSAGEVAN - Osage of Virginia
Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11486
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/15/07

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	5		
Beryllium	4.0	1		
Cadmium	5.0	1		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	1		
Copper	25	.9		
Iron	300	12		
Lead	5.0	1.7	-0.86	<5.0
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	1		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP11486: F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1
6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F47956
Account: OSAGEVAN - Osage of Virginia
Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11486
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/15/07 03/15/07

Metal	F47956-1 Original	DUP	RPD	QC Limits	F47956-1 Original	MS	Spikelot MPFLICP1	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead	0.0	0.0 (a)	NC	0-20	0.0	464	500	92.8	80-120
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Tin									
Vanadium									
Zinc									

Associated samples MP11486: F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Elevated reporting limit(s) due to matrix interference.

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F47956
 Account: OSAGEVAN - Osage of Virginia
 Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11486
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 03/15/07

Metal	BSP Result	Spikelot MPFLICP1	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	499	500	99.8	80-120
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP11486: F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F47956
 Account: OSAGEVAN - Osage of Virginia
 Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11486
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 03/15/07

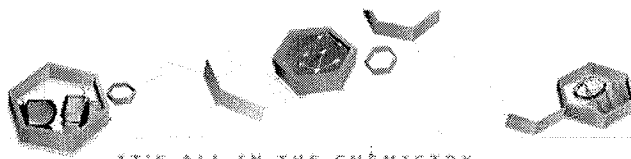
F47956-1		QC	
Metal	Original SDL 1:5	RPD	Limits

Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.00	0.00	NC	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP11486: F47956-1, F47956-2, F47956-3, F47956-4, F47956-5, F47956-6

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.4
 6



04/02/07

Technical Report for

Osage of Virginia

CTO 0001: AS4141/JP5 MCAS

CTO 0001

Accutest Job Number: F48038

Sampling Date: 03/16/07



Report to:

Osage of Virginia

mcree@osageva.com

ATTN: Mike Cree

Total number of pages in report: 37



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi
Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK
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Sample Summary

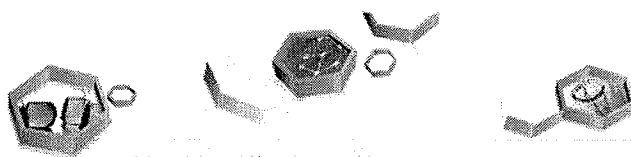
Osage of Virginia

Job No: F48038

CTO 0001: AS4141/JP5 MCAS

Project No: CTO 0001

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
F48038-1	03/16/07	09:10 TE	03/17/07	AQ Ground Water	USTAS4141-OBG06
F48038-2	03/16/07	09:50 TE	03/17/07	AQ Ground Water	USTAS4141-MW14
F48038-3	03/16/07	10:46 TE	03/17/07	AQ Ground Water	USTAS4141-MW17
F48038-4	03/16/07	11:55 TE	03/17/07	AQ Ground Water	USTAS4141-MW19
F48038-5	03/16/07	00:00 TE	03/17/07	AQ Ground Water	USTAS4141-DUPLICATE
F48038-6	03/16/07	00:00 TE	03/17/07	AQ Trip Blank Water	TRIP BLANKS



IT'S ALL IN THE CHEMISTRY

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	USTAS4141-OBG06	Date Sampled:	03/16/07
Lab Sample ID:	F48038-1	Date Received:	03/17/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001639.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.96	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.96	ug/l	
120-12-7	Anthracene	ND	4.8	0.96	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.96	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.96	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.96	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.96	ug/l	
218-01-9	Chrysene	ND	4.8	0.96	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.96	ug/l	
86-73-7	Fluorene	ND	4.8	0.96	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	1.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.96	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.96	ug/l	
91-20-3	Naphthalene	ND	4.8	0.96	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.96	ug/l	
129-00-0	Pyrene	ND	4.8	0.96	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%		42-108%
321-60-8	2-Fluorobiphenyl	56%		40-106%
1718-51-0	Terphenyl-d14	67%		39-121%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-OBG06
 Lab Sample ID: F48038-1
 Matrix: AQ - Ground Water
 Method: EPA 601/602
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
 Date Received: 03/17/07
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023889.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	105%		70-120%
98-08-8	aaa-Trifluorotoluene	85%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

2.1
2

Client Sample ID: USTAS4141-OBG06

Lab Sample ID: F48038-1

Matrix: AQ - Ground Water

Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07

Date Received: 03/17/07

Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	< 5.0	5.0	ug/l	1	03/19/07	03/19/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5573

(2) Prep QC Batch: MP11503

RL = Reporting Limit

Report of Analysis

Client Sample ID: USTAS4141-MW14
Lab Sample ID: F48038-2
Matrix: AQ - Ground Water
Method: EPA 625 SW846 3510C
Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
Date Received: 03/17/07
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001640.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.96	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.96	ug/l	
120-12-7	Anthracene	ND	4.8	0.96	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.96	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.96	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.96	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	1.9	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.96	ug/l	
218-01-9	Chrysene	ND	4.8	0.96	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	1.9	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.96	ug/l	
86-73-7	Fluorene	ND	4.8	0.96	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	1.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.96	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.96	ug/l	
91-20-3	Naphthalene	ND	4.8	0.96	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.96	ug/l	
129-00-0	Pyrene	ND	4.8	0.96	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%		42-108%
321-60-8	2-Fluorobiphenyl	65%		40-106%
1718-51-0	Terphenyl-d14	61%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-MW14
Lab Sample ID: F48038-2
Matrix: AQ - Ground Water
Method: EPA 601/602
Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
Date Received: 03/17/07
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023890.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	108%		70-120%
98-08-8	aaa-Trifluorotoluene	87%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

2.2
2

Client Sample ID: USTAS4141-MW14
Lab Sample ID: F48038-2
Matrix: AQ - Ground Water
Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
Date Received: 03/17/07
Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	<20	20	ug/l	1	03/19/07	03/19/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5573

(2) Prep QC Batch: MP11503

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	USTAS4141-MW17	Date Sampled:	03/16/07
Lab Sample ID:	F48038-3	Date Received:	03/17/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 625 SW846 3510C		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001641.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2	R07321.D	10	03/27/07	RB	03/20/07	OP19878	SR342

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2	1010 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.99	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.99	ug/l	
120-12-7	Anthracene	ND	5.0	0.99	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.99	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.99	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.99	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.99	ug/l	
218-01-9	Chrysene	ND	5.0	0.99	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.99	ug/l	
86-73-7	Fluorene	ND	5.0	0.99	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	120	5.0	0.99	ug/l	
91-57-6	2-Methylnaphthalene	87.6	5.0	0.99	ug/l	
91-20-3	Naphthalene	257 ^a	50	9.9	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.99	ug/l	
129-00-0	Pyrene	ND	5.0	0.99	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71%	0% ^b	42-108%
321-60-8	2-Fluorobiphenyl	62%	0% ^b	40-106%
1718-51-0	Terphenyl-d14	68%	0% ^b	39-121%

(a) Result is from Run# 2

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	USTAS4141-MW17	Date Sampled:	03/16/07
Lab Sample ID:	F48038-3	Date Received:	03/17/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023893.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	6.0	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	57.0	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene ^b	ND	13	13	ug/l	
100-41-4	Ethylbenzene	16.7	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	21.0	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	116%		70-120%
98-08-8	aaa-Trifluorotoluene	87%		73-118%

(a) All hits confirmed by GC/MS.

(b) Elevated reporting limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

2.3

2

Client Sample ID: USTAS4141-MW17

Lab Sample ID: F48038-3

Matrix: AQ - Ground Water

Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07

Date Received: 03/17/07

Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 20	20	ug/l	1	03/19/07	03/19/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5573

(2) Prep QC Batch: MP11503

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: USTAS4141-MW19
 Lab Sample ID: F48038-4
 Matrix: AQ - Ground Water
 Method: EPA 625 SW846 3510C
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
 Date Received: 03/17/07
 Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001642.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1010 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	0.99	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.99	ug/l	
120-12-7	Anthracene	ND	5.0	0.99	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.99	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.99	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.99	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.99	ug/l	
218-01-9	Chrysene	ND	5.0	0.99	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.99	ug/l	
86-73-7	Fluorene	ND	5.0	0.99	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.99	ug/l	
91-20-3	Naphthalene	ND	5.0	0.99	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.99	ug/l	
129-00-0	Pyrene	ND	5.0	0.99	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		42-108%
321-60-8	2-Fluorobiphenyl	76%		40-106%
1718-51-0	Terphenyl-d14	71%		39-121%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: USTAS4141-MW19
 Lab Sample ID: F48038-4
 Matrix: AQ - Ground Water
 Method: EPA 601/602
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
 Date Received: 03/17/07
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023894.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	108%		70-120%
98-08-8	aaa-Trifluorotoluene	87%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2.4

2

Client Sample ID: USTAS4141-MW19

Lab Sample ID: F48038-4

Matrix: AQ - Ground Water

Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07

Date Received: 03/17/07

Percent Solids: n/a

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 20	20	ug/l	1	03/19/07	03/19/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5573

(2) Prep QC Batch: MP11503

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: USTAS4141-DUPLICATE
 Lab Sample ID: F48038-5
 Matrix: AQ - Ground Water
 Method: EPA 625 SW846 3510C
 Project: CTO 0001: AS4141/JP5 MCAS

Date Sampled: 03/16/07
 Date Received: 03/17/07
 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U001643.D	1	03/26/07	RB	03/20/07	OP19878	SU80
Run #2	R07322.D	10	03/27/07	RB	03/20/07	OP19878	SR342

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2	1020 ml	1.0 ml

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.98	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.98	ug/l	
120-12-7	Anthracene	ND	4.9	0.98	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.98	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.98	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.98	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.98	ug/l	
218-01-9	Chrysene	ND	4.9	0.98	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	2.0	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.98	ug/l	
86-73-7	Fluorene	ND	4.9	0.98	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	2.0	ug/l	
90-12-0	1-Methylnaphthalene	118	4.9	0.98	ug/l	
91-57-6	2-Methylnaphthalene	85.3	4.9	0.98	ug/l	
91-20-3	Naphthalene	250 ^a	49	9.8	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.98	ug/l	
129-00-0	Pyrene	ND	4.9	0.98	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	72%	0% ^b	42-108%
321-60-8	2-Fluorobiphenyl	54%	0% ^b	40-106%
1718-51-0	Terphenyl-d14	57%	0% ^b	39-121%

(a) Result is from Run# 2

(b) Outside control limits due to dilution.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	USTAS4141-DUPLICATE	Date Sampled:	03/16/07
Lab Sample ID:	F48038-5	Date Received:	03/17/07
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QQ023895.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.9	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	58.8	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene ^a	ND	14	14	ug/l	
100-41-4	Ethylbenzene	17.1	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	21.8	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	117%		70-120%
98-08-8	aaa-Trifluorotoluene	87%		73-118%

(a) All hits confirmed by GC/MS.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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2.5

2

Client Sample ID: USTAS4141-DUPLICATE

Lab Sample ID: F48038-5

Matrix: AQ - Ground Water

Date Sampled: 03/16/07

Date Received: 03/17/07

Percent Solids: n/a

Project: CTO 0001: AS4141/JP5 MCAS

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead ^a	< 20	20	ug/l	1	03/19/07	03/19/07 RS	SW846 6010B ¹	SM 3030C ²

(1) Instrument QC Batch: MA5573

(2) Prep QC Batch: MP11503

(a) Elevated reporting limit(s) due to matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	TRIP BLANKS	Date Sampled:	03/16/07
Lab Sample ID:	F48038-6	Date Received:	03/17/07
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 601/602		
Project:	CTO 0001: AS4141/JP5 MCAS		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	QQ023896.D	1	03/26/07	AF	n/a	n/a	GQQ905
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

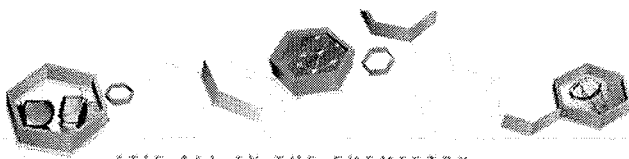
Purgeable Aromatics, Full List

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	110%		70-120%
98-08-8	aaa-Trifluorotoluene	87%		73-118%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4405 VINELAND ROAD • SUITE C-15
ORLANDO, FL 32811
TEL: 407-425-6700 • FAX: 407-425-0707

ACCUTEST JOB #:

ACCUTEST QUOTE #:

F48038

CLIENT INFORMATION		FACILITY INFORMATION		ANALYTICAL INFORMATION		MATRIX CODES								
OSAGE OF VIRGINIA NAME 2013 A COLLEY AVE ADDRESS Norfolk VA 23517 CITY, STATE ZIP MIKE CREE SEND REPORT TO: PHONE # (757) 440-0400		PROJECT NAME CTO 0001 LOCATION AS4141/JPS NCAS PROJECT NO. CTO 0001 FAX # (757) 440-0411		602 + 4141S 625 PAHs 3030A (Pb)		DW - DRINKING WATER GW - GROUND WATER WW - WASTE WATER SO - SOIL SL - SLUDGE OI - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID								
ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION		PRESERVATION								LAB USE ONLY		
		DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	NOI	NOH	INCO	HSCH	NONE			
1	USTAS4141 - OBG06	3/16/07	0910	TE	GW	6	x	x	x	x	x	x		
2	USTAS4141 - MW14	3/16/07	0930	TE	GW	6	x	x	x	x	x	x		
3	USTAS4141 - MW17	3/16/07	1046	TE	GN	6	x	x	x	x	x	x		
4	USTAS4141 - MW19	3/16/07	1155	TE	GW	6	x	x	x	x	x	x		
5	USTAS4141 - DUPLICATE	3/16/07	—	TE	GN	6	x	x	x	x	x	x		
6	TRIP BLANKS	3/16/07	LAB	LAB	W	2	x							
	TEMP BLANK	3/16/07	LAB	LAB		1								
DATA TURNAROUND INFORMATION		DATA DELIVERABLE INFORMATION		COMMENTS/REMARKS										
☒ STANDARD ☐ 48 HOUR RUSH ☐ 24 HOUR EMERGENCY ☐ OTHER EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED		APPROVED BY: _____ ☐ STANDARD ☐ COMMERCIAL "B" ☐ DISK DELIVERABLE ☐ STATE FORMS ☒ OTHER (SPECIFY) <u>EDD FORMAT</u>		EMAIL RESULTS IN "EDD FORMAT" TO: <u>MCREE@OSAGEVA.COM</u> <u>JAMES.WILSON@SHANGRP.COM</u> <u>MARK.MARTIN@SHANGRP.COM</u>										
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY														
RELINQUISHED BY: 1. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 1. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 2. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 2. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 3. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 3. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 4. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 4. <u>[Signature]</u>
RELINQUISHED BY: 3. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 3. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 4. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 4. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 5. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 5. <u>[Signature]</u>	DATE TIME: 3/16/07	RELINQUISHED BY: 6. <u>[Signature]</u>	DATE TIME: 3/16/07	RECEIVED BY: 6. <u>[Signature]</u>
SEAL #		PRESERVE WHERE APPLICABLE		ON ICE		TEMPERATURE								
						1. 8.2.2c								

F48038: Chain of Custody

Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F48038 CLIENT: State of VA PROJECT: CTO 0001
 DATE/TIME RECEIVED: 03-17-07 10:00 # OF COOLERS RECEIVED: 2 COOLER TEMPS: 1.8, 2.2
 METHOD OF DELIVERY: FEDEX UPS ACCUTEST COURIER GREYHOUND DELIVERY OTHER
 AIRBILL NUMBERS: 8600 5192 9989

COOLER INFORMATION

- ☐ CUSTODY SEAL NOT PRESENT OR NOT INTACT
- ☐ CHAIN OF CUSTODY NOT RECEIVED (COC)
- ☐ ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- ☐ SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- ☐ TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- ☒ TRIP BLANK PROVIDED
- ☐ TRIP BLANK NOT PROVIDED
- ☐ TRIP BLANK NOT ON COC
- ☒ TRIP BLANK INTACT
- ☐ TRIP BLANK NOT INTACT
- ☒ RECEIVED WATER TRIP BLANK
- ☐ RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

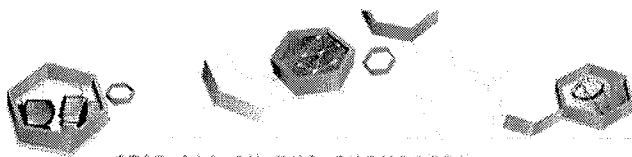
NUMBER OF ENCORES ? 2
 NUMBER OF 5035 FIELD KITS ? 2
 NUMBER OR LAB FILTERED METALS ? 2

SUMMARY OF COMMENTS: _____

SAMPLE INFORMATION

- ☐ SAMPLE LABELS NOT PRESENT ON ALL BOTTLES
 - ☐ CORRECT NUMBER OF CONTAINERS USED
 - ☐ SAMPLE RECEIVED IMPROPERLY PRESERVED
 - ☐ INSUFFICIENT VOLUME FOR ANALYSIS
 - ☐ TIMES ON COC DOES NOT MATCH LABEL(S)
 - ☐ ID'S ON COC DOES NOT MATCH LABEL(S)
 - ☐ VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
 - ☐ BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
 - ☐ NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
 - ☐ UNCLEAR FILTERING INSTRUCTIONS
 - ☐ UNCLEAR COMPOSITING INSTRUCTIONS
 - ☐ SAMPLE CONTAINER(S) RECEIVED BROKEN
 - ☐ % SOLIDS JAR NOT RECEIVED
 - ☐ 5035 FIELD KIT NOT FROZEN WITHIN 48 HOUR'S
 - ☐ RESIDUAL CHLORINE PRESENT
- (APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

TECHNICIAN SIGNATURE/DATE W. F. H. 03-17-07 TECHNICIAN SIGNATURE/DATE NC 03-17-07 ASBD 10/03/06



IT'S ALL IN THE CHEMISTRY

GC/MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MB	U001629.D	1	03/26/07	RB	03/20/07	OP19878	SU80

The QC reported here applies to the following samples:

Method: EPA 625

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	63% 42-108%
321-60-8	2-Fluorobiphenyl	57% 40-106%
1718-51-0	Terphenyl-d14	73% 39-121%

Method Blank Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MB	R07320.D	1	03/27/07	RB	03/20/07	OP19878	SR342

The QC reported here applies to the following samples:

Method: EPA 625

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	5.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.0	ug/l	
120-12-7	Anthracene	ND	5.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	1.0	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	1.0	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	1.0	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	2.0	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	1.0	ug/l	
218-01-9	Chrysene	ND	5.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	2.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	1.0	ug/l	
86-73-7	Fluorene	ND	5.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
85-01-8	Phenanthrene	ND	5.0	1.0	ug/l	
129-00-0	Pyrene	ND	5.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	63% 42-108%
321-60-8	2-Fluorobiphenyl	63% 40-106%
1718-51-0	Terphenyl-d14	85% 39-121%

Blank Spike Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-BS	U001628.D	1	03/26/07	RB	03/20/07	OP19878	SU80

The QC reported here applies to the following samples:

Method: EPA 625

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
83-32-9	Acenaphthene	50	34.8	70	58-106
208-96-8	Acenaphthylene	50	34.8	70	58-105
120-12-7	Anthracene	50	38.6	77	65-108
56-55-3	Benzo(a)anthracene	50	38.0	76	63-111
50-32-8	Benzo(a)pyrene	50	37.3	75	62-106
205-99-2	Benzo(b)fluoranthene	50	36.9	74	63-109
191-24-2	Benzo(g,h,i)perylene	50	38.6	77	61-111
207-08-9	Benzo(k)fluoranthene	50	35.5	71	64-111
218-01-9	Chrysene	50	38.0	76	64-111
53-70-3	Dibenzo(a,h)anthracene	50	41.1	82	62-112
206-44-0	Fluoranthene	50	44.5	89	65-114
86-73-7	Fluorene	50	38.4	77	61-106
193-39-5	Indeno(1,2,3-cd)pyrene	50	42.1	84	61-113
90-12-0	1-Methylnaphthalene	50	31.4	63	52-102
91-57-6	2-Methylnaphthalene	50	33.1	66	56-112
91-20-3	Naphthalene	50	29.3	59	50-104
85-01-8	Phenanthrene	50	37.9	76	65-108
129-00-0	Pyrene	50	35.4	71	60-113

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	60%	42-108%
321-60-8	2-Fluorobiphenyl	58%	40-106%
1718-51-0	Terphenyl-d14	70%	39-121%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP19878-MS	U001644.D	1	03/26/07	RB	03/20/07	OP19878	SU80
OP19878-MSD	U001645.D	1	03/26/07	RB	03/20/07	OP19878	SU80
F47956-4	U001636.D	1	03/26/07	RB	03/20/07	OP19878	SU80

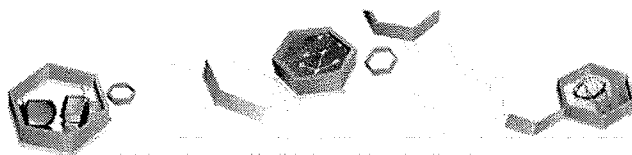
The QC reported here applies to the following samples:

Method: EPA 625

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

CAS No.	Compound	F47956-4 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		100	76.8	77	82.1	82	7	58-106/21
208-96-8	Acenaphthylene	ND		100	77.7	78	83.6	84	7	58-105/21
120-12-7	Anthracene	ND		100	79.4	79	84.5	85	6	65-108/19
56-55-3	Benzo(a)anthracene	ND		100	78.5	79	83.2	83	6	63-111/19
50-32-8	Benzo(a)pyrene	ND		100	77.2	77	81.7	82	6	62-106/20
205-99-2	Benzo(b)fluoranthene	ND		100	82.1	82	86.4	86	5	63-109/20
191-24-2	Benzo(g,h,i)perylene	ND		100	73.7	74	78.1	78	6	61-111/21
207-08-9	Benzo(k)fluoranthene	ND		100	73.4	73	76.8	77	5	64-111/20
218-01-9	Chrysene	ND		100	78.3	78	82.8	83	6	64-111/19
53-70-3	Dibenzo(a,h)anthracene	ND		100	79.1	79	85.0	85	7	62-112/20
206-44-0	Fluoranthene	ND		100	87.8	88	96.4	96	9	65-114/21
86-73-7	Fluorene	ND		100	81.2	81	87.3	87	7	61-106/19
193-39-5	Indeno(1,2,3-cd)pyrene	ND		100	81.7	82	86.6	87	6	61-113/20
90-12-0	1-Methylnaphthalene	1.4	J	100	74.1	73	79.8	78	7	52-102/25
91-57-6	2-Methylnaphthalene	1.6	J	100	78.6	77	85.3	84	8	56-112/26
91-20-3	Naphthalene	ND		100	71.7	72	78.9	79	10	50-104/28
85-01-8	Phenanthrene	ND		100	79.3	79	84.2	84	6	65-108/20
129-00-0	Pyrene	ND		100	77.5	78	77.7	78	0	60-113/20

CAS No.	Surrogate Recoveries	MS	MSD	F47956-4	Limits
4165-60-0	Nitrobenzene-d5	69%	75%	61%	42-108%
321-60-8	2-Fluorobiphenyl	67%	72%	59%	40-106%
1718-51-0	Terphenyl-d14	74%	74%	60%	39-121%



GC Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ905-MB	QQ023870.D 1		03/26/07	AF	n/a	n/a	GQQ905

The QC reported here applies to the following samples:

Method: SW846 8021B

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5, F48038-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.50	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.50	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	104%	70-120%
98-08-8	aaa-Trifluorotoluene	87%	73-118%

Blank Spike Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GQQ905-BS	QQ023869.D1		03/26/07	AF	n/a	n/a	GQQ905

The QC reported here applies to the following samples:

Method: SW846 8021B

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5, F48038-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	17.8	89	80-120
108-90-7	Chlorobenzene	20	19.6	98	79-118
95-50-1	1,2-Dichlorobenzene	20	20.5	103	76-117
541-73-1	1,3-Dichlorobenzene	20	20.7	104	78-120
106-46-7	1,4-Dichlorobenzene	20	20.9	105	78-117
100-41-4	Ethylbenzene	20	19.0	95	79-121
1634-04-4	Methyl Tert Butyl Ether	20	18.8	94	72-113
108-88-3	Toluene	20	18.2	91	79-121
1330-20-7	Xylenes (total)	60	57.2	95	80-119

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	111%	70-120%
98-08-8	aaa-Trifluorotoluene	89%	73-118%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: F48038

Account: OSAGEVAN Osage of Virginia

Project: CTO 0001: AS4141/JP5 MCAS

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F48137-2MS	QQ023887.D 1		03/26/07	AF	n/a	n/a	GQQ905
F48137-2MSD	QQ023888.D 1		03/26/07	AF	n/a	n/a	GQQ905
F48137-2	QQ023872.D 1		03/26/07	AF	n/a	n/a	GQQ905

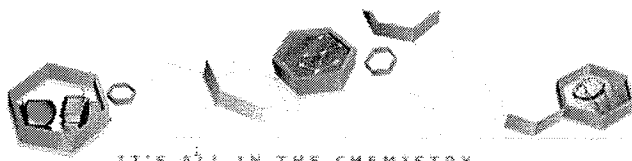
The QC reported here applies to the following samples:

Method: EPA 601/602

F48038-1, F48038-2, F48038-3, F48038-4, F48038-5, F48038-6

CAS No.	Compound	F48137-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	17.8	89	17.6	88	1	80-120/10
108-90-7	Chlorobenzene	ND	20	19.6	98	19.3	97	2	79-118/10
95-50-1	1,2-Dichlorobenzene	ND	20	21.2	106	20.9	105	1	76-117/18
541-73-1	1,3-Dichlorobenzene	ND	20	20.9	105	20.6	103	1	78-120/13
106-46-7	1,4-Dichlorobenzene	ND	20	21.2	106	20.9	105	1	78-117/11
100-41-4	Ethylbenzene	ND	20	18.9	95	18.7	94	1	79-121/9
1634-04-4	Methyl Tert Butyl Ether	ND	20	19.3	97	19.2	96	1	72-113/13
108-88-3	Toluene	ND	20	18.2	91	17.9	90	2	79-121/10
1330-20-7	Xylenes (total)	ND	60	57.0	95	56.2	94	1	80-119/8

CAS No.	Surrogate Recoveries	MS	MSD	F48137-2	Limits
460-00-4	4-Bromofluorobenzene	110%	112%	104%	70-120%
98-08-8	aaa-Trifluorotoluene	86%	88%	87%	73-118%



Metals Analysis



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: F48038
Account: OSAGEVAN - Osage of Virginia
Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11503
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/19/07

Metal	RL	IDL	MB raw	final
Aluminum	200	18		
Antimony	6.0	3.4		
Arsenic	10	2.8		
Barium	200	5		
Beryllium	4.0	1		
Cadmium	5.0	1		
Calcium	1000	42		
Chromium	10	.6		
Cobalt	50	1		
Copper	25	.9		
Iron	300	12		
Lead	5.0	1.7	-1.1	<5.0
Magnesium	5000	4.3		
Manganese	15	.6		
Molybdenum	50	1.3		
Nickel	40	1		
Potassium	10000	10		
Selenium	10	2		
Silver	10	.9		
Sodium	10000	500		
Thallium	10	2.3		
Tin	50	3.1		
Vanadium	50	.6		
Zinc	20	1.3		

Associated samples MP11503: F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

6.1.1

6

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: F48038
Account: OSAGEVAN - Osage of Virginia
Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11503
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 03/19/07 03/19/07

Metal	F48038-1 Original DUP		RPD	QC Limits	F48038-1 Original MS		Spikelot MPFLICP1 % Rec	QC Limits
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead	0.0	0.0	NC	0-20	0.0	639	625	102.2 80-120
Magnesium								
Manganese								
Molybdenum								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Tin								
Vanadium								
Zinc								

Associated samples MP11503: F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

6.1.2

6

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: F48038
 Account: OSAGEVAN - Osage of Virginia
 Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11503
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 03/19/07

Metal	BSP Result	Spikelot MPFLICP1 % Rec	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead	511	500	102.2 80-120
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Tin			
Vanadium			
Zinc			

Associated samples MP11503: F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.3

6

SERIAL DILUTION RESULTS SUMMARY

Login Number: F48038
 Account: OSAGEVAN - Osage of Virginia
 Project: CTO 0001: AS4141/JP5 MCAS

QC Batch ID: MP11503
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 03/19/07

Metal	F48038-1 Original SDL 1:5 RPD			QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead	0.00	0.00	NC	0-10
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Thallium				
Tin				
Vanadium				
Zinc				

Associated samples MP11503: F48038-1, F48038-2, F48038-3, F48038-4, F48038-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

6.1.4

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