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Tel 314-674-1000

November 23, 2009

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

VIA FEDEX

Re: Long-Term Monitoring Program
3rd Quarter 2009 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Long-Term Monitoring Program 3rd Quarter 2009 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@solutia.com

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Long-Term Monitoring Program
3rd Quarter 2009 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

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3RD QUARTER 2009
DATA REPORT

LONG-TERM MONITORING PROGRAM

SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

November 2009

URS Corporation
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Project # 21562154.00003

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1.0 INTRODUCTION

This report presents the results of the 3rd Quarter 2009 (3Q09) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009). The Site location is presented in **Figure 1**.

The LTMP was designed to evaluate the effectiveness of monitored natural attenuation (MNA), including: 1) a clear and meaningful trend of decreasing contaminant mass; 2) data that indirectly demonstrate the types and rates of natural attenuation processes active at the site; and 3) data that directly demonstrate the occurrence of biodegradation processes at the site.

Groundwater Sampling Location and Frequency - As specified in the LTMP Work Plan, groundwater samples will be collected for eight quarters from five monitoring wells downgradient of the Former Chlorobenzene Process Area (CPAMW-1D through CPAMW-5D) and five monitoring wells downgradient of the Former Benzene Storage Area (BSAMW-1S and BSAMW-2D through BSAMW-5D) to assess attenuation processes in the American Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River.

Monitoring wells BSAMW-1S, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Benzene Storage Area. Monitoring wells CPAMW-1D, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Chlorobenzene Process Area. Source areas and monitoring well locations are presented in **Figure 2**.

Quarterly sampling under the Long-Term Monitoring Program commenced 3Q08 and will continue for a total of eight quarters. At the end of eight quarters, groundwater quality and attenuation process data will be evaluated to determine if longer sampling intervals (e.g., semi-annual or annual) are appropriate.

Groundwater Sampling Parameters - During the 3Q09 groundwater sampling event, groundwater samples were analyzed for benzene, monochlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene using USEPA Method 8260B to demonstrate a trend of decreasing contaminant mass and/or concentrations over time. In accordance with USEPA comments regarding the Long-Term Monitoring Plan, the following constituents were added to the groundwater monitoring parameter list on a semi-annual basis (1st and 3rd Quarters):

- 4-Chloroaniline: CPAMW-3D, CPAMW-4D, and CPAMW-5D
- 2-Chlorophenol: All wells
- 1, 2, 4-Trichlorobenzene: All wells
- 1,4-Dioxane: BSAMW-2D, BSAMW-3D, BSAMW-4D, and BSAMW-5D

MNA samples were collected from all ten long-term monitoring program wells. Evaluation of the types of active natural attenuation processes at the site is based on the following key geochemical parameters:

- Electron Donors: Organic Carbon (Total and Dissolved)
- Electron Acceptors: Iron (Total and Dissolved)
Manganese (Total and Dissolved)
Nitrate
Sulfate
- Biodegradation Byproducts: Carbon Dioxide
Chloride
Methane
- Biodegradation Indicators: Alkalinity

Direct demonstration of the occurrence of biodegradation processes is completed quarterly utilizing Microbial Insights (www.microbe.com) Bio-Trap® Samplers for Phospholipid Fatty Acid Analysis (PLFA), along with Stable Isotope Probes (SIPs) for benzene or chlorobenzene detection in select wells.

Surface Water and Sediment Sampling – Surface water and sediment samples are collected during winter low flow conditions and during summer low flow conditions as part of the site long-term monitoring program. This typically coincides with the 1st and 3rd quarter groundwater sampling events. The objective of the surface water and sediment monitoring program is to assess the impact of contaminated groundwater discharging to the Mississippi River north of the Groundwater Migration Control System (GMCS).

2.0 FIELD PROCEDURES

URS Corporation (URS) conducted 3Q09 monitoring well sampling activities between August 18 and 26, in accordance with procedures outlined in the Revised LTMP Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes field investigative procedures:

Groundwater Level Measurements – URS personnel used an electronic oil/water interface probe to measure depth to static groundwater levels and if present, the thickness of non-aqueous phase liquid (NAPL), to 0.01 feet. Depth to groundwater measurements were collected on August 17 and 18, 2009 from accessible existing wells (i.e., GM-, K- , PSMW- and PMA-series) and piezometers clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised LTMP Work Plan **(Figure 3**). NAPL was not detected within any of the LTMP monitoring wells.

Well gauging information for the 3Q09 event is presented in **Table 1**. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU) is presented as **Figure 3**.

Groundwater Sampling – Groundwater samples were collected on August 18th, 19th, 20th, and 26th, 2009. Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 250 to 375 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every three to five minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-thru cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
pH	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-thru cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed, in the following order:

- Volatile Organic Compounds (VOCs)
- Gas Sensitive Parameters (e.g., methane, carbon dioxide)
- General Chemistry (i.e., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, and total and dissolved organic carbon)
- Field Parameters (i.e., dissolved oxygen, ferrous iron, and oxidation-reduction potential).

Samples collected for ferrous iron, dissolved iron and dissolved manganese analysis were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F (0.2)” in the sample nomenclature.

Quality assurance/quality control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates

(MS/MSD) were collected at a rate of 5%. In addition, trip blanks accompanied each shipment containing samples for VOC analysis.

Each investigative or QC sample was labeled immediately following collection. Each sample identification number consisted of the following nomenclature "AAAMW#-MMYY-QAC" where:

- "**AAA**" denotes "Chlorobenzene Process Area (CPA)" or "Benzene Storage Area (BSA)"and "**MW-#**" denotes "Monitoring Well Number":
- **MMYY –** Month and year of sampling quarter, e.g.: Third quarter (August) 2009, 0809
- **"QAC"** denotes QA/QC sample
  - **AD –** analytical duplicate
  - **EB –** equipment blank
  - **MS or MSD –** Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, preservative used (if applicable), analysis requested/comments, and sampler signature/date/time, with permanent ink on the chain-of-custody (COC). Prior to shipment, coolers were sealed between the lid and sides of the cooler with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of an overnight delivery service. Field sampling data sheets are included in **Appendix A**, COC forms are included in **Appendix B**.

Field personnel and equipment were decontaminated according to procedures specified in the Revised LTMP Work Plan to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Alconox® or equivalent detergent wash, a potable water rinse, and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

Biodegradation Evaluation Sampling - Bio-Trap® samplers and Stable Isotope Probes (SIPs), provided by Microbial Insights, Inc. (Rockford, TN), were utilized in the LTMP to provide information regarding biodegradation potential of the Shallow Hydrogeologic Unit (SHU), the

MHU and the DHU. Bio-Trap® samplers are passive sampling tools which, over time, collect microbes across a membrane that serves as the sampling matrix. SIPs are similar passive sampling tools that are analyzed to measure the degradation of a specific contaminant (i.e., benzene and chlorobenzene).

On August 5 and 6, 2009, URS field personnel deployed Bio-Trap® samplers in each of the ten LTMP wells for PLFA analysis. A benzene SIP and a monochlorobenzene SIP were placed in monitoring wells BSAMW02D and CPAMW03D, respectively. Bio-Trap® samplers and SIPs were tied to nylon line attached to the well cap and lowered to the middle of the well screen.

On September 11, 2009, the Bio-Trap® samplers and SIPs were retrieved from the wells, sealed in Ziploc® bags, labeled with the proper well identification and placed in an iced sample cooler with a signed COC. Sealed sample coolers were sent to Microbial Insights, Inc. for analysis.

Surface Water and Sediment Monitoring - Surface water/sediment and groundwater sampling events are typically coordinated to confirm groundwater is discharging to the river at the time of sampling, and to assess the relationship between VOC concentrations in the river and in groundwater. The surface water and sediment sampling was conducted subsequent to the 3Q09 groundwater sampling event on September 23, 2009. This timing was necessitated due to high river stage in August and September. Fluid levels in groundwater monitoring wells CPAMW-5D (elev. 384.39), BSAMW-5D (elev. 386.73) and BSAMW-4D (elev. 388.25) were gauged on the same day in which the surface water and sediment sampling occurred. The water levels in the wells were higher than the Mississippi River (~382.51) confirming discharge to the river.

Surface water and sediment samples were collected at three locations, R2007-1 through R2007-3 (**Figure 2**). Coordinates for each of the three sample locations were preloaded into a Trimble Global Positioning System (GPS) unit, which URS field personnel used for navigation to the sample locations. The river bed is scoured in this vicinity; therefore, field personnel positioned the sampling boat near the planned sample location, where the dredge was able to reach the river bed. In an effort to collect a sample representing the water column above the sediments and minimize potential contamination from the sediments or the sampling system, surface water samples were collected prior to sediment samples at each of the three locations.

Samples were analyzed for the following VOCs: benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene along with semivolatile organic compounds (SVOCs) 1,4-dioxane, 4-chloroaniline, 2-chlorophenol and 1,2,4-trichlorobenzene.

QA/QC and shipping procedures were similar to those described above for groundwater sample collection.

In-situ water quality parameters (temperature, pH, dissolved oxygen and conductivity) were also recorded at each of the three sample locations. These parameters were measured with a Horiba Model U-22 at a depth of one foot below the water surface, and recorded on field data sheets (**Appendix C).**

Surface Water Sampling

Surface water samples were collected at the sediment-water interface (within one foot of the bottom) at the pre-designated sampling locations. Samples were collected with a peristaltic pump and weighted intake. New tubing was used at each sampling location. Tubing was clamped to the cable of the sediment sampler (ponar dredge) and lowered with the dredge to the bottom of the river. Unfiltered surface water samples were used for chemical analysis. The samples for VOC and SVOC analysis were collected by directly filling appropriate containers from the peristaltic pump tubing to minimize VOC and/or preservative loss. Pump velocity was reduced during sampling to minimize volatilization.

Sediment Sampling

Sediment samples were collected with an 11.1 liter ponar grab sampler. The sampler was deployed from a davit along the side of the boat, and was raised and lowered with a winch. Prior to sampling at each location, the grab sampler and the other sampling devices (stainless steel bowl and spoon) were decontaminated with a distilled water and Alconox® wash, followed by a distilled water rinse. A single grab sample was sufficient to provide the needed sample quantity. Sediment samples were collected from the upper 2 inches (5-6 centimeters) of the river bed. Upon retrieval, the sediment sampler was opened and the sediment was transferred to the stainless steel bowl. The samples for VOC analysis were obtained using a 5 milliliter TerraCore sampler, which was inserted into the sediment below the surface and removed with care to prevent VOC loss.

COCs for surface water and sediment sampling are included in **Appendix B**.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for VOCs, SVOCs and MNA parameters, using the following methodologies:

- VOCs, via USEPA SW-846 Method 8260B
- SVOCs, via USEPA SW-846 Method 8270C
- MNA parameters: alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010B), total and dissolved manganese (6010B), methane (RSK 175), nitrate (353.2), sulfate (375.4), and total and dissolved organic carbon (415.1).

Dichlorobenzenes were quantitated using Method 8260B because of potential volatilization losses associated with Method 8270C. Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised Long Term Monitoring Work Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as **Appendix D**. Laboratory result pages (i.e. Form 1's) along with data validation review sheets are included in **Appendices E and F**.

A total of 14 groundwater samples (10 investigative samples, 1 field duplicate, 1 MS/MSD pair and 1 equipment blank) were prepared and analyzed by TestAmerica for combinations of VOCs, dissolved gases, metals, and general chemistry. In addition, four trip blanks were included in the coolers that contained samples for VOC analysis and were analyzed for VOCs. The results for the various analyses were submitted as sample delivery groups (SDGs) KPS052, KPS053, and KPS054. The samples contained in each SDG are listed below:

KPS052	KPS053	KPS054
BSAMW-4D-0809	BSAMW-1S-0809	BSAMW-5D-0809
CPAMW-4D-0809	CPAMW-1D-0809	CPAMW-5D-0809
Trip Blank	CPAMW-2D-0809	Trip Blank
BSAMW-3D-0809	CPAMW-2D-0809-AD	
BSAMW-3D-0809-EB	Trip Blank	
BSAMW-2D-0809		
CPAMW-3D-0809		
Trip Blank		

Evaluation of the groundwater analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1999), USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004), and the Revised Long-Term Monitoring Program Work Plan (Solutia 2009).

Based on the above mentioned criteria, groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, laboratory control sample (LCS), surrogate and field duplicate data were achieved for these SDGs to meet the project objectives. Completeness which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect/nondetect (**J/UJ**) data was 100 percent.

For surface water and sediment, a total of 13 samples (six investigative (three surface water and three sediment), two field duplicates, two MS/MSD pair and one equipment blank) were prepared and analyzed by TestAmerica for combinations of VOCs and SVOCs (**Appendix F**). In addition, one trip blank was included in the cooler that contained surface water samples for VOC analysis. The results for the various analyses were submitted as SDGs KRS007 and KRS008 (**Appendix F**).

The samples contained in each SDG are listed below:

KRS007	**KRS008**
SW-R2007-1-0909	SED-R2007-1-0909
SW-R2007-2-0909	SED-R2007-2-0909
SW-R2007-3-0909	SED-R2007-3-0909
SW-R2007-2-0909-AD	SED-R2007-2-0909-AD
SED-R2007-1-0909-EB	
Trip Blank 092309	

Evaluation of the surface water and sediment analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, (USEPA 1999) and the Revised Long Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

Based on the above mentioned criteria, surface water and sediment results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, laboratory control sample (LCS), surrogate and field duplicate data were achieved for these SDGs to meet the project objectives. Completeness which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect/nondetect (**J/UJ**) data was 100 percent.

5.0 OBSERVATIONS

Groundwater analytical detections and MNA results for the 3Q09 LTMP sampling event are presented in **Tables 2** and **3,** respectively. Benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,4-dioxane, 4-chloroaniline, 2-chlorophenol and 1,2,4-trichlorobenzene were detected in samples collected from the ten LTMP wells during this sampling event. Each of these constituents is discussed below:

Benzene - Benzene was detected in collected samples at levels above the laboratory reporting limit in nine of the ten wells sampled in 3Q09, ranging from 12 µg/L (CPAMW-4D) to 940,000 µg/L (BSAMW-1S).

Downgradient of the Former Benzene Storage Area, benzene was detected in the DHU at concentrations of 72,000 µg/L (BSAMW-2D) and 68 µg/L (BSAMW-3D). Near the river north of the Sauget Area 2 Groundwater Migration Control System (SA2 GMCS), benzene was detected in the DHU at concentrations of 99 µg/L (BSAMW-4D).

Benzene was detected at the Former Chlorobenzene Process Area at concentrations of 5,000 µg/L (CPAMW-1D) and 1,100/1,000 µg/L (CPAMW-2D and duplicate) at the North Tank Farm. Downgradient of the Former Chlorobenzene Storage Area, benzene was detected in the DHU at a concentration of 44 µg/L (CPAMW03D) and 12 µg/L (CPAMW-4D). Benzene was not detected near the river north of the SA2 GMCS in DHU well CPAMW05D.

Chlorobenzenes (Total) - Total chlorobenzenes (e.g., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4, dichlorobenzene) were detected at levels above the laboratory reporting limit in nine of the ten wells sampled in 3Q09, ranging from 353 µg/L (BSAMW-5D) to 47,700 µg/L (CPAMW-2D)/(45,170 µg/L-CPAMW-2D-AD).

Downgradient of the Former Chlorobenzene Storage Area, total chlorobenzenes were detected in the DHU at concentrations of 540 µg/L (CPAMW-3D) and 1,133 µg/L (CPAMW-4D). Total chlorobenzenes were detected in the DHU near the river north of SA2 GMCS at a concentration of 1,513 µg/L (CPAMW-5D).

Downgradient of the Former Benzene Storage Area, total chlorobenzenes were detected at concentrations of 5,000 µg/L (BSAMW-2D) and 1,462 µg/L (BSAMW-3D). North of the SA2 GMCS, near the river, total chlorobenzenes were detected in the DHU at concentrations of 2,781 µg/L (BSAMW-4D) and 353 µg/L (BSAMW-5D).

Figure 4 displays benzene and total chlorobenzenes results from the 3Q09 sampling event.

1,4-Dioxane - Groundwater samples were collected from four monitoring wells downgradient of the Former Benzene and Chlorobenzene Storage Area to analyze for 1,4-dioxane (BSAMW-2D,

BSAMW-3D, BSAMW-4D, and BSAMW-5D). 1,4-Dioxane was detected in monitoring wells BSAMW-2D and BSAMW-4D at concentrations of 29 µg/L and 41 µg/L, respectively.

4-Chloroaniline - Groundwater samples for 4-chloroaniline analysis were collected from monitoring wells CPAMW-3D, CPAMW-4D and CPAMW-5D. 4-chloroaniline was detected in monitoring wells CPAMW-3D (70 µg/L) and CPAMW-4D (96 µg/L).

2-Chlorophenol - Of the ten samples available for analysis during 3Q09, 2-chlorophenol was detected in three of the LTMP wells at concentrations ranging from 14 µg/L (BSAMW-4D) to 26 µg/L (CPAMW-1D); located along the limiting flow lines and within the Chlorobenzene Process Area, respectively. 2-Chlorophenol was also detected in monitoring well CPAMW-2D at a concentration of 22 µg/L (CPAMW-2D)/(17 µg/L-CPAMW-2D-AD).

1,2,4-Trichlorobenzene – Samples from the ten LTMP wells were analyzed for 1,2,4-Trichlorobenzene. Of the wells sampled, only the sample from monitoring well CPAMW-1D indicated a detection, with a concentration of 740 µg/L.

Surface Water and Sediment Monitoring - Surface water and sediment samples were analyzed for VOCs benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene along with SVOCs 4-chloroaniline, 2-chlorophenol, 1,4-dioxane and 1,2,4-trichlorobenzene. The results are summarized as follows**:**

- None of these constituents were detected in the surface water samples (VOC reporting limit 1 µg/L).
- The sediment sample from location R2007-3, indicated an estimated benzene concentration of 3.5 µg/Kg, along with a chlorobenzene concentration of 72 µg/Kg and an estimated 1,4-dichlorobenzene concentration of 1.6 µg/Kg. All other constituents were non-detect in the samples (variable reporting limits). Sample location R2007-3 is approximately 150 feet from the shoreline, and is downgradient from well BSAMW-4D.

These results indicate that constituents are attenuating prior to discharge to the river.

Monitored Natural Attenuation - The MNA results for this quarter are presented in **Table 3**. PLFA and SIP laboratory results are included in **Appendix G**. These data were compared to other quarterly sampling data in the first annual natural attenuation evaluation report submitted in October 2009 and will be compared again in the second such report following 2Q10 sampling.

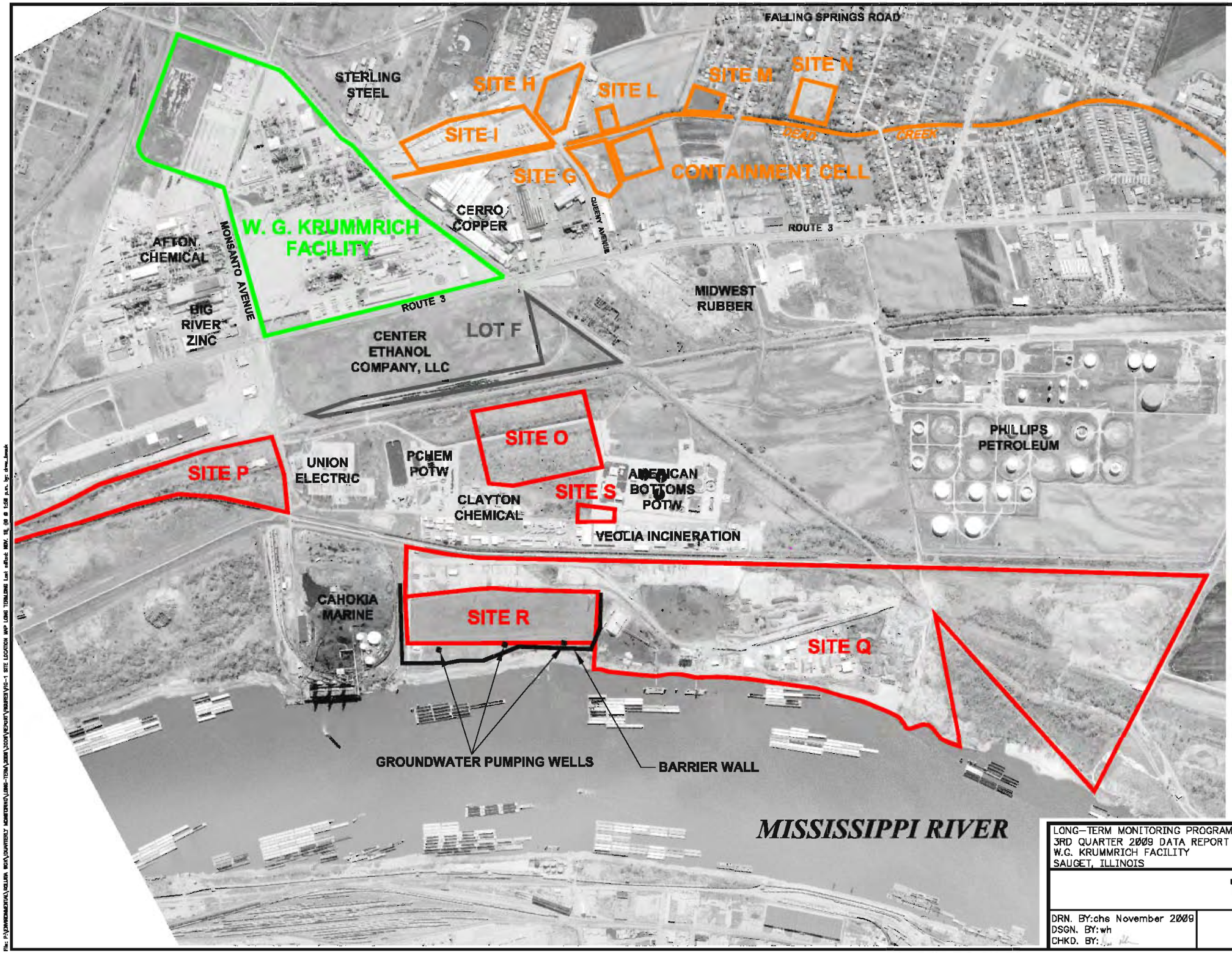
6.0 REFERENCES

Solutia Inc, 2009. Revised Long-Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.

USEPA, 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review.

USEPA, 2004. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.

Figures



LEGEND

- W.G. KRUMMRICH FACILITY
- SAUGET AREA #1
- SAUGET AREA #2

Ø 1000

SCALE FEET

LONG-TERM MONITORING PROGRAM
3RD QUARTER 2009 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562154

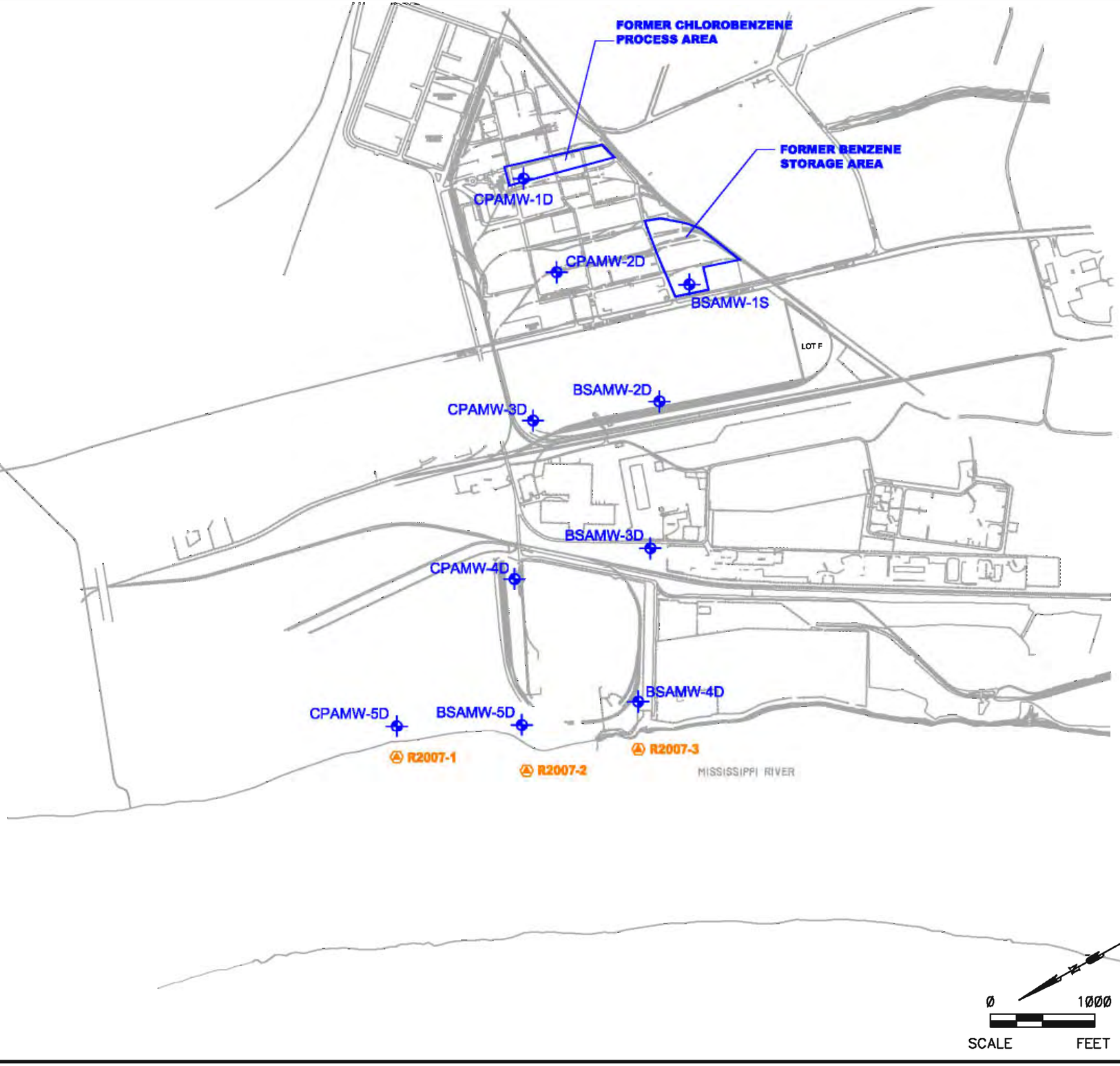
URS

DRN. BY:chs November 2009
DSGN. BY:wh
CHKD. BY:

Site Location Map

FIG. NO. 1

File: P:\Environmental\Illinois Work\Quarterly Monitoring\Long-Term\2009\3rd Quarter\Figures\Fig-1 SITE LOCATION MAP LONG TERM.dwg Last edited: NOV. 18, 09 @ 1:58 p.m. by: chs_bunch



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- LONG-TERM MONITORING WELL LOCATION
- LONG-TERM MONITORING PROGRAM SURFACE WATER / SEDIMENT SAMPLING LOCATION

NOTES:

1. LOCATIONS DEPICTED ARE THOSE USED TO DEVELOP GROUNDWATER CONTOUR MAPS FOR MHU/DHU.
2. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

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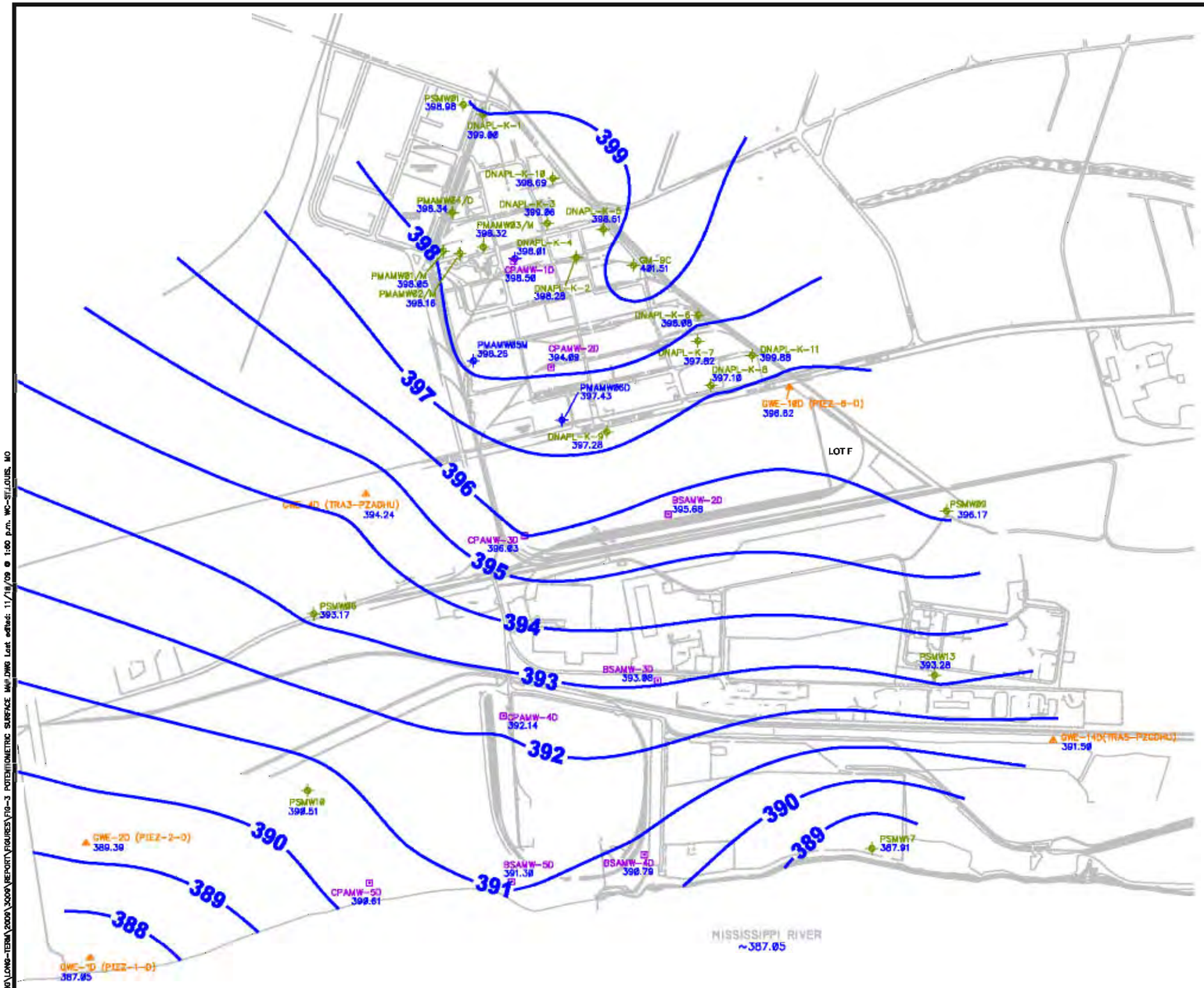
SCALE FEET

LONG-TERM MONITORING PROGRAM 3RD QUARTER 2009 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562154
URS	
DRN. BY:chs November 2009 DSGN. BY:ekf CHKD. BY:	Long-Term Monitoring Program Well Locations
	FIG. NO. 2



LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- —393— GROUNDWATER ELEVATION CONTOUR (FT NAVD)

NOTES:

1. GROUNDWATER LEVELS WERE MEASURED AUGUST 17-18, 2009.
2. CONTOURS GENERATED PRIMARILY USING SURFER SOFTWARE VERSION 8. SOME INTERPRETATION WAS DONE USING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND.
3. THE MISSISSIPPI RIVER STAGE ELEVATION PRESENTED ON THE FIGURE IS AN AVERAGE ELEVATION FOR THE TIME OF THE GAUGING EVENT. THE INFORMATION WAS OBTAINED FROM THE SITE R BUBBLER.
4. LOCATIONS WITH WELLS SCREENED IN BOTH THE MHU AND DHU UTILIZED THE DHU WELL FOR DEVELOPMENT OF THE POTENTIOMETRIC SURFACE MAP.

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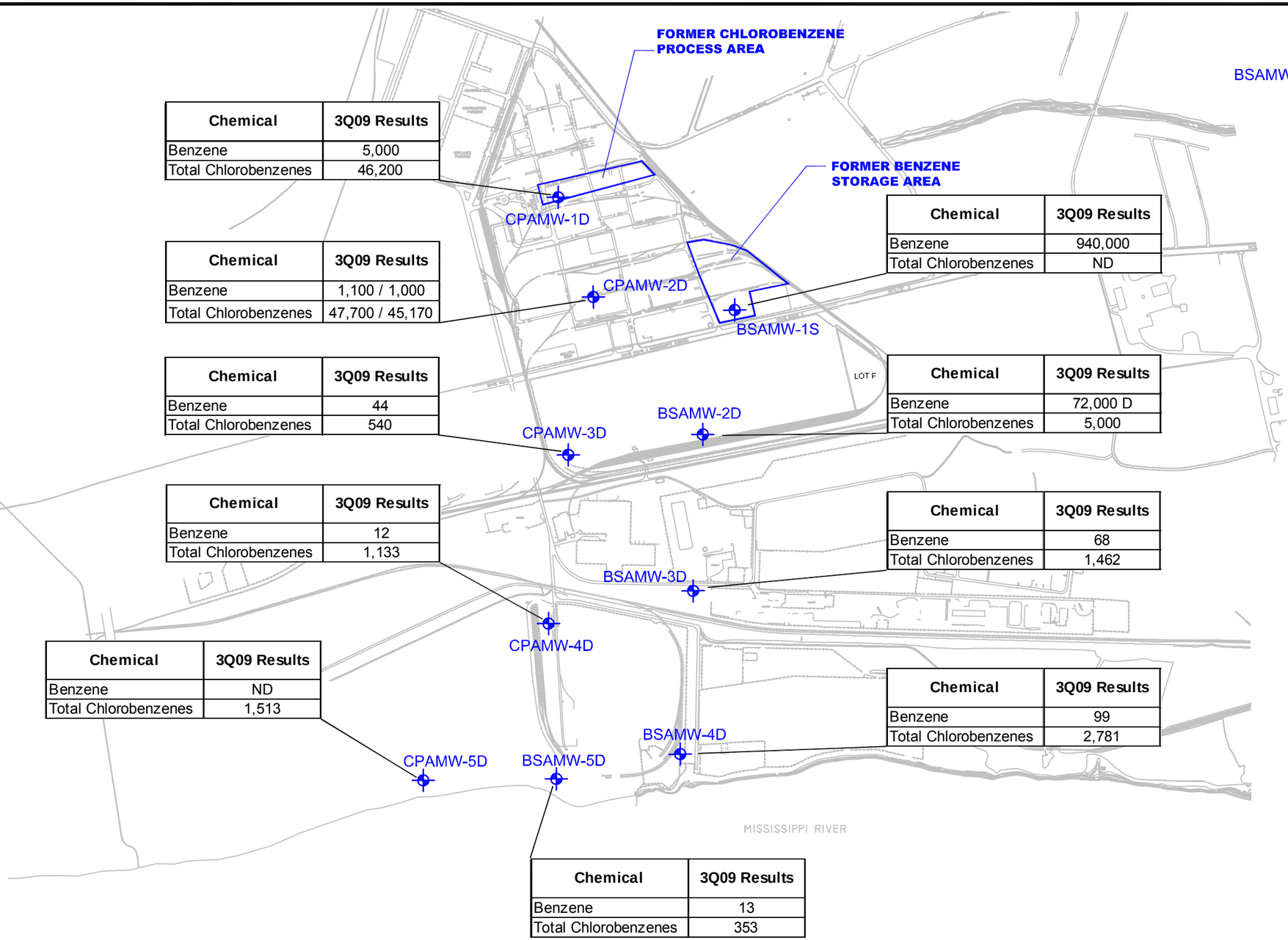
LONG-TERM MONITORING PROGRAM 3RD QUARTER 2009 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562154
URS	
DRN. BY:chs November 2009 DSGN. BY:ekf CHKD. BY:	Potentiometric Surface Map Middle/Deep Hydrogeologic Unit
	FIG. NO. 3

File: P:\ENVIRONMENTAL\SOLUTIA WORK\QUARTERLY MONITORING\LONG-TERM\2009\3Q09\REPORT\FIGURES\F03-3 POTENTIOMETRIC SURFACE MAP.DWG Last edited: 11/18/09 @ 1:50 p.m. WC-STLOUIS, MO



Chemical	3Q09 Results
Benzene	5,000
Total Chlorobenzenes	46,200

Chemical	3Q09 Results
Benzene	1,100 / 1,000
Total Chlorobenzenes	47,700 / 45,170

Chemical	3Q09 Results
Benzene	44
Total Chlorobenzenes	540

Chemical	3Q09 Results
Benzene	12
Total Chlorobenzenes	1,133

Chemical	3Q09 Results
Benzene	ND
Total Chlorobenzenes	1,513

Chemical	3Q09 Results
Benzene	13
Total Chlorobenzenes	353

Chemical	3Q09 Results
Benzene	940,000
Total Chlorobenzenes	ND

Chemical	3Q09 Results
Benzene	72,000 D
Total Chlorobenzenes	5,000

Chemical	3Q09 Results
Benzene	68
Total Chlorobenzenes	1,462

Chemical	3Q09 Results
Benzene	99
Total Chlorobenzenes	2,781

LEGEND

BSAMW-1D — LONG-TERM MONITORING WELL LOCATION

NOTES:

1. TOTAL CHLOROBENZENES RESULTS INCLUDE THE SUM OF MONOCHLOROBENZENE, 1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE, AND 1,4-DICHLOROBENZENE.
2. RESULTS SHOWN ARE IN ug/L.
3. ND DENOTES ANALYTE OR ANALYTES NOT DETECTED.
4. MULTIPLE SAMPLE RESULTS INDICATE A DUPLICATE SAMPLE.
5. "D" DENOTES RESULTS FROM A DILUTED SAMPLE

Ø 1000
SCALE FEET

LONG-TERM MONITORING PROGRAM
3RD QUARTER 2009 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562154

URS

DRN. BY:dab November 2009
DSGN. BY:EKF
CHKD. BY:

Benzene and Total Chlorobenzenes Results

FIG. NO. 4

Tables

See last page of table for notes.

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						August 17 - 18, 2009		
	Ground Elevation (feet)*	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Product Thickness (feet)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)									
BSAMW-1S	409.49	412.31	19.68	24.86	389.63	384.63	14.84	--	397.47
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)									
PMAMW-1M	410.32	410.08	54.54	59.54	355.78	350.78	12.03	--	398.05
PMAMW-2M	412.26	411.93	56.87	61.87	355.39	350.39	13.77	--	398.16
PMAMW-3M	412.36	412.10	57.07	62.07	355.29	350.29	13.78	--	398.32
PMAMW-5M	411.27	410.97	52.17	57.17	359.10	354.10	12.71	--	398.26
PSMW-1	409.37	412.59	34.56	39.56	374.81	369.81	13.61	--	398.98
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)									
BSAMW-2D	412.00	415.13	65.79	70.79	346.21	341.21	19.45	--	395.68
BSAMW-3D	412.91	415.74	104.80	109.80	308.11	303.11	22.66	--	393.08
BSAMW-4D	425.00	424.69	118.54	123.54	306.46	301.46	33.90	--	390.79
BSAMW-5D	420.80	420.49	116.25	120.85	304.95	299.95	29.19	--	391.30
CPAMW-1D	408.62	408.32	66.12	71.12	342.50	337.50	9.82	--	398.50
CPAMW-2D	408.51	408.20	99.96	104.96	308.55	303.55	14.11	--	394.09
CPAMW-3D	410.87	410.67	101.90	106.90	308.97	303.97	14.64	--	396.03
CPAMW-4D	421.57	421.20	116.44	121.44	305.13	300.13	29.06	--	392.14
CPAMW-5D	411.03	413.15	105.51	110.51	305.52	300.52	22.54	--	390.61
DNAPL-K-1	413.07	415.56	108.2	123.2	304.87	289.87	16.56	--	399.00
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	9.44	--	398.28
DNAPL-K-3	412.13	411.91	104.8	119.8	307.33	292.33	12.85	--	399.06
DNAPL-K-4	409.48	409.15	102.55	117.55	306.93	291.93	11.14	--	398.01
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	13.30	--	398.61
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	12.01	--	398.08
DNAPL-K-7	408.32	407.72	100.4	115.4	307.92	292.92	9.90	--	397.82
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	14.28	--	397.10
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	8.69	--	397.28
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	14.56	--	398.69
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	14.11	--	397.67
GM-9C	409.54	411.21	88	108	321.54	301.54	11.33	--	399.88

See last page of table for notes.

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						August 17 - 18, 2009		
	Ground Elevation (feet)*	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Product Thickness (feet)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock) (continued)									
GWE-1D (PIEZ-1D)	412.80	415.60	117	127	295.80	285.80	28.55	--	387.05
GWE-2D (PIEZ-2D)	417.45	417.14	127	137	290.45	280.45	27.75	--	389.39
GWE-4D (TRA3-PZADHU)	406.05	405.74	74	80	332.05	326.05	11.50	--	394.24
GWE-10D (PIEZ-6D)	410.15	412.87	102.5	112.5	307.65	297.65	16.25	--	396.62
GWE-14D (TRA5-PZCDHU)	420.47	422.90	90	96	330.47	324.47	31.40	--	391.50
PMAMW-4D	411.22	410.88	68.84	73.84	342.38	337.38	12.54	--	398.34
PMAMW-6D	407.63	407.32	96.49	101.49	311.14	306.14	9.89	--	397.43
PSMW-6	404.11	406.63	99.80	104.80	304.31	299.31	13.46	--	393.17
PSMW-9	403.92	403.52	100.40	105.40	303.52	298.52	7.35	--	396.17
PSMW-10	409.63	412.18	101.23	106.23	308.40	303.40	21.67	--	390.51
PSMW-13	405.80	405.53	106.08	111.08	299.72	294.72	12.25	--	393.28
PSMW-17	420.22	423.26	121.25	126.25	298.97	293.97	35.35	--	387.91

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
bgs - below ground surface
btoc - Below top of casing

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	VOC (µg/L)					SVOC (µg/L)			
		Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chloroaniline	2-Chlorophenol	1,4-Dioxane	1,2,4-Trichlorobenzene
BENZENE STORAGE AREA										
BSAMW-1S-0809	8/20/2009	**940,000**	<5000	<5000	<5000	<5000	NA	<9.4	NA	<9.4
BSAMW-2D-0809	8/19/2009	**72,000 D**	**5,000**	<200	<200	<200	NA	<9.4	**29**	<9.4
BSAMW-3D-0809	8/19/2009	**68**	**1,100**	**32**	<20	**330**	NA	<9.4	<9.4	<9.4
BSAMW-4D-0809	8/18/2009	**99**	**2,700 D**	**20**	<10	**61**	NA	**14**	**41**	<9.7
BSAMW-5D-0809	8/26/2009	**13**	**330**	**10**	<4	**13**	NA	<9.4	<9.4	<9.4
CHLOROBENZENE PROCESS AREA										
CPAMW-1D-0809	8/20/2009	**5,000**	**16,000**	**18,000**	**1,200**	**11,000**	NA	**26**	NA	**740 D**
CPAMW-2D-0809	8/20/2009	**1,100**	**30,000**	**2,100**	**600**	**15,000**	NA	**22**	NA	<9.4
CPAMW-2D-0809-AD	8/20/2009	**1,000**	**30,000**	**1,700**	**470**	**13,000**	NA	**17**	NA	<9.4
CPAMW-3D-0809	8/19/2009	**44**	**510 D**	**12**	**1.2**	**17**	**70**	<9.4	NA	<9.4
CPAMW-4D-0809	8/18/2009	**12**	**1,100**	**14**	<10	**19**	**96**	<9.4	NA	<9.4
CPAMW-5D-0809	8/26/2009	<10	**1,500**	<10	<10	**13**	<19	<9.4	NA	<9.4

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given.
BOLD indicates concentration greater than reporting limit.
AD = Analytical Duplicate
D = Compound analyzed at a dilution
NA = sample not analyzed for select analyte in accordance with Revised LTMP Work Plan

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)	ORP (mV)
Benzene Storage Area																		
BSAMW-1S-0809	8/20/2009	900	<23 B	100	4.55	<0.35	<0.33		1.8		0.36		13,000	<0.05	<5		9.7	-142.2
BSAMW-1S-F(0.2)-0809	8/20/2009							1.36		1.6		0.36				8.1		
BSAMW-2D-0809	8/19/2009	700	<36 B	85	1.18	10	0.81		1.5		0.28		11,000	<0.05	<5		6.6	-136.0
BSAMW-2D-F(0.2)-0809	8/19/2009							1.14		1.2		0.26				5.1		
BSAMW-3D-0809	8/19/2009	510	<32 B	67	2.54	2.2	5.9		12		0.53		440	<0.05	260		4.8	-135.0
BSAMW-3D-F(0.2)-0809	8/19/2009							>5		12		0.54				3.8		
BSAMW-4D-0809	8/18/2009	650	66 B	100	1.11	7.3	<0.33		8.1		0.59		270	<0.05	120		7	-172.3
BSAMW-4D-F(0.2)-0809	8/18/2009							4.23		7.9		0.59				5.6		
BSAMW-5D-0809	8/26/2009	840	78 B	270	2.33	18	<0.33		17		0.47		11,000	<0.25	<5		6.3	-129.7
BSAMW-5D-F(0.2)-0809	8/26/2009							>5		16		0.46				4.7		
Chlorobenzene Process Area																		
CPAMW-1D-0809	8/20/2009	1,100	<5	110	2.49	73	<0.33		1.5		0.1		32,000	<0.05	<5		58	12.2
CPAMW-1D-F(0-2)-0809	8/20/2009							0.27		1.5		0.098				39		
CPAMW-2D-0809	8/20/2009	630	<27 B	66	4.39	9.5	0.54		5.9		0.35		2,800	<0.05	<5		12	-111.0
CPAMW-2D-F(0-2)-0809	8/20/2009							>5		5.3		0.34				12		
CPAMW-3D-0809	8/19/2009	690	<56 B	270	3.66	31	<0.33		14		0.66		32,000	<0.05	<5		11	-137.2
CPAMW-3D-F(0.2)-0809	8/19/2009							>5		14		0.71				10		
CPAMW-4D-0809	8/18/2009	850	50 B	250	0.83	15	<0.33		11		0.25		5,300	<0.05	<5		8.5	-154.7
CPAMW-4D-F(0.2)-0809	8/18/2009							>5		11		0.26				7.8		
CPAMW-5D-0809	8/26/2009	390	150 B	290	1.62	6.1	<0.33		93		3.3		30	<0.25	1600		4	-38.0
CPAMW-5D-F(0.2)-0809	8/26/2009							>5		99		3.6				4.3		

Notes:
DO and ORP were measured in the field using YSI 6920 equipped with a flow-thru cell. Values presented represent final measurements before sampling
Ferrous Iron readings were measured in the field using a LaMotte Colorimeter after the groundwater passed through a 0.2 µ filter.
mg/L = milligrams per liter
ug/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given.
A blank space indicates sample not analyzed for select analyte.
B = Compound was found in the blank and sample
F(0.2) = Sample was filtered utilizing a 0.2 µ filter during sample collection.
mV = millivolts

Appendix A

Groundwater Purging and Sampling Forms

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/20/09 | WEATHER: sunny, 70s
MONITORING WELL ID: BSAMW01S | SAMPLE ID: BSAMW01S-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 27.33 ft
Constructed Well Depth (btoc): 27.50 ft
Depth to Water (btoc): 14.88 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 22.50 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 12.45 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 25.00 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 257 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	0923	15.03	colorless	hydrocarbon	7.21	17.93	1.890	35.8	4.17	-119.4
750	0926				7.23	17.96	1.887	29.9	4.28	-125.5
1,500	0929				7.25	18.01	1.885	25.0	4.48	-130.1
2,250	0932				7.25	18.02	1.883	22.3	4.56	-132.7
3,000	0935				7.25	18.03	1.882	19.7	4.65	-134.5
3,750	0938				7.25	18.20	1.883	17.6	4.56	-136.6
4,500	0941				7.25	18.18	1.884	17.4	4.58	-137.0
5,250	0944				7.25	18.17	1.881	17.2	4.57	-137.7
6,000	0947				7.25	18.22	1.882	16.4	4.65	-138.2
6,750	0950				7.25	18.06	1.875	15.7	4.54	-139.2
7,500	0953				7.25	18.16	1.875	15.1	4.64	-140.0
8,250	0956				7.25	18.00	1.875	14.6	4.64	-141.0
9,000	0959				7.25	17.86	1.873	14.3	4.64	-141.6
9,750	1002	↓	↓	↓	7.25	17.93	1.871	14.3	4.55	-142.2
					MEC					

Start Time: 0923
Stop Time: 1002
Elapsed Time: 39 min
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/20/09

SAMPLING DATA

Sample Date: 8/20/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1010
Sample Flow Rate: 250 mL/min.
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 1.36 ppm

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LMT Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/19/09 | WEATHER: sunny, 80s
MONITORING WELL ID: BSAMW02D | SAMPLE ID: BSAMW02D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 77.10 ft
Constructed Well Depth (btoc): ____ ft
Depth to Water (btoc): 19.60 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 72.05 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 57.50 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 74.55 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.1 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1225	19.46	colorless	hydrocarbon	7.00	19.36	3.003	4.1	2.29	-125.1
750	1228				6.97	19.09	2.912*	4.0	1.63	-136.8
1500	1252				7.09	19.51	1.580	3.0	2.26	-95.2
2,250	1255				6.99	19.23	1.566	3.8	1.41	-119.2
3,000	1258				6.98	19.31	1.560	3.1	1.23	-128.2
3,750	1301				6.98	19.40	1.549	2.9	1.15	-132.7
4,500	1304				6.98	19.39	1.550	3.3	1.15	-134.7
5,250	1307	↓	↓	↓	6.98	19.61	1.548	2.9	1.18	-136.0
						MEC				

Start Time: 1225
Stop Time: 1307
Elapsed Time: 18 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/19/09

SAMPLING DATA

Sample Date: 8/19/09 1315 mc
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: mc
Sample Time: 1315
Sample Flow Rate: 250 mL/min
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 1.14 ppm
* recalibrated conductivity

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/19/09 | WEATHER: sun/clouds, 80s
MONITORING WELL ID: BSAMW03D | SAMPLE ID: BSAMW03D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 114.79 ft
Constructed Well Depth (btoc): ____ ft
Depth to Water (btoc): 22.33 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ____ ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 92.46 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is (4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ____ ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are (4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.2 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1027	22.33	colorless	hydrocarbon	6.76	18.42	3.104	8.3	2.65	-133.9
750	1030				6.80	18.35	3.079	6.4	2.38	-137.3
1,500	1033				6.82	18.46	3.084	4.6	2.48	-135.9
2,250	1036				6.83	18.59	3.078	3.9	2.53	-135.4
3,000	1039	↓	↓	↓	6.84	18.61	3.080	3.7	2.54	-135.0
						MC				

Start Time: 1027
Stop Time: 1039
Elapsed Time: 12 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/19/09

SAMPLING DATA

Sample Date: 8/19/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1045
Sample Flow Rate: 250 mL/min
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: EB before this well – BSAMW03D-0809-EB

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = Overrange

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program PROJECT NUMBER: 21562154.00003 FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/18/09 WEATHER: Sunny, 80s
MONITORING WELL ID: BSAMW04D SAMPLE ID: BSAMW04D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 123.47 ft
Constructed Well Depth (btoc): 123.54 ft
Depth to Water (btoc): 33.37 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 118.54 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 90.10 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 121.04 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1242	33.38	colorless	hydrocarbon	6.85	17.96	1.381	5.1	1.53	-131.7
750	1245	↓	↓	↓	6.80	17.42	1.352	5.1	1.35	-140.7
1500	1248				6.79	17.36	1.338	5.5	1.25	-160.2
2,250	1251				6.79	17.39	1.333	4.9	1.15	-166.7
3,000	1254				6.79	17.34	1.329	4.7	1.11	-168.1
3,750	1257				6.80	17.94	1.337	4.4	1.11	-172.3
						MEC				

Start Time: 1242
Stop Time: 1257
Elapsed Time: 15 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/18/09

SAMPLING DATA

Sample Date: 8/18/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1305
Sample Flow Rate: 250 mL/min
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 4.23

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/26/09 | WEATHER: sunny, 70s
MONITORING WELL ID: BSAMW05D | SAMPLE ID: BSAMW05D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 120.09 ft
Constructed Well Depth (btoc): 121.25 ft
Depth to Water (btoc): 28.10 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 116.25 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 91.99 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 118.75 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1004	28.14	colorless	hydrocarbon	6.57	19.67	2.374	17.7	3.14	-113.4
750	1006				6.64	19.23	2.368	18.9	2.81	-120.7
1,500	1008				6.67	19.00	2.363	19.7	2.69	-122.7
2,250	1010				6.70	18.52	2.349	15.7	2.63	-125.9
3,000	1012				6.71	18.72	2.344	16.4	2.61	-126.7
4,500	1016				6.72	18.74	2.339	12.8	2.54	-128.3
5,250	1018				6.73	18.76	2.335	14.1	2.46	-129.2
6,000	1020				6.74	18.64	2.331	10.7	2.41	-128.9
6,750	1022				6.74	18.67	2.330	11.4	2.34	-128.9
7,500	1024				6.74	18.63	2.329	9.4	2.33	-129.7
						MEC				

Start Time: 1004
Stop Time: 1024
Elapsed Time: 20 min.
Average Purge Rate (mL/min): 375
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/26/09

SAMPLING DATA

Sample Date: 8/26/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace [X] Initials: MC
Sample Time: 1030
Sample Flow Rate: 375 ml/min
Analysis: VOCs, Metals, MNA
QA/QC Samples: ~~MS/MSD~~ –
BSAMW05D-0809-MS
BSAMW05D-0809-MSD

COMMENTS:
MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = Overrange.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/20/09 | WEATHER: overcast, 70s
MONITORING WELL ID: CPAMW01D | SAMPLE ID: CPAMW01D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 70.88 ft
Constructed Well Depth (btoc): ____ ft
Depth to Water (btoc): 9.75 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 66.12 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 61.13 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 68.62 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = ____ ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 2.8 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1125	9.80	light brown	hydrocarbon	9.19	20.11	1.749	144.0	3.52	-16.0
750	1128	↓	↓	↓	9.24	19.93	1.895	88.1	2.50	-8.3
1,500	1131				9.16	19.54	2.035	60.7	2.11	-7.1
2,250	1134				9.14	19.45	2.106	44.4	2.26	-7.4
3,000	1137				9.14	19.53	2.157	35.2	2.38	-4.9
3,750	1140				9.14	19.52	2.189	31.7	2.14	-2.2
4,500	1143				9.14	19.51	2.207	27.3	2.05	-0.3
5,250	1146				9.14	19.30	2.236	25.2	2.17	-3.1
6,000	1149				9.15	19.30	2.256	23.6	2.11	1.7
6,750	1152				9.16	19.39	2.277	22.5	2.46	5.7
7,500	1155				9.16	19.32	2.294	21.5	2.58	5.0
8,250	1158				9.17	19.41	2.303	21.4	2.60	9.6
9,000	1201	↓	↓	↓	9.17	19.55	2.319	21.6	2.49	12.2
					MEC					

Start Time: 1125
Stop Time: 1201
Elapsed Time: 36 min
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/20/09

SAMPLING DATA

Sample Date: 8/20/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1210
Sample Flow Rate: 250 mL/min
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = 0.27 ppm

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/20/09 | WEATHER: overcast, 70s
MONITORING WELL ID: CPAMW02D | SAMPLE ID: CPAMW02D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 104.80 ft
Constructed Well Depth (btoc): 104.96 ft
Depth to Water (btoc): 11.40 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 99.96 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 93.40 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 102.46 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1357	11.40	colorless	hydrocarbon	6.97	20.95	1.239	93.2	4.67	-112.8
750	1400				6.85	20.78	1.256	71.0	4.85	-113.6
1,500	1403				6.81	20.43	1.293	49.7	4.91	-113.5
2,250	1406				6.79	20.37	1.316	37.0	5.20	-114.0
3,000	1409				6.78	20.41	1.332	29.9	5.33	-114.3
3,750	1412				6.78	20.25	1.341	27.4	5.88	-114.4
4,500	1415				6.79	20.31	1.327	26.3	6.19	-115.0
5,250	1418				6.80	21.85	1.368	24.9	5.66	-113.3
6,000	1421				6.81	22.00	1.371	23.7	5.85	-112.1
6,750	1424				6.80	21.46	1.378	21.6	5.76	-112.7
7,500	1427				6.80	21.33	1.381	20.0	4.96	-113.0
8,250	1430				6.79	21.06	1.383	19.2	5.06	-113.2
9,000	1433				6.79	20.83	1.388	18.3	4.87	-114.4
9,750	1436				6.79	20.94	1.393	17.9	4.98	-114.1
10,500	1439				6.79	21.02	1.400	17.2	4.89	-114.0
11,250	1442				6.79	20.87	1.404	16.9	4.89	-114.1

Start Time: 1357
Stop Time: 1454
Elapsed Time: 57 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/20/09

SAMPLING DATA

Sample Date: 8/20/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1505
Sample Flow Rate: 250mL/min.
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: AD - CPAMW02D-0809-AD

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = over range

PURGE DATA CONTINUED: CPAMW02D

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
12,000	1445	11.40	colorless	hydrocarbon	6.78	19.87	1.410	16.4	4.30	-114.1
12,750	1448	↓	↓	↓	6.78	19.91	1.412	15.8	4.38	-113.8
13,500	1451				6.78	19.95	1.417	15.1	4.29	-111.3
14,250	1454				6.78	19.91	1.421	15.1	4.39	-111.0

MES

COMMENTS:

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program | PROJECT NUMBER: 21562154.00003 | FIELD PERSONNEL: Mike Corbett
DATE: 8/19/09 | WEATHER: Sunny, breezy, 80s
MONITORING WELL ID: CPAMW03D | SAMPLE ID: CPAMW03D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 113.20 ft
Constructed Well Depth (btoc): ____ ft
Depth to Water (btoc): 14.45 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ____ ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 98.75 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ____ ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume = (3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1433	14.46	colorless	none	6.60	22.41	2.404	13.9	4.89	-137.5
750	1436				6.50	22.24	2.315	4.7	3.39	-138.0
1,500	1439				6.51	22.08	2.225	5.4	3.94	-136.5
2,250	1442				6.47	21.89	2.185	5.1	3.85	-135.2
3,000	1445				6.48	22.37	2.139	-1.9	4.32	-132.1
3,750	1448				6.50	22.61	2.144	2.9	4.12	-130.8
4,500	1451				6.48	22.10	2.110	-1.6	3.85	-128.4
5,250	1454				6.48	22.00	2.098	3.2	3.78	-126.9
6,000	1457				6.47	22.51	2.176	4.6	4.60	-128.9
6,750	1500				6.49	22.16	2.180	-0.9	3.79	-134.8
7,500	1503				6.44	22.23	2.189	2.9	3.64	-134.1
8,250	1506				6.48	22.09	2.180	1.8	3.69	-136.6
9,000	1509	↓	↓	↓	6.46	22.09	2.177	3.2	3.66	-137.2
					MEC					

Start Time: 1433
Stop Time: 1509
Elapsed Time: 36 min.
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/19/09

SAMPLING DATA

Sample Date: 8/19/09
Sample Time: 1515
Analysis: VOCs, Metals, MNA, SVOCs
Sample Method: Stainless Steel Monsoon
Sample Flow Rate: 250 mL/min
QA/QC Samples: none
VOA Vials, No Headspace* ☒ Initials: MC

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = Overrange
* Effervescence could not be eliminated without emptying HCl preservative.

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program PROJECT NUMBER: 21562154.00003 FIELD PERSONNEL: Mike Corbett, Drew Brouk
DATE: 8/18/09 WEATHER: cloudy, 80s
MONITORING WELL ID: CPAMW04D SAMPLE ID: CPAMW04D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 121.16 ft
Constructed Well Depth (btoc): 121.44 ft
Depth to Water (btoc): 29.06 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): 116.44 ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): ~~442.~~ 92.10 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is <4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = 118.94 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are < 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
0	1445	29.06	colorless	hydrocarbon	6.62	18.51	1.956	4.8	2.86	-152.2
750	1448				6.58	19.35	1.980	5.0	1.60	-153.8
1,500	1451				6.59	19.47	1.975	4.2	1.31	-150.0
2,250	1454				6.61	19.20	1.982	4.3	1.27	-149.3
3,000	1457				6.606	19.17	1.989	4.4	1.15	-148.6
3,750	1500				6.63	18.01	1.901	4.0	1.10	-150.1
4,500	1503				6.62	17.99	1.863	3.2	0.98	-152.6
5,250	1506				6.62	17.95	1.859	3.3	0.97	-153.4
6,000	1509				6.65	18.07	1.857	4.3	0.88	-153.5
6,750	1512				6.68	18.02	1.849	3.7	0.83	-154.7
						MEC				

Start Time: 1445
Stop Time: 1512
Elapsed Time: 27 min
Average Purge Rate (mL/min): 250
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/18/09

SAMPLING DATA

Sample Date: 8/18/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace ☒ Initials: MC
Sample Time: 1520
Sample Flow Rate: 250 mL/min
Analysis: VOCs, Metals, MNA, SVOCs
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, TOC
Ferrous Iron (Filtered 0.2 micron) = overrange

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: LTM Program PROJECT NUMBER: 21562154.00003 FIELD PERSONNEL: Mike Corbett, Drew Bronk
DATE: 8/26/09 WEATHER: sunny, 80s
MONITORING WELL ID: CPAMW05D SAMPLE ID: CPAMW05D-0809

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): 114.81 ft
Constructed Well Depth (btoc): ft
Depth to Water (btoc): 22.54 ft
Depth to LNAPL/DNAPL (btoc): — ft
Depth to Top of Screen (btoc): ft
Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Lenth is ⟨4 feet,
Place Pump at: Total Well Depth – 0.5 (Screen Length + DNAPL Column Height) = ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ⟨ 4ft,
Place Pump at: Total Well Depth – (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell): 750 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 2,250 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: Stainless Steel Monsoon

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (ms/cm)	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
~~375~~ 0	1240	22.55	colorless	hydrocarbon	5.84	16.50	3.817	9.5	1.90	-50.6
750	1242	↓	↓	↓	5.58	16.36	3.824	6.6	1.68	-41.2
1,500	1244				5.51	16.30	3.820	6.6	1.66	-41.0
2,250	1244				5.49	16.31	3.816	6.4	1.65	-40.1
3,000	1246				5.44	16.27	3.810	6.2	1.63	-38.7
3,750	1248				5.42	16.23	3.807	6.1	1.68	-38.0
						MEC				

Start Time: 1240
Stop Time: 1248
Elapsed Time: 8 min.
Average Purge Rate (mL/min): 375
Water Quality Meter ID: YSI 6920
Date Calibrated: 8/26/09

SAMPLING DATA

Sample Date: 8/26/09
Sample Method: Stainless Steel Monsoon
VOA Vials, No Headspace: ☒ Initials: MC
Sample Time: 1255
Sample Flow Rate: 375 mL/min.
Analysis: VOCs, Metals, MNA
QA/QC Samples: none

COMMENTS:

MNA – Alkalinity, CO_2, Chloride, Ferrous Iron, Methane, Nitrate, Sulfate, DOC, TOC
Ferrous Iron (Filtered 0.2 micron) = over range

Appendix B

Chains-of-Custody

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date: 8/18/09	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W)			SDG No.
(314) 429-0100 Phone	TAT if different from Below			
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 3Q09 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-4D-0809	8/18/09	1305	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSA MW-4D-F(0.2)-0809	↓	1305	G	Water	2	X									1	1	
CPAMW-4D-0809		1520	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-4D-F(0.2)-0809		1520	G	Water	2	X									1	1	
Trip Blank	↓	—	—	Water	2		2										

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

2	1	4	1	1	1	3,1	2	4	2		

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

2.6°c
680-50005

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/18/09 1730	[signature]	TMSL	8/19/09 0919
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date: 8/19/09	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W)			SDG No.
(314) 429-0100 Phone	TAT if different from Below			
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 3Q09 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-3D-0809	8/19/09	1045	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-3D-F(0.2)-0809		1045	G	Water	2	X									1	1	
BSAMW-3D-0809-EB		0955	G	Water	5		3	2									
BSAMW-2D-0809		1315	G	Water	14		3	2	1	1	1	3	2	1			
BSAMW-2D-F(0.2)-0809		1315	G	Water	2	X									1	1	
CPAMW-3D-0809		1515	G	Water	14		3‡	2	1	1	1	3	2	1			‡Effervescence could not be
CPAM-3D-F(0.2)-0809		1515	G	Water	2	X									1	1	eliminated from HCl-preserved
Trip Blank	↓	—	—	Water	2		2										VOA vials. To eliminate
																	effervescence, the VOA
																	vials were refilled
																	without HCl preservative.
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	1	4	1	1	1	3,1	2	4	2	680-50061

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

TEMPERATURE
0.6 | 3.4

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/19/09 1800	Beth A Daughtry	TA SAV	8-20-9C 0921
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Savannah
2 LaRoche Avenue
annah, GA 31404
ne 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date: 8/20/09	COC No:
S Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: Fed'Ex	1 of 1 COCs
1 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
Louis, MO 63110	Calendar (C) or Work Days (W)			SDG No.
4) 429-0100 Phone	TAT if different from Below			
4) 429-0462 FAX	☐ 2 weeks			
ject Name: 3Q09 LTM GW Sampling	☐ 1 week			
e: Solutia WG Krummrich Facility	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-1S-0809	8/20/09	1010	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-1S-F(0.2)-0809		1010	G	Water	2	X									1	1	
CPAMW-1D-0809		1210	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-1D-F(0.2)-0809		1210	G	Water	2	X									1	1	
CPAMW-2D-0809		1505	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-2D-0809-AD		1505	G	Water	5		3	2									
CPAMW-2D-F(0.2)-0809		1505	G	Water	2	X									1	1	
Trip Blank	↓	—	—	Water	2		2										
							2	1	4	1	1	1	3,1	2	4	2	

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

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments: Level 4 Data Package

680-50105 mh 8-24-09
~~680-50185~~

TEMPERATURE 5.0 2.8

inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	8/20/09 1800			8/21/09 09:18
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Savannah
2 LaRoche Avenue
annah, GA 31404
ne 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date:	COC No:
S Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
01 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
Louis, MO 63110	Calendar (C) or Work Days (W)			
4) 429-0100 Phone	TAT if different from Below Standard			SDG No.
4) 429-0462 FAX	☐ 2 weeks			
oject Name: 3Q09 LTM GW Sampling	☐ 1 week			
e: Solutia WG Krummrich Facility	☐ 2 days			
O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-5D-0809	8/26/09	1030	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-5D-F(0.2)-0809		1030	G	Water	2	X									1	1	
BSAMW-5D-0809-MS		1030	G	Water	5		3	2									
BSAMW-5D-0809-MSD		1030	G	Water	5		3	2									
CPAMW-5D-0809		1255	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-5D-F(0.2)-0809		1255	G	Water	2	X									1	1	
Trip Blank	↓	—	—	Water	2		2										
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	1	4	1	1	1	3,1	2	4	2	

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: **Level 4 Data Package**

3.6°c / 2.4°c
680 - 50251

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	8/26/09 1700	George K Lomm	TA SV	8/27/09 0919
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: 680 - 50251	Company:	Date/Time:

Serial Number 022713

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK Fall 2009 River	21562154.00010	IL

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Lidya Gulizia		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Bob Billman	314 429 0100	

CLIENT NAME	CLIENT E-MAIL
URS Corporation	bob_billman@wscorp.com

CLIENT ADDRESS: 1001 Highlands Plaza DRW St. Louis MO 63110
COMPANY CONTRACTING THIS WORK (if applicable)

PAGE 1 OF 2

STANDARD REPORT DELIVERY ☒
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3-DCB, 1,4-DCB by 8260B	REQUIRED ANALYSIS: 2-Chlorotoluene, 4-Chlorotoluene, 1,2,4 TCB by 8260C	REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	REQUIRED ANALYSIS: 2-Chlorophenol, 4-Chloroaniline, 1,4 Dioxane, 1,2,4 TCB by 8270C	REMARKS
								Sed Thio	Sed Meth	Sed Thio	Sed Meth	
9/23/09	1430	SW-R2007-1-0909	G	X				3	2			DCB = Dichlorobenzene
	1520	SED-R2007-1-0909	G		X					3	1	TCB = Trichlorobenzene
	1320	SW-R2007-2-0909	G	X				3	2			Aqueous VOCs are preserved w/ Sodium Thiosulfate only, NO HCl
	1345	SED-R2007-2-0909	G		X					3	1	
	1115	SW-R2007-3-0909	G	X				3	2			
	1140	SED-R2007-3-0909	G		X					3	1	
	1320	SW-R2007-2-0909-AD	G	X				3	2			
	1345	SED-R2007-2-0909-AD	G		X					3	1	
	1115	SW-R2007-3-0909-MS	G	X				3	2			
	1115	SW-R2007-3-0909-MSD	G	X				3	2			
	1140	SED-R2007-3-0909-MS	G		X					3	1	
		~~SED-R2007-3-0909-MSD~~ KP 9/23/09										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Lee Bully	9/23/09	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
FEDEX	9/23/09	1900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George K Gowan	9/24/09	0912	YES ○ NO ○		680-51036	6.0 | 5.8 | 4.9

Serial Number 022714

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK Fall 2009 River	21562154.00010	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
LIDYA GULIZIA		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
BOB BILLMAN	314 429 0100	
CLIENT NAME	CLIENT E-MAIL	
URS CORPORATION	bob_billman@urscorp.com	
CLIENT ADDRESS		
1001 Highlands Plaza DR W St. Louis MO 63110		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 2 OF 2

STANDARD REPORT DELIVERY ☒
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS-LIQUID (OIL, SOLVENT...)	REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	4 Chloroaniline, 2 Chlorophenol, 1,4 Dioxane, 1,2,4 TCB by 8270C	Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	4 Chloroaniline, 2 Chlorophenol, 1,4 Dioxane, 1,2,4 TCB by 8270C	REMARKS
								Sed Thio	Sed Thio	Sed Meth	PRESERVATIVE	NUMBER OF CONTAINERS SUBMITTED
9/23/09	1140	SED-R2007-3-0909-MSD	G		X			3		3	1	
	1630	SED-R2007-1-0909-EB	G	X				3	2			
↓	1115	TRIP BLANK 092309	G	X				2				

9/23/09

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	9/23/09	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
FED Ex	9/23/09	1900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George Klomes	9/24/09	0912	YES ○ NO ○		680-51036	

Appendix C

Surface Water and Sediment Sampling Forms

URS

Surface Water / Sediment Sampling Field Data Sheet

Project Number: 21562154.00010	**Sampling Event:** Fall 2009
Sampling Personnel: K Pulley, C Williams J Roy S David	**Sample Location:** R2007-1
Sample Date/Time: 9/23/09	**Sample Coordinates:** See GPS file. Approx 7' from location
SW: 1430 Sed: ~~1445~~ 1520	

Field Descriptions and Observations: Sediment is gray fine sand to silt, no odors. Water is mostly clear

Depth is 7.5

Weather Conditions: Mostly Cloudy Temp is 79°F

Water Quality Parameters Turb = 73.7

Specific Conductance (~~umhos~~ mS/cm): 0.611	pH: 8.59
Water Temperature (°C): 23.6	Dissolved Oxygen (mg/L): 8.76

Sample Collected (check)

SW	Sed		SW	Sed	
X	X	Volatile Orgaic Compounds			Pesticides
X	X	Semi-volatile Organic Compounds			Metals
		Herbicides			Other _____

Photographs

Photo Date/Time: 9/23/09 Camera/Disk ID:

Number	Direction	Description	Number	Direction	Description
1	←	Sed			

Comments/Notes:

URS

Surface Water / Sediment Sampling Field Data Sheet

Project Number: 21562154.00010	**Sampling Event:** Fall 2009
Sampling Personnel: K.Pulley C.Williams J.Roy S.David	**Sample Location:** R-2007-2
Sample Date/Time: ~~9/22/09~~ 9/23/09	**Sample Coordinates:**
SW: 1320 / Sed: 1345	See GPS File App 18' SW of site
Field Descriptions and Observations: Sediment is Brown coarse Sand. Water is clear. Depth is 20.0	
Weather Conditions: Mostly Cloudy Temp 78°F	

Water Quality Parameters Turb= 61.7

Specific Conductance (µmhos): 0.611	pH: 8.56
Water Temperature (°C) 23.6	Dissolved Oxygen (mg/L): 9.00

Sample Collected (check)

SW	Sed		SW	Sed	
		Volatile Orgaic Compounds			Pesticides
		Semi-volatile Organic Compounds			Metals
		Herbicides			Other _____

Photographs

Photo Date/Time:			Camera/Disk ID:		
Number	Direction	Description	Number	Direction	Description
3	—	Sed			

Comments/Notes: Duplicate collected here (labeled "AD")

URS

Surface Water / Sediment Sampling Field Data Sheet

Project Number: 21562154.00010	**Sampling Event:** Fall 2009
Sampling Personnel: K.Bulley C.Williams J.Roy S.David	**Sample Location:** R-2007-3
Sample Date/Time: 9/23/09 SW: 1115 Sed: 1140	**Sample Coordinates:** See GPS file Approx 7' from location
Field Descriptions and Observations: Sediment is Brown coarse sand & small gravel Water is mostly clear Depth is 16.0	
Weather Conditions: Mostly Cloudy Temp 74°F	

Water Quality Parameters Turb = 68.6

Specific Conductance (~~µmhos~~ mS/cm): 0.601	pH: 8.29
Water Temperature (°C) 23.4	Dissolved Oxygen (mg/L): 8.40

Sample Collected (check)

SW	Sed		SW	Sed	
X	X	Volatile Orgaic Compounds			Pesticides
X	X	Semi-volatile Organic Compounds			Metals
		Herbicides			Other _____

Photographs

Photo Date/Time: 9/23/09 1142 & 1150 Camera/Disk ID:

Number	Direction	Description	Number	Direction	Description
1	—	Sed			
2	—	Looking NE (of large activity)			

Comments/Notes: MS/MSD

Appendix D

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Long-Term Monitoring Program
3rd Quarter 2009 Data Report

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141

November 2009

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562154.00003

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples and surface water/sediment samples collected in August of 2009 at the Solutia W.G. Krummrich plant and Mississippi River as part of the 3rd Quarter 2009 Long-Term Monitoring Program. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methods, Standard methods and USEPA SW-846 methodologies. Groundwater samples were tested for volatile organic compounds (VOCs), semivolatile compounds (SVOCs), metals, dissolved gasses, and general chemistry. Surface water and sediment samples were tested for VOCs and SVOCs.

One hundred percent of the data were subjected to a data quality review (Level III validation); ten percent of these data were subjected to a full data validation (Level IV validation). Please see Appendix E for groundwater validation reports (Full Validation of VOC Data – SDG KPS052, Full Validation of SVOC Data – SDG KPS052, Full Validation of Metals Data – SDG KPS052, and Full Validation of Wet Chemistry Data – SDG KPS052). Please see Appendix F for river sediment validation reports (Full Validation of VOC Data – SDG KRS008 and Full Validation of SVOC Data – SDG KRS008). The Level III and IV validations were performed in order to confirm that the analytical data provided by Test America were acceptable in quality for their intended use.

A total of 14 groundwater samples (10 investigative samples, one field duplicate pair, one MS/MSD pair, and one equipment blank) were analyzed by Test America. In addition, four trip blank sets were included in the coolers that contained groundwater samples for VOC analysis and were analyzed for VOCs by USEPA SW-846 Method 8260B. These samples were analyzed as three Sample Delivery Groups (SDGs) KPS052, KPS053, and KPS054 utilizing the following USEPA SW-846 Methods:

- Method 8260B for VOCs (Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene)
- Method 8270C for SVOCs (1,2,4-Trichlorobenzene, 1,4-Dioxane, 2-Chlorophenol, and 4-Chloroaniline)
- Method 6010B for total and dissolved iron and manganese

Samples were also analyzed for dissolved gasses and general chemistry parameters by the following methods:

- Method RSK-175 for Dissolved Gasses (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Free Carbon Dioxide

- USEPA Method 325.2 for Chloride
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate
- USEPA Method 415.1 for Total and Dissolved Organic Carbon

A total of 13 surface water and sediment samples (six investigative surface water and sediment), two field duplicates, two MS/MSD pairs and one equipment blank) were analyzed by TestAmerica for combinations of VOCs and SVOCs. In addition, one trip blank was included in the cooler that contained surface water samples for VOC analysis and were analyzed for VOCs by USEPA SW-846 Method 8260B. The results were analyzed as two Sample Delivery Groups (SDGs) KRS007 and KRS008 utilizing the following USEPA SW-846 Methods:

- Method 8260 for VOCs (benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene).
- Method 8270C for SVOCs (2-chlorophenol, 4-chloroaniline, 1,4-dioxane, and 1,2,4-trichlorobenzene).

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004 and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory reporting forms (Form-1s). The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed. The various qualifiers are explained in **Tables 1** and **2** below:

TABLE 1 Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Analyte was not detected at or above the reporting limit.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Spike recovery exceeds upper or lower control limits.
F	MS, MSD or RPD exceeds upper or lower control limits.
P	The difference between the results of the two GC columns is greater than 40%
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

TABLE 2 URS Data Qualifiers

URS Qualifier	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined as the percentage of analytical results that are judged to be valid, including estimated detect/non-detect (**J/UJ**) data was 100 percent, which meets the completeness goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks, field equipment blanks and trip blank samples

- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) sample recoveries and relative percent difference (RPD) values
- Field duplicate results
- Results reported from dilutions
- Internal standard responses

Inorganics/General chemistry

- Receipt condition and sample holding times
- Laboratory method blank and field equipment blank samples
- LCS recoveries
- MS/MSD sample recoveries and matrix duplicate RPD values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions

The following sections present the results of the data review.

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

Upon review of the KPS052 data, the chain-of-custody form indicated that effervescence was observed in the field and therefore three unpreserved VOA vials were filled in the field for sample CPAMW-3D-0809. The unpreserved vials did not contain headspace and so were used in the analysis of sample CPAMW-3D-0809.

Upon review of the KPS053 data, the cooler receipt form indicated that one of three VOA vials for samples BSAMW-1S-0809 and CPAMW-2D-0809 were received by the laboratory broken. The remaining intact vials contained sufficient sample for all requested analyses.

Upon review of the KRS007 data, the cooler receipt form indicated that VOC samples were preserved with sodium thiosulfate only; however, samples were analyzed within 7 days of sample collection. The equipment blank results are reported with this SDG, but were collected and associated with samples reported as part of SDG KRS008.

Upon review of the KRS008 data, the cooler receipt form indicated that the vials for sample SED-R2007-1-0909 were received by the laboratory not sufficiently sealed. Sample SED-R2007-1-0909 was qualified using professional judgment.

3.0 TRIP BLANKS, LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

Trip blank samples are used to assess VOC cross contamination of samples during shipment to the laboratory. Trip blanks were submitted with each cooler shipped containing samples for VOC analyses for a total of four trip blank sample sets. All associated samples were nondetect; therefore, no qualification of data was required.

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blank samples were analyzed at the method prescribed frequencies.

Method blank samples were non-detect with the exceptions summarized in the table below:

SDG	Blank ID	Parameter	Analyte	Concentration	Units
KPS052	MB 680-145826/1	General Chemistry	Carbon dioxide, free	9.23	mg/L
KPS052	MB 680-146286/1	General Chemistry	Carbon dioxide, free	10.6	mg/L
KPS053	MB 680-146286/1	General Chemistry	Carbon dioxide, free	10.6	mg/L
KPS054	MB 680-146554	General Chemistry	Carbon dioxide, free	11.2	mg/L

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. Qualifications based on method blank contamination are summarized in the table below:

SDG	Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
KPS052	BSAMW-2D-0809	General Chemistry	Carbon dioxide, free	36	**U**
KPS052	BSAMW-3D-0809	General Chemistry	Carbon dioxide, free	32	**U**
KPS052	CPAMW-3D-0809	General Chemistry	Carbon dioxide, free	56	**U**
KPS053	BSAMW-1S-0809	General Chemistry	Carbon dioxide, free	23	**U**
KPS053	CPAMW-2D-0809	General Chemistry	Carbon dioxide, free	27	**U**

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. Equipment blank samples were nondetect.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. Samples analyzed for VOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Organic Data Review state how data is qualified, if surrogate spike recoveries do not meet acceptance criteria.

Groundwater surrogate recoveries were within evaluation criteria. Surrogates that were associated with quality control samples or were diluted out and not recovered did not require qualification.

Surface water and sediment surrogate recoveries were within evaluation criteria; therefore, no qualification of data was required.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Groundwater laboratory control samples (LCS) are analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria. No qualification of data was required.

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were required to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for 10 investigative samples meeting the work plan frequency requirement.

No qualifications were made to the data if the MS/MSD percent RPD was the only factor out of criteria. Also, USEPA National Functional Guidelines for Organic Data Review (October 1999) states that organic data should not be qualified based on MS/MSD criteria alone. Therefore, if recoveries were outside evaluation criterion due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria.

Groundwater samples spiked and analyzed as MS/MSDs and their respective recoveries are discussed further in data reviews in Appendix E. No qualification of data was required. Surface water and sediment samples spiked and analyzed as MS/MSDs and their respective recoveries are discussed further in data reviews in Appendix E. No qualification of data was required.

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within 2 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One pair of field duplicate samples were collected for the 10 investigative groundwater samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Groundwater field duplicate RPDs were within evaluation criteria.

Two pairs of field duplicate samples were collected for the 6 investigative surface water and sediment samples (3 surface water and 3 sediment). This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Surface water and sediment field duplicate RPDs were within evaluation criteria; therefore, no qualification of data was required.

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent for VOCs.

The internal standards area responses for VOCs and SVOCs were verified for the data review. VOC and SVOC IS responses met the criteria as described above for all water and sediment samples. No qualification of data was required.

9.0 RESULTS REPORTED FROM DILUTIONS

VOC, SVOC, chloride, and sulfate results for groundwater samples were diluted when high levels of target analytes were present. The diluted sample results for these analytes were reported for the associated samples.

Surface water and sediment samples did not require a dilution.

Appendix E
Groundwater Analytical Results
(with Data Review/Validation Reports)

E.1 SDG KPS052

Results of Samples from Wells:

BSAMW-2D
BSAMW-3D
BSAMW-4D
CPAMW-3D
CPAMW-4D

E.1.a Solutia Krummrich Data Review

Laboratory SDG: KPS052

Reviewer: Elizabeth Kunkel

Date Reviewed: 9/22/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999. USEPA National Functional Guidelines for Inorganic Data Review 2004.

Applicable Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification #	Sample Identification #
BSAMW-4D- 0809	BSAMW-4D-F(0.2)-0809
CPAMW-4D- 0809	CPAMW-4D-F(0.2)-0809
Trip Blank	BSAMW-3D-0809
BSAMW-3D-F(0.2)-0809	BSAMW-3D-0809-EB
BSAMW-2D-0809	BSAM-2D- F(0.2)-0809
CPAMW-3D-0809	CPAMW-3D-F(0.2)-0809
Trip Blank	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

The laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Additionally, total and dissolved iron and sulfate MS/MSD recoveries in sample BSAMW-4D-0809 could not be evaluated. Effervescence was observed in the field and therefore three unpreserved VOA vials were filled in the field for sample CPAMW-3D-0809. The unpreserved vials did not contain headspace and so were used in the analysis of sample CPAMW-3D-0809. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-145826/1	General Chemistry	Carbon dioxide, free	9.23	mg/L
MB 680-146286/1	General Chemistry	Carbon dioxide, free	10.6	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
BSAMW-3D-0809	General Chemistry	Carbon dioxide, free	32	**U**
BSAMW-2D-0809	General Chemistry	Carbon dioxide, free	36	**U**
CPAMW-3D-0809	General Chemistry	Carbon dioxide, free	56	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample BSAMW-4D-0809 was spiked and analyzed for total and dissolved iron, total and dissolved manganese, and sulfate. Sample BSAMW-3D-0809 was spiked and analyzed for total organic carbon.

Were MS/MSD recoveries within evaluation criteria?

Yes, however, total and dissolved iron and sulfate MS/MSD recoveries in sample BSAMW-4D-0809 could not be evaluated because the sample concentrations were greater than four times (4X) the matrix spike concentration.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample CPAMW-4D-0809 was duplicated and analyzed for alkalinity and free carbon dioxide.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and non-detect, were undiluted results also reported?

Analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

E.1.b FULL VALIDATION OF VOC DATA - SDG KPS052

This section describes the full validation for four water samples which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. Samples were analyzed by Test America Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KPS052. Samples included as part of this validation are listed below:

Sample Identification	Sample Identification
BSAMW-3D-0809	CPAMW-3D-0809
BSAMW-4D-0809	CPAMW-4D-0809

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and USEPA SW-846 Method 8260B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Data Review (USEPA 1999) where applicable to SW-846 Method 8260B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

Effervescense was observed in the field and therefore three unpreserved VOA vials were filled in the field for sample CPAMW-3D-0809. The unpreserved vials did not contain headspace and so were used in the analysis of sample CPAMW-3D-0809. The cooler receipt form did not indicate any problems for the validated samples.

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chains-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and at a pH <2 and were analyzed within the 14 day holding time criteria. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, and no qualification of data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. Samples as part of SDG KPS052 were analyzed using instrument MSO5973. The ICAL for instrument MSO5973 was established on 8/21/2009 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8260B. An average response factor (RF) was determined for each target analyte, the RFs were reviewed and verified greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane and greater than 0.05 for all other target analytes.

Review of the initial calibration summary forms indicated %RSDs were $\leq$ 30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and $\leq$ 15% for non-CCCs. Percent relative standard deviations (RSDs) were recalculated from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

1.6 Calibration Verification

Review of the sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency every 12 hours. Review of continuing calibration

summary forms indicated all RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other analytes for each CCAL. In addition, percent differences (%Ds) and percent drift (%Drift) met the evaluation criteria of $\leq$ 20% for CCCs and < 30% for all other target analytes. Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B. All target compounds were reported as non-detect in all method blanks analyzed as part of this SDG. Target analytes for all trip blank samples were reported as non-detect. The review of chromatograms indicates all peaks present were accounted or the concentrations reported were below the method detection limit. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. All surrogate recoveries were within the method acceptance criteria

A minimum of 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted and no qualification of data was required.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. No VOC MS/MSDs were analyzed for the samples chosen for validation.

1.10 Internal Standards and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria. No qualification of data was required based on LCS recoveries.

A minimum of 10% of the spiking compound recoveries for the LCS's were recalculated using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100% for this SDG.

E.1.c FULL VALIDATION OF SVOC DATA – SDG KPS052

This section describes the full validation for four water samples which were prepared by USEPA SW-846 Method 3520C and analyzed for semivolatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KPS052. Samples included as part of this validation are listed below:

Sample Identification	Sample Identification
BSAMW-2D-0809	CPAMW-3D-0809
BSAMW-4D-0809	CPAMW-4D-0809

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and USEPA SW-846 Method 8270C. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Data Review (USEPA 1999) where applicable to SW-846 Method 8270C.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

No problems were indicated in laboratory case narrative or cooler receipt form for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were extracted within 7 days of collection and analyzed within 40 days of extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for semivolatile analysis. Samples as part of SDG KPS052 were analyzed using instrument MSN5973. The ICAL for instrument MSN5973 was established on 8/24/2009 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15%.

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency of every 12 hours. Review of continuing calibration

summary forms indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 20% for CCCs and target analytes that were quantitated using linear calibration (response factor).

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. All target compounds in the blank samples were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples.

A minimum of 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. No SVOC MS/MSDs were analyzed for the samples chosen for validation.

1.10 Internal Standards and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria. No qualifications to the data based on IS areas or retention times were required.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria. No qualifications of data were required based on LCS recoveries.

A minimum of 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS and surrogate data were achieved for this SDG. In addition, completeness defined to be the percentage of analytical results, which are judged to be valid, including estimated detect/non-detect **(J/UJ**) data was 100% for this SDG.

E.1.d FULL VALIDATION OF METALS DATA – SDG KPS052

This section describes the full data validation for three water samples which were prepared by USEPA SW-846 Methods 3005A and analyzed for total and dissolved iron and manganese by USEPA SW-846 Method 6010B. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KPS052. Samples included as part of this validation are listed below:

Sample Identification
BSAMW-3D-0809
CPAMW-3D-0809
CPAMW-3D-F(0.2)-0809

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and USEPA SW-846 Method 6010B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Inorganic Data Review (USEPA 2004) where applicable to SW-846 Method 6010B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative /cooler receipt form
- Sample preservation and holding times
- Blank contamination
- Initial calibration
- Calibration verification
- Laboratory control sample (LCS)
- Matrix spike/matrix spike duplicate (MS/MSD)
- Laboratory duplicate sample
- ICP serial dilution
- ICP interference check samples (ICS)
- Sample result verification
- Overall assessment of data

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this SDG.

1.2 Laboratory Case Narrative / Cooler Receipt Form

The laboratory case narrative and cooler receipt form did not indicate any problems for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were received by the laboratory at 4°C $\pm$ 2 °C, and at a pH<2 and were analyzed within the evaluation criteria of 6 months for metals. No qualification of data was required based on holding time criteria or sample preservation.

1.4 Blank Contamination

The purpose of blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Initial calibration, continuing calibration, and preparation blanks were reported non-detect for all metals analyzed. No qualification of data was required based on blank results.

1.5 Initial Calibration

Initial calibration (ICAL) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for metals analyses. An ICAL was analyzed at the beginning of the run sequence. ICAL curves were established using a blank and three standards for analysis of metals by inductively coupled plasma atomic emission (ICP-AE). All initial calibration verification (ICV) recoveries were within evaluation criteria (ICP metals, 90-110%). A minimum of 10% of the ICAL curve and ICV recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted. No qualification of the data was required based on ICV data.

1.6 Calibration Verification

Calibration Verification (CV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the ICAL. The laboratory analyzed CV samples at a frequency of 10% as specified by the methodologies. CV samples associated with the validated samples had recoveries within the evaluation criteria (ICP metals, 90-110%). A minimum of 10% of the CV sample recoveries were recalculated and compared to the raw data and no calculation or transcription errors were noted.

1.7 Laboratory Control Sample (LCS)

Laboratory control samples (LCS) were analyzed to assess the accuracy of the analytical method and to demonstrate laboratory performance. The LCS recoveries for metals were within evaluation criteria (75-125%) for metals. A minimum of 10% of the LCS recoveries were recalculated and compared to the raw data; no calculation or

transcription errors were noted. No qualification of data was required based on LCS recoveries.

1.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD samples are analyzed to assess accuracy, precision and the effects of matrix interference during the analysis of a particular sample. No metal MS/MSDs were analyzed for the samples chosen for validation.

1.9 Laboratory Duplicate Sample

Laboratory duplicate samples are analyzed to assess the precision of a particular sample.

No laboratory duplicates were analyzed for the samples chosen for validation.

1.10 ICP Serial Dilution

Serial dilutions were analyzed to assess the potential significant physical or chemical interferences due to sample matrix. Serial dilutions were analyzed on a sample (BSAMW-4D-0809) in this SDG for metals. However, this sample was not chosen for validation. Serial dilution percent differences (%Ds) were within evaluation criteria (+/- 10%). No qualification of data was required.

1.11 ICP Interference Check Sample

An Interference Check Sample (ICS) was analyzed to verify the contract laboratory's interelement and background correction factors for analysis of metals by ICP. The laboratory analyzed the ICS at the beginning of the analytical run as specified in USEPA SW-846 Method 6010B. The ICS recoveries for all metals analyzed were within evaluation criteria (80-120%); therefore, no qualification of the ICP data was required. A minimum of 10% of the ICS recoveries were recalculated and compared to the raw data; no transcription and calculation errors were noted.

1.12 Sample Result Verification

The metals results were recalculated to validate that analyte quantitation was derived accurately, and no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package. No transcription errors were noted and the correct reporting limits were used.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Completeness, defined to be the percentage of analytical results that are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100% for this SDG.

E.1.e FULL VALIDATION OF WET CHEMISTRY DATA – SDG KPS052

This section describes the full data validation of three water samples which were analyzed for various wet chemistry parameters. The analytical parameters and methodologies are summarized below:

Parameter	Method	Reference
Nitrate/Nitrite	353.2	USEPA Methods for Chemical Analysis of Water and Waste (USEPA, 1983)
Sulfate	375.4	
Total and Dissolved Organic Carbon	415.1	
Chloride	325.2	
Alkalinity	310.1	
Carbon Dioxide	Calc from 310.1	
Dissolved Gasses	RSK-175	RSK-175

Samples were analyzed by TestAmerica Laboratory, of Savannah, Georgia, and submitted as part of sample delivery group (SDG) KPS052. Samples included as a part of this validation are listed below:

Sample Identification
BSAMW-3D-0809
BSAMW-4D-0809
BSAMW-4D-F(0.2)-0809

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and evaluation of the analytical data followed procedures outlined in USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004), where applicable to the above mentioned USEPA Methods. The evaluation criteria used during the validation were a combination of those criteria presented in the respective methods and the laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Sample preservation and holding times
- Blank contamination
- Initial calibration
- Calibration verification
- Laboratory control sample (LCS)
- Laboratory duplicate analysis
- Matrix spike/matrix spike duplicate samples (MS/MSD)
- Sample result verification
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective method. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Sample BSAMW-4D-0809 was diluted due to high levels of chloride. Sample BSAMW-3D-0809 was diluted due to high levels of sulfate. These issues are addressed further in the appropriate sections below. The cooler receipt form did not indicate any problems for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection, extraction and analyses dates involved comparing the chain-of -custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were persevered properly (4°C ± 2 °C) and at a pH <2 for sulfate and total organic carbon and all samples were analyzed within holding time criteria; 28 days for chloride, nitrate/nitrite, sulfate, total organic carbon and 14 days for alkalinity and RSK-175. No qualifications of data were required based on holding times and sample preservation.

1.4 Blank Contamination

The purpose of method blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required. A review of the method blank summary forms and the raw data forms indicated all target compounds were reported as non-detect with the exception of free carbon dioxide summarized in the table below:

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-146286/1	General Chemistry	Carbon dioxide, free	10.6	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported nondetect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New RL	Qualification
BSAMW-3D-0809	General Chemistry	Carbon dioxide, free	32	**U**

1.5 Initial Calibration

Initial calibration verification (ICV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for the wet chemistry analyses. Alkalinity concentrations are determined by titration; therefore, no calibration curve was generated. The verification of alkalinity analyses was achieved with the analysis of laboratory control samples (LCS). The LCS data is further discussed in the appropriate section below. An initial calibration was established at the beginning of the run sequence for the all other analyses. A minimum of five standards was used to establish the initial calibration curve as required by the analytical methods. Review of the initial calibration data indicated that the r values were greater than 0.995 for all calibration curves; therefore, no qualification of data was required. The ICAL for RSK-175 was established using at least eight concentration standards to establish the external calibration and all r values were greater than or equal to 0.995. No qualification of data was required based on initial calibration. Approximately 10% of the initial calibration and ICV recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted.

1.6 Calibration Verification

Calibration verification (CV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the initial calibration curve. CV samples were analyzed at the required frequency of every 10 samples and the percent differences (%D) or percent drift (%drift) values were within evaluation criteria for each analytical method. No qualification of data was required based on %drift.

Approximately 10% of the CV sample recoveries were recalculated and compared to the raw data. No calculation or transcription errors were noted.

1.7 Laboratory Control Sample (LCS)

Laboratory control samples (LCS) were established to assess the accuracy of the analytical method and to demonstrate laboratory performance. LCS recoveries were within the evaluation criteria; therefore, no qualification of data was required. A minimum of 10% of LCS recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted.

1.8 Laboratory Duplicate Analysis

Laboratory duplicate samples assess the precision of a particular sample. Laboratory duplicates were not analyzed for the validated samples; therefore, no qualification of data was required.

1.9 Matrix Spike/ Matrix Spike Duplicate Samples (MS/MSD)

MS/MSD samples are analyzed to assess the accuracy, precision and the effects of matrix interference during the analysis of a particular sample. Sample BSAMW-3D-0809 was spiked and analyzed for total organic carbon. MS/MSD recoveries were

within evaluation criteria. No qualification of data was required based on MS/MSD recoveries.

The MS/MSD percent recovery data was recalculated and compared to the raw data. No calculation or transcription errors were noted.

1.10 Sample Result Verification

A minimum of 10% of the validated sample results were recalculated to verify that analyte quantitation was derived accurately, and no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package. No transcription errors were noted and the correct reporting limits were used.

1.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Completeness, defined to be the percentage of analytical results that are judged to be valid, including estimated detect/nondetect (**J/UJ**) data, was 100 percent for this SDG.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-50005-1

SDG Number: KPS052

Job Description: WGK LTM GW 3Q09 - AUG 2009

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, MO 63141

Attention: Mr. Jerry Rinaldi

Lidya Gulizia

Approved for release.
Lidya Gulizia
Project Manager I
9/18/2009 5:08 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
09/18/2009

Reviewed on SEP 21 2009 EXK

cc: Mr. Jeff Adams
Mr. Bob Billman
Dave Palmer
Mr. Richard Williams

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
680-J50005-1 / SDG No. KPS052

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 145998 was outside control limits. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 310.1, SM 2320B: The method blank for preparation batch 145826 contained free CO2 above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method(s) 310.1: The method blank for preparation batch 146286 contained free CO2 above the reporting limit (RL). None of the samples associated with this method blank contained the target compound; therefore, re-extraction and/or re-analysis of samples were not performed.

Method(s) 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 146592 were outside control limits. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 375.4, 9038: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for batch 147200 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

Comments
No additional comments.

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METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Liquid-Liquid Extraction (Continuous)	TAL SAV		SW846 3520C
Dissolved Gases (GC)	TAL SAV	RSK RSK-175	
Metals (ICP)	TAL SAV	SW846 6010B	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD
Preparation, Total Recoverable or Dissolved Metals	TAL SAV		SW846 3005A
Alkalinity	TAL SAV	MCAWW 310.1	
Chloride	TAL SAV	MCAWW 325.2	
Nitrogen, Nitrate-Nitrite	TAL SAV	MCAWW 353.2	
Sulfate	TAL SAV	MCAWW 375.4	
TOC	TAL SAV	MCAWW 415.1	
DOC	TAL SAV	MCAWW 415.1	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 8270C	Nguyen, Thuong	TN
RSK RSK-175	Moncrief, Amy	AEM
SW846 6010B	Bland, Brian	BCB
MCAWW 310.1	Vasquez, Juana	JV
MCAWW 325.2	Ross, Jon	JR
MCAWW 353.2	Ross, Jon	JR
MCAWW 375.4	Ross, Jon	JR
MCAWW 415.1	Blackshear, Kim	KB

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-50005-1	BSAMW-4D-0809	Water	08/18/2009 1305	08/19/2009 1029
680-50005-2	BSAMW-4D-F(0.2)-0809	Water	08/18/2009 1305	08/19/2009 1029
680-50005-3	CPAMW-4D-0809	Water	08/18/2009 1520	08/19/2009 1029
680-50005-4	CPAMW-4D-F(0.2)-0809	Water	08/18/2009 1520	08/19/2009 1029
680-50005-5	Trip Blank	Water	08/18/2009 0000	08/19/2009 1029
680-50061-1	BSAMW-3D-0809	Water	08/19/2009 1045	08/20/2009 0921
680-50061-2	BSAMW-3D-F(0.2)-0809	Water	08/19/2009 1045	08/20/2009 0921
680-50061-3EB	BSAMW-3D-0809-EB	Water	08/19/2009 0955	08/20/2009 0921
680-50061-4	BSAMW-2D-0809	Water	08/19/2009 1315	08/20/2009 0921
680-50061-5	BSAMW-2D-F(0.2)-0809	Water	08/19/2009 1315	08/20/2009 0921
680-50061-6	CPAMW-3D-0809	Water	08/19/2009 1515	08/20/2009 0921
680-50061-7	CPAM-3D-F(0.2)-0809	Water	08/19/2009 1515	08/20/2009 0921
680-50061-8TB	Trip Blank	Water	08/19/2009 0000	08/20/2009 0921

SEP 21 2009 ERK

SAMPLE RESULTS

* "Do not use this data. Use all other data."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1127.d
Dilution:	10		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1728		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1728		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	99		10
* ~~Chlorobenzene~~	~~2300~~	~~E~~	~~10~~
1,2-Dichlorobenzene	20		10
1,3-Dichlorobenzene	10	U	10
1,4-Dichlorobenzene	61		10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	106		75 - 120
Dibromofluoromethane	101		75 - 121
Toluene-d8 (Surr)	105		75 - 120

SEP 21 2009 EZK

* "Use these results only. All other data was reported from the 10X dilution analysis."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1109.d
Dilution:	200			Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 1306	Run Type:	DL	Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 1306				

Analyte	Result (ug/L)	Qualifier	RL
~~Benzene~~	~~200~~	~~U~~	~~200~~
* Chlorobenzene	2700	D	200
~~1,2-Dichlorobenzene~~	~~200~~	~~U~~	~~200~~
~~1,3-Dichlorobenzene~~	~~200~~	~~U~~	~~200~~
~~1,4-Dichlorobenzene~~	~~200~~	~~U~~	~~200~~

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	104		75 - 120
Dibromofluoromethane	103		75 - 121
Toluene-d8 (Surr)	107		75 - 120

SEP 21 2009 EZK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1129.d
Dilution:	10		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1757		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1757		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	12		10
Chlorobenzene	1100		10
1,2-Dichlorobenzene	14		10
1,3-Dichlorobenzene	10	U	10
1,4-Dichlorobenzene	19		10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	106		75 - 120
Dibromofluoromethane	102		75 - 121
Toluene-d8 (Surr)	105		75 - 120

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-50005-5
Client Matrix: Water

Date Sampled: 08/18/2009 0000
Date Received: 08/19/2009 1029

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1105.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1208		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1208		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		75 - 120
Dibromofluoromethane	109		75 - 121
Toluene-d8 (Surr)	104		75 - 120

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1131.d
Dilution:	20			Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 1826			Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 1826				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	68		20
Chlorobenzene	1100		20
1,2-Dichlorobenzene	32		20
1,3-Dichlorobenzene	20	U	20
1,4-Dichlorobenzene	330		20

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	108		75 - 120
Dibromofluoromethane	98		75 - 121
Toluene-d8 (Surr)	106		75 - 120

SEP 21 2009 ELK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809-EB**

Lab Sample ID: 680-50061-3EB
Client Matrix: Water

Date Sampled: 08/19/2009 0955
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1107.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1237		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1237		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	105		75 - 120
Dibromofluoromethane	108		75 - 121
Toluene-d8 (Surr)	106		75 - 120

SEP 21 2009 EJK

* Do not use this data. Use all other data."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1115.d
Dilution:	200		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1433		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1433		

Analyte	Result (ug/L)	Qualifier	RL
* ~~Benzene~~	~~78000~~	~~E~~	~~200~~
Chlorobenzene	5000		200
1,2-Dichlorobenzene	200	U	200
1,3-Dichlorobenzene	200	U	200
1,4-Dichlorobenzene	200	U	200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	108		75 - 120
Dibromofluoromethane	104		75 - 121
Toluene-d8 (Surr)	110		75 - 120

SEP 21 2009 EZK

* "Use these results only. All other data was reported from the 200x dilution analysis."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1133.d
Dilution:	1000			Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 1855	Run Type:	DL	Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 1855				

Analyte	Result (ug/L)	Qualifier	RL
* Benzene	72000	D	1000
~~Chlorobenzene~~	~~5100~~	~~D~~	~~1000~~
~~1,2-Dichlorobenzene~~	~~1000~~	~~U~~	~~1000~~
~~1,3-Dichlorobenzene~~	~~1000~~	~~U~~	~~1000~~
~~1,4-Dichlorobenzene~~	~~1000~~	~~U~~	~~1000~~

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	108		75 - 120
Dibromofluoromethane	102		75 - 121
Toluene-d8 (Surr)	107		75 - 120

SEP 21 2009 ZK

* "Do not use this data. Use all other data."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1135.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1924		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1924		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	44		1.0
* ~~Chlorobenzene~~	~~400~~	~~E~~	~~1.0~~
1,2-Dichlorobenzene	12		1.0
1,3-Dichlorobenzene	1.2		1.0
1,4-Dichlorobenzene	17		1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	105		75 - 120
Dibromofluoromethane	103		75 - 121
Toluene-d8 (Surr)	105		75 - 120

SEP 21 2009

* " Use these results only. All other data was reported from the 1.0 dilution analysis. "

Analytical Data

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1117.d
Dilution:	200			Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 1502	Run Type:	DL	Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 1502				

Analyte	Result (ug/L)	Qualifier	RL
~~Benzene~~	~~200~~	~~U~~	~~200~~
* Chlorobenzene	510	D	200
~~1,2-Dichlorobenzene~~	~~200~~	~~U~~	~~200~~
~~1,3-Dichlorobenzene~~	~~200~~	~~U~~	~~200~~
~~1,4-Dichlorobenzene~~	~~200~~	~~U~~	200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	106		75 - 120
Dibromofluoromethane	100		75 - 121
Toluene-d8 (Surr)	105		75 - 120

SEP 21 2009 EZK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-50061-8TB
Client Matrix: Water

Date Sampled: 08/19/2009 0000
Date Received: 08/20/2009 0921

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146219	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1103.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/24/2009 1139		Final Weight/Volume: 5 mL
Date Prepared:	08/24/2009 1139		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		75 - 120
Dibromofluoromethane	108		75 - 121
Toluene-d8 (Surr)	104		75 - 120

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145882		Lab File ID:	n3723.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	08/28/2009 1716			Final Weight/Volume:	1 mL
Date Prepared:	08/20/2009 1338			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.7	U	9.7
1,4-Dioxane	41		9.7
2-Chlorophenol	14		9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	69		38 - 116
2,4,6-Tribromophenol	80		40 - 139
2-Fluorobiphenyl	65		50 - 113
2-Fluorophenol	72		36 - 110
Nitrobenzene-d5	69		45 - 112
Terphenyl-d14	74		10 - 121

SEP 21 2009 ETK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145882		Lab File ID:	n3724.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/28/2009 1738			Final Weight/Volume:	1 mL
Date Prepared:	08/20/2009 1338			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	96		19
2-Chlorophenol	9.4	U	9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	79		38 - 116
2-Fluorophenol	75		36 - 110
2,4,6-Tribromophenol	78		40 - 139
Nitrobenzene-d5	83		45 - 112
2-Fluorobiphenyl	66		50 - 113
Terphenyl-d14	72		10 - 121

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145998		Lab File ID:	n3727.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/28/2009 1845			Final Weight/Volume:	1 mL
Date Prepared:	08/21/2009 1348			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.4	U	9.4
1,4-Dioxane	9.4	U	9.4
2-Chlorophenol	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	70		38 - 116
2,4,6-Tribromophenol	78		40 - 139
2-Fluorobiphenyl	72		50 - 113
2-Fluorophenol	76		36 - 110
Nitrobenzene-d5	78		45 - 112
Terphenyl-d14	27		10 - 121

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809-EB**

Lab Sample ID: 680-50061-3EB
Client Matrix: Water

Date Sampled: 08/19/2009 0955
Date Received: 08/20/2009 0921

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145998		Lab File ID:	n3728.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/28/2009 1907			Final Weight/Volume:	1 mL
Date Prepared:	08/21/2009 1348			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.4	U	9.4
1,4-Dioxane	9.4	U	9.4
2-Chlorophenol	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	77		38 - 116
2,4,6-Tribromophenol	86		40 - 139
2-Fluorobiphenyl	76		50 - 113
2-Fluorophenol	73		36 - 110
Nitrobenzene-d5	85		45 - 112
Terphenyl-d14	71		10 - 121

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145998		Lab File ID:	n3729.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/28/2009 1930			Final Weight/Volume:	1 mL
Date Prepared:	08/21/2009 1348			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.4	U	9.4
1,4-Dioxane	29		9.4
2-Chlorophenol	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	76		38 - 116
2,4,6-Tribromophenol	82		40 - 139
2-Fluorobiphenyl	70		50 - 113
2-Fluorophenol	78		36 - 110
Nitrobenzene-d5	81		45 - 112
Terphenyl-d14	23		10 - 121

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146846		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-145998		Lab File ID:	n3730.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/28/2009 1952			Final Weight/Volume:	1 mL
Date Prepared:	08/21/2009 1348			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	70		19
2-Chlorophenol	9.4	U	9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	71		38 - 116
2-Fluorophenol	75		36 - 110
2,4,6-Tribromophenol	81		40 - 139
Nitrobenzene-d5	80		45 - 112
2-Fluorobiphenyl	71		50 - 113
Terphenyl-d14	30		10 - 121

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263	Instrument ID: VGUFID2
Preparation:	N/A		Lab File ID: U1533.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	08/25/2009 1049		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	7.3		0.35
Ethylene	0.33	U	0.33
Methane	270		0.19

SEP 21 2009 ELK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1534.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1102			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	15		0.35
Ethylene	0.33	U	0.33

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265	Instrument ID: VGUTCD1
Preparation:	N/A		Lab File ID: U1534.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	08/25/2009 1102		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	5300		0.19

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1538.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1154			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	2.2		0.35
Ethylene	5.9		0.33

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265		Instrument ID:	VGUTCD1
Preparation:	N/A			Lab File ID:	U1538.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1154			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	440		0.19

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1539.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1206			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	10		0.35
Ethylene	0.81		0.33

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265		Instrument ID:	VGUTCD1
Preparation:	N/A			Lab File ID:	U1539.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1206			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	11000		0.19

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1540.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1219			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	31		0.35
Ethylene	0.33	U	0.33

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265	Instrument ID: VGUTCD1
Preparation:	N/A		Lab File ID: U1540.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	08/25/2009 1219		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	32000		0.19

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0145			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	8.1		0.050
Manganese	0.59		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-4D-F(0.2)-0809**

Lab Sample ID: 680-50005-2
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0212			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	7.9		0.050
Manganese, Dissolved	0.59		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0217			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	11		0.050
Manganese	0.25		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-4D-F(0.2)-0809**

Lab Sample ID: 680-50005-4
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0223			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	11		0.050
Manganese, Dissolved	0.26		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0239			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	12		0.050
Manganese	0.53		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-3D-F(0.2)-0809**

Lab Sample ID: 680-50061-2
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0244			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	12		0.050
Manganese, Dissolved	0.54		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0249			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	1.5		0.050
Manganese	0.28		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **BSAMW-2D-F(0.2)-0809**

Lab Sample ID: 680-50061-5
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0255			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	1.2		0.050
Manganese, Dissolved	0.26		0.010

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0300			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	14		0.050
Manganese	0.66		0.010

SEP 21 2009 EJK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Client Sample ID: **CPAM-3D-F(0.2)-0809**

Lab Sample ID: 680-50061-7
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0305			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	14		0.050
Manganese, Dissolved	0.71		0.010

SEP 21 2009

General Chemistry

Client Sample ID: **BSAMW-4D-0809**

Lab Sample ID: 680-50005-1
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	100		mg/L	2.0	2.0	325.2
Analysis Batch: 680-146177	Date Analyzed: 08/24/2009 1050					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146583	Date Analyzed: 08/20/2009 0925					
Sulfate	120		mg/L	50	10	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1020					
Total Organic Carbon	7.0		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/28/2009 2315					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	650		mg/L	5.0	1.0	310.1
Analysis Batch: 680-145826	Date Analyzed: 08/19/2009 1312					
Carbon Dioxide, Free	66	B	mg/L	5.0	1.0	310.1
Analysis Batch: 680-145826	Date Analyzed: 08/19/2009 1312					

SEP 21 2009

General Chemistry

Client Sample ID: **BSAMW-4D-F(0.2)-0809**

Lab Sample ID: 680-50005-2
Client Matrix: Water

Date Sampled: 08/18/2009 1305
Date Received: 08/19/2009 1029

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	5.6		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 21 2009

General Chemistry

Client Sample ID: **CPAMW-4D-0809**

Lab Sample ID: 680-50005-3
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	250		mg/L	5.0	5.0	325.2
Analysis Batch: 680-146177	Date Analyzed: 08/24/2009 1050					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146583	Date Analyzed: 08/20/2009 0925					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0954					
Total Organic Carbon	8.5		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/28/2009 2329					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	850		mg/L	5.0	1.0	310.1
Analysis Batch: 680-145826	Date Analyzed: 08/19/2009 1312					
Carbon Dioxide, Free	50	B	mg/L	5.0	1.0	310.1
Analysis Batch: 680-145826	Date Analyzed: 08/19/2009 1312					

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

General Chemistry

Client Sample ID: **CPAMW-4D-F(0.2)-0809**

Lab Sample ID: 680-50005-4
Client Matrix: Water

Date Sampled: 08/18/2009 1520
Date Received: 08/19/2009 1029

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	7.8		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 21 2009

General Chemistry

Client Sample ID: **BSAMW-3D-0809**

Lab Sample ID: 680-50061-1
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	67		mg/L	1.0	1.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1247					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/20/2009 1402					
Sulfate	260		mg/L	100	20	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1125					
Total Organic Carbon	4.8		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/28/2009 2343					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	510		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					
Carbon Dioxide, Free	0.0 ~~32~~ ND	~~B~~ "U"	mg/L	~~5.0~~ 32	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

General Chemistry

Client Sample ID: **BSAMW-3D-F(0.2)-0809**

Lab Sample ID: 680-50061-2
Client Matrix: Water

Date Sampled: 08/19/2009 1045
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	3.8		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 21 2009

General Chemistry

Client Sample ID: **BSAMW-2D-0809**

Lab Sample ID: 680-50061-4
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	85		mg/L	1.0	1.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1247					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/20/2009 1402					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0956					
Total Organic Carbon	6.6		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/29/2009 0033					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	700		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					
Carbon Dioxide, Free	0.0 ~~36~~ ND	~~B~~ "U"	mg/L	~~5.0~~ 36	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

General Chemistry

Client Sample ID: **BSAMW-2D-F(0.2)-0809**

Lab Sample ID: 680-50061-5
Client Matrix: Water

Date Sampled: 08/19/2009 1315
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	5.1		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 21 2009

General Chemistry

Client Sample ID: **CPAMW-3D-0809**

Lab Sample ID: 680-50061-6
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	270		mg/L	5.0	5.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1317					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/20/2009 1402					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0956					
Total Organic Carbon	11		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/29/2009 0047					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	690		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					
Carbon Dioxide, Free	0.0 ~~50~~ ND	~~B~~ U	mg/L	~~5.0~~ 5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

General Chemistry

Client Sample ID: **CPAM-3D-F(0.2)-0809**

Lab Sample ID: 680-50061-7
Client Matrix: Water

Date Sampled: 08/19/2009 1515
Date Received: 08/20/2009 0921

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	10		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146774	Date Analyzed: 08/26/2009 0936					

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DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
	E	Result exceeded calibration range.
	D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
GC VOA		
	U	Indicates the analyte was analyzed for but not detected.
Metals		
	U	Indicates the analyte was analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
General Chemistry		
	B	Compound was found in the blank and sample.
	U	Indicates the analyte was analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:680-146219					
LCS 680-146219/21	Lab Control Sample	T	Water	8260B	
LCSD 680-146219/22	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-146219/20	Method Blank	T	Water	8260B	
680-50005-1	BSAMW-4D-0809	T	Water	8260B	
680-50005-1DL	BSAMW-4D-0809	T	Water	8260B	
680-50005-3	CPAMW-4D-0809	T	Water	8260B	
680-50005-5	Trip Blank	T	Water	8260B	
680-50061-1	BSAMW-3D-0809	T	Water	8260B	
680-50061-3EB	BSAMW-3D-0809-EB	T	Water	8260B	
680-50061-4	BSAMW-2D-0809	T	Water	8260B	
680-50061-4DL	BSAMW-2D-0809	T	Water	8260B	
680-50061-6	CPAMW-3D-0809	T	Water	8260B	
680-50061-6DL	CPAMW-3D-0809	T	Water	8260B	
680-50061-8TB	Trip Blank	T	Water	8260B	

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 680-145882					
LCS 680-145882/21-A	Lab Control Sample	T	Water	3520C	
MB 680-145882/20-A	Method Blank	T	Water	3520C	
680-50005-1	BSAMW-4D-0809	T	Water	3520C	
680-50005-3	CPAMW-4D-0809	T	Water	3520C	
Prep Batch: 680-145998					
LCS 680-145998/20-A	Lab Control Sample	T	Water	3520C	
MB 680-145998/19-A	Method Blank	T	Water	3520C	
680-50061-1	BSAMW-3D-0809	T	Water	3520C	
680-50061-3EB	BSAMW-3D-0809-EB	T	Water	3520C	
680-50061-4	BSAMW-2D-0809	T	Water	3520C	
680-50061-6	CPAMW-3D-0809	T	Water	3520C	
Analysis Batch:680-146400					
LCS 680-145998/20-A	Lab Control Sample	T	Water	8270C	680-145998
MB 680-145998/19-A	Method Blank	T	Water	8270C	680-145998
Analysis Batch:680-146517					
LCS 680-145882/21-A	Lab Control Sample	T	Water	8270C	680-145882
MB 680-145882/20-A	Method Blank	T	Water	8270C	680-145882
Analysis Batch:680-146846					
680-50005-1	BSAMW-4D-0809	T	Water	8270C	680-145882
680-50005-3	CPAMW-4D-0809	T	Water	8270C	680-145882
680-50061-1	BSAMW-3D-0809	T	Water	8270C	680-145998
680-50061-3EB	BSAMW-3D-0809-EB	T	Water	8270C	680-145998
680-50061-4	BSAMW-2D-0809	T	Water	8270C	680-145998
680-50061-6	CPAMW-3D-0809	T	Water	8270C	680-145998

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC VOA					
Analysis Batch:680-146263					
LCS 680-146263/18	Lab Control Sample	T	Water	RSK-175	
MB 680-146263/17	Method Blank	T	Water	RSK-175	
680-50005-1	BSAMW-4D-0809	T	Water	RSK-175	
680-50005-3	CPAMW-4D-0809	T	Water	RSK-175	
680-50061-1	BSAMW-3D-0809	T	Water	RSK-175	
680-50061-4	BSAMW-2D-0809	T	Water	RSK-175	
680-50061-6	CPAMW-3D-0809	T	Water	RSK-175	
Analysis Batch:680-146265					
LCS 680-146265/17	Lab Control Sample	T	Water	RSK-175	
680-50005-3	CPAMW-4D-0809	T	Water	RSK-175	
680-50061-1	BSAMW-3D-0809	T	Water	RSK-175	
680-50061-4	BSAMW-2D-0809	T	Water	RSK-175	
680-50061-6	CPAMW-3D-0809	T	Water	RSK-175	

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 680-146254					
LCS 680-146254/18-A	Lab Control Sample	R	Water	3005A	
MB 680-146254/17-A	Method Blank	R	Water	3005A	
680-50005-1	BSAMW-4D-0809	R	Water	3005A	
680-50005-1MS	Matrix Spike	R	Water	3005A	
680-50005-1MSD	Matrix Spike Duplicate	R	Water	3005A	
680-50005-2	BSAMW-4D-F(0.2)-0809	D	Water	3005A	
680-50005-3	CPAMW-4D-0809	R	Water	3005A	
680-50005-4	CPAMW-4D-F(0.2)-0809	D	Water	3005A	
680-50061-1	BSAMW-3D-0809	R	Water	3005A	
680-50061-2	BSAMW-3D-F(0.2)-0809	D	Water	3005A	
680-50061-4	BSAMW-2D-0809	R	Water	3005A	
680-50061-5	BSAMW-2D-F(0.2)-0809	D	Water	3005A	
680-50061-6	CPAMW-3D-0809	R	Water	3005A	
680-50061-7	CPAM-3D-F(0.2)-0809	D	Water	3005A	
Analysis Batch:680-146387					
LCS 680-146254/18-A	Lab Control Sample	R	Water	6010B	680-146254
MB 680-146254/17-A	Method Blank	R	Water	6010B	680-146254
680-50005-1	BSAMW-4D-0809	R	Water	6010B	680-146254
680-50005-1MS	Matrix Spike	R	Water	6010B	680-146254
680-50005-1MSD	Matrix Spike Duplicate	R	Water	6010B	680-146254
680-50005-2	BSAMW-4D-F(0.2)-0809	D	Water	6010B	680-146254
680-50005-3	CPAMW-4D-0809	R	Water	6010B	680-146254
680-50005-4	CPAMW-4D-F(0.2)-0809	D	Water	6010B	680-146254
680-50061-1	BSAMW-3D-0809	R	Water	6010B	680-146254
680-50061-2	BSAMW-3D-F(0.2)-0809	D	Water	6010B	680-146254
680-50061-4	BSAMW-2D-0809	R	Water	6010B	680-146254
680-50061-5	BSAMW-2D-F(0.2)-0809	D	Water	6010B	680-146254
680-50061-6	CPAMW-3D-0809	R	Water	6010B	680-146254
680-50061-7	CPAM-3D-F(0.2)-0809	D	Water	6010B	680-146254

Report Basis
D = Dissolved
R = Total Recoverable

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-145826					
LCS 680-145826/2	Lab Control Sample	T	Water	310.1	
MB 680-145826/1	Method Blank	T	Water	310.1	
680-50005-1	BSAMW-4D-0809	T	Water	310.1	
680-50005-3	CPAMW-4D-0809	T	Water	310.1	
680-50005-3DU	Duplicate	T	Water	310.1	
Analysis Batch:680-146177					
LCS 680-146177/7	Lab Control Sample	T	Water	325.2	
MB 680-146177/1	Method Blank	T	Water	325.2	
680-50005-1	BSAMW-4D-0809	T	Water	325.2	
680-50005-3	CPAMW-4D-0809	T	Water	325.2	
Analysis Batch:680-146178					
LCS 680-146178/2	Lab Control Sample	T	Water	325.2	
MB 680-146178/1	Method Blank	T	Water	325.2	
680-50061-1	BSAMW-3D-0809	T	Water	325.2	
680-50061-4	BSAMW-2D-0809	T	Water	325.2	
680-50061-6	CPAMW-3D-0809	T	Water	325.2	
Analysis Batch:680-146286					
LCS 680-146286/2	Lab Control Sample	T	Water	310.1	
MB 680-146286/1	Method Blank	T	Water	310.1	
680-50061-1	BSAMW-3D-0809	T	Water	310.1	
680-50061-4	BSAMW-2D-0809	T	Water	310.1	
680-50061-6	CPAMW-3D-0809	T	Water	310.1	
Analysis Batch:680-146583					
LCS 680-146583/2	Lab Control Sample	T	Water	353.2	
MB 680-146583/1	Method Blank	T	Water	353.2	
680-50005-1	BSAMW-4D-0809	T	Water	353.2	
680-50005-3	CPAMW-4D-0809	T	Water	353.2	
Analysis Batch:680-146592					
LCS 680-146592/2	Lab Control Sample	T	Water	353.2	
MB 680-146592/1	Method Blank	T	Water	353.2	
680-50061-1	BSAMW-3D-0809	T	Water	353.2	
680-50061-4	BSAMW-2D-0809	T	Water	353.2	
680-50061-6	CPAMW-3D-0809	T	Water	353.2	

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-146767					
LCS 680-146767/32	Lab Control Sample	T	Water	415.1	
MB 680-146767/25	Method Blank	T	Water	415.1	
680-50005-1	BSAMW-4D-0809	T	Water	415.1	
680-50005-3	CPAMW-4D-0809	T	Water	415.1	
680-50061-1	BSAMW-3D-0809	T	Water	415.1	
680-50061-1MS	Matrix Spike	T	Water	415.1	
680-50061-1MSD	Matrix Spike Duplicate	T	Water	415.1	
680-50061-4	BSAMW-2D-0809	T	Water	415.1	
680-50061-6	CPAMW-3D-0809	T	Water	415.1	
Analysis Batch:680-146774					
LCS 680-146774/2	Lab Control Sample	D	Water	415.1	
MB 680-146774/1	Method Blank	D	Water	415.1	
680-50005-2	BSAMW-4D-F(0.2)-0809	D	Water	415.1	
680-50005-4	CPAMW-4D-F(0.2)-0809	D	Water	415.1	
680-50061-2	BSAMW-3D-F(0.2)-0809	D	Water	415.1	
680-50061-5	BSAMW-2D-F(0.2)-0809	D	Water	415.1	
680-50061-7	CPAM-3D-F(0.2)-0809	D	Water	415.1	
Analysis Batch:680-147200					
LCS 680-147200/2	Lab Control Sample	T	Water	375.4	
MB 680-147200/1	Method Blank	T	Water	375.4	
680-50005-1	BSAMW-4D-0809	T	Water	375.4	
680-50005-1MS	Matrix Spike	T	Water	375.4	
680-50005-1MSD	Matrix Spike Duplicate	T	Water	375.4	
680-50005-3	CPAMW-4D-0809	T	Water	375.4	
680-50061-1	BSAMW-3D-0809	T	Water	375.4	
680-50061-4	BSAMW-2D-0809	T	Water	375.4	
680-50061-6	CPAMW-3D-0809	T	Water	375.4	

Report Basis
D = Dissolved
T = Total

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-50005-1 DL	BSAMW-4D-0809 DL	104	103	107
680-50005-1	BSAMW-4D-0809	106	101	105
680-50005-3	CPAMW-4D-0809	106	102	105
680-50005-5	Trip Blank	103	109	104
680-50061-1	BSAMW-3D-0809	108	98	106
680-50061-3	BSAMW-3D-0809-EB	105	108	106
680-50061-4	BSAMW-2D-0809	108	104	110
680-50061-4 DL	BSAMW-2D-0809 DL	108	102	107
680-50061-6 DL	CPAMW-3D-0809 DL	106	100	105
680-50061-6	CPAMW-3D-0809	105	103	105
680-50061-8	Trip Blank	103	108	104
MB 680-146219/20		107	108	104
LCS 680-146219/21		108	104	102
LCSD 680-146219/22		106	105	102

Surrogate	Acceptance Limits
BFB = 4-Bromofluorobenzene	75-120
DBFM = Dibromofluoromethane	75-121
TOL = Toluene-d8 (Surr)	75-120

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	2FP %Rec	TBP %Rec	NBZ %Rec	FBP %Rec	TPH %Rec
680-50005-3	CPAMW-4D-0809	79	75	78	83	66	72
680-50061-6	CPAMW-3D-0809	71	75	81	80	71	30

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
2FP = 2-Fluorophenol	36-110
TBP = 2,4,6-Tribromophenol	40-139
NBZ = Nitrobenzene-d5	45-112
FBP = 2-Fluorobiphenyl	50-113
TPH = Terphenyl-d14	10-121

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Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	2FP %Rec	FBP %Rec	NBZ %Rec	TPH %Rec
MB 680-145882/20-A		72	93	72	77	90	74
MB 680-145998/19-A		65	74	63	65	75	65
LCS 680-145882/21-A		71	86	68	77	88	76
LCS 680-145998/20-A		73	77	63	66	76	75

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
TBP = 2,4,6-Tribromophenol	40-139
2FP = 2-Fluorophenol	36-110
FBP = 2-Fluorobiphenyl	50-113
NBZ = Nitrobenzene-d5	45-112
TPH = Terphenyl-d14	10-121

SEP 21 2009 EJK

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	TPH %Rec
680-50005-1	BSAMW-4D-0809	69	80	65	72	69	74
680-50061-1	BSAMW-3D-0809	70	78	72	76	78	27
680-50061-3	BSAMW-3D-0809-EB	77	86	76	73	85	71
680-50061-4	BSAMW-2D-0809	76	82	70	78	81	23

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
TBP = 2,4,6-Tribromophenol	40-139
FBP = 2-Fluorobiphenyl	50-113
2FP = 2-Fluorophenol	36-110
NBZ = Nitrobenzene-d5	45-112
TPH = Terphenyl-d14	10-121

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146219

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-146219/20	Analysis Batch:	680-146219	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq055.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 1110			Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 1110				

Analyte	Result	Qual	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	107	75 - 120
Dibromofluoromethane	108	75 - 121
Toluene-d8 (Surr)	104	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-146219

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-146219/21	Analysis Batch:	680-146219	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq047.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 0915			Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 0915				

LCSD Lab Sample ID:	LCSD 680-146219/22	Analysis Batch:	680-146219	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq049.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/24/2009 0944			Final Weight/Volume:	5 mL
Date Prepared:	08/24/2009 0944				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	99	100	77 - 119	1	30		
Chlorobenzene	100	100	85 - 116	0	30		
1,2-Dichlorobenzene	105	103	79 - 124	2	30		
1,3-Dichlorobenzene	105	103	78 - 125	1	30		
1,4-Dichlorobenzene	101	100	81 - 122	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	108	106	75 - 120
Dibromofluoromethane	104	105	75 - 121
Toluene-d8 (Surr)	102	102	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-145882

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-145882/20-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 0559
Date Prepared: 08/20/2009 1338

Analysis Batch: 680-146517
Prep Batch: 680-145882
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3158.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	RL
4-Chloroaniline	20	U	20
1,2,4-Trichlorobenzene	10	U	10
1,4-Dioxane	10	U	10
2-Chlorophenol	10	U	10

Surrogate	% Rec	Acceptance Limits
Phenol-d5	72	38 - 116
2,4,6-Tribromophenol	93	40 - 139
2-Fluorophenol	72	36 - 110
2-Fluorobiphenyl	77	50 - 113
Nitrobenzene-d5	90	45 - 112
Terphenyl-d14	74	10 - 121

Lab Control Sample - Batch: 680-145882

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-145882/21-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 0624
Date Prepared: 08/20/2009 1338

Analysis Batch: 680-146517
Prep Batch: 680-145882
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3159.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	100	24.9	25	10 - 110	
1,2,4-Trichlorobenzene	100	68.1	68	41 - 110	
1,4-Dioxane	100	46.8	47	11 - 110	
2-Chlorophenol	100	76.4	76	47 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	71	38 - 116
2,4,6-Tribromophenol	86	40 - 139
2-Fluorophenol	68	36 - 110
2-Fluorobiphenyl	77	50 - 113
Nitrobenzene-d5	88	45 - 112
Terphenyl-d14	76	10 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-145998

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-145998/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 2102
Date Prepared: 08/21/2009 1348

Analysis Batch: 680-146400
Prep Batch: 680-145998
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3143.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	RL
4-Chloroaniline	20	U	20
1,2,4-Trichlorobenzene	10	U	10
1,4-Dioxane	10	U	10
2-Chlorophenol	10	U	10

Surrogate	% Rec	Acceptance Limits
Phenol-d5	65	38 - 116
2,4,6-Tribromophenol	74	40 - 139
2-Fluorophenol	63	36 - 110
2-Fluorobiphenyl	65	50 - 113
Nitrobenzene-d5	75	45 - 112
Terphenyl-d14	65	10 - 121

Lab Control Sample - Batch: 680-145998

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-145998/20-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 2128
Date Prepared: 08/21/2009 1348

Analysis Batch: 680-146400
Prep Batch: 680-145998
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3144.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	100	70.1	70	10 - 110	
1,2,4-Trichlorobenzene	100	59.5	59	41 - 110	
1,4-Dioxane	100	39.7	40	11 - 110	
2-Chlorophenol	100	73.2	73	47 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	73	38 - 116
2,4,6-Tribromophenol	77	40 - 139
2-Fluorophenol	63	36 - 110
2-Fluorobiphenyl	66	50 - 113
Nitrobenzene-d5	76	45 - 112
Terphenyl-d14	75	10 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146263

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-146263/17
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 2110
Date Prepared: N/A

Analysis Batch: 680-146263
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ398.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Result	Qual	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	0.19	U	0.19

Lab Control Sample - Batch: 680-146263

Method: RSK-175
Preparation: N/A

Lab Sample ID: LCS 680-146263/18
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0849
Date Prepared: N/A

Analysis Batch: 680-146263
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ400.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ethane	282	288	102	75 - 125	
Ethylene	271	297	110	75 - 125	
Methane	153	163	106	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Lab Control Sample - Batch: 680-146265

Method: RSK-175
Preparation: N/A

Lab Sample ID:	LCS 680-146265/17	Analysis Batch:	680-146265	Instrument ID:	GC Volatiles - U TCD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UQ388.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	17000 uL
Date Analyzed:	08/24/2009 1424			Final Weight/Volume:	17 mL
Date Prepared:	N/A			Injection Volume:	1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Methane	1910	2330	122	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146254

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-146254/17-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0135
Date Prepared: 08/25/2009 1208

Analysis Batch: 680-146387
Prep Batch: 680-146254
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-146254

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-146254/18-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0140
Date Prepared: 08/25/2009 1208

Analysis Batch: 680-146387
Prep Batch: 680-146254
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.02	102	75 - 125	
Iron, Dissolved	1.00	1.02	102	75 - 125	
Manganese	0.500	0.497	99	75 - 125	
Manganese, Dissolved	0.500	0.497	99	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-146254

Method: 6010B
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	680-50005-1	Analysis Batch: 680-146387	Instrument ID: ICP/AES - D
Client Matrix:	Water	Prep Batch: 680-146254	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	08/26/2009 0201		Final Weight/Volume: 50 mL
Date Prepared:	08/25/2009 1208		

MSD Lab Sample ID:	680-50005-1	Analysis Batch: 680-146387	Instrument ID: ICP/AES - D
Client Matrix:	Water	Prep Batch: 680-146254	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	08/26/2009 0207		Final Weight/Volume: 50 mL
Date Prepared:	08/25/2009 1208		

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Iron	133	109	75 - 125	3	20	4	4
Iron, Dissolved	133	109	75 - 125	3	20	4	4
Manganese	105	100	75 - 125	2	20		
Manganese, Dissolved	105	100	75 - 125	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-145826

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-145826/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/19/2009 1012
Date Prepared: N/A

Analysis Batch: 680-145826
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	9.23		5.0

Lab Control Sample - Batch: 680-145826

Method: 310.1
Preparation: N/A

Lab Sample ID: LCS 680-145826/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/19/2009 1012
Date Prepared: N/A

Analysis Batch: 680-145826
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	369	398	108	80 - 120	

Duplicate - Batch: 680-145826

Method: 310.1
Preparation: N/A

→ CPAMW-4D-0809

Lab Sample ID: 680-50005-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/19/2009 1312
Date Prepared: N/A

Analysis Batch: 680-145826
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	850	856	0	30	
Carbon Dioxide, Free	50	48.4	4	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146286

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-146286/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0815
Date Prepared: N/A

Analysis Batch: 680-146286
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	10.6		5.0

Lab Control Sample - Batch: 680-146286

Method: 310.1
Preparation: N/A

Lab Sample ID: LCS 680-146286/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0815
Date Prepared: N/A

Analysis Batch: 680-146286
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	369	395	107	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146177

Method: 325.2
Preparation: N/A

Lab Sample ID: MB 680-146177/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1008
Date Prepared: N/A

Analysis Batch: 680-146177
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-146177

Method: 325.2
Preparation: N/A

Lab Sample ID: LCS 680-146177/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1009
Date Prepared: N/A

Analysis Batch: 680-146177
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	49.1	98	85 - 115	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146178

Method: 325.2
Preparation: N/A

Lab Sample ID: MB 680-146178/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1217
Date Prepared: N/A

Analysis Batch: 680-146178
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-146178

Method: 325.2
Preparation: N/A

Lab Sample ID: LCS 680-146178/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1218
Date Prepared: N/A

Analysis Batch: 680-146178
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	49.8	99	85 - 115	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146583

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-146583/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1159
Date Prepared: N/A

Analysis Batch: 680-146583
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-146583

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-146583/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1159
Date Prepared: N/A

Analysis Batch: 680-146583
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	1.02	102	90 - 110	
Nitrate Nitrite as N	1.00	1.02	102	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146592

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-146592/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1632
Date Prepared: N/A

Analysis Batch: 680-146592
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-146592

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-146592/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1632
Date Prepared: N/A

Analysis Batch: 680-146592
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	1.03	103	90 - 110	
Nitrate Nitrite as N	1.00	1.03	103	90 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: MB 680-147200/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: LCS 680-147200/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	20.1	100	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-147200

Method: 375.4
Preparation: N/A

MS Lab Sample ID: 680-50005-1
Client Matrix: Water
Dilution: 10
Date Analyzed: 09/04/2009 1020
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-50005-1
Client Matrix: Water
Dilution: 10
Date Analyzed: 09/04/2009 1023
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	66	93	75 - 125	4	30	4	4

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146767

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146767/25
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/28/2009 1559
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-146767

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146767/32
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/28/2009 1803
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.5	102	80 - 120	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-146767

Method: 415.1
Preparation: N/A

MS Lab Sample ID: 680-50061-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/29/2009 0000
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A

Instrument ID: Total Organic Carbon
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

MSD Lab Sample ID: 680-50061-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/29/2009 0016
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Total Organic Carbon	103	102	80 - 120	1	25		

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Client: Solutia Inc.

Job Number: 680-50005-1
Sdg Number: KPS052

Method Blank - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146774/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Dissolved Organic Carbon-Dissolved	1.0	U	1.0

Lab Control Sample - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146774/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved Organic Carbon-Dissolved	20.0	20.4	102	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 21 2009

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-50005-1
SDG Number: KPS052

Login Number: 50005
Creator: Conner, Keaton
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	MS/MSD not requested in client SDG (no additional volume provided).
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	False	
Sample Preservation Verified	True	

SEP 21 2009

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date: 8/19/09	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W)			SDG No.
(314) 429-0100 Phone	TAT if different from Below			
(314) 429-0462 FAX	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			
Project Name: 3Q09 LTM GW Sampling				
Site: Solutia WG Krummrich Facility				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-3D-0809 ✓	8/19/09	1045	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-3D-F(0.2)-0809 ✓		1045	G	Water	2	X									1	1	
BSAMW-3D-0809-EB ✓		0955	G	Water	5		3	2									
BSAMW-2D-0809 ✓		1315	G	Water	14		3	2	1	1	1	3	2	1			
BSAMW-2D-F(0.2)-0809 ✓		1315	G	Water	2	X									1	1	
CPAMW-3D-0809 ✓		1515	G	Water	14		3+	2	1	1	1	3	2	1			+Effervescence could not be eliminated from HCl-preserved VOA vials. To eliminate effervescence, the VOA vials were refilled without HCl preservative.
CPAM-3D-F(0.2)-0809 ✓		1515	G	Water	2	X									1	1	
Trip Blank ✓	↓	—	—	Water	2		2										
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	1	4	1	1	1	3,1	2	4	2	680-50061

Page 83 of 85

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: **Level 4 Data Package**

TEMPERATURE
0.6|3.4

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/19/09 1800	Beth A Daughtry	TA SAV	8-20-09 0921
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SEP 21 2009 [signature]

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Carrier: FedEx	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia		__1__ of __1__ COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W) _____			SDG No.
(314) 429-0100 Phone	TAT if different from Below _____			
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 3Q09 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-4D-0809 ✓	8/18/09	1305	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-4D-F(0.2)-0809 ✓		1305	G	Water	2	X									1	1	
CPAMW-4D-0809 ✓		1520	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-4D-F(0.2)-0809 ✓		1520	G	Water	2	X									1	1	
Trip Blank ✓	↓	—	—	Water	2		2										
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____							2	1	4	1	1	1	3,1	2	4	2	

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: **Level 4 Data Package**

2.6°C
680-50005

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	8/18/09 1730		TA St. Lou	8/19/09 0919
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SEP 21 2009

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-50005-1
SDG Number: KPS052

Login Number: 50061
Creator: Daughtry, Beth
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6 and 3.4 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	MS/MSD not requested in client SDG (no additional volume provided).
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

SEP 21 2009

E.2 SDG KPS053

Results of Samples from Wells:

BSAMW-1S
CPAMW-1D
CPAMW-2D

E.2 Solutia Krummrich Data Review

Laboratory SDG: KPS053

Reviewer: Elizabeth Kunkel

Date Reviewed: 9/29/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999. USEPA National Functional Guidelines for Inorganic Data Review 2004.

Applicable Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	Sample Identification
BSAMW-1S-0809	BSAMW-1S-F(0.2)-0809
CPAMW-1D- 0809	CPAMW-1D-F(0.2)-0809
CPAMW-2D-0809	CPAMW-2D-0809-AD
CPAMW-2D-F(0.2)-0809	Trip Blank

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

The laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of three VOA vials for samples BSAMW-1S-0809 and CPAMW-2D-0809 were received by the laboratory broken. The remaining intact vials contained sufficient sample to complete all requested analyses.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-146286/1	General Chemistry	Carbon dioxide, free	10.6	mg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Field ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
BSAMW-1S-0809	General Chemistry	Carbon dioxide, free	23	**U**
CPAMW-2D-0809	General Chemistry	Carbon dioxide, free	27	**U**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample CPAMW-2D-0809 was duplicated and analyzed for alkalinity and free carbon dioxide.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
CPAMW-2D-0809	CPAMW-2D-0809-AD

Were field duplicates within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and non-detect, were undiluted results also reported?

Analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-50105-1

SDG Number: KPS053

Job Description: WGK LTM GW 3Q09 - AUG 2009

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, MO 63141

Attention: Mr. Jerry Rinaldi

Approved for release.
Lidya Gulizia
Project Manager I
9/22/2009 10:20 AM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
09/22/2009

Reviewed on SEP 22 2009

cc: Mr. Jeff Adams
Mr. Bob Billman
Dave Palmer
Mr. Richard Williams

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Receipt
Method(s) 8260B, RSK-175: One or more containers for the following sample(s) was received broken or leaking: BSAMW-1S-0809 (680-50105-1), CPAMW-2D-0809 (680-50105-5). One of three vials was received broken for each ID.

All other samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
No analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 310.1: The Method Blank in batch 146286 contained free CO2 over the detection limit. The data have been reported.

Method(s) 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 146592 were outside control limits. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 375.4, 9038: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for batch 147200 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

Comments
No additional comments.

SEP 22 2009 ETK

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Liquid-Liquid Extraction (Continuous)	TAL SAV		SW846 3520C
Dissolved Gases (GC)	TAL SAV	RSK RSK-175	
Metals (ICP)	TAL SAV	SW846 6010B	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD
Preparation, Total Recoverable or Dissolved Metals	TAL SAV		SW846 3005A
Alkalinity	TAL SAV	MCAWW 310.1	
Chloride	TAL SAV	MCAWW 325.2	
Nitrogen, Nitrate-Nitrite	TAL SAV	MCAWW 353.2	
Sulfate	TAL SAV	MCAWW 375.4	
TOC	TAL SAV	MCAWW 415.1	
DOC	TAL SAV	MCAWW 415.1	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method	Analyst	Analyst ID
SW846 8260B	Cowart, Judson	WJC
SW846 8270C	Haynes, Carion	CRH
RSK RSK-175	Moncrief, Amy	AEM
SW846 6010B	Bland, Brian	BCB
MCAWW 310.1	Vasquez, Juana	JV
MCAWW 325.2	Ross, Jon	JR
MCAWW 353.2	Ross, Jon	JR
MCAWW 375.4	Ross, Jon	JR
MCAWW 415.1	Blackshear, Kim	KB

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-50105-1	BSAMW-1S-0809	Water	08/20/2009 1010	08/21/2009 0918
680-50105-2	BSAMW-1S-F(0.2)-0809	Water	08/20/2009 1010	08/21/2009 0918
680-50105-3	CPAMW-1D-0809	Water	08/20/2009 1210	08/21/2009 0918
680-50105-4	CPAMW-1D-F(0.2)-0809	Water	08/20/2009 1210	08/21/2009 0918
680-50105-5	CPAMW-2D-0809	Water	08/20/2009 1505	08/21/2009 0918
680-50105-6	CPAMW-2D-0809-AD	Water	08/20/2009 1505	08/21/2009 0918
680-50105-7	CPAMW-2D-F(0.2)-0809	Water	08/20/2009 1505	08/21/2009 0918
680-50105-8	Trip Blank	Water	08/20/2009 0000	08/21/2009 0918

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146914	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p009.d
Dilution:	5000		Initial Weight/Volume: 5 mL
Date Analyzed:	08/31/2009 1636		Final Weight/Volume: 5 mL
Date Prepared:	08/31/2009 1636		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	940000		5000
Chlorobenzene	5000	U	5000
1,2-Dichlorobenzene	5000	U	5000
1,3-Dichlorobenzene	5000	U	5000
1,4-Dichlorobenzene	5000	U	5000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		75 - 120
Dibromofluoromethane	116		75 - 121
Toluene-d8 (Surr)	104		75 - 120

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146914	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p011.d
Dilution:	200		Initial Weight/Volume: 5 mL
Date Analyzed:	08/31/2009 1658		Final Weight/Volume: 5 mL
Date Prepared:	08/31/2009 1658		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	5000		200
Chlorobenzene	16000		200
1,2-Dichlorobenzene	18000		200
1,3-Dichlorobenzene	1200		200
1,4-Dichlorobenzene	11000		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	101		75 - 120
Dibromofluoromethane	112		75 - 121
Toluene-d8 (Surr)	102		75 - 120

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146914	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p013.d
Dilution:	200		Initial Weight/Volume: 5 mL
Date Analyzed:	08/31/2009 1720		Final Weight/Volume: 5 mL
Date Prepared:	08/31/2009 1720		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1100		200
Chlorobenzene	30000		200
1,2-Dichlorobenzene	2100		200
1,3-Dichlorobenzene	600		200
1,4-Dichlorobenzene	15000		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		75 - 120
Dibromofluoromethane	111		75 - 121
Toluene-d8 (Surr)	102		75 - 120

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809-AD**

Lab Sample ID: 680-50105-6
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146610	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p111.d
Dilution:	200		Initial Weight/Volume: 5 mL
Date Analyzed:	08/27/2009 2016		Final Weight/Volume: 5 mL
Date Prepared:	08/27/2009 2016		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1000		200
Chlorobenzene	30000		200
1,2-Dichlorobenzene	1700		200
1,3-Dichlorobenzene	470		200
1,4-Dichlorobenzene	13000		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	101		75 - 120
Dibromofluoromethane	113		75 - 121
Toluene-d8 (Surr)	104		75 - 120

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-50105-8
Client Matrix: Water

Date Sampled: 08/20/2009 0000
Date Received: 08/21/2009 0918

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146610	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p095.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/27/2009 1535		Final Weight/Volume: 5 mL
Date Prepared:	08/27/2009 1535		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	92		75 - 120
Dibromofluoromethane	121		75 - 121
Toluene-d8 (Surr)	103		75 - 120

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146614		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146126		Lab File ID:	n3695.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/27/2009 1257			Final Weight/Volume:	1 mL
Date Prepared:	08/24/2009 1353			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	9.4	U	9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	78		38 - 116
2-Fluorophenol	78		36 - 110
2,4,6-Tribromophenol	95		40 - 139
Nitrobenzene-d5	76		45 - 112
2-Fluorobiphenyl	70		50 - 113
Terphenyl-d14	47		10 - 121

SEP 22 2009

* " Do not use this data. Use all other data."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146614		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146126		Lab File ID:	n3696.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/27/2009 1320			Final Weight/Volume:	1 mL
Date Prepared:	08/24/2009 1353			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	26		9.4
* ~~1,2,4-Trichlorobenzene~~	~~560~~	~~E~~	~~9.4~~

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	73		38 - 116
2-Fluorophenol	92		36 - 110
2,4,6-Tribromophenol	81		40 - 139
Nitrobenzene-d5	77		45 - 112
2-Fluorobiphenyl	66		50 - 113
Terphenyl-d14	16		10 - 121

SEP 22 2009 ERK

* "Use these results only. All other data was reported from the 1.0 dilution analysis."

Analytical Data

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146614		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146126		Lab File ID:	n3710.d
Dilution:	5.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/27/2009 1834	Run Type:	DL	Final Weight/Volume:	1 mL
Date Prepared:	08/24/2009 1353			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
~~2-Chlorophenol~~	~~47~~	~~U~~	~~47~~
* 1,2,4-Trichlorobenzene	740	D	47

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	75		38 - 116
2-Fluorophenol	92		36 - 110
2,4,6-Tribromophenol	85		40 - 139
Nitrobenzene-d5	89		45 - 112
2-Fluorobiphenyl	79		50 - 113
Terphenyl-d14	20		10 - 121

SEP 22 2009 EZK

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146614		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146126		Lab File ID:	n3697.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	08/27/2009 1342			Final Weight/Volume:	1 mL
Date Prepared:	08/24/2009 1353			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	22		9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	70		38 - 116
2-Fluorophenol	102		36 - 110
2,4,6-Tribromophenol	78		40 - 139
Nitrobenzene-d5	78		45 - 112
2-Fluorobiphenyl	72		50 - 113
Terphenyl-d14	39		10 - 121

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809-AD**

Lab Sample ID: 680-50105-6
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-146614	Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146126	Lab File ID:	n3698.d
Dilution:	1.0		Initial Weight/Volume:	1060 mL
Date Analyzed:	08/27/2009 1405		Final Weight/Volume:	1 mL
Date Prepared:	08/24/2009 1353		Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	17		9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	74		38 - 116
2-Fluorophenol	96		36 - 110
2,4,6-Tribromophenol	84		40 - 139
Nitrobenzene-d5	74		45 - 112
2-Fluorobiphenyl	66		50 - 113
Terphenyl-d14	34		10 - 121

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1542.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1244			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265		Instrument ID:	VGUTCD1
Preparation:	N/A			Lab File ID:	U1542.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1244			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	13000		0.19

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1544.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1309			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	73		0.35
Ethylene	0.33	U	0.33

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265	Instrument ID: VGUTCD1
Preparation:	N/A		Lab File ID: U1544.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	08/25/2009 1309		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	32000		0.19

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146263	Instrument ID: VGUFID2
Preparation:	N/A		Lab File ID: U1543.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	08/25/2009 1256		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	9.5		0.35
Ethylene	0.54		0.33

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-146265		Instrument ID:	VGUTCD1
Preparation:	N/A			Lab File ID:	U1543.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	08/25/2009 1256			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	2800		0.19

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0311			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	1.8		0.050
Manganese	0.36		0.010

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **BSAMW-1S-F(0.2)-0809**

Lab Sample ID: 680-50105-2
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0316			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	1.6		0.050
Manganese, Dissolved	0.36		0.010

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0321			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	1.5		0.050
Manganese	0.10		0.010

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-1D-F(0.2)-0809**

Lab Sample ID: 680-50105-4
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0327			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	1.5		0.050
Manganese, Dissolved	0.098		0.010

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0343			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron	5.9		0.050
Manganese	0.35		0.010

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Client Sample ID: **CPAMW-2D-F(0.2)-0809**

Lab Sample ID: 680-50105-7
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-146387		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146254		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	08/26/2009 0348			Final Weight/Volume:	50 mL
Date Prepared:	08/25/2009 1208				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	5.3		0.050
Manganese, Dissolved	0.34		0.010

SEP 22 2009

General Chemistry

Client Sample ID: **BSAMW-1S-0809**

Lab Sample ID: 680-50105-1
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	100		mg/L	2.0	2.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1317					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/21/2009 1725					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0956					
Total Organic Carbon	9.7		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146767	Date Analyzed: 08/29/2009 0101					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	900		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					
Carbon Dioxide, Free	0.0 ~~23~~ ND	~~B~~ "U"	mg/L	~~5.0~~ 2.3	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					

SEP 22 2009

General Chemistry

Client Sample ID: **BSAMW-1S-F(0.2)-0809**

Lab Sample ID: 680-50105-2
Client Matrix: Water

Date Sampled: 08/20/2009 1010
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	8.1		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 22 2009

General Chemistry

Client Sample ID: **CPAMW-1D-0809**

Lab Sample ID: 680-50105-3
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	110		mg/L	2.0	2.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1303					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/21/2009 1725					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0959					
Total Organic Carbon	58		mg/L	5.0	5.0	415.1
Analysis Batch: 680-146814	Date Analyzed: 08/31/2009 1611					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	1100		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					
Carbon Dioxide, Free	5.0	U	mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 0815					

SEP 22 2009

General Chemistry

Client Sample ID: **CPAMW-1D-F(0.2)-0809**

Lab Sample ID: 680-50105-4
Client Matrix: Water

Date Sampled: 08/20/2009 1210
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	39		mg/L	5.0	5.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 22 2009

General Chemistry

Client Sample ID: **CPAMW-2D-0809**

Lab Sample ID: 680-50105-5
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	66		mg/L	1.0	1.0	325.2
Analysis Batch: 680-146178	Date Analyzed: 08/24/2009 1247					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-146592	Date Analyzed: 08/21/2009 1725					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 0959					
Total Organic Carbon	12		mg/L	1.0	1.0	415.1
Analysis Batch: 680-146814	Date Analyzed: 08/31/2009 1611					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	630		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 1556					
Carbon Dioxide, Free	0.0 ~~27~~ ND	~~B~~ U	mg/L	~~5.0~~ 27	1.0	310.1
Analysis Batch: 680-146286	Date Analyzed: 08/25/2009 1556					

SEP 22 2009

General Chemistry

Client Sample ID: **CPAMW-2D-F(0.2)-0809**

Lab Sample ID: 680-50105-7
Client Matrix: Water

Date Sampled: 08/20/2009 1505
Date Received: 08/21/2009 0918

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	12		mg/L	1.0	1.0	415.1

Analysis Batch: 680-146774 Date Analyzed: 08/26/2009 0936

SEP 22 2009

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	E	Result exceeded calibration range.
	D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
GC VOA		
	U	Indicates the analyte was analyzed for but not detected.
Metals		
	U	Indicates the analyte was analyzed for but not detected.
General Chemistry		
	B	Compound was found in the blank and sample.
	U	Indicates the analyte was analyzed for but not detected.

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:680-146610					
LCS 680-146610/5	Lab Control Sample	T	Water	8260B	
LCSD 680-146610/6	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-146610/8	Method Blank	T	Water	8260B	
680-50105-6	CPAMW-2D-0809-AD	T	Water	8260B	
680-50105-8	Trip Blank	T	Water	8260B	
Analysis Batch:680-146914					
LCS 680-146914/26	Lab Control Sample	T	Water	8260B	
LCSD 680-146914/27	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-146914/29	Method Blank	T	Water	8260B	
680-50105-1	BSAMW-1S-0809	T	Water	8260B	
680-50105-3	CPAMW-1D-0809	T	Water	8260B	
680-50105-5	CPAMW-2D-0809	T	Water	8260B	

Report Basis
T = Total

GC/MS Semi VOA					
Prep Batch: 680-146126					
LCS 680-146126/22-A	Lab Control Sample	T	Water	3520C	
MB 680-146126/21-A	Method Blank	T	Water	3520C	
680-50105-1	BSAMW-1S-0809	T	Water	3520C	
680-50105-3	CPAMW-1D-0809	T	Water	3520C	
680-50105-3DL	CPAMW-1D-0809	T	Water	3520C	
680-50105-5	CPAMW-2D-0809	T	Water	3520C	
680-50105-6	CPAMW-2D-0809-AD	T	Water	3520C	
Analysis Batch:680-146390					
LCS 680-146126/22-A	Lab Control Sample	T	Water	8270C	680-146126
MB 680-146126/21-A	Method Blank	T	Water	8270C	680-146126
Analysis Batch:680-146614					
680-50105-1	BSAMW-1S-0809	T	Water	8270C	680-146126
680-50105-3	CPAMW-1D-0809	T	Water	8270C	680-146126
680-50105-3DL	CPAMW-1D-0809	T	Water	8270C	680-146126
680-50105-5	CPAMW-2D-0809	T	Water	8270C	680-146126
680-50105-6	CPAMW-2D-0809-AD	T	Water	8270C	680-146126

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC VOA					
Analysis Batch:680-146263					
LCS 680-146263/18	Lab Control Sample	T	Water	RSK-175	
MB 680-146263/17	Method Blank	T	Water	RSK-175	
680-50105-1	BSAMW-1S-0809	T	Water	RSK-175	
680-50105-3	CPAMW-1D-0809	T	Water	RSK-175	
680-50105-5	CPAMW-2D-0809	T	Water	RSK-175	
Analysis Batch:680-146265					
LCS 680-146265/17	Lab Control Sample	T	Water	RSK-175	
680-50105-1	BSAMW-1S-0809	T	Water	RSK-175	
680-50105-3	CPAMW-1D-0809	T	Water	RSK-175	
680-50105-5	CPAMW-2D-0809	T	Water	RSK-175	

Report Basis
T = Total

Metals					
Prep Batch: 680-146254					
LCS 680-146254/18-A	Lab Control Sample	R	Water	3005A	
MB 680-146254/17-A	Method Blank	R	Water	3005A	
680-50105-1	BSAMW-1S-0809	R	Water	3005A	
680-50105-2	BSAMW-1S-F(0.2)-0809	D	Water	3005A	
680-50105-3	CPAMW-1D-0809	R	Water	3005A	
680-50105-4	CPAMW-1D-F(0.2)-0809	D	Water	3005A	
680-50105-5	CPAMW-2D-0809	R	Water	3005A	
680-50105-7	CPAMW-2D-F(0.2)-0809	D	Water	3005A	
Analysis Batch:680-146387					
LCS 680-146254/18-A	Lab Control Sample	R	Water	6010B	680-146254
MB 680-146254/17-A	Method Blank	R	Water	6010B	680-146254
680-50105-1	BSAMW-1S-0809	R	Water	6010B	680-146254
680-50105-2	BSAMW-1S-F(0.2)-0809	D	Water	6010B	680-146254
680-50105-3	CPAMW-1D-0809	R	Water	6010B	680-146254
680-50105-4	CPAMW-1D-F(0.2)-0809	D	Water	6010B	680-146254
680-50105-5	CPAMW-2D-0809	R	Water	6010B	680-146254
680-50105-7	CPAMW-2D-F(0.2)-0809	D	Water	6010B	680-146254

Report Basis
D = Dissolved
R = Total Recoverable

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-146178					
LCS 680-146178/2	Lab Control Sample	T	Water	325.2	
MB 680-146178/1	Method Blank	T	Water	325.2	
680-50105-1	BSAMW-1S-0809	T	Water	325.2	
680-50105-3	CPAMW-1D-0809	T	Water	325.2	
680-50105-5	CPAMW-2D-0809	T	Water	325.2	
Analysis Batch:680-146286					
LCS 680-146286/2	Lab Control Sample	T	Water	310.1	
MB 680-146286/1	Method Blank	T	Water	310.1	
680-50105-1	BSAMW-1S-0809	T	Water	310.1	
680-50105-3	CPAMW-1D-0809	T	Water	310.1	
680-50105-5	CPAMW-2D-0809	T	Water	310.1	
680-50105-5DU	Duplicate	T	Water	310.1	
Analysis Batch:680-146592					
LCS 680-146592/2	Lab Control Sample	T	Water	353.2	
MB 680-146592/1	Method Blank	T	Water	353.2	
680-50105-1	BSAMW-1S-0809	T	Water	353.2	
680-50105-3	CPAMW-1D-0809	T	Water	353.2	
680-50105-5	CPAMW-2D-0809	T	Water	353.2	
Analysis Batch:680-146767					
LCS 680-146767/32	Lab Control Sample	T	Water	415.1	
MB 680-146767/25	Method Blank	T	Water	415.1	
680-50105-1	BSAMW-1S-0809	T	Water	415.1	
Analysis Batch:680-146774					
LCS 680-146774/2	Lab Control Sample	D	Water	415.1	
MB 680-146774/1	Method Blank	D	Water	415.1	
680-50105-2	BSAMW-1S-F(0.2)-0809	D	Water	415.1	
680-50105-4	CPAMW-1D-F(0.2)-0809	D	Water	415.1	
680-50105-7	CPAMW-2D-F(0.2)-0809	D	Water	415.1	
Analysis Batch:680-146814					
LCS 680-146814/2	Lab Control Sample	T	Water	415.1	
MB 680-146814/1	Method Blank	T	Water	415.1	
680-50105-3	CPAMW-1D-0809	T	Water	415.1	
680-50105-5	CPAMW-2D-0809	T	Water	415.1	
Analysis Batch:680-147200					
LCS 680-147200/2	Lab Control Sample	T	Water	375.4	
MB 680-147200/1	Method Blank	T	Water	375.4	
680-50105-1	BSAMW-1S-0809	T	Water	375.4	
680-50105-3	CPAMW-1D-0809	T	Water	375.4	
680-50105-5	CPAMW-2D-0809	T	Water	375.4	

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis
D = Dissolved
T = Total

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-50105-1	BSAMW-1S-0809	98	116	104
680-50105-3	CPAMW-1D-0809	101	112	102
680-50105-5	CPAMW-2D-0809	98	111	102
680-50105-6	CPAMW-2D-0809-AD	101	113	104
680-50105-8	Trip Blank	92	121	103
MB 680-146610/8		97	119	103
MB 680-146914/29		97	119	103
LCS 680-146610/5		104	112	104
LCS 680-146914/26		98	113	97
LCSD 680-146610/6		105	116	106
LCSD 680-146914/27		98	116	97

Surrogate	Acceptance Limits
BFB = 4-Bromofluorobenzene	75-120
DBFM = Dibromofluoromethane	75-121
TOL = Toluene-d8 (Surr)	75-120

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	2FP %Rec	TBP %Rec	NBZ %Rec	FBP %Rec	TPH %Rec
680-50105-1	BSAMW-1S-0809	78	78	95	76	70	47
680-50105-3	CPAMW-1D-0809	73	92	81	77	66	16
680-50105-3 DL	CPAMW-1D-0809 DL	75	92	85	89	79	20
680-50105-5	CPAMW-2D-0809	70	102	78	78	72	39
680-50105-6	CPAMW-2D-0809-AD	74	96	84	74	66	34
MB 680-146126/21-A		76	82	87	89	80	79
LCS 680-146126/22-A		75	72	82	82	74	78

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
2FP = 2-Fluorophenol	36-110
TBP = 2,4,6-Tribromophenol	40-139
NBZ = Nitrobenzene-d5	45-112
FBP = 2-Fluorobiphenyl	50-113
TPH = Terphenyl-d14	10-121

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146610

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-146610/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1246
Date Prepared: 08/27/2009 1246

Analysis Batch: 680-146610
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq171.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	119	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-146610

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-146610/5	Analysis Batch:	680-146610	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq163.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/27/2009 1031			Final Weight/Volume:	5 mL
Date Prepared:	08/27/2009 1031				

LCSD Lab Sample ID:	LCSD 680-146610/6	Analysis Batch:	680-146610	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq165.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/27/2009 1101			Final Weight/Volume:	5 mL
Date Prepared:	08/27/2009 1101				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	107	107	77 - 119	0	30		
Chlorobenzene	103	106	85 - 116	3	30		
1,2-Dichlorobenzene	101	101	79 - 124	1	30		
1,3-Dichlorobenzene	98	97	78 - 125	0	30		
1,4-Dichlorobenzene	97	98	81 - 122	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	104	105	75 - 120
Dibromofluoromethane	112	116	75 - 121
Toluene-d8 (Surr)	104	106	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146914

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-146914/29
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1429
Date Prepared: 08/31/2009 1429

Analysis Batch: 680-146914
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq043.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	97	75 - 120
Dibromofluoromethane	119	75 - 121
Toluene-d8 (Surr)	103	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-146914

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-146914/26	Analysis Batch:	680-146914	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq035.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1302			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1302				

LCSD Lab Sample ID:	LCSD 680-146914/27	Analysis Batch:	680-146914	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq037.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1324			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1324				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	101	103	77 - 119	2	30		
Chlorobenzene	102	103	85 - 116	2	30		
1,2-Dichlorobenzene	97	98	79 - 124	1	30		
1,3-Dichlorobenzene	99	99	78 - 125	0	30		
1,4-Dichlorobenzene	99	99	81 - 122	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	98	98	75 - 120
Dibromofluoromethane	113	116	75 - 121
Toluene-d8 (Surr)	97	97	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146126

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-146126/21-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 1809
Date Prepared: 08/24/2009 1353

Analysis Batch: 680-146390
Prep Batch: 680-146126
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - N
Lab File ID: n3659.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	RL
2-Chlorophenol	10	U	10
1,2,4-Trichlorobenzene	10	U	10
4-Chloroaniline	20	U	20
1,4-Dioxane	10	U	10

Surrogate	% Rec	Acceptance Limits
Phenol-d5	76	38 - 116
2-Fluorophenol	82	36 - 110
2,4,6-Tribromophenol	87	40 - 139
Nitrobenzene-d5	89	45 - 112
2-Fluorobiphenyl	80	50 - 113
Terphenyl-d14	79	10 - 121

Lab Control Sample - Batch: 680-146126

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-146126/22-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 1831
Date Prepared: 08/24/2009 1353

Analysis Batch: 680-146390
Prep Batch: 680-146126
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - N
Lab File ID: n3660.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2-Chlorophenol	100	70.1	70	47 - 110	
1,2,4-Trichlorobenzene	100	65.2	65	41 - 110	
4-Chloroaniline	100	55.2	55	10 - 110	
1,4-Dioxane	100	43.2	43	11 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	75	38 - 116
2-Fluorophenol	72	36 - 110
2,4,6-Tribromophenol	82	40 - 139
Nitrobenzene-d5	82	45 - 112
2-Fluorobiphenyl	74	50 - 113
Terphenyl-d14	78	10 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146263

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-146263/17
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 2110
Date Prepared: N/A

Analysis Batch: 680-146263
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ398.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Result	Qual	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	0.19	U	0.19

Lab Control Sample - Batch: 680-146263

Method: RSK-175
Preparation: N/A

Lab Sample ID: LCS 680-146263/18
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0849
Date Prepared: N/A

Analysis Batch: 680-146263
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ400.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ethane	282	288	102	75 - 125	
Ethylene	271	297	110	75 - 125	
Methane	153	163	106	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Lab Control Sample - Batch: 680-146265

Method: RSK-175
Preparation: N/A

Lab Sample ID:	LCS 680-146265/17	Analysis Batch:	680-146265	Instrument ID:	GC Volatiles - U TCD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	UQ388.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	17000 uL
Date Analyzed:	08/24/2009 1424			Final Weight/Volume:	17 mL
Date Prepared:	N/A			Injection Volume:	1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Methane	1910	2330	122	75 - 125	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146254

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-146254/17-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0135
Date Prepared: 08/25/2009 1208

Analysis Batch: 680-146387
Prep Batch: 680-146254
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-146254

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-146254/18-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0140
Date Prepared: 08/25/2009 1208

Analysis Batch: 680-146387
Prep Batch: 680-146254
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.02	102	75 - 125	
Iron, Dissolved	1.00	1.02	102	75 - 125	
Manganese	0.500	0.497	99	75 - 125	
Manganese, Dissolved	0.500	0.497	99	75 - 125	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146286

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-146286/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0815
Date Prepared: N/A

Analysis Batch: 680-146286
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	10.6		5.0

Lab Control Sample - Batch: 680-146286

Method: 310.1
Preparation: N/A

Lab Sample ID: LCS 680-146286/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 0815
Date Prepared: N/A

Analysis Batch: 680-146286
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	369	395	107	80 - 120	

Duplicate - Batch: 680-146286

Method: 310.1
Preparation: N/A

Lab Sample ID: 680-50105-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/25/2009 1556
Date Prepared: N/A

Analysis Batch: 680-146286
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	630	625	0	30	
Carbon Dioxide, Free	27	26.2	4	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146178

Method: 325.2
Preparation: N/A

Lab Sample ID: MB 680-146178/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1217
Date Prepared: N/A

Analysis Batch: 680-146178
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-146178

Method: 325.2
Preparation: N/A

Lab Sample ID: LCS 680-146178/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/24/2009 1218
Date Prepared: N/A

Analysis Batch: 680-146178
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	49.8	99	85 - 115	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146592

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-146592/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1632
Date Prepared: N/A

Analysis Batch: 680-146592
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-146592

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-146592/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1632
Date Prepared: N/A

Analysis Batch: 680-146592
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	1.03	103	90 - 110	
Nitrate Nitrite as N	1.00	1.03	103	90 - 110	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: MB 680-147200/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: LCS 680-147200/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	20.1	100	75 - 125	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146767

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146767/25
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/28/2009 1559
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-146767

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146767/32
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/28/2009 1803
Date Prepared: N/A

Analysis Batch: 680-146767
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.5	102	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 22 2009

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146774/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Dissolved Organic Carbon-Dissolved	1.0	U	1.0

Lab Control Sample - Batch: 680-146774

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146774/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/26/2009 0936
Date Prepared: N/A

Analysis Batch: 680-146774
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved Organic Carbon-Dissolved	20.0	20.4	102	80 - 120	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50105-1
Sdg Number: KPS053

Method Blank - Batch: 680-146814

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-146814/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1611
Date Prepared: N/A

Analysis Batch: 680-146814
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-146814

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-146814/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1611
Date Prepared: N/A

Analysis Batch: 680-146814
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.5	103	80 - 120	

SEP 22 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett	Date:	COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: Fed Ex	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W)			
(314) 429-0100 Phone	TAT if different from Below			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 3Q09 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-1S-0809 ✓	8/20/09	1010	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-1S-F(0.2)-0809 ✓		1010	G	Water	2	X									1	1	
CPAMW-1D-0809 ✓		1210	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-1D-F(0.2)-0809 ✓		1210	G	Water	2	X									1	1	
CPAMW-2D-0809 ✓		1505	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-2D-0809-AD ✓		1505	G	Water	5		3	2									
CPAMW-2D-F(0.2)-0809 ✓		1505	G	Water	2	X									1	1	
Trip Blank ✓	↓	—	—	Water	2		2										
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____							2	1	4	1	1	1	3,1	2	4	2	

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

680-50105
~~680-50185~~ 8-24-09 TEMPERATURE 5.0 2.8

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/20/09 1800	[signature]	TA	8/21/09 09:18
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-50105-1
SDG Number: KPS053

Login Number: 50105
Creator: Kicklighter, Marilyn
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.0 and 2.8 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	See SDG KPS054 for MS/MSD samples.
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

E.3 SDG KPS054

Results of Samples from Wells:

BSAMW-5D
CPAMW-5D

E.3 Solutia Krummrich Data Review

Laboratory SDG: KPS054

Reviewer: Elizabeth Kunkel

Date Reviewed: 10/5/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999. USEPA National Functional Guidelines for Inorganic Data Review 2004.

Applicable Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	Sample Identification
BSAMW-5D-0809	BSAMW-5D-F(0.2)-0809
CPAMW-5D-0809	CPAMW-5D-F(0.2)-0809
Trip Blank	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that free carbon dioxide was detected in the method blank. Additionally, MS/MSD recoveries for chloride could not be evaluated due to sample concentrations greater than four times the matrix spike concentration. SVOC MS recovery and MS/MSD RPD were outside evaluation criteria. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration	Units
MB 680-146554	General Chemistry	Carbon dioxide, free	11.2	mg/L

Analytical data that were reported nondetect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification.

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample BSAMW-5D-0809 was spiked and analyzed for VOCs, SVOCs, and chloride.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
BSAMW-5D-0809	SVOCs	4-chloroaniline	**5/**62	169	10-110/40

USEPA National Functional Guidelines for Organic Data Review indicates that organic data should not be qualified based on MS/MSD data alone and LCS recoveries were within evaluation criteria; therefore, no qualification of data was required. MS/MSD recoveries for chloride could not be evaluated due to sample concentrations greater than four times (4X) the matrix spike concentration; therefore, no qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample CPAMW-5D-F(0.2)-0809 was duplicated and analyzed for alkalinity and free carbon dioxide.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and non-detect, were undiluted results also reported?

Analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

No

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-50251-1

SDG Number: KPS054

Job Description: WGK LTM GW 3Q09 - AUG 2009

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, MO 63141

Attention: Mr. Jerry Rinaldi

Lidya Gulizia

Approved for release.
Lidya Gulizia
Project Manager I
9/23/2009 5:27 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
09/23/2009

Reviewed
on
9/29/2009 EZK

cc: Mr. Jeff Adams
Mr. Bob Billman
Dave Palmer
Mr. Richard Williams

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
TestAmerica Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 352-0165 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
No analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method(s) 310.1, SM 2320B: The method blank associated with samples BSAMW-5D-0809 (680-50251-1), CPAMW-5D-0809 (680-50251-3) contained Free Carbon Dioxide above the laboratory RL. Since free CO2 is a calculation based on bicarbonate alkalinity and pH, slight shifts in blank pH or Bicarbonate alkalinity values can cause elevated Free CO2 values.

Method(s) 353.2: The following sample(s) was diluted due to the nature of the sample matrix: BSAMW-5D-0809 (680-50251-1), CPAMW-5D-0809 (680-50251-3). Elevated reporting limits (RLs) are provided.

Method(s) 375.4, 9038: Due to the high concentration of sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for batch 147200 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

Comments
No additional comments.

SEP 29 2009 ERK

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Liquid-Liquid Extraction (Continuous)	TAL SAV		SW846 3520C
Dissolved Gases (GC)	TAL SAV	RSK RSK-175	
Metals (ICP)	TAL SAV	SW846 6010B	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD
Preparation, Total Recoverable or Dissolved Metals	TAL SAV		SW846 3005A
Alkalinity	TAL SAV	MCAWW 310.1	
Chloride	TAL SAV	MCAWW 325.2	
Nitrogen, Nitrate-Nitrite	TAL SAV	MCAWW 353.2	
Sulfate	TAL SAV	MCAWW 375.4	
TOC	TAL SAV	MCAWW 415.1	
DOC	TAL SAV	MCAWW 415.1	
Sample Filtration, Field	TAL SAV		FIELD_FLTRD

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 8270C	Haynes, Carion	CRH
RSK RSK-175	Moncrief, Amy	AEM
SW846 6010B	Bland, Brian	BCB
MCAWW 310.1	Vasquez, Juana	JV
MCAWW 325.2	Ross, Jon	JR
MCAWW 353.2	Ross, Jon	JR
MCAWW 375.4	Ross, Jon	JR
MCAWW 415.1	Dalton, Gloria	GJ
MCAWW 415.1	McDonald, Debbie	DAM

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-50251-1	BSAMW-5D-0809	Water	08/26/2009 1030	08/27/2009 0919
680-50251-1MS	BSAMW-5D-0809-MS	Water	08/26/2009 1030	08/27/2009 0919
680-50251-1MSD	BSAMW-5D-0809-MSD	Water	08/26/2009 1030	08/27/2009 0919
680-50251-2	BSAMW-5D-F(0.2)-0809	Water	08/26/2009 1030	08/27/2009 0919
680-50251-3	CPAMW-5D-0809	Water	08/26/2009 1255	08/27/2009 0919
680-50251-4	CPAMW-5D-F(0.2)-0809	Water	08/26/2009 1255	08/27/2009 0919
680-50251-5TB	Trip Blank	Water	08/26/2009 0000	08/27/2009 0919

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146787	Instrument ID: MSO
Preparation:	5030B		Lab File ID: o1327.d
Dilution:	4.0		Initial Weight/Volume: 5 mL
Date Analyzed:	08/31/2009 1506		Final Weight/Volume: 5 mL
Date Prepared:	08/31/2009 1506		

Analyte	Result (ug/L)	Qualifier	RL
Benzene	13		4.0
Chlorobenzene	330		4.0
1,2-Dichlorobenzene	10		4.0
1,3-Dichlorobenzene	4.0	U	4.0
1,4-Dichlorobenzene	13		4.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	105		75 - 120
Dibromofluoromethane	101		75 - 121
Toluene-d8 (Surr)	104		75 - 120

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **CPAMW-5D-0809**

Lab Sample ID: 680-50251-3
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146787		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1329.d
Dilution:	10			Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1535			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1535				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	10	U	10
Chlorobenzene	1500		10
1,2-Dichlorobenzene	10	U	10
1,3-Dichlorobenzene	10	U	10
1,4-Dichlorobenzene	13		10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		75 - 120
Dibromofluoromethane	103		75 - 121
Toluene-d8 (Surr)	106		75 - 120

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **Trip Blank**

Lab Sample ID: 680-50251-5TB
Client Matrix: Water

Date Sampled: 08/26/2009 0000
Date Received: 08/27/2009 0919

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-146787		Instrument ID:	MSO
Preparation:	5030B			Lab File ID:	o1321.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1339			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1339				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	103		75 - 120
Dibromofluoromethane	108		75 - 121
Toluene-d8 (Surr)	105		75 - 120

SEP 29 2009 EJR

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-147396		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146757		Lab File ID:	n3903.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/08/2009 1852			Final Weight/Volume:	1 mL
Date Prepared:	08/31/2009 1350			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.4	U	9.4
1,4-Dioxane	9.4	U	9.4
2-Chlorophenol	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	56		38 - 116
2,4,6-Tribromophenol	70		40 - 139
2-Fluorobiphenyl	53		50 - 113
2-Fluorophenol	54		36 - 110
Nitrobenzene-d5	61		45 - 112
Terphenyl-d14	30		10 - 121

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **CPAMW-5D-0809**

Lab Sample ID: 680-50251-3
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-147396		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-146757		Lab File ID:	n3904.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/08/2009 1914			Final Weight/Volume:	1 mL
Date Prepared:	08/31/2009 1350			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	19	U	19
2-Chlorophenol	9.4	U	9.4
1,2,4-Trichlorobenzene	9.4	U	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	67		38 - 116
2-Fluorophenol	75		36 - 110
2,4,6-Tribromophenol	79		40 - 139
Nitrobenzene-d5	79		45 - 112
2-Fluorobiphenyl	67		50 - 113
Terphenyl-d14	34		10 - 121

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-147326		Instrument ID:	VGUFID2
Preparation:	N/A			Lab File ID:	U1556.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	09/08/2009 1219			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	18		0.35
Ethylene	0.33	U	0.33

SEP 29 2009 EZK

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-147327		Instrument ID:	VGUTCD1
Preparation:	N/A			Lab File ID:	U1556.D
Dilution:	1.0			Initial Weight/Volume:	17000 uL
Date Analyzed:	09/08/2009 1219			Final Weight/Volume:	17 mL
Date Prepared:				Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Methane	11000		0.19

SEP 29 2009 EJK

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **CPAMW-5D-0809**

Lab Sample ID: 680-50251-3
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-147326	Instrument ID: VGUFID2
Preparation:	N/A		Lab File ID: U1557.D
Dilution:	1.0		Initial Weight/Volume: 17000 uL
Date Analyzed:	09/08/2009 1232		Final Weight/Volume: 17 mL
Date Prepared:			Injection Volume: 1 uL

Analyte	Result (ug/L)	Qualifier	RL
Ethane	6.1		0.35
Ethylene	0.33	U	0.33
Methane	30		0.19

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-147097		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146970		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2009 1019			Final Weight/Volume:	50 mL
Date Prepared:	09/02/2009 1132				

Analyte	Result (mg/L)	Qualifier	RL
Iron	17		0.050
Manganese	0.47		0.010

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **BSAMW-5D-F(0.2)-0809**

Lab Sample ID: 680-50251-2
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-147097		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146970		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2009 1024			Final Weight/Volume:	50 mL
Date Prepared:	09/02/2009 1132				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	16		0.050
Manganese, Dissolved	0.46		0.010

SEP 29 2009 EZK

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **CPAMW-5D-0809**

Lab Sample ID: 680-50251-3
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-147097		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146970		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2009 1031			Final Weight/Volume:	50 mL
Date Prepared:	09/02/2009 1132				

Analyte	Result (mg/L)	Qualifier	RL
Iron	93		0.050
Manganese	3.3		0.010

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Client Sample ID: **CPAMW-5D-F(0.2)-0809**

Lab Sample ID: 680-50251-4
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-147097		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-146970		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	09/03/2009 1037			Final Weight/Volume:	50 mL
Date Prepared:	09/02/2009 1132				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	99		0.050
Manganese, Dissolved	3.6		0.010

SEP 29 2009

General Chemistry

Client Sample ID: **BSAMW-5D-0809**

Lab Sample ID: 680-50251-1
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	270		mg/L	5.0	5.0	325.2
Analysis Batch: 680-147350	Date Analyzed: 09/08/2009 1542					
Nitrate as N	0.25	U	mg/L	0.25	5.0	353.2
Analysis Batch: 680-146589	Date Analyzed: 08/27/2009 1449					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1005					
Total Organic Carbon	6.3		mg/L	1.0	1.0	415.1
Analysis Batch: 680-147667	Date Analyzed: 09/10/2009 2209					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	840		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146554	Date Analyzed: 08/27/2009 0745					
Carbon Dioxide, Free	78	B	mg/L	5.0	1.0	310.1
Analysis Batch: 680-146554	Date Analyzed: 08/27/2009 0745					

SEP 29 2009

General Chemistry

Client Sample ID: **BSAMW-5D-F(0.2)-0809**

Lab Sample ID: 680-50251-2
Client Matrix: Water

Date Sampled: 08/26/2009 1030
Date Received: 08/27/2009 0919

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	4.7		mg/L	1.0	1.0	415.1

Analysis Batch: 680-148017 Date Analyzed: 09/17/2009 0505

SEP 29 2009 ERK

General Chemistry

Client Sample ID: **CPAMW-5D-0809**

Lab Sample ID: 680-50251-3
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	290		mg/L	5.0	5.0	325.2
Analysis Batch: 680-147350	Date Analyzed: 09/08/2009 1542					
Nitrate as N	0.25	U	mg/L	0.25	5.0	353.2
Analysis Batch: 680-146589	Date Analyzed: 08/27/2009 1449					
Sulfate	1600		mg/L	500	100	375.4
Analysis Batch: 680-147200	Date Analyzed: 09/04/2009 1127					
Total Organic Carbon	4.0		mg/L	1.0	1.0	415.1
Analysis Batch: 680-147667	Date Analyzed: 09/10/2009 2225					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	390		mg/L	5.0	1.0	310.1
Analysis Batch: 680-146554	Date Analyzed: 08/27/2009 0745					
Carbon Dioxide, Free	150	B	mg/L	5.0	1.0	310.1
Analysis Batch: 680-146554	Date Analyzed: 08/27/2009 0745					

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

General Chemistry

Client Sample ID: **CPAMW-5D-F(0.2)-0809**

Lab Sample ID: 680-50251-4
Client Matrix: Water

Date Sampled: 08/26/2009 1255
Date Received: 08/27/2009 0919

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	4.3		mg/L	1.0	1.0	415.1

Analysis Batch: 680-148017 Date Analyzed: 09/17/2009 0505

SEP 29 2009

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	F	MS or MSD exceeds the control limits
	F	RPD of the MS and MSD exceeds the control limits
GC VOA		
	U	Indicates the analyte was analyzed for but not detected.
Metals		
	U	Indicates the analyte was analyzed for but not detected.
General Chemistry		
	B	Compound was found in the blank and sample.
	U	Indicates the analyte was analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:680-146787					
LCS 680-146787/7	Lab Control Sample	T	Water	8260B	
LCSD 680-146787/9	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-146787/11	Method Blank	T	Water	8260B	
680-50251-1	BSAMW-5D-0809	T	Water	8260B	
680-50251-1MS	Matrix Spike	T	Water	8260B	
680-50251-1MSD	Matrix Spike Duplicate	T	Water	8260B	
680-50251-3	CPAMW-5D-0809	T	Water	8260B	
680-50251-5TB	Trip Blank	T	Water	8260B	

Report Basis
T = Total

GC/MS Semi VOA					
Prep Batch: 680-146757					
LCS 680-146757/22-A	Lab Control Sample	T	Water	3520C	
MB 680-146757/21-A	Method Blank	T	Water	3520C	
680-50251-1	BSAMW-5D-0809	T	Water	3520C	
680-50251-1MS	Matrix Spike	T	Water	3520C	
680-50251-1MSD	Matrix Spike Duplicate	T	Water	3520C	
680-50251-3	CPAMW-5D-0809	T	Water	3520C	
Analysis Batch:680-147396					
LCS 680-146757/22-A	Lab Control Sample	T	Water	8270C	680-146757
MB 680-146757/21-A	Method Blank	T	Water	8270C	680-146757
680-50251-1	BSAMW-5D-0809	T	Water	8270C	680-146757
680-50251-1MS	Matrix Spike	T	Water	8270C	680-146757
680-50251-1MSD	Matrix Spike Duplicate	T	Water	8270C	680-146757
680-50251-3	CPAMW-5D-0809	T	Water	8270C	680-146757

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC VOA					
Analysis Batch:680-147326					
LCS 680-147326/12	Lab Control Sample	T	Water	RSK-175	
MB 680-147326/13	Method Blank	T	Water	RSK-175	
680-50251-1	BSAMW-5D-0809	T	Water	RSK-175	
680-50251-3	CPAMW-5D-0809	T	Water	RSK-175	
Analysis Batch:680-147327					
LCS 680-147327/12	Lab Control Sample	T	Water	RSK-175	
680-50251-1	BSAMW-5D-0809	T	Water	RSK-175	

Report Basis
T = Total

Metals					
Prep Batch: 680-146970					
LCS 680-146970/15-A	Lab Control Sample	R	Water	3005A	
MB 680-146970/14-A	Method Blank	R	Water	3005A	
680-50251-1	BSAMW-5D-0809	R	Water	3005A	
680-50251-2	BSAMW-5D-F(0.2)-0809	D	Water	3005A	
680-50251-3	CPAMW-5D-0809	R	Water	3005A	
680-50251-4	CPAMW-5D-F(0.2)-0809	D	Water	3005A	
Analysis Batch:680-147097					
LCS 680-146970/15-A	Lab Control Sample	R	Water	6010B	680-146970
MB 680-146970/14-A	Method Blank	R	Water	6010B	680-146970
680-50251-1	BSAMW-5D-0809	R	Water	6010B	680-146970
680-50251-2	BSAMW-5D-F(0.2)-0809	D	Water	6010B	680-146970
680-50251-3	CPAMW-5D-0809	R	Water	6010B	680-146970
680-50251-4	CPAMW-5D-F(0.2)-0809	D	Water	6010B	680-146970

Report Basis
D = Dissolved
R = Total Recoverable

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-146554					
LCS 680-146554/2	Lab Control Sample	T	Water	310.1	
MB 680-146554/1	Method Blank	T	Water	310.1	
680-50251-1	BSAMW-5D-0809	T	Water	310.1	
680-50251-3	CPAMW-5D-0809	T	Water	310.1	
680-50251-3DU	Duplicate	T	Water	310.1	
Analysis Batch:680-146589					
LCS 680-146589/2	Lab Control Sample	T	Water	353.2	
MB 680-146589/1	Method Blank	T	Water	353.2	
680-50251-1	BSAMW-5D-0809	T	Water	353.2	
680-50251-3	CPAMW-5D-0809	T	Water	353.2	
Analysis Batch:680-147200					
LCS 680-147200/2	Lab Control Sample	T	Water	375.4	
MB 680-147200/1	Method Blank	T	Water	375.4	
680-50251-1	BSAMW-5D-0809	T	Water	375.4	
680-50251-3	CPAMW-5D-0809	T	Water	375.4	
Analysis Batch:680-147350					
LCS 680-147350/6	Lab Control Sample	T	Water	325.2	
MB 680-147350/1	Method Blank	T	Water	325.2	
680-50251-1	BSAMW-5D-0809	T	Water	325.2	
680-50251-1MS	Matrix Spike	T	Water	325.2	
680-50251-1MSD	Matrix Spike Duplicate	T	Water	325.2	
680-50251-3	CPAMW-5D-0809	T	Water	325.2	
Analysis Batch:680-147667					
LCS 680-147667/4	Lab Control Sample	T	Water	415.1	
MB 680-147667/2	Method Blank	T	Water	415.1	
680-50251-1	BSAMW-5D-0809	T	Water	415.1	
680-50251-3	CPAMW-5D-0809	T	Water	415.1	
Analysis Batch:680-148017					
680-50251-2	BSAMW-5D-F(0.2)-0809	D	Water	415.1	
680-50251-4	CPAMW-5D-F(0.2)-0809	D	Water	415.1	

Report Basis
D = Dissolved
T = Total

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-50251-1	BSAMW-5D-0809	105	101	104
680-50251-3	CPAMW-5D-0809	103	103	106
680-50251-5	Trip Blank	103	108	105
MB 680-146787/11		105	107	105
LCS 680-146787/7		107	107	105
LCSD 680-146787/9		107	105	105
680-50251-1 MS	BSAMW-5D-0809 MS	108	102	102
680-50251-1 MSD	BSAMW-5D-0809 MSD	109	103	102

Surrogate	Acceptance Limits
BFB = 4-Bromofluorobenzene	75-120
DBFM = Dibromofluoromethane	75-121
TOL = Toluene-d8 (Surr)	75-120

SEP 29 2009 EZR

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	2FP %Rec	TBP %Rec	NBZ %Rec	FBP %Rec	TPH %Rec
680-50251-3	CPAMW-5D-0809	67	75	79	79	67	34

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
2FP = 2-Fluorophenol	36-110
TBP = 2,4,6-Tribromophenol	40-139
NBZ = Nitrobenzene-d5	45-112
FBP = 2-Fluorobiphenyl	50-113
TPH = Terphenyl-d14	10-121

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	2FP %Rec	FBP %Rec	NBZ %Rec	TPH %Rec
MB 680-146757/21-A		78	85	76	77	89	86
LCS 680-146757/22-A		88	88	81	78	95	80

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
TBP = 2,4,6-Tribromophenol	40-139
2FP = 2-Fluorophenol	36-110
FBP = 2-Fluorobiphenyl	50-113
NBZ = Nitrobenzene-d5	45-112
TPH = Terphenyl-d14	10-121

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	TPH %Rec
680-50251-1	BSAMW-5D-0809	56	70	53	54	61	30
680-50251-1 MS	BSAMW-5D-0809 MS	82	86	72	80	98	44
680-50251-1 MSD	BSAMW-5D-0809 MSD	84	84	73	80	94	52

Surrogate	Acceptance Limits
PHL = Phenol-d5	38-116
TBP = 2,4,6-Tribromophenol	40-139
FBP = 2-Fluorobiphenyl	50-113
2FP = 2-Fluorophenol	36-110
NBZ = Nitrobenzene-d5	45-112
TPH = Terphenyl-d14	10-121

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-146787

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-146787/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/31/2009 1015
Date Prepared: 08/31/2009 1015

Analysis Batch: 680-146787
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - O
Lab File ID: oq161.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL
Benzene	1.0	U	1.0
Chlorobenzene	1.0	U	1.0
1,2-Dichlorobenzene	1.0	U	1.0
1,3-Dichlorobenzene	1.0	U	1.0
1,4-Dichlorobenzene	1.0	U	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	105	75 - 120
Dibromofluoromethane	107	75 - 121
Toluene-d8 (Surr)	105	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-146787

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-146787/7	Analysis Batch:	680-146787	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq153.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 0819			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 0819				

LCSD Lab Sample ID:	LCSD 680-146787/9	Analysis Batch:	680-146787	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	oq155.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 0848			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 0848				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	105	104	77 - 119	1	30		
Chlorobenzene	99	100	85 - 116	2	30		
1,2-Dichlorobenzene	102	103	79 - 124	1	30		
1,3-Dichlorobenzene	105	105	78 - 125	0	30		
1,4-Dichlorobenzene	103	102	81 - 122	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	107	107	75 - 120
Dibromofluoromethane	107	105	75 - 121
Toluene-d8 (Surr)	105	105	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EJK

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-146787

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-50251-1	Analysis Batch:	680-146787	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1339.d
Dilution:	4.0			Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1801			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1801				

MSD Lab Sample ID:	680-50251-1	Analysis Batch:	680-146787	Instrument ID:	GC/MS Volatiles - O
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	o1341.d
Dilution:	4.0			Initial Weight/Volume:	5 mL
Date Analyzed:	08/31/2009 1830			Final Weight/Volume:	5 mL
Date Prepared:	08/31/2009 1830				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	101	101	77 - 119	0	30		
Chlorobenzene	88	91	85 - 116	1	30		
1,2-Dichlorobenzene	105	105	79 - 124	0	30		
1,3-Dichlorobenzene	108	108	78 - 125	0	30		
1,4-Dichlorobenzene	104	107	81 - 122	3	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	108	109	75 - 120
Dibromofluoromethane	102	103	75 - 121
Toluene-d8 (Surr)	102	102	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-146757

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-146757/21-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1444
Date Prepared: 08/31/2009 1350

Analysis Batch: 680-147396
Prep Batch: 680-146757
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - N
Lab File ID: n3892.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	RL
4-Chloroaniline	20	U	20
1,2,4-Trichlorobenzene	10	U	10
1,4-Dioxane	10	U	10
2-Chlorophenol	10	U	10

Surrogate	% Rec	Acceptance Limits
Phenol-d5	78	38 - 116
2,4,6-Tribromophenol	85	40 - 139
2-Fluorophenol	76	36 - 110
2-Fluorobiphenyl	77	50 - 113
Nitrobenzene-d5	89	45 - 112
Terphenyl-d14	86	10 - 121

Lab Control Sample - Batch: 680-146757

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-146757/22-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1507
Date Prepared: 08/31/2009 1350

Analysis Batch: 680-147396
Prep Batch: 680-146757
Units: ug/L

Instrument ID: GC/MS SemiVolatiles - N
Lab File ID: n3893.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	100	66.4	66	10 - 110	
1,2,4-Trichlorobenzene	100	68.3	68	41 - 110	
1,4-Dioxane	100	48.3	48	11 - 110	
2-Chlorophenol	100	81.5	82	47 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	88	38 - 116
2,4,6-Tribromophenol	88	40 - 139
2-Fluorophenol	81	36 - 110
2-Fluorobiphenyl	78	50 - 113
Nitrobenzene-d5	95	45 - 112
Terphenyl-d14	80	10 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-146757

Method: 8270C
Preparation: 3520C

MS Lab Sample ID:	680-50251-1	Analysis Batch: 680-147396	Instrument ID: GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch: 680-146757	Lab File ID: n3905.d
Dilution:	1.0		Initial Weight/Volume: 1060 mL
Date Analyzed:	09/08/2009 1937		Final Weight/Volume: 1 mL
Date Prepared:	08/31/2009 1350		Injection Volume: 1.0 uL

MSD Lab Sample ID:	680-50251-1	Analysis Batch: 680-147396	Instrument ID: GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch: 680-146757	Lab File ID: n3906.d
Dilution:	1.0		Initial Weight/Volume: 1060 mL
Date Analyzed:	09/08/2009 1959		Final Weight/Volume: 1 mL
Date Prepared:	08/31/2009 1350		Injection Volume: 1.0 uL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4-Chloroaniline	5	62	10 - 110	169	40	U F	F
1,2,4-Trichlorobenzene	71	68	41 - 110	5	40		
1,4-Dioxane	48	41	11 - 110	17	40		
2-Chlorophenol	79	78	47 - 110	1	40		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Phenol-d5	82	84	38 - 116
2,4,6-Tribromophenol	86	84	40 - 139
2-Fluorobiphenyl	72	73	50 - 113
2-Fluorophenol	80	80	36 - 110
Nitrobenzene-d5	98	94	45 - 112
Terphenyl-d14	44	52	10 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

SEP 29 2009 EZK

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-147326

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-147326/13
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1146
Date Prepared: N/A

Analysis Batch: 680-147326
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ432.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Result	Qual	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	0.19	U	0.19

Lab Control Sample - Batch: 680-147326

Method: RSK-175
Preparation: N/A

Lab Sample ID: LCS 680-147326/12
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1042
Date Prepared: N/A

Analysis Batch: 680-147326
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U FID
Lab File ID: UQ430.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ethane	282	225	80	75 - 125	
Ethylene	271	241	89	75 - 125	
Methane	153	134	88	75 - 125	

SEP 29 2009 ELR

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Lab Control Sample - Batch: 680-147327

Method: RSK-175
Preparation: N/A

Lab Sample ID: LCS 680-147327/12
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 0939
Date Prepared: N/A

Analysis Batch: 680-147327
Prep Batch: N/A
Units: ug/L

Instrument ID: GC Volatiles - U TCD
Lab File ID: UQ426.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Methane	1910	2210	115	75 - 125	

SEP 29 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-146970

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-146970/14-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/02/2009 2124
Date Prepared: 09/02/2009 1132

Analysis Batch: 680-147097
Prep Batch: 680-146970
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-146970

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-146970/15-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/02/2009 2129
Date Prepared: 09/02/2009 1132

Analysis Batch: 680-147097
Prep Batch: 680-146970
Units: mg/L

Instrument ID: ICP/AES - D
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.07	107	75 - 125	
Iron, Dissolved	1.00	1.07	107	75 - 125	
Manganese	0.500	0.511	102	75 - 125	
Manganese, Dissolved	0.500	0.511	102	75 - 125	

SEP 29 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-146554

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-146554/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 0745
Date Prepared: N/A

Analysis Batch: 680-146554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	11.2		5.0

Lab Control Sample - Batch: 680-146554

Method: 310.1
Preparation: N/A

Lab Sample ID: LCS 680-146554/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 0745
Date Prepared: N/A

Analysis Batch: 680-146554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	369	383	104	80 - 120	

Duplicate - Batch: 680-146554

Method: 310.1
Preparation: N/A

Lab Sample ID: 680-50251-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 0745
Date Prepared: N/A

Analysis Batch: 680-146554
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	390	392	0	30	
Carbon Dioxide, Free	150	143	6	30	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-147350

Method: 325.2
Preparation: N/A

Lab Sample ID: MB 680-147350/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1514
Date Prepared: N/A

Analysis Batch: 680-147350
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-147350

Method: 325.2
Preparation: N/A

Lab Sample ID: LCS 680-147350/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/08/2009 1515
Date Prepared: N/A

Analysis Batch: 680-147350
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	48.7	97	85 - 115	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-147350

Method: 325.2
Preparation: N/A

MS Lab Sample ID: 680-50251-1
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 09/08/2009 1542
Date Prepared: N/A

Analysis Batch: 680-147350
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 680-50251-1
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 09/08/2009 1542
Date Prepared: N/A

Analysis Batch: 680-147350
Prep Batch: N/A

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Chloride	63	60	85 - 115	0	30	4	4

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-146589

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-146589/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1540
Date Prepared: N/A

Analysis Batch: 680-146589
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-146589

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-146589/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 08/27/2009 1540
Date Prepared: N/A

Analysis Batch: 680-146589
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.00	0.993	99	90 - 110	
Nitrate Nitrite as N	1.00	0.993	99	90 - 110	

SEP 29 2009 EKR

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: MB 680-147200/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-147200

Method: 375.4
Preparation: N/A

Lab Sample ID: LCS 680-147200/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/04/2009 0954
Date Prepared: N/A

Analysis Batch: 680-147200
Prep Batch: N/A
Units: mg/L

Instrument ID: KoneLab1
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	20.1	100	75 - 125	

SEP 29 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-50251-1
Sdg Number: KPS054

Method Blank - Batch: 680-147667

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-147667/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/10/2009 2031
Date Prepared: N/A

Analysis Batch: 680-147667
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-147667

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-147667/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/10/2009 2101
Date Prepared: N/A

Analysis Batch: 680-147667
Prep Batch: N/A
Units: mg/L

Instrument ID: Total Organic Carbon Analyze
Lab File ID: N/A
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	19.9	99	80 - 120	

SEP 29 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jeff Adams	Site Contact: Mike Corbett		COC No:
URS Corporation	Tel/Fax: (314) 743-4228	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 21562154.00003
St. Louis, MO 63110	Calendar (C) or Work Days (W)			SDG No.
(314) 429-0100 Phone	TAT if different from Below Standard			
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 3Q09 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260	SVOCs by 8270C*	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
BSAMW-5D-0809 ✓	8/26/09	1030	G	Water	14		3	2	1	1	1	3	2	1			*SVOCs per semi-annual list
BSAMW-5D-F(0.2)-0809 ✓		1030	G	Water	2	X									1	1	
BSAMW-5D-0809-MS ✓		1030	G	Water	5		3	2									
BSAMW-5D-0809-MSD ✓		1030	G	Water	5		3	2									
CPAMW-5D-0809 ✓		1255	G	Water	14		3	2	1	1	1	3	2	1			
CPAMW-5D-F(0.2)-0809 ✓		1255	G	Water	2	X									1	1	
Trip Blank ✓	↓	—	—	Water	2		2										
							2	1	4	1	1	1	3,1	2	4	2	

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

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: **Level 4 Data Package**

3.6°c / 2.4°c
680 - 50251

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	8/26/09 1700	George K Lomax	TAL SV	8/27/09 0919
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: 680 - 50251	Company:	Date/Time:

SEP 29 2009 EZK

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-50251-1
SDG Number: KPS054

Login Number: 50251
Creator: Conner, Keaton
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6 and 2.4 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	False	
Sample Preservation Verified	True	

SEP 29 2009

Appendix F
Surface Water and Sediment Analytical Results
(with Data Review/Validation Reports)

F.1 SDG KRS007

Results of Surface Water Samples from Sampling Points:

R2007-1
R2007-2
R2007-3

F.1 Solutia Krummrich Data Review

Laboratory SDG: KRS007

Reviewer: Elizabeth Kunkel

Date Reviewed: 10/21/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999.

Applicable Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	Sample Identification
SW-R2007-1-0909	SW-R2007-2-0909
SW-R2007-3-0909	SW-R2007-2-0909-AD
SED-R2007-1-0909-EB	Trip Blank 092309

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

No problems were noted in the laboratory case narrative.

The cooler receipt form indicated that VOC samples were preserved with sodium thiosulfate only; however, samples were analyzed within 7 days of sample collection. The equipment blank results are reported with this SDG, but were collected and associated with samples reported as part of SDG KRS008.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample SW-R2007-3-0909 was spiked and analyzed for VOCs and SVOCs.

Were MS/MSD recoveries within evaluation criteria?

Yes

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
SW-R2007-2-0909	SW-R2007-2-0909-AD

Were field duplicates within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and non-detect, were undiluted results also reported?

Samples were not analyzed at a dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

No

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-51036-1

SDG Number: KRS007

Job Description: WGK River Sampling SA - SW SEP 2009

For:
Solutia Inc.
500 Monsanto
Sauget, IL 62206-1198

Attention: Mr. Richard Williams

Approved for release.
Lidya Gulizia
Project Manager I
10/14/2009 5:16 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
10/14/2009

Reviewed on OCT 21 2009 EZK

cc: Mr. Bob Billman

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

Receipt
All samples were received in good condition within temperature requirements.

Per the field sampler's observation and notation on the chain-of-custody (COC) record, the surface water volatile samples were preserved with sodium thiosulfite only and did not contain hydrochloric acid. All aqueous volatile samples were analyzed within 7 days from collection due to the absence of acid preservative.

No other additional comments.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The grand mean exception, as outlined in EPA Method 8000B, was applied to the initial calibration (ICAL). This rule states that when one or more compounds in the ICAL fail to meet acceptance criteria, the initial calibration (ICAL) may be used for quantitation if the average %RSD (the grand mean) of all the compounds in the ICAL is less than or equal to 15 %RSD.

No other analytical or quality issues were noted.

Comments
No additional comments.

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Purge and Trap	TAL SAV		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Liquid-Liquid Extraction (Continuous)	TAL SAV		SW846 3520C

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Method	Analyst	Analyst ID
SW846 8260B	Cowart, Judson	WJC
SW846 8270C	Haynes, Carion	CRH

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-51036-1	SW-R2007-1-0909	Water	09/23/2009 1430	09/24/2009 0912
680-51036-3	SW-R2007-2-0909	Water	09/23/2009 1320	09/24/2009 0912
680-51036-5	SW-R2007-3-0909	Water	09/23/2009 1115	09/24/2009 0912
680-51036-5MS	SW-R2007-3-0909	Water	09/23/2009 1115	09/24/2009 0912
680-51036-5MSD	SW-R2007-3-0909	Water	09/23/2009 1115	09/24/2009 0912
680-51036-7FD	SW-R2007-2-0909-AD	Water	09/23/2009 1320	09/24/2009 0912
680-51036-9EB	SED-R2007-1-0909-EB	Water	09/23/2009 1630	09/24/2009 0912
680-51036-10TB	Trip Blank 092309	Water	09/23/2009 1115	09/24/2009 0912

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-1-0909**

Lab Sample ID: 680-51036-1
Client Matrix: Water

Date Sampled: 09/23/2009 1430
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-149042	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p477.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	09/26/2009 1858		Final Weight/Volume: 5 mL
Date Prepared:	09/26/2009 1858		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	90		75 - 120
Dibromofluoromethane	106		75 - 121
Toluene-d8 (Surr)	103		75 - 120

OCT 21 2009 ERL

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-2-0909**

Lab Sample ID: 680-51036-3
Client Matrix: Water

Date Sampled: 09/23/2009 1320
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-149168	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p507.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	09/28/2009 1412		Final Weight/Volume: 5 mL
Date Prepared:	09/28/2009 1412		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	103		75 - 121
Toluene-d8 (Surr)	102		75 - 120

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-3-0909**

Lab Sample ID: 680-51036-5
Client Matrix: Water

Date Sampled: 09/23/2009 1115
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 09/25/2009 1916
Date Prepared: 09/25/2009 1916

Analysis Batch: 680-148898

Instrument ID: MSP
Lab File ID: p463.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	97		75 - 121
Toluene-d8 (Surr)	104		75 - 120

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-2-0909-AD**

Lab Sample ID: 680-51036-7FD
Client Matrix: Water

Date Sampled: 09/23/2009 1320
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-149042		Instrument ID:	MSP
Preparation:	5030B			Lab File ID:	p479.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	09/26/2009 1927			Final Weight/Volume:	5 mL
Date Prepared:	09/26/2009 1927				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	101		75 - 121
Toluene-d8 (Surr)	102		75 - 120

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Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SED-R2007-1-0909-EB**

Lab Sample ID: 680-51036-9EB
Client Matrix: Water

Date Sampled: 09/23/2009 1630
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-149042		Instrument ID:	MSP
Preparation:	5030B			Lab File ID:	p481.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Date Analyzed:	09/26/2009 1957			Final Weight/Volume:	5 mL
Date Prepared:	09/26/2009 1957				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	102		75 - 121
Toluene-d8 (Surr)	105		75 - 120

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **Trip Blank 092309**

Lab Sample ID: 680-51036-10TB
Client Matrix: Water

Date Sampled: 09/23/2009 1115
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-149168	Instrument ID: MSP
Preparation:	5030B		Lab File ID: p505.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	09/28/2009 1342		Final Weight/Volume: 5 mL
Date Prepared:	09/28/2009 1342		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	90		75 - 120
Dibromofluoromethane	108		75 - 121
Toluene-d8 (Surr)	105		75 - 120

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-1-0909**

Lab Sample ID: 680-51036-1
Client Matrix: Water

Date Sampled: 09/23/2009 1430
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149301		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-148822		Lab File ID:	n4242.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/30/2009 1451			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Chloroaniline	19	U	4.6	19
2-Chlorophenol	9.5	U	0.95	9.5
1,4-Dioxane	9.5	U	2.5	9.5
1,2,4-Trichlorobenzene	9.5	U	0.68	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	73		50 - 113
2-Fluorophenol	62		36 - 110
Nitrobenzene-d5	87		45 - 112
Phenol-d5	65		38 - 116
Terphenyl-d14	28		10 - 121
2,4,6-Tribromophenol	70		40 - 139

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-2-0909**

Lab Sample ID: 680-51036-3
Client Matrix: Water

Date Sampled: 09/23/2009 1320
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149301		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-148822		Lab File ID:	n4243.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/30/2009 1514			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Chloroaniline	19	U	4.6	19
2-Chlorophenol	9.5	U	0.95	9.5
1,4-Dioxane	9.5	U	2.5	9.5
1,2,4-Trichlorobenzene	9.5	U	0.68	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	75		50 - 113
2-Fluorophenol	60		36 - 110
Nitrobenzene-d5	85		45 - 112
Phenol-d5	65		38 - 116
Terphenyl-d14	33		10 - 121
2,4,6-Tribromophenol	75		40 - 139

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-3-0909**

Lab Sample ID: 680-51036-5
Client Matrix: Water

Date Sampled: 09/23/2009 1115
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149301		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-148822		Lab File ID:	n4244.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/30/2009 1536			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Chloroaniline	19	U	4.6	19
2-Chlorophenol	9.5	U	0.95	9.5
1,4-Dioxane	9.5	U	2.5	9.5
1,2,4-Trichlorobenzene	9.5	U	0.68	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	71		50 - 113
2-Fluorophenol	62		36 - 110
Nitrobenzene-d5	85		45 - 112
Phenol-d5	64		38 - 116
Terphenyl-d14	33		10 - 121
2,4,6-Tribromophenol	74		40 - 139

OCT 21 2009 GWR

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SW-R2007-2-0909-AD**

Lab Sample ID: 680-51036-7FD
Client Matrix: Water

Date Sampled: 09/23/2009 1320
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149301		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-148822		Lab File ID:	n4245.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/30/2009 1558			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Chloroaniline	19	U	4.6	19
2-Chlorophenol	9.5	U	0.95	9.5
1,4-Dioxane	9.5	U	2.5	9.5
1,2,4-Trichlorobenzene	9.5	U	0.68	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	72		50 - 113
2-Fluorophenol	59		36 - 110
Nitrobenzene-d5	83		45 - 112
Phenol-d5	63		38 - 116
Terphenyl-d14	34		10 - 121
2,4,6-Tribromophenol	76		40 - 139

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Client Sample ID: **SED-R2007-1-0909-EB**

Lab Sample ID: 680-51036-9EB
Client Matrix: Water

Date Sampled: 09/23/2009 1630
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149301		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-148822		Lab File ID:	n4246.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	09/30/2009 1621			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
4-Chloroaniline	19	U	4.7	19
2-Chlorophenol	9.7	U	0.97	9.7
1,4-Dioxane	9.7	U	2.5	9.7
1,2,4-Trichlorobenzene	9.7	U	0.69	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	56		50 - 113
2-Fluorophenol	47		36 - 110
Nitrobenzene-d5	69		45 - 112
Phenol-d5	49		38 - 116
Terphenyl-d14	28		10 - 121
2,4,6-Tribromophenol	61		40 - 139

OCT 21 2009

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:680-148898					
LCS 680-148898/9	Lab Control Sample	T	Water	8260B	
LCSD 680-148898/18	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-148898/11	Method Blank	T	Water	8260B	
680-51036-5	SW-R2007-3-0909	T	Water	8260B	
Analysis Batch:680-149042					
LCS 680-149042/11	Lab Control Sample	T	Water	8260B	
LCSD 680-149042/12	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-149042/14	Method Blank	T	Water	8260B	
680-51036-1	SW-R2007-1-0909	T	Water	8260B	
680-51036-5MS	Matrix Spike	T	Water	8260B	
680-51036-5MSD	Matrix Spike Duplicate	T	Water	8260B	
680-51036-7FD	SW-R2007-2-0909-AD	T	Water	8260B	
680-51036-9EB	SED-R2007-1-0909-EB	T	Water	8260B	
Analysis Batch:680-149168					
LCS 680-149168/16	Lab Control Sample	T	Water	8260B	
LCSD 680-149168/17	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-149168/19	Method Blank	T	Water	8260B	
680-51036-3	SW-R2007-2-0909	T	Water	8260B	
680-51036-10TB	Trip Blank 092309	T	Water	8260B	

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 680-148822					
LCS 680-148822/18-A	Lab Control Sample	T	Water	3520C	
MB 680-148822/17-A	Method Blank	T	Water	3520C	
680-51036-1	SW-R2007-1-0909	T	Water	3520C	
680-51036-3	SW-R2007-2-0909	T	Water	3520C	
680-51036-5	SW-R2007-3-0909	T	Water	3520C	
680-51036-5MS	Matrix Spike	T	Water	3520C	
680-51036-5MSD	Matrix Spike Duplicate	T	Water	3520C	
680-51036-7FD	SW-R2007-2-0909-AD	T	Water	3520C	
680-51036-9EB	SED-R2007-1-0909-EB	T	Water	3520C	
Analysis Batch:680-149301					
LCS 680-148822/18-A	Lab Control Sample	T	Water	8270C	680-148822
MB 680-148822/17-A	Method Blank	T	Water	8270C	680-148822
680-51036-1	SW-R2007-1-0909	T	Water	8270C	680-148822
680-51036-3	SW-R2007-2-0909	T	Water	8270C	680-148822
680-51036-5	SW-R2007-3-0909	T	Water	8270C	680-148822
680-51036-5MS	Matrix Spike	T	Water	8270C	680-148822
680-51036-5MSD	Matrix Spike Duplicate	T	Water	8270C	680-148822
680-51036-7FD	SW-R2007-2-0909-AD	T	Water	8270C	680-148822
680-51036-9EB	SED-R2007-1-0909-EB	T	Water	8270C	680-148822

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-51036-1	SW-R2007-1-0909	90	106	103
680-51036-3	SW-R2007-2-0909	94	103	102
680-51036-5	SW-R2007-3-0909	94	97	104
680-51036-7	SW-R2007-2-0909-A D	93	101	102
680-51036-9	SED-R2007-1-0909-E B	95	102	105
680-51036-10	Trip Blank 092309	90	108	105
MB 680-148898/11		93	104	103
MB 680-149042/14		94	103	102
MB 680-149168/19		96	107	104
LCS 680-148898/9		97	96	100
LCS 680-149042/11		95	99	101
LCS 680-149168/16		100	100	105
LCSD 680-148898/18		98	89	100
LCSD 680-149042/12		94	98	105
LCSD 680-149168/17		98	103	106
680-51036-5 MS	SW-R2007-3-0909 MS	97	96	105
680-51036-5 MSD	SW-R2007-3-0909 MSD	100	95	105

Surrogate	Acceptance Limits
BFB = 4-Bromofluorobenzene	75-120
DBFM = Dibromofluoromethane	75-121
TOL = Toluene-d8 (Surr)	75-120

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec	TBP %Rec
680-51036-1	SW-R2007-1-0909	73	62	87	65	28	70
680-51036-3	SW-R2007-2-0909	75	60	85	65	33	75
680-51036-5	SW-R2007-3-0909	71	62	85	64	33	74
680-51036-7	SW-R2007-2-0909-AD	72	59	83	63	34	76
680-51036-9	SED-R2007-1-0909-EB	56	47	69	49	28	61
MB 680-148822/17-A		76	72	86	66	81	61
LCS 680-148822/18-A		76	62	80	61	68	70
680-51036-5 MS	SW-R2007-3-0909 MS	72	56	83	64	45	78
680-51036-5 MSD	SW-R2007-3-0909 MSD	85	63	96	70	52	90

Surrogate	Acceptance Limits
FBP = 2-Fluorobiphenyl	50-113
2FP = 2-Fluorophenol	36-110
NBZ = Nitrobenzene-d5	45-112
PHL = Phenol-d5	38-116
TPH = Terphenyl-d14	10-121
TBP = 2,4,6-Tribromophenol	40-139

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Method Blank - Batch: 680-148898

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-148898/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/25/2009 1300
Date Prepared: 09/25/2009 1300

Analysis Batch: 680-148898
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq233.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	93	75 - 120
Dibromofluoromethane	104	75 - 121
Toluene-d8 (Surr)	103	75 - 120

OCT 21 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-148898

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-148898/9	Analysis Batch:	680-148898	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq227.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/25/2009 1129			Final Weight/Volume:	5 mL
Date Prepared:	09/25/2009 1129				

LCSD Lab Sample ID:	LCSD 680-148898/18	Analysis Batch:	680-148898	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq235.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/25/2009 2045			Final Weight/Volume:	5 mL
Date Prepared:	09/25/2009 2045				

	% Rec.					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	106	106	77 - 119	1	30		
Chlorobenzene	94	89	85 - 116	6	30		
1,2-Dichlorobenzene	89	90	79 - 124	1	30		
1,3-Dichlorobenzene	89	91	78 - 125	2	30		
1,4-Dichlorobenzene	88	89	81 - 122	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	97	98	75 - 120
Dibromofluoromethane	96	89	75 - 121
Toluene-d8 (Surr)	100	100	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Method Blank - Batch: 680-149042

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-149042/14
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/26/2009 1756
Date Prepared: 09/26/2009 1756

Analysis Batch: 680-149042
Prep Batch: N/A
Units: ug/L

Instrument ID: GC/MS Volatiles - P
Lab File ID: pq251.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	94	75 - 120
Dibromofluoromethane	103	75 - 121
Toluene-d8 (Surr)	102	75 - 120

OCT 21 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-149042

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-149042/11	Analysis Batch:	680-149042	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq243.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/26/2009 1559			Final Weight/Volume:	5 mL
Date Prepared:	09/26/2009 1559				

LCSD Lab Sample ID:	LCSD 680-149042/12	Analysis Batch:	680-149042	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq245.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/26/2009 1629			Final Weight/Volume:	5 mL
Date Prepared:	09/26/2009 1629				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	104	105	77 - 119	1	30		
Chlorobenzene	93	92	85 - 116	1	30		
1,2-Dichlorobenzene	86	85	79 - 124	1	30		
1,3-Dichlorobenzene	89	88	78 - 125	1	30		
1,4-Dichlorobenzene	88	86	81 - 122	3	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	95	94	75 - 120
Dibromofluoromethane	99	98	75 - 121
Toluene-d8 (Surr)	101	105	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-149042

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-51036-5	Analysis Batch: 680-149042	Instrument ID: GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: p495.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	09/26/2009 2338		Final Weight/Volume: 5 mL
Date Prepared:	09/26/2009 2338		

MSD Lab Sample ID:	680-51036-5	Analysis Batch: 680-149042	Instrument ID: GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch: N/A	Lab File ID: p497.d
Dilution:	1.0		Initial Weight/Volume: 5 mL
Date Analyzed:	09/27/2009 0008		Final Weight/Volume: 5 mL
Date Prepared:	09/27/2009 0008		

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	106	106	77 - 119	0	30		
Chlorobenzene	93	91	85 - 116	1	30		
1,2-Dichlorobenzene	89	91	79 - 124	3	30		
1,3-Dichlorobenzene	93	93	78 - 125	1	30		
1,4-Dichlorobenzene	90	92	81 - 122	2	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	97	100	75 - 120
Dibromofluoromethane	96	95	75 - 121
Toluene-d8 (Surr)	105	105	75 - 120

OCT 21 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Method Blank - Batch: 680-149168

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 680-149168/19	Analysis Batch:	680-149168	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq265.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2009 1240			Final Weight/Volume:	5 mL
Date Prepared:	09/28/2009 1240				

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.25	1.0
Chlorobenzene	1.0	U	0.25	1.0
1,2-Dichlorobenzene	1.0	U	0.21	1.0
1,3-Dichlorobenzene	1.0	U	0.25	1.0
1,4-Dichlorobenzene	1.0	U	0.28	1.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	96	75 - 120
Dibromofluoromethane	107	75 - 121
Toluene-d8 (Surr)	104	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-149168

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-149168/16	Analysis Batch:	680-149168	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq257.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2009 1043			Final Weight/Volume:	5 mL
Date Prepared:	09/28/2009 1043				

LCSD Lab Sample ID:	LCSD 680-149168/17	Analysis Batch:	680-149168	Instrument ID:	GC/MS Volatiles - P
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq259.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2009 1112			Final Weight/Volume:	5 mL
Date Prepared:	09/28/2009 1112				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	109	111	77 - 119	1	30		
Chlorobenzene	95	92	85 - 116	3	30		
1,2-Dichlorobenzene	90	86	79 - 124	5	30		
1,3-Dichlorobenzene	92	89	78 - 125	3	30		
1,4-Dichlorobenzene	90	88	81 - 122	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	100	98	75 - 120
Dibromofluoromethane	100	103	75 - 121
Toluene-d8 (Surr)	105	106	75 - 120

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Method Blank - Batch: 680-148822

Method: 8270C
Preparation: 3520C

Lab Sample ID:	MB 680-148822/17-A	Analysis Batch:	680-149301	Instrument ID:	GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch:	680-148822	Lab File ID:	n4229.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	1000 mL
Date Analyzed:	09/30/2009 0958			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Result	Qual	MDL	RL
4-Chloroaniline	20	U	4.8	20
2-Chlorophenol	10	U	1.0	10
1,4-Dioxane	10	U	2.6	10
1,2,4-Trichlorobenzene	10	U	0.71	10

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	76	50 - 113
2-Fluorophenol	72	36 - 110
Nitrobenzene-d5	86	45 - 112
Phenol-d5	66	38 - 116
Terphenyl-d14	81	10 - 121
2,4,6-Tribromophenol	61	40 - 139

Lab Control Sample - Batch: 680-148822

Method: 8270C
Preparation: 3520C

Lab Sample ID:	LCS 680-148822/18-A	Analysis Batch:	680-149301	Instrument ID:	GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch:	680-148822	Lab File ID:	n4230.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	1000 mL
Date Analyzed:	09/30/2009 1021			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	100	40.3	40	10 - 110	
2-Chlorophenol	100	65.8	66	47 - 110	
1,4-Dioxane	100	38.4	38	11 - 110	
1,2,4-Trichlorobenzene	100	66.9	67	41 - 110	

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	76	50 - 113
2-Fluorophenol	62	36 - 110
Nitrobenzene-d5	80	45 - 112
Phenol-d5	61	38 - 116
Terphenyl-d14	68	10 - 121
2,4,6-Tribromophenol	70	40 - 139

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-1
Sdg Number: KRS007

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-148822

Method: 8270C
Preparation: 3520C

MS Lab Sample ID:	680-51036-5	Analysis Batch:	680-149301	Instrument ID:	GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch:	680-148822	Lab File ID:	n4247.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/30/2009 1643			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

MSD Lab Sample ID:	680-51036-5	Analysis Batch:	680-149301	Instrument ID:	GC/MS SemiVolatiles - N
Client Matrix:	Water	Prep Batch:	680-148822	Lab File ID:	n4248.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/30/2009 1706			Final Weight/Volume:	1 mL
Date Prepared:	09/25/2009 1451			Injection Volume:	1.0 uL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4-Chloroaniline	26	26	10 - 110	1	40		
2-Chlorophenol	68	77	47 - 110	12	40		
1,4-Dioxane	32	34	11 - 110	7	40		
1,2,4-Trichlorobenzene	66	77	41 - 110	15	40		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	72	85	50 - 113
2-Fluorophenol	56	63	36 - 110
Nitrobenzene-d5	83	96	45 - 112
Phenol-d5	64	70	38 - 116
Terphenyl-d14	45	52	10 - 121
2,4,6-Tribromophenol	78	90	40 - 139

OCT 21 2009

Calculations are performed before rounding to avoid round-off errors in calculated results.

Serial Number 022713

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

☒ **TestAmerica Savannah**
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

◯ Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: WGK Fall 2009 River	PROJECT NO.: 21562154.00010	PROJECT LOCATION (STATE): IL
TAL (LAB) PROJECT MANAGER: Lidya Gulizia	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Bob Billman	CLIENT PHONE: 314 429 0100	CLIENT FAX:
CLIENT NAME: URS Corporation	CLIENT E-MAIL: bob_billman@urscorp.com	
CLIENT ADDRESS: 1001 Highlands Plaza Dr W St. Louis MO 63110		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 2

STANDARD REPORT DELIVERY ☒ DATE DUE ______
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯ DATE DUE ______
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS:
- (A1) Benzene, Chlorobenzene, 1,2 DCB, 1,3-DCB, 1,4 DCB by 8260B — PRESERVATIVE: Sod Thio
- (A2) 4 Chloroaniline, 2-Chlorophenol, 1,4 Dioxane, 1,2,4 TCB by 8270C — PRESERVATIVE: Sod ~~Thio~~
- (A3) Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B — PRESERVATIVE: Sod Bis / Meth
- (A4) 4 Chloroaniline, 2-Chlorophenol, 1,4 Dioxane, 1,2,4 TCB by 8270C

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SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	A1	A2	A3	A4	REMARKS
9/23/09	1430	SW-R2007-1-0909	G	X				3	2			DCB = Dichlorobenzene
↓	1520	SED-R2007-1-0909	G		X					3	1	TCB = Trichlorobenzene
↓	1320	SW-R2007-2-0909	G	X				3	2			Aqueous VOCs are
↓	1345	SED-R2007-2-0909	G		X					3	1	preserved w/ sodium
↓	1115	SW-R2007-3-0909	G	X				3	2			Thiosulfate only,
↓	1140	SED-R2007-3-0909	G		X					3	1	NO HCl
↓	1320	SW-R2007-2-0909-AD	G	X				3	2			
↓	1345	SED-R2007-2-0909-AD	G		X					3	1	
↓	1115	SW-R2007-3-0909-MS	G	X				3	2			
↓	1115	SW-R2007-3-0909-MSD	G	X				3	2			
↓	1140	SED-R2007-3-0909-MS ~~SED-R2007-0909-MSD~~ KP 9/23/09	G		X					3	1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/23/09	1900						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
FedEx	9/23/09	1900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George Khoury	9/24/09	0912	YES ◯ NO ◯		680-51036	6.0 / 5.8 / 4.9

OCT 21 2009 [initials]

TAL8240-680 (1207)

Serial Number 022714

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK Fall 2009 River	21562154.00010	IL
TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
LIDYA GUELZIA		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
BOB BILLMAN	314 429 0100	
CLIENT NAME	CLIENT E-MAIL	
URS CORPORATION	bob_billman@urscorp.com	
CLIENT ADDRESS		
1001 Highlands Plaza DR W St. Louis MO 63110		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 2 OF 2

STANDARD REPORT DELIVERY ⊗
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS-LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED: Benzene, chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	4 Chloroanitline, 2 Chloraphenol, 1,4 Dioxane, 1,2,4 TCB by 8270C	Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	4 Chloroanitline, 2 Chloraphenol, 1,4 Dioxane, 1,2,4 TCB by 8270C							REMARKS
								Sed Thio	Sed Thio	Sed Thio Meth								
9/23/09	1140	SED-R2007-3-0909-MSD	G		X			3		3	1							
↓	1630	SED-R2007-1-0909-EB	G	X				3	2									
↓	1115	TRIP BLANK 092309	G	X				2										

PRESERVATIVE

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9/23/09

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	9/23/09	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
FED EX	9/23/09	1900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George Klumm	9/24/09	0912	YES ○ NO ○		680-51036	

TAL8240-680 (1207)

OCT 21 2009

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-51036-1
SDG Number: KRS007

Login Number: 51036
Creator: Conner, Keaton
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	3 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	6.0, 5.8, 4.9 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

OCT 21 2009

TestAmerica Savannah

F.2 SDG KRS008

Results of Sediment Samples from Sampling Points:

R2007-1
R2007-2
R2007-3

F.2.a Solutia Krummrich Data Review

Laboratory SDG: KRS008

Reviewer: Elizabeth Kunkel

Date Reviewed: 10/21/2009

Guidance: USEPA National Functional Guidelines for Organic Data Review 1999.

Applicable Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	Sample Identification
SED-R2007-1-0909	SED-R2007-2-0909
SED-R2007-3-0909	SED-R2007-2-0909-AD

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that the VOC MSD recovery was outside evaluation criteria for chlorobenzene. Additionally, SVOC MS/MSD RPD for 1,4-dioxane was outside evaluation criteria. These issues are addressed further in the appropriate section below.

The cooler receipt form indicated that the vials for sample SED-R2007-1-0909 were received by the laboratory not sufficiently sealed. This sample was qualified using professional judgment.

3.0 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample SED-R2007-3-0909 was spiked and analyzed for VOCs and SVOCs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
SED-R2007-3-0909	VOCs	Chlorobenzene	108/**182**	20	77-120/50
SED-R2007-3-0909	SVOCs	1,4-dioxane	10/16	**53**	10-110/50

USEPA National Functional Guidelines for Organic Data Review indicates that organic data should not be qualified based on MS/MSD data alone and LCS recoveries were within evaluation criteria; therefore, no qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
SED-R2007-2-0909	SED-R2007-2-0909-AD

Were field duplicates within evaluation criteria?

Yes

11.0 Sample Dilutions

For samples that were diluted and non-detect, were undiluted results also reported?

Samples were not analyzed at a dilution.

12.0 Additional Qualifications

Were additional qualifications applied?

Yes, sample SED-R2007-1-0909 was qualified using professional judgment due to potential volatilization of compounds from insufficiently sealed sample vials.

Field ID	Parameter	Analyte	Qualifiers	Comments
SED-R2007-1-0909	VOCs	All VOC non-detects	**UJ**	Professional Judgment

F.2.b FULL VALIDATION OF VOC DATA - SDG KRS008

This section describes the full validation for two sediment samples which were prepared by USEPA SW-846 Method 5030B and analyzed for volatile organic compounds (VOCs) by USEPA SW-846 Method 8260B. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KRS008. Samples included as part of this validation are listed below:

Sample Identification
SED-R2007-1-09
SED-R2007-3-09

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and USEPA SW-846 Method 8260B. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Data Review (USEPA 1999) where applicable to SW-846 Method 8260B.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

The laboratory case narrative indicated that the VOC MSD recovery was outside evaluation criteria for chlorobenzene. This issue is addressed further in the appropriate section below.

The cooler receipt form indicated that the vials for sample SED-R2007-1-0909 were received by the laboratory not sufficiently sealed. This sample was qualified using professional judgment, due to potential volatilization from insufficiently sealed sample vials.

Field ID	Parameter	Analyte	Qualifiers	Comments
SED-R2007-1-0909	VOCs	All VOC non-detects	**UJ**	Professional Judgment

1.3 Holding Times and Sample Preservation

Review of the sample collection and analysis dates involved comparing the chains-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were analyzed within the 14 day holding time criteria. No qualification of data was required due to sample preservation or holding time criteria.

1.4 GC/MS Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against criteria established in USEPA SW-846 Method 8260B.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, and no qualification of data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. Samples as part of SDG KRS008 were analyzed using instrument. The ICAL for instrument MSM5972 was established on 9/1/2009 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8260B. An average response factor (RF) was determined for each target analyte, the RFs were reviewed and verified greater than 0.10 for chloromethane, 1,1-dichloroethane and bromoform, 0.30 for chlorobenzene and 1,1,2,2-tetrachloroethane and greater than 0.05 for all other target analytes.

Review of the initial calibration summary forms indicated %RSDs were $\leq$ 30% for calibration check compounds (CCCs) [1,1-dichloroethene, toluene, chloroform, ethylbenzene, 1,2-dichloropropane, and vinyl chloride], and $\leq$ 15% for non-CCCs. Percent RSDs were recalculated from the raw data and no errors in calculation were noted; therefore, no qualification of data was required.

1.6 Calibration verification

Review of the sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency every 12 hours. Review of continuing calibration summary forms indicated all RFs met the evaluation criteria of greater than 0.10 (chloromethane, 1,1-dichloroethane and bromoform), 0.30 (chlorobenzene and 1,1,2,2-tetrachloroethane) and greater than 0.05 for all other analytes for each CCAL. In addition, percent differences (%Ds) met the evaluation criteria of $\leq$ 20% for CCCs and < 30% for all other target analytes. Recalculations of the RFs and %Ds for two target compounds were completed for each CV, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8260B. All target compounds were reported as non-detect in all method blanks analyzed as part of this SDG. The review of chromatograms indicates all peaks present were surrogate, internal standards or the concentrations reported were below the method detection limit. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. All surrogate recoveries were within the method acceptance criteria

A minimum of 10% of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted and no qualification of data was required.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample SED-R2007-3-0909 was spiked and analyzed for VOCs. MS/MSD recoveries were within evaluation criteria with the exception of the one summarized in the table below:

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
SED-R2007-3-0909	VOCs	Chlorobenzene	108/**182**	20	77-120/50

USEPA National Functional Guidelines for Organic Data Review indicates that organic data should not be qualified based on only MS/MSD data alone and LCS recoveries were within evaluation criteria; therefore, no qualification of data was required.

The MS/MSD percent recovery data was recalculated and compared to the raw data. No calculation or transcription errors were noted.

1.10 Internal Standards and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50% to +100%, and the IS retention times must be within 30 seconds of the IS continuing calibration retention time. IS areas and retention times for the validated samples in this SDG were within evaluation criteria. The summary forms versus the raw data were verified and no transcription errors were noted.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria. No qualification of data was required based on LCS recoveries.

A minimum of 10% of the spiking compound recoveries for the LCS's were recalculated using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS and surrogate data were achieved for this SDG. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100% for this SDG.

F.2.c FULL VALIDATION OF SVOC DATA – SDG KRS008

This section describes the full validation for two sediment samples which were prepared by USEPA SW-846 Method 3550B and analyzed for semivolatile organic compounds (SVOCs) by USEPA SW-846 Method 8270C. Samples were analyzed by TestAmerica Laboratory of Savanna, Georgia, and submitted as part of sample delivery group (SDG) KPS008. Samples included as part of this validation are listed below:

Sample Identification
SED-R2007-1-0909
SED-R2007-3-0909

QA/QC criteria were identified in the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009) and USEPA SW-846 Method 8270C. Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Data Review (USEPA 1999) where applicable to SW-846 Method 8270C.

Criteria evaluated included the following method performance criteria:

- Data package completeness
- Laboratory case narrative/cooler receipt form
- Holding times and sample preservation
- Instrument performance
- Initial calibration
- Calibration verification
- Blank samples
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) samples
- Internal standards and retention times
- Laboratory control sample (LCS)
- Target compound identification and quantitation
- Overall data assessment

1.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete.

1.2 Laboratory Case Narrative/Cooler Receipt Form

Although not indicated in the laboratory case narrative, the SVOC MS/MSD RPD was outside evaluation criteria for 1,4-dioxane. Continuing calibration %D was below evaluation criteria for 1,4-dioxane. These issues are addressed further in the appropriate section below. The cooler receipt form did not indicate any problems for the validated samples.

1.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The validated samples were received at $4^{o}C \pm 2^{o}C$, and were extracted (sediment) within 14 days of collection and analyzed within 40 days of extraction. No qualification of data was required due to sample preservation or holding time criteria.

1.4 Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria established in Method 8270C.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, therefore; no qualification of the data was required. The raw data forms were checked against the summary forms and no calculation or transcription errors were noted.

1.5 Initial Calibration

An Initial calibration (ICAL) was established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for volatile analysis. Samples as part of SDG KRS008 were analyzed using instrument MST5973. The ICAL for instrument MST5973 was established on 9/15/2009 prior to sample analysis and using at least five concentration standards to establish the initial calibration curve as required by Method 8270C. An average response factor (RF) was determined for each target analyte, and the RFs were reviewed and verified as greater than 0.05 for all target analytes.

Review of the initial calibration summary forms indicated calibration check compounds (CCCs) had percent relative standard deviations (%RSDs) $\leq$ 30%. All other target analytes had %RSDs less than 15%.Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.6 Calibration Verification

Review of sample chromatograms indicated the calibration verifications (CVs) were performed at the required frequency of every 12 hours. Review of continuing calibration summary forms indicated all RFs met the evaluation criteria of greater than 0.05 for all target analytes. In addition, percent differences (%Ds) met the evaluation criteria of less than or equal to 20% for CCCs and target analytes that were quantitated using linear calibration (response factor), with the exception summarized below:

CCV Date and Time	Analyte	%D
9/28/2009 12:53	1,4-dioxane	-20.5

Qualification of analytes based on %Ds below evaluation criteria is summarized in the table below:

Sample ID	Analyte	Qualification
SED-R2007-1-0909	1,4-dioxane	**UJ**
SED-R2007-3-0909	1,4-dioxane	**UJ**

Recalculations of the RFs and %RSD for one compound per internal standard were performed, and no errors in calculation were noted.

1.7 Blank Samples

The purpose of method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. All target compounds in the blank samples were reported as non-detect. No qualification of data was required.

1.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Surrogate recoveries were within the method acceptance criteria for all validated samples.

A minimum of 10% of the surrogate recoveries was recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

1.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess potential matrix effects. Sample SED-R2007-3-0909 was spiked and analyzed for SVOCs.

MS/MSD recoveries and MS/MSD RPDs were within evaluation criteria with the exception of those summarized in the table below:

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
SED-R2007-3-0909	SVOCs	1,4-dioxane	10/16	**53**	10-110/50

USEPA National Functional Guidelines for Organic Data Review indicates that organic data should not be qualified based on only MS/MSD RPDs outside of evaluation criteria; therefore, no qualification of data was required.

The MS/MSD percent recovery data was recalculated and compared to the raw data. No calculation or transcription errors were noted.

1.10 Internal Standard Areas and Retention Times

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Following Method 8270C, the IS areas for the samples and CVs must be within –50% to +100% and retention times must be within 30 seconds of the IS area and retention time of the midpoint of the ICAL.

The IS areas for the CVs and the validated samples in this SDG were within evaluation criteria. No qualifications of data based on IS areas or retention times were required.

1.11 Laboratory Control Sample (LCS)

Laboratory control samples were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria. No qualifications of data were required based on LCS recoveries.

A minimum of 10% of the spiking compound recoveries for the LCS were recalculated from the raw data and verified using the LCS summary forms, and no calculation or transcription errors were noted.

1.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated CV retention times. A minimum of 10% of the detected target analytes and spiking compounds were verified. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, 10% of the target analytes were recalculated from the raw data, and no calculation errors were noted. Additionally, the reporting limits were verified to determine if reporting limits (RLs) were adjusted for dilutions. No qualification of the data was required and review of the data indicated the correct RLs were reported.

1.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS and surrogate data were achieved for this SDG. In addition, completeness defined to be the percentage of analytical results, which are judged to be valid, including estimated detect/non-detect **(J/UJ**) data was 100% for this SDG.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-51036-2

SDG Number: KRS008

Job Description: WGK River Sampling SA - SED SEP 2009

For:
Solutia Inc.
500 Monsanto
Sauget, IL 62206-1198

Attention: Mr. Richard Williams

Approved for release.
Lidya Gulizia
Project Manager I
10/14/2009 5:33 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
10/14/2009

Reviewed
on
OCT 21 2009 EZR

cc: Mr. Bob Billman

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC: 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
680-51036-2 / SDG KRS008 / Sediment

Receipt
Method(s) 5035: The container(s) submitted for the following sample(s) was not sufficiently sealed: SED-R2007-1-0909 (680-51036-2). Loss of volatiles may have occurred.

All other samples were received in good condition within temperature requirements.

GC/MS VOA
Method(s) 8260B: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 4 analytes to recover outside criteria for this method when a full list spike is utilized. The matrix spike duplicate (MSD) associated with batch 148858 had one (1) analyte outside control limits. Although this is outside the allowable number of exceedances, the associated laboratory control sample (LCS) met all criteria; therefore, re-extraction/re-analysis was not performed.

No other analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The grand mean exception, as outlined in EPA Method 8000B, was applied to the initial calibration (ICAL). This rule states that when one or more compounds in the ICAL fail to meet acceptance criteria, the initial calibration (ICAL) may be used for quantitation if the average %RSD (the grand mean) of all the compounds in the ICAL is less than or equal to 15 %RSD.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Comments
No additional comments.

OCT 21 2009

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Volatile Organic Compounds (GC/MS)	TAL SAV	SW846 8260B	
Closed System Purge and Trap	TAL SAV		SW846 5035
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Ultrasonic Extraction	TAL SAV		SW846 3550B
Percent Moisture	TAL SAV	EPA Moisture	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Method	Analyst	Analyst ID
SW846 8260B	Sokolin, Eleina	ES
SW846 8270C	Chamberlain, Kim	KAC
EPA Moisture	Morgan, Harriet	HM

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-51036-2	SED-R2007-1-0909	Solid	09/23/2009 1520	09/24/2009 0912
680-51036-4	SED-R2007-2-0909	Solid	09/23/2009 1345	09/24/2009 0912
680-51036-6	SED-R2007-3-0909	Solid	09/23/2009 1140	09/24/2009 0912
680-51036-6MS	SED-R2007-3-0909	Solid	09/23/2009 1140	09/24/2009 0912
680-51036-6MSD	SED-R2007-3-0909	Solid	09/23/2009 1140	09/24/2009 0912
680-51036-8FD	SED-R2007-2-0909-AD	Solid	09/23/2009 1345	09/24/2009 0912

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-1-0909**

Lab Sample ID: 680-51036-2
Client Matrix: Solid % Moisture: 21.2

Date Sampled: 09/23/2009 1520
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-148858		Instrument ID:	MSM
Preparation:	5035	Prep Batch: 680-148759		Lab File ID:	m0279.d
Dilution:	1.0			Initial Weight/Volume:	6.0 g
Date Analyzed:	09/25/2009 1408			Final Weight/Volume:	5 g
Date Prepared:	09/24/2009 1539				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzene		5.3	UJ	0.77	5.3
Chlorobenzene		5.3	UJ	1.0	5.3
1,2-Dichlorobenzene		5.3	UJ	1.4	5.3
1,3-Dichlorobenzene		5.3	UJ	1.7	5.3
1,4-Dichlorobenzene		5.3	UJ	0.78	5.3

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		65 - 124
Dibromofluoromethane	90		65 - 124
Toluene-d8 (Surr)	101		65 - 132

OCT 21 2009 EVL

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-2-0909**

Lab Sample ID: 680-51036-4
Client Matrix: Solid
% Moisture: 18.1

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-148858		Instrument ID:	MSM
Preparation:	5035	Prep Batch: 680-148759		Lab File ID:	m0280.d
Dilution:	1.0			Initial Weight/Volume:	6.2 g
Date Analyzed:	09/25/2009 1439			Final Weight/Volume:	5 g
Date Prepared:	09/24/2009 1539				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzene		4.9	U	0.72	4.9
Chlorobenzene		4.9	U	0.95	4.9
1,2-Dichlorobenzene		4.9	U	1.3	4.9
1,3-Dichlorobenzene		4.9	U	1.6	4.9
1,4-Dichlorobenzene		4.9	U	0.73	4.9

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		65 - 124
Dibromofluoromethane	88		65 - 124
Toluene-d8 (Surr)	99		65 - 132

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-3-0909**

Lab Sample ID: 680-51036-6
Client Matrix: Solid
% Moisture: 9.5

Date Sampled: 09/23/2009 1140
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-148858	Instrument ID: MSM
Preparation:	5035	Prep Batch: 680-148759	Lab File ID: m0281.d
Dilution:	1.0		Initial Weight/Volume: 5.9 g
Date Analyzed:	09/25/2009 1509		Final Weight/Volume: 5 g
Date Prepared:	09/24/2009 1539		

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzene		3.5	J	0.68	4.7
Chlorobenzene		72		0.90	4.7
1,2-Dichlorobenzene		4.7	U	1.2	4.7
1,3-Dichlorobenzene		4.7	U	1.5	4.7
1,4-Dichlorobenzene		1.6	J	0.69	4.7

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		65 - 124
Dibromofluoromethane	94		65 - 124
Toluene-d8 (Surr)	99		65 - 132

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-2-0909-AD**

Lab Sample ID: 680-51036-8FD
Client Matrix: Solid % Moisture: 16.5

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-148858		Instrument ID:	MSM
Preparation:	5035	Prep Batch: 680-148759		Lab File ID:	m0282.d
Dilution:	1.0			Initial Weight/Volume:	6.8 g
Date Analyzed:	09/25/2009 1541			Final Weight/Volume:	5 g
Date Prepared:	09/24/2009 1539				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Benzene		4.4	U	0.64	4.4
Chlorobenzene		4.4	U	0.85	4.4
1,2-Dichlorobenzene		4.4	U	1.1	4.4
1,3-Dichlorobenzene		4.4	U	1.4	4.4
1,4-Dichlorobenzene		4.4	U	0.65	4.4

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		65 - 124
Dibromofluoromethane	95		65 - 124
Toluene-d8 (Surr)	101		65 - 132

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-1-0909**

Lab Sample ID: 680-51036-2
Client Matrix: Solid
% Moisture: 21.2

Date Sampled: 09/23/2009 1520
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149162		Instrument ID:	MST
Preparation:	3550B	Prep Batch: 680-148790		Lab File ID:	t3552.d
Dilution:	1.0			Initial Weight/Volume:	30.07 g
Date Analyzed:	09/28/2009 2123			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4-Chloroaniline		840	U	66	840
2-Chlorophenol		420	U	51	420
1,2,4-Trichlorobenzene		420	U	39	420
1,4-Dioxane		420	"UJ"	150	420

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	59		44 - 110
2-Fluorophenol	51		41 - 110
Nitrobenzene-d5	51		36 - 110
Phenol-d5	47		43 - 110
Terphenyl-d14	62		10 - 112
2,4,6-Tribromophenol	54		36 - 128

OCT 21 2009 ZZR

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-2-0909**

Lab Sample ID: 680-51036-4
Client Matrix: Solid
% Moisture: 18.1

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149162		Instrument ID:	MST
Preparation:	3550B	Prep Batch: 680-148790		Lab File ID:	t3553.d
Dilution:	1.0			Initial Weight/Volume:	30.02 g
Date Analyzed:	09/28/2009 2149			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4-Chloroaniline		810	U	63	810
2-Chlorophenol		400	U	49	400
1,2,4-Trichlorobenzene		400	U	38	400
1,4-Dioxane		400	U	150	400

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	71		44 - 110
2-Fluorophenol	58		41 - 110
Nitrobenzene-d5	59		36 - 110
Phenol-d5	55		43 - 110
Terphenyl-d14	76		10 - 112
2,4,6-Tribromophenol	73		36 - 128

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-3-0909**

Lab Sample ID: 680-51036-6
Client Matrix: Solid % Moisture: 9.5

Date Sampled: 09/23/2009 1140
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149162		Instrument ID:	MST
Preparation:	3550B	Prep Batch: 680-148790		Lab File ID:	t3554.d
Dilution:	1.0			Initial Weight/Volume:	30.03 g
Date Analyzed:	09/28/2009 2214			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4-Chloroaniline		730	U	57	730
2-Chlorophenol		360	U	44	360
1,2,4-Trichlorobenzene		360	U	34	360
1,4-Dioxane		360	"UJ"	130	360

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	67		44 - 110
2-Fluorophenol	58		41 - 110
Nitrobenzene-d5	60		36 - 110
Phenol-d5	59		43 - 110
Terphenyl-d14	81		10 - 112
2,4,6-Tribromophenol	77		36 - 128

OCT 21 2009 EZR

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Client Sample ID: **SED-R2007-2-0909-AD**

Lab Sample ID: 680-51036-8FD
Client Matrix: Solid % Moisture: 16.5

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 680-149162		Instrument ID:	MST
Preparation:	3550B	Prep Batch: 680-148790		Lab File ID:	t3555.d
Dilution:	1.0			Initial Weight/Volume:	30.04 g
Date Analyzed:	09/28/2009 2240			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
4-Chloroaniline		790	U	62	790
2-Chlorophenol		390	U	48	390
1,2,4-Trichlorobenzene		390	U	37	390
1,4-Dioxane		390	U	140	390

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	61		44 - 110
2-Fluorophenol	55		41 - 110
Nitrobenzene-d5	56		36 - 110
Phenol-d5	52		43 - 110
Terphenyl-d14	74		10 - 112
2,4,6-Tribromophenol	73		36 - 128

OCT 21 2009 EZR

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

General Chemistry

Client Sample ID: **SED-R2007-1-0909**

Lab Sample ID: 680-51036-2
Client Matrix: Solid

Date Sampled: 09/23/2009 1520
Date Received: 09/24/2009 0912

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	21		%	0.010	0.010	1.0	Moisture
Analysis Batch: 680-148840	Date Analyzed: 09/25/2009 1203						DryWt Corrected: N

OCT 21 2009

General Chemistry

Client Sample ID: **SED-R2007-2-0909**

Lab Sample ID: 680-51036-4
Client Matrix: Solid

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	18		%	0.010	0.010	1.0	Moisture

Analysis Batch: 680-148840 Date Analyzed: 09/25/2009 1203 DryWt Corrected: N

OCT 21 2009

General Chemistry

Client Sample ID: **SED-R2007-3-0909**

Lab Sample ID: 680-51036-6
Client Matrix: Solid

Date Sampled: 09/23/2009 1140
Date Received: 09/24/2009 0912

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	9.5		%	0.010	0.010	1.0	Moisture

Analysis Batch: 680-148840 Date Analyzed: 09/25/2009 1230 DryWt Corrected: N

OCT 21 2009

General Chemistry

Client Sample ID: **SED-R2007-2-0909-AD**

Lab Sample ID: 680-51036-8FD
Client Matrix: Solid

Date Sampled: 09/23/2009 1345
Date Received: 09/24/2009 0912

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	17		%	0.010	0.010	1.0	Moisture
Analysis Batch: 680-148840	Date Analyzed: 09/25/2009 1231						DryWt Corrected: N

OCT 21 2009

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
	F	MS or MSD exceeds the control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	F	RPD of the MS and MSD exceeds the control limits

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 680-148759					
680-51036-2	SED-R2007-1-0909	T	Solid	5035	
680-51036-4	SED-R2007-2-0909	T	Solid	5035	
680-51036-6	SED-R2007-3-0909	T	Solid	5035	
680-51036-6MS	Matrix Spike	T	Solid	5035	
680-51036-6MSD	Matrix Spike Duplicate	T	Solid	5035	
680-51036-8FD	SED-R2007-2-0909-AD	T	Solid	5035	
Analysis Batch:680-148858					
LCS 680-148858/5	Lab Control Sample	T	Solid	8260B	
MB 680-148858/6	Method Blank	T	Solid	8260B	
680-51036-2	SED-R2007-1-0909	T	Solid	8260B	680-148759
680-51036-4	SED-R2007-2-0909	T	Solid	8260B	680-148759
680-51036-6	SED-R2007-3-0909	T	Solid	8260B	680-148759
680-51036-6MS	Matrix Spike	T	Solid	8260B	680-148759
680-51036-6MSD	Matrix Spike Duplicate	T	Solid	8260B	680-148759
680-51036-8FD	SED-R2007-2-0909-AD	T	Solid	8260B	680-148759

Report Basis
T = Total

GC/MS Semi VOA					
Prep Batch: 680-148790					
LCS 680-148790/7-A	Lab Control Sample	T	Solid	3550B	
MB 680-148790/6-A	Method Blank	T	Solid	3550B	
680-51036-2	SED-R2007-1-0909	T	Solid	3550B	
680-51036-4	SED-R2007-2-0909	T	Solid	3550B	
680-51036-6	SED-R2007-3-0909	T	Solid	3550B	
680-51036-6MS	Matrix Spike	T	Solid	3550B	
680-51036-6MSD	Matrix Spike Duplicate	T	Solid	3550B	
680-51036-8FD	SED-R2007-2-0909-AD	T	Solid	3550B	
Analysis Batch:680-149162					
LCS 680-148790/7-A	Lab Control Sample	T	Solid	8270C	680-148790
MB 680-148790/6-A	Method Blank	T	Solid	8270C	680-148790
680-51036-2	SED-R2007-1-0909	T	Solid	8270C	680-148790
680-51036-4	SED-R2007-2-0909	T	Solid	8270C	680-148790
680-51036-6	SED-R2007-3-0909	T	Solid	8270C	680-148790
680-51036-6MS	Matrix Spike	T	Solid	8270C	680-148790
680-51036-6MSD	Matrix Spike Duplicate	T	Solid	8270C	680-148790
680-51036-8FD	SED-R2007-2-0909-AD	T	Solid	8270C	680-148790

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-148840					
680-51036-2	SED-R2007-1-0909	T	Solid	Moisture	
680-51036-4	SED-R2007-2-0909	T	Solid	Moisture	
680-51036-6	SED-R2007-3-0909	T	Solid	Moisture	
680-51036-6MS	Matrix Spike	T	Solid	Moisture	
680-51036-6MSD	Matrix Spike Duplicate	T	Solid	Moisture	
680-51036-8FD	SED-R2007-2-0909-AD	T	Solid	Moisture	

Report Basis
T = Total

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-51036-2	SED-R2007-1-0909	94	90	101
680-51036-4	SED-R2007-2-0909	98	88	99
680-51036-6	SED-R2007-3-0909	94	94	99
680-51036-8	SED-R2007-2-0909-A D	98	95	101
MB 680-148858/6		99	95	102
LCS 680-148858/5		102	107	107
680-51036-6 MS	SED-R2007-3-0909 MS	94	121	93
680-51036-6 MSD	SED-R2007-3-0909 MSD	100	110	105

Surrogate	Acceptance Limits
BFB = 4-Bromofluorobenzene	65-124
DBFM = Dibromofluoromethane	65-124
TOL = Toluene-d8 (Surr)	65-132

OCT 21 2009 ERR

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	FBP %Rec	2FP %Rec	NBZ %Rec	PHL %Rec	TPH %Rec	TBP %Rec
680-51036-2	SED-R2007-1-0909	59	51	51	47	62	54
680-51036-4	SED-R2007-2-0909	71	58	59	55	76	73
680-51036-6	SED-R2007-3-0909	67	58	60	59	81	77
680-51036-8	SED-R2007-2-0909-A D	61	55	56	52	74	73
MB 680-148790/6-A		58	51	51	49	68	59
LCS 680-148790/7-A		61	52	57	53	66	60
680-51036-6 MS	SED-R2007-3-0909 MS	56	53	55	52	62	61
680-51036-6 MSD	SED-R2007-3-0909 MSD	52	46	47	47	61	60

Surrogate	Acceptance Limits
FBP = 2-Fluorobiphenyl	44-110
2FP = 2-Fluorophenol	41-110
NBZ = Nitrobenzene-d5	36-110
PHL = Phenol-d5	43-110
TPH = Terphenyl-d14	10-112
TBP = 2,4,6-Tribromophenol	36-128

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-148759

Method: 8260B
Preparation: 5035

MS Lab Sample ID:	680-51036-6	Analysis Batch:	680-148858	Instrument ID:	GC/MS Volatiles - M
Client Matrix:	Solid	Prep Batch:	680-148759	Lab File ID:	m0285.d
Dilution:	1.0			Initial Weight/Volume:	6.0 g
Date Analyzed:	09/25/2009 1721			Final Weight/Volume:	5 g
Date Prepared:	09/24/2009 1539				

MSD Lab Sample ID:	680-51036-6	Analysis Batch:	680-148858	Instrument ID:	GC/MS Volatiles - M
Client Matrix:	Solid	Prep Batch:	680-148759	Lab File ID:	m0286.d
Dilution:	1.0			Initial Weight/Volume:	6.6 g
Date Analyzed:	09/25/2009 1752			Final Weight/Volume:	5 g
Date Prepared:	09/24/2009 1539				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	88	97	63 - 130	0	50		
Chlorobenzene	108	182	77 - 120	20	50		F
1,2-Dichlorobenzene	90	100	75 - 123	2	50		
1,3-Dichlorobenzene	86	96	74 - 123	2	50		
1,4-Dichlorobenzene	84	94	75 - 122	1	50		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	94	100	65 - 124
Dibromofluoromethane	121	110	65 - 124
Toluene-d8 (Surr)	93	105	65 - 132

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Method Blank - Batch: 680-148858

Method: 8260B
Preparation: N/A

Lab Sample ID: MB 680-148858/6
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/25/2009 1025
Date Prepared: N/A

Analysis Batch: 680-148858
Prep Batch: N/A
Units: ug/Kg

Instrument ID: GC/MS Volatiles - M
Lab File ID: mq158.d
Initial Weight/Volume: 5 g
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	5.0	U	0.73	5.0
Chlorobenzene	5.0	U	0.96	5.0
1,2-Dichlorobenzene	5.0	U	1.3	5.0
1,3-Dichlorobenzene	5.0	U	1.6	5.0
1,4-Dichlorobenzene	5.0	U	0.74	5.0

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	99	65 - 124
Dibromofluoromethane	95	65 - 124
Toluene-d8 (Surr)	102	65 - 132

Lab Control Sample - Batch: 680-148858

Method: 8260B
Preparation: N/A

Lab Sample ID: LCS 680-148858/5
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/25/2009 0841
Date Prepared: N/A

Analysis Batch: 680-148858
Prep Batch: N/A
Units: ug/Kg

Instrument ID: GC/MS Volatiles - M
Lab File ID: mq156.d
Initial Weight/Volume: 5 g
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	50.0	52.3	105	63 - 130	
Chlorobenzene	50.0	51.6	103	77 - 120	
1,2-Dichlorobenzene	50.0	50.9	102	75 - 123	
1,3-Dichlorobenzene	50.0	51.7	103	74 - 123	
1,4-Dichlorobenzene	50.0	50.3	101	75 - 122	

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	102	65 - 124
Dibromofluoromethane	107	65 - 124
Toluene-d8 (Surr)	107	65 - 132

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Method Blank - Batch: 680-148790

Method: 8270C
Preparation: 3550B

Lab Sample ID: MB 680-148790/6-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/28/2009 2007
Date Prepared: 09/24/2009 2102

Analysis Batch: 680-149162
Prep Batch: 680-148790
Units: ug/Kg

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3549.d
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Result	Qual	MDL	RL
4-Chloroaniline	660	U	52	660
2-Chlorophenol	330	U	40	330
1,2,4-Trichlorobenzene	330	U	31	330
1,4-Dioxane	330	U	120	330

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	58	44 - 110
2-Fluorophenol	51	41 - 110
Nitrobenzene-d5	51	36 - 110
Phenol-d5	49	43 - 110
Terphenyl-d14	68	10 - 112
2,4,6-Tribromophenol	59	36 - 128

Lab Control Sample - Batch: 680-148790

Method: 8270C
Preparation: 3550B

Lab Sample ID: LCS 680-148790/7-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 09/28/2009 2033
Date Prepared: 09/24/2009 2102

Analysis Batch: 680-149162
Prep Batch: 680-148790
Units: ug/Kg

Instrument ID: GC/MS SemiVolatiles - T
Lab File ID: t3550.d
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	3330	1770	53	21 - 110	
2-Chlorophenol	3330	1830	55	44 - 110	
1,2,4-Trichlorobenzene	3330	1860	56	42 - 110	
1,4-Dioxane	3330	685	21	10 - 110	

Surrogate	% Rec	Acceptance Limits
2-Fluorobiphenyl	61	44 - 110
2-Fluorophenol	52	41 - 110
Nitrobenzene-d5	57	36 - 110
Phenol-d5	53	43 - 110
Terphenyl-d14	66	10 - 112
2,4,6-Tribromophenol	60	36 - 128

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Client: Solutia Inc.

Job Number: 680-51036-2
Sdg Number: KRS008

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-148790

Method: 8270C
Preparation: 3550B

MS Lab Sample ID:	680-51036-6	Analysis Batch:	680-149162	Instrument ID:	GC/MS SemiVolatiles - T
Client Matrix:	Solid	Prep Batch:	680-148790	Lab File ID:	t3556.d
Dilution:	1.0			Initial Weight/Volume:	30.03 g
Date Analyzed:	09/28/2009 2305			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

MSD Lab Sample ID:	680-51036-6	Analysis Batch:	680-149162	Instrument ID:	GC/MS SemiVolatiles - T
Client Matrix:	Solid	Prep Batch:	680-148790	Lab File ID:	t3557.d
Dilution:	1.0			Initial Weight/Volume:	30.03 g
Date Analyzed:	09/28/2009 2331			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2009 2102			Injection Volume:	

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4-Chloroaniline	54	51	21 - 110	6	50		
2-Chlorophenol	55	50	44 - 110	8	50		
1,2,4-Trichlorobenzene	54	49	42 - 110	10	50		
1,4-Dioxane	10	16	10 - 110	53	50	J	F

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2-Fluorobiphenyl	56	52	44 - 110
2-Fluorophenol	53	46	41 - 110
Nitrobenzene-d5	55	47	36 - 110
Phenol-d5	52	47	43 - 110
Terphenyl-d14	62	61	10 - 112
2,4,6-Tribromophenol	61	60	36 - 128

Calculations are performed before rounding to avoid round-off errors in calculated results.

OCT 21 2009

Serial Number 022713

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK Fall 2009 River	215621S4.00010	IL

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
LIDYA GULIZIA		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Bob BILLMAN	314 429 0100	

CLIENT NAME	CLIENT E-MAIL
URS CORPORATION	bob_billman@urscorp.com

CLIENT ADDRESS: 1001 Highlands Plaza DRW St. Louis MO 63110

COMPANY CONTRACTING THIS WORK (if applicable)

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3-DCB, 1,4 DCB by 8270C; 2-Chlorophenol; 1,2,4 Trichlorobenzene, 1,2,4 TCB by 8270C; Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B; 4 Chloroaniline, 2-Chlorophenol, 1,4 Dioxane, 1,2,4 TCB by 8270C; Sulfide; Thio; PRESERVATIVE

PAGE	OF
1	2

STANDARD REPORT DELIVERY (X)
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMP (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED								REMARKS
9/23/09	1430	SW-R2007-1-0909	G	X				3	2							DCB = Dichlorobenzene
	1520	SED-R2007-1-0909	G		X					3	1					TCB = Trichlorobenzene
	1320	SW-R2007-2-0909	G	X				3	2							Aqueous VOCs are
	1345	SED-R2007-2-0909	G		X					3	1					preserved w/ Sodium
	1115	SW-R2007-3-0909	G	X				3	2							Thiosulfate only,
	1140	SED-R2007-3-0909	G		X					3	1					NO HCl
	1320	SW-R2007-2-0909-AD	G	X				3	2							
	1345	SED-R2007-2-0909-AD	G		X					3	1					
	1115	SW-R2007-3-0909-MS	G	X				3	2							
	1115	SW-R2007-3-0909-MSD	G	X				3	2							
	1140	SED-R2007-3-0909-MS	G		X					3	1					
		~~SED-R2007-3-0909-MSD~~ KP 9/23/09														

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RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	9/23/09	1900						
RECEIVED BY: (SIGNATURE) FEDEX	DATE 9/23/09	TIME 1900	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George K Gomm	9/24/09	0912	YES ( ) NO ( )		680-51036	6.0/5.8/4.9

OCT 21 2009 TAL8240-680 (1207)

Serial Number 022714

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica
THE LEADER I N ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
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Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK Fall 2009 River	21562154.00010	IL

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
LIDYA GUELZIA		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
BOB BILLMAN	314 429 0100	

CLIENT NAME	CLIENT E-MAIL
URS CORPORATION	bob_billman@urscorp.com

CLIENT ADDRESS: 1001 Highlands Plaza DR W St. Louis MO 63110
COMPANY CONTRACTING THIS WORK (if applicable)

PAGE 2 OF 2

STANDARD REPORT DELIVERY ☒
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

Page	SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	MATRIX TYPE: SOLID OR SEMISOLID	MATRIX TYPE: AIR	MATRIX TYPE: NONAQUEOUS-LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	REQUIRED ANALYSIS: 4 Chloroaniline, 2 Chloronaphthalene, 1,4 Dioxane, 1,4 PDB by 8270C	REQUIRED ANALYSIS: Benzene, Chlorobenzene, 1,2 DCB, 1,3 DCB, 1,4 DCB by 8260B	REQUIRED ANALYSIS: 4 Chloroaniline, 2 Chloronaphthalene, 1,4 Dioxane, 1,4 PDB by 8270C	REMARKS
					Sed Thio	Sed Thio			8260B Meth	PRESERVATIVE			NUMBER OF CONTAINERS SUBMITTED
30 of 31	9/23/09	1140	SED-R2007-3-0909-MSD	G		X			3		3	1	
	↓	1630	SED-R2007-1-0909-EB	G	X				3	2			
	↓	1115	TRIP BLANK 092309	G	X				2				

9/23/09

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	9/23/09	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
FED Ex	9/23/09	1900						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
George Klomm	9/24/09	0912	YES ○ NO ○		680-51036	

OCT 21 2009

TAL-8240-680 (1207)

Login Sample Receipt Check List

Client: URS Corporation

Job Number: 680-51036-2
SDG Number: KRS008

Login Number: 51036
Creator: Conner, Keaton
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	3 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	6.0, 5.8, 4.9 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

Appendix G

Microbial Insights Data Package

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Client: Dave Palmer
URS Corp
1001 Highlands Plaza Dr. West
Suite 300
St. Louis, MO 63110

Phone: (314) 743-4154

Fax: (314) 429-0462

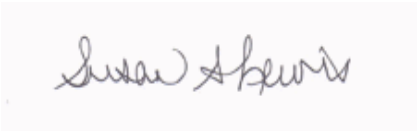
Identifier: 028GI **Date Rec:** 09/12/2009 **Report Date:** 10/26/2009

Client Project #: 21562154.00003 **Client Project Name:** Solutia WG Krummrich Long Term Monit

Purchase Order #:

Analysis Requested: PLFA, PLFA+SIP

Reviewed By:



MICROBIAL INSIGHTS, INC.

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PLFA

Client: **URS Corp**
Project: Solutia WG Krummrich Long Term Monitoring

MI Project Number: **028GI**
Date Received: 09/12/2009

Sample Information

Sample Name:	**BSAMW01S-0909**	**BSAMW02D-0909**	**BSAMW03D-0909**	**BSAMW04D-0909**	**BSAMW05D-0909**
Sample Date:	09/11/2009	09/11/2009	09/11/2009	09/11/2009	09/11/2009
Sample Matrix:	beads	beads	beads	beads	beads
Analyst:	MG	MG	MG	MG	MG

Biomass Concentrations

Total Biomass (cells/bead)	**1.11E+05**	**1.28E+05**	**8.14E+04**	**7.93E+05**	**1.48E+05**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**4.52**	**3.39**	**2.93**	**2.08**	**5.63**
Proteobacteria (Monos)	**55.40**	**62.62**	**58.90**	**84.70**	**63.65**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**4.42**	**2.14**	**1.79**	**0.22**	**3.62**
General (Nsats)	**32.94**	**25.74**	**28.85**	**10.19**	**25.50**
Eukaryotes (polyenoics)	**2.72**	**6.09**	**7.53**	**2.82**	**1.62**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.13**	**0.20**	**1.00**	**0.03**	**0.06**
Decreased Permeability	**0.71**	**0.23**	**0.17**	**0.37**	**0.04**

Legend:
NA = Not Analyzed NS = Not Sampled

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PLFA

Client: **URS Corp**
Project: Solutia WG Krummrich Long Term Monitoring

MI Project Number: **028GI**
Date Received: 09/12/2009

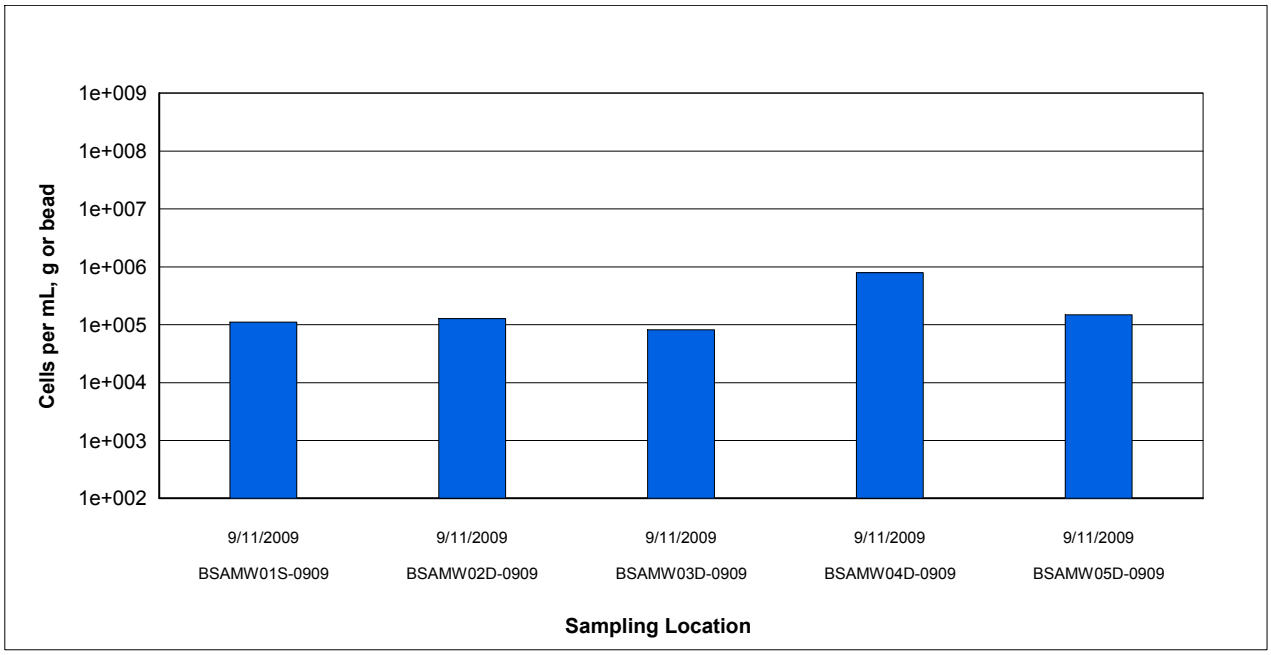

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

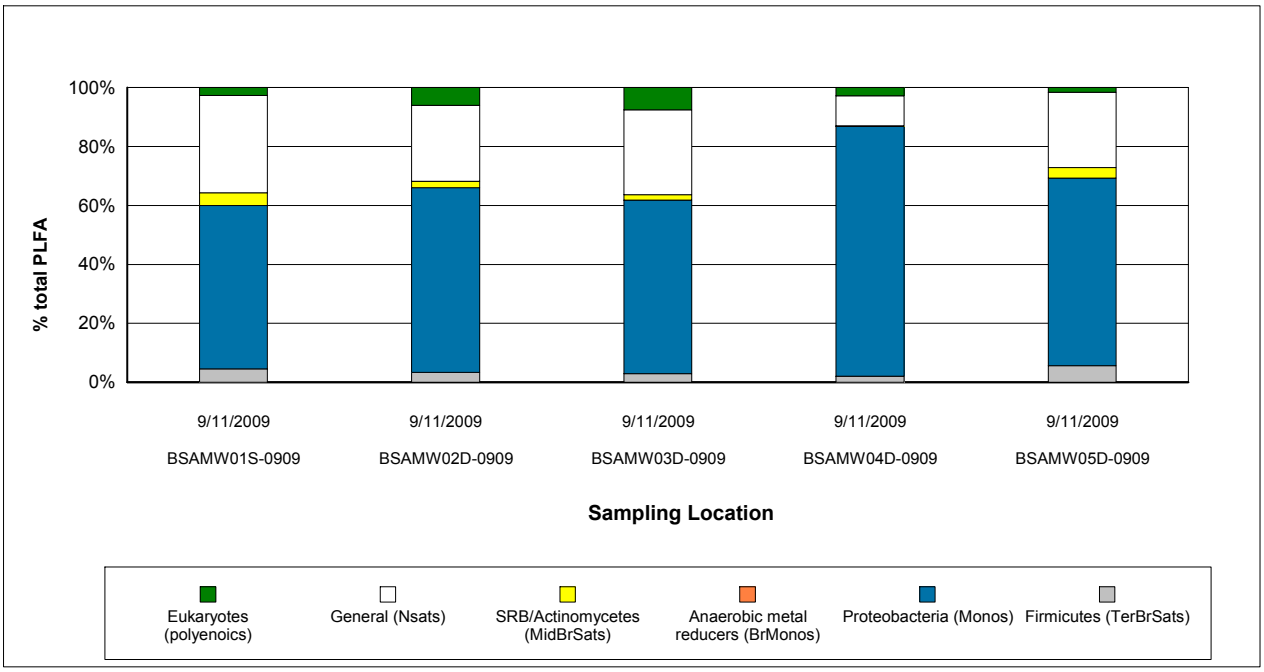

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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PLFA

Client: **URS Corp**
Project: Solutia WG Krummrich Long Term Monitoring

MI Project Number: **028GI**
Date Received: 09/12/2009

Sample Information

Sample Name:	**CPAMW01D-0909**	**CPAMW02D-0909**	**CPAMW03D-0909**	**CPAMW04D-0909**	**CPAMW05D-0909**
Sample Date:	09/11/2009	09/11/2009	09/11/2009	09/11/2009	09/11/2009
Sample Matrix:	beads	beads	beads	beads	beads
Analyst:	MG	MG	MG	MG	MG

Biomass Concentrations

Total Biomass (cells/bead)	**1.82E+05**	**2.30E+05**	**2.79E+05**	**1.61E+06**	**5.46E+04**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**6.51**	**3.68**	**4.78**	**8.48**	**0.00**
Proteobacteria (Monos)	**49.76**	**60.49**	**54.60**	**60.90**	**62.86**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.67**	**0.00**	**0.18**	**0.00**
SRB/Actinomycetes (MidBrSats)	**3.66**	**0.78**	**0.92**	**2.67**	**2.72**
General (Nsats)	**37.35**	**27.33**	**34.06**	**27.14**	**27.44**
Eukaryotes (polyenoics)	**2.71**	**7.03**	**5.66**	**0.61**	**6.97**

Physiological Status (Proteobacteria only)

Slowed Growth	**1.29**	**0.12**	**0.11**	**0.11**	**0.22**
Decreased Permeability	**0.29**	**0.35**	**0.18**	**0.14**	**0.19**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

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PLFA

Client: **URS Corp**
Project: Solutia WG Krummrich Long Term Monitoring

MI Project Number: **028GI**
Date Received: 09/12/2009

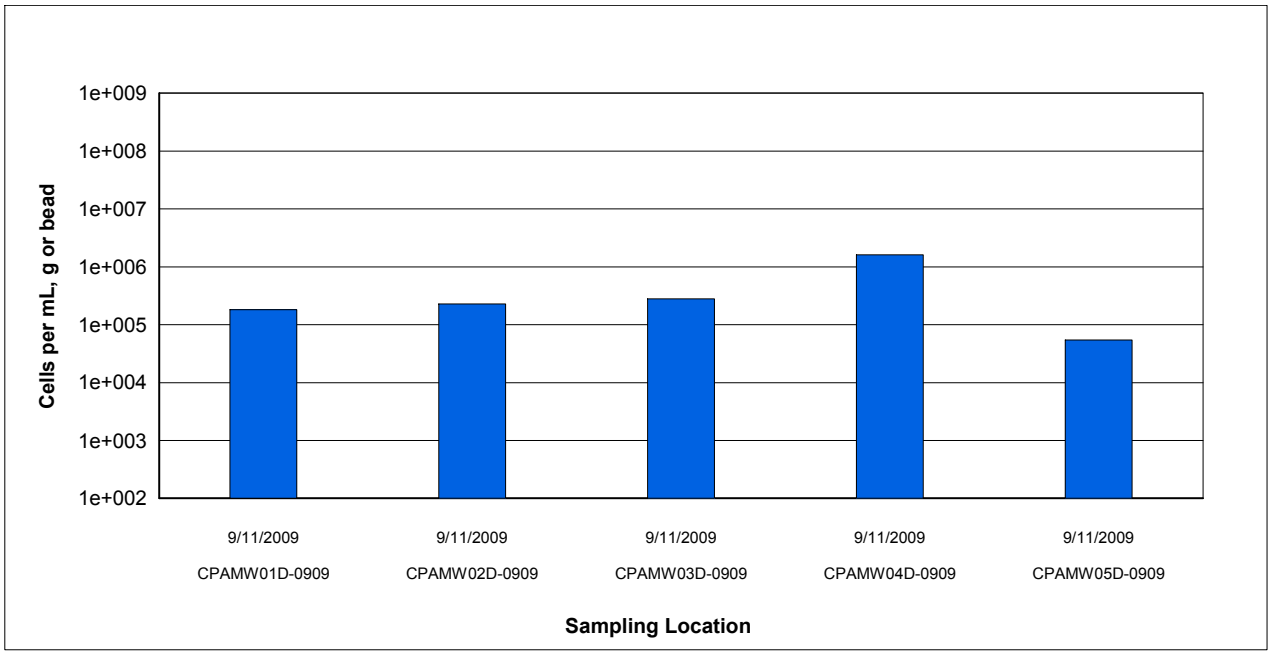

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

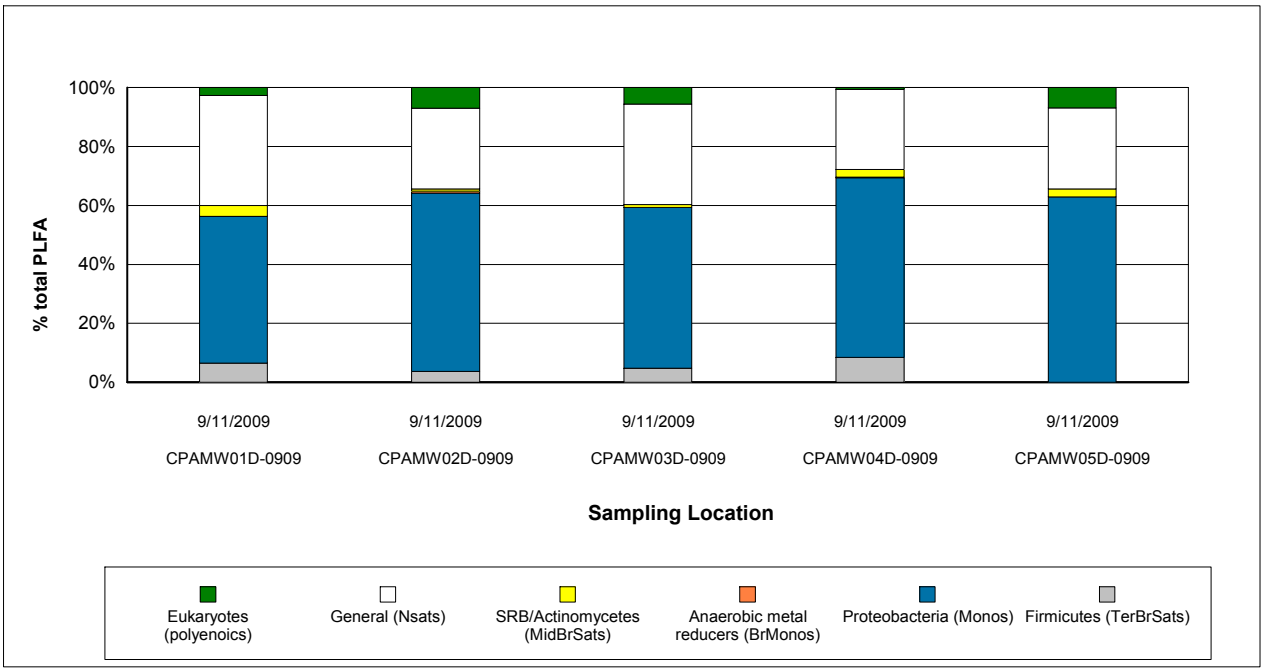

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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Identifier: 028GI **Date Rec:** 09/12/2009 **Report Date:** 10/26/2009

Client Project #: 21562154.00003 **Client Project Name:** Solutia WG Krummrich Long Term Monit

Purchase Order #:

Comments:

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Phone: 865.573.8188
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Web: www.microbe.com

SITE LOGIC Report

Stable Isotope Probing (SIP) Study

Contact: Thomas Adams
Address: URS Corporation
1001 Highlands Plaza Drive West
St. Louis, MO 63110

Phone: 314.429.0100

Email: Thomas_adams@urscorp.com

MI Identifier: 028GI

Report Date: November 18, 2009

Project: Solutia WGK Long Term Monitoring 21562154.00003

Comments:

Executive Summary

Bio-Trap® samplers baited with ^{13}C labeled benzene or chlorobenzene were deployed for 36 days and then recovered for analysis. A complete summary of the results is provided in Table 1.

- A moderate level of biomass (~10^5 cells/bead) was detected in the sampler in the ^{13}C chlorobenzene sampler. A low level was detected in the ^{13}C benzene sampler.
- Quantification of ^{13}C enriched biomass demonstrated a low level of utilization of the benzene in well BSAMW02D-0909. There was no ^{13}C chlorobenzene incorporated into the biomass in well CPAMW03D-0909.
- Quantification of the ^{13}C dissolved inorganic carbon (DIC) showed no mineralization occurring in either sampler.
- Comparison of pre- and post-deployment concentrations of ^{13}C labeled benzene demonstrated a 1% loss and the ^{13}C labeled chlorobenzene showed a 68% loss.

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Overview of Approach

Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a "labeled" contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (^{12}C) which accounts for 99% of carbon and carbon 13 (^{13}C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing ^{13}C labeled carbon. Since ^{13}C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of ^{13}C).
- Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of ^{13}C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

Phospholipid Fatty Acids (PLFA): PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of ^{13}C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce "signature" types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a "fingerprint" of the microbial community. In addition, *Proteobacteria* modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

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Results

Table 1. Summary of the results obtained from the Bio-Trap® Units. Interpretation guidelines and definitions are found later in the document.

Sample Name	BSAMW02D-0909-^{13}C Benzene	CPAMW03D-0909-^{13}C Chlorobenzene
^{13}C Contaminant Loss		
Benzene Pre-deployment (mg/bd)	1.11	----
Benzene Post-deployment (mg/bd)	1.09	----
Chlorobenzene Pre-deployment (mg/bd)	----	0.26
Chlorobenzene Post-deployment (mg/bd)	----	0.08
% Loss	1%	68%
First Order Rate Constant (1/days)	0.000	0.032
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bd)	6.94E+04	6.23E+05
^{13}C Enriched Biomass (Cells/bd)	5.90E+01	0.00E+00
% ^{13}C Incorporation	0.08%	0.00%
Average PLFA Del (‰)	49	0
Maximum PLFA Del (‰)	49	0
^{13}C Mineralization		
DIC Del (‰)	-18	-18
% 13C	1.09	1.09
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	3.9	4.6
Proteobacteria (Monos)	55.8	49.8
Anaerobic metal reducers (BrMonos)	2.1	2.6
Actinomycetes (MidBrSats)	1.4	0.0
General (Nsats)	22.3	34.7
Eukaryotes (Polyenoics)	14.5	8.3
Physiological Status (Proteobacteria only)		
Slowed Growth	0.52	0.30
Decreased Permeability	1.13	0.39

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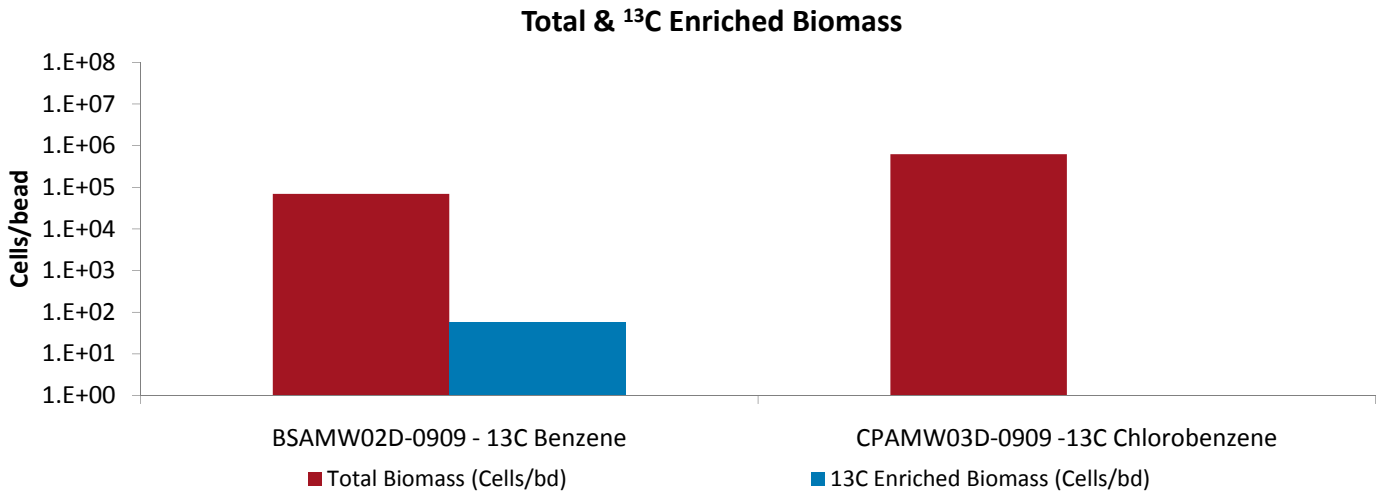

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

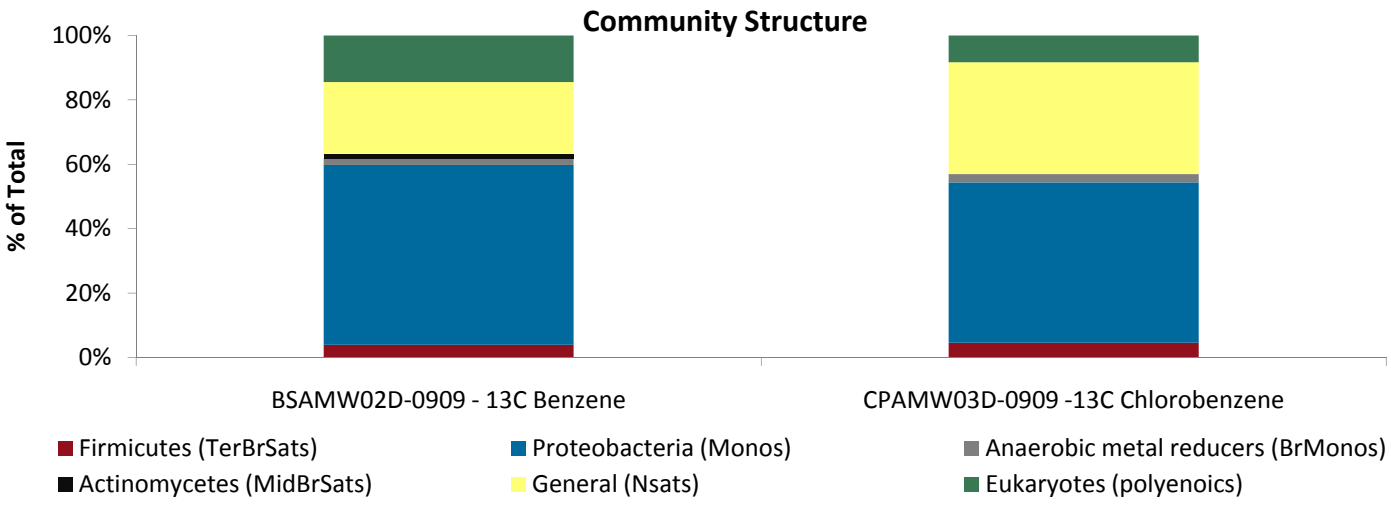

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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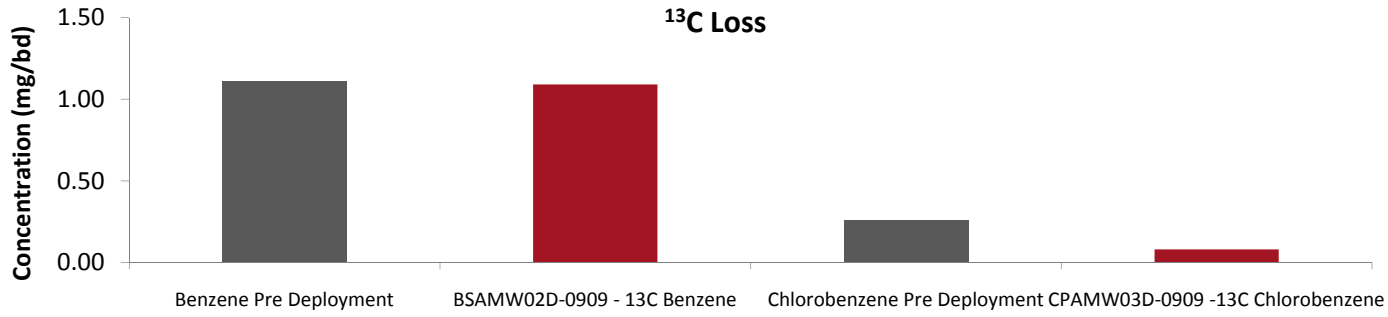

Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

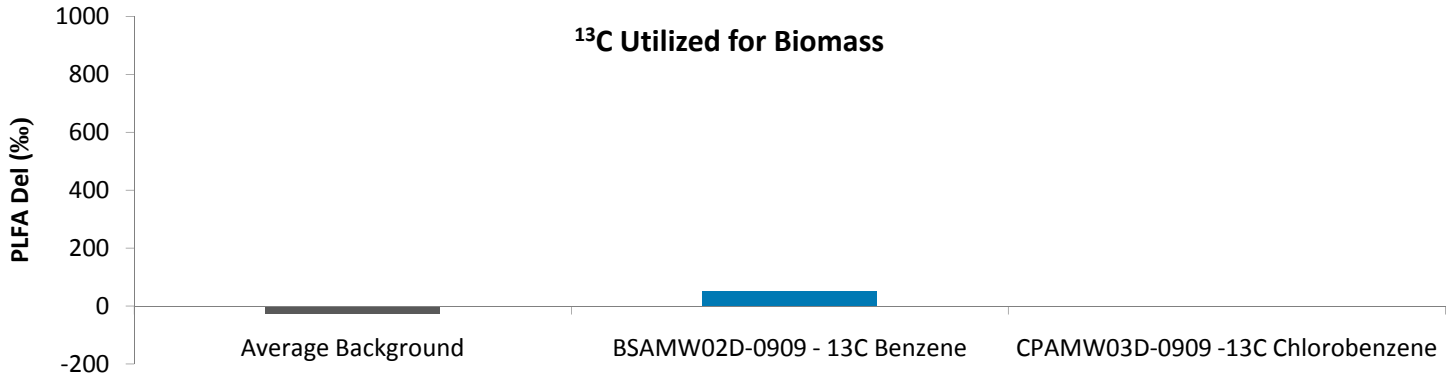

Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

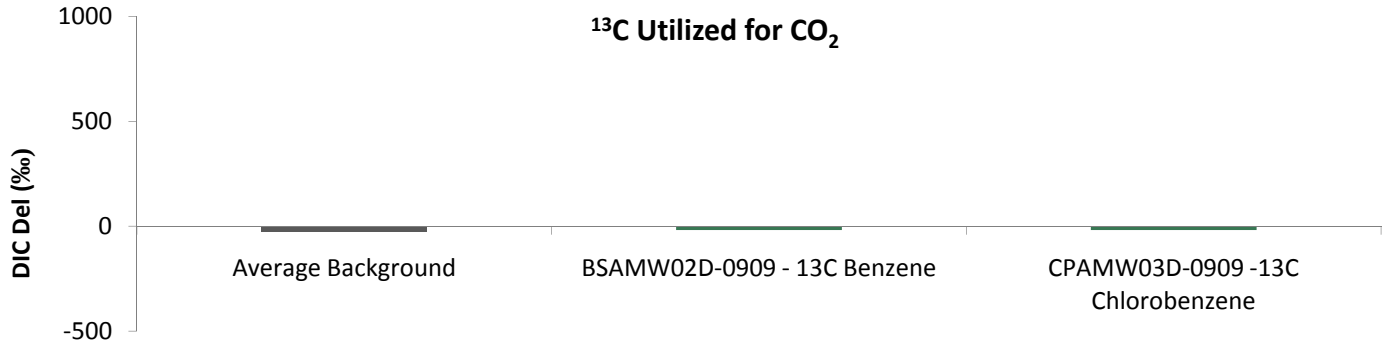

Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

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Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss, to estimate the first order degradation rate constant (k), and to estimate the contaminant half life (Results Summary Table). For a description of how the first order rate constant is calculated, please see the glossary at the end of the report. The first order rate constant can be used to compare different wells or treatments depending on the design of the study. A higher value is indicative of a greater biodegradation rate.

Alternatively, the contaminant half life can be used to make the same types of comparisons between wells and treatments. By definition, half life is the amount of time required for the contaminant concentration to equal half of the initial concentration (see glossary for calculation).

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

Total Biomass		
Low	**Moderate**	**High**
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

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R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x, of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}C/^{12}C$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000

Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}CO_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}CO_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC $\%^{13}C$ are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and % ^{13}C		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24 %	>2.24 %

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

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Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in eukaryotes such as fungi, protozoa, algae, higher plants, and animals.	Eukaryotic scavengers will often rise up and prey on contaminant utilizing bacteria

Physiological Status (*Proteobacteria*): Some *Proteobacteria* modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

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Glossary

Del: A Del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand denoted ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

First Order Rate Constant: The first order rate is expression is $C=C_oe^{-kt}$ where C is the post-deployment concentration (mg/bead), C_o is the pre-deployment concentration (mg/bead), k is the first order rate constant (1/days), and t is the deployment time (days). Upon rearrangement and using pre-and post-deployment concentrations, $k=-\ln(C/C_o)/t$.

Half Life: Half life is the amount of time required for the contaminant concentration to equal half of the initial concentration and is expressed as $C=C_o/2$. Substituting into the rate expression and solving for half life ($t_{1/2}$), $t_{1/2} = \ln(0.5)/-k$. As opposed to the rate constant, a higher half life ($t_{1/2}$) indicates a lower degradation rate.

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MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	VFA	MEE	DGGE+ID	DGGE+SID		qDHC (Dehalococcoides)	DHC Functional genes	qDHB (Dehalobacter)	qDSM (Desulfuromonas)	qDSB (Desulfitobacterium)	qEBAC (Total)	qDSR (SRBs only)	qSRB/IRB	qMGN (methanogens)	qMOB (methanotrophs)	qDNF (Denitrifying)	qAOB (ammonia oxidizing)	qPM1 (MTBE aerobic)	qTOD (Initial PAHs aerobic)	qCAT (Intermediate PAHs aerobic)	qBSS (Toluene/Xylene Anaerobic)	qNAH (Naphthalene aerobic)	add qPCR	add qPCR	add qPCR	RNA (Expression Option)*	Other: Benzene SIP	Other: Chlorobenzene SIP	Other:	Other:
028GF 1	BSAMW01S-0909	9/11/09	1330	water	X																														
2&3	BSAMW02D-0909	9/11/09	1230	water	X																											X			
4	BSAMW03D-0909	9/11/09	1200	water	X																														
5	BSAMW04D-0909	9/11/09	1115	water	X																														
6	BSAMW05D-0909	9/11/09	1145	water	X																														
7	CPAMW01D-0909	9/11/09	1315	water	X																														
8	CPAMW02D-0909	9/11/09	1300	water	X																														
9&10	CPAMW03D-0909	9/11/09	1245	water	X																												X		
11	CPAMW04D-0909	9/11/09	1130	water	X																														
12	CPAMW05D-0909	9/11/09	1215	water	X																														

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