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October 23, 2015

Ms. Carolyn Bury - LU-9J
U.S. EPA Region 5
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

Re: Long-Term Monitoring Program
3rd Quarter 2015 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Ms. Bury:

Enclosed please find the Long-Term Monitoring Program 3rd Quarter 2015 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. Results from sampling of Mississippi River surface water and sediment; supplemental piezometers GWE-1D, 2D, 3D, 5S, and 5M; and supplemental wells GWE-5D; ESL-MW-A, C1, and D1; and PM1M and PM1D are also included in this report.

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

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Long-Term Monitoring Program
3rd Quarter 2015 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

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Solutia

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GSI Environmental (CD only)

Chuck Newell 2211 Norfolk Street, Suite 1000, Houston, TX 77098-4044

GROUNDWATER MONITORING REPORT

GROUNDWATER MONITORING REPORT

LONG-TERM MONITORING PROGRAM
SOLUTIA INC., W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared For: Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141 USA

Submitted By: Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA

October 2015 **140-3345**

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 FIELD ACTIVITIES 3
2.1 Water Level Measurement 3
2.2 Groundwater Sample Collection 3
2.3 Quality Assurance and Sample Handling 4
2.4 Biodegradation Sampling 5
2.5 Surface Water and Sediment Monitoring 6
2.6 Decontamination and Investigation Derived Waste 7
3.0 QUALITY ASSURANCE 7
4.0 OBSERVATIONS 9
4.1 Benzene 9
4.2 Chlorobenzenes (Total) 9
4.3 Semi-Volatile Organic Compounds 10
4.4 Surface Water and Sediment 10
4.5 Monitored Natural Attenuation 11
5.0 CLOSING 11
6.0 REFERENCES 12

List of Figures

Figure 1 Site Location Map
Figure 2 Long-Term Monitoring Program Well Locations
Figure 3 Potentiometric Surface Map Middle/Deep Hydrogeologic Unit
Figure 4 Benzene and Total Chlorobenzenes Results

List of Tables

Table 1 Monitoring Well Gauging Information
Table 2 Groundwater Analytical Results
Table 3 Monitored Natural Attenuation Results

List of Appendices

Appendix A Groundwater Purging and Sampling Forms
Appendix B Chains-of-Custody
Appendix C Quality Assurance Report
Appendix D Groundwater Analytical Results (including data validation reports)
Appendix E Microbial Insights Data Package

1.0 INTRODUCTION

Golder Associates Inc. (Golder) is pleased to submit this report summarizing the 3rd Quarter 2015 (3Q15) Long-Term Monitoring Program (LTMP) groundwater sampling activities at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. The facility is located at 500 Monsanto Avenue, Sauget, Illinois as shown on Figure 1.

The 3Q15 sampling event was performed in general accordance with the Revised LTMP Work Plan (Work Plan) (Solutia 2009). Work conducted during the LTMP is designed to evaluate the effectiveness of monitored natural attenuation (MNA). The effectiveness of MNA at the Site, is shown by the following:

- A clear and meaningful trend of decreasing contaminant mass
- Data that indirectly demonstrate the types and rates of natural attenuation process active at the Site
- Data that directly demonstrate the occurrence of biodegradation processes at the Site

The Work Plan addresses quarterly sampling requirements from the United States Environmental Protection Agency's (USEPA) February 26, 2008, Final Decision (USEPA, 2008). According to the Work Plan, ten (10) groundwater samples are to be collected from monitoring wells from two (2) source areas, former Benzene Storage Area and former Chlorobenzene Process Area; four (4) monitoring wells located downgradient of the former Benzene Storage Area; and four (4) monitoring wells located downgradient of the former Chlorobenzene Process Area. Monitoring wells are located in the Shallow Hydrogeologic Unit (SHU), Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU). One (1) monitoring well is screened in the SHU at the former Benzene Storage Area. The remaining nine (9) wells are screened in the MHU and DHU. Analytical data from these wells are used to evaluate the attenuation processes in the America Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River.

In addition to the monitoring wells specified in the Work Plan, the USEPA has also requested that groundwater samples be collected from eleven (11) additional monitoring wells and piezometers approximately 1.0 to 1.5 miles north of the Site.

The scope of work detailed in the Work Plan is summarized below.

Twenty-one (21) monitoring wells and piezometers are sampled during the LTMP event. The locations of the monitoring wells, piezometers and source areas are shown on Figure 2 and the sample locations are included on the table below.

Area	Location Relative to Area	Sample Identification
Former Benzene Storage	Source Area Well	BSA-MW-1S
	Downgradient	BSA-MW-2D
		BSA-MW-3D
		BSA-MW-4D
		BSA-MW-5D
Former Chlorobenzene Process	Source Area Well	CPA-MW-1D
	Downgradient	CPA-MW-2D
		CPA-MW-3D
		CPA-MW-4D
		CPA-MW-5D
Supplemental Wells North of the Site	---	ESL-MW-A
		ESL-MW-C1
		ESL-MW-D1
		GWE-1D
		GWE-2D
		GWE-3D
		GWE-5D
		GWE-5M
		GWE-5S
		PM1D
		PM1M

Water levels in the monitoring wells and piezometers are measured quarterly and total depths are measured in the 1st quarter of each year.

During the quarterly sampling events, monitoring wells and piezometers are sampled for the following volatile organic compound (VOC) analytes: benzene; chlorobenzene; 1,2-dichlorobenzene; 1,3-dichlorobenzene; and 1,4-dichlorobenzene. During the 1st and 3rd quarters, monitoring wells and piezometers are sampled for the following semi-volatile organic compound (SVOC) analytes: 4-chloroaniline (CPA-MW-3D, CPA-MW-4D and CPA-MW-5D); 2-chlorophenol (BSA and CPA wells); 1,2,4-trichlorobenzene (BSA and CPA wells); and 1,4-dioxane (BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, and BSA-MW-5D). The following MNA parameters are sampled quarterly to evaluate active natural attenuation occurring at the Site:

- Electron Donors – total and dissolved organic carbon
- Electron Acceptors – iron, manganese, nitrate, sulfate
- Biodegradation Byproducts – carbon dioxide, chloride, methane
- Biodegradation Indicators – alkalinity

Microbial Insights BioTrap® samplers for Phospholipid Fatty Acid (PLFA) analysis and Stable Isotope Probes (SIPs) baited with benzene or chlorobenzene are deployed quarterly to demonstrate the occurrence of biodegradation occurring at the Site.

Mississippi River surface water and sediment samples are scheduled to be collected on a semi-annual basis (1st and 3rd quarter). To assess the impact of contaminated groundwater discharging into the river north of the Groundwater Migration Control System (GMCS), surface water and sediment samples were collected during the 3Q15 sampling event.

2.0 FIELD ACTIVITIES

Golder conducted 3Q15 sampling events between August 3 and August 20, 2015. Activities were performed in general accordance with the Work Plan.

2.1 Water Level Measurement

Prior to sampling during the 3Q15 event, Golder performed a synoptic round of water level measurements at 77 monitoring wells and piezometers on July 30 and July 31, 2015. The following monitoring well and piezometer series are included in the LTMP:

- BSA-series
- CPA-series
- ESL-series
- GM-series
- GWE-series
- K-series
- PS-MW-series
- PMA-series
- PM-series
- Piezometer clusters installed for Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects

An oil/water interface probe was used to measure the water level (to 0.01 feet) and, if present, detect and measure the thickness of non-aqueous phase liquid (NAPL). During the 3Q15 sampling event, NAPL was not detected in monitoring wells or piezometers. Total depths are measured during the 1st quarter of each year. The 3Q15 well gauging information is shown on Table 1. The information collected from the MHU and the DHU was used to create a groundwater potentiometric surface map, as shown on Figure 3.

2.2 Groundwater Sample Collection

Monitoring wells and piezometers sampled during the 3Q15 LTMP event were purged and sampled using low-flow sampling techniques, low-density polyethylene tubing (LDPE) and a submersible or peristaltic

pump (GWE-1D, GWE-2D and GWE-3D). The pump intake was placed at approximately the middle of the screened interval for each well. Purging was conducted at a rate of approximately 300 mL/min to reduce drawdown. Drawdown was measured throughout purging activities to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Measurement of field parameters began once the flow rate and drawdown were stable. Parameters were measured for each system volume purged using a SmartTROLL™ multi-parameter meter. The system volume includes the volume of the tubing, the volume of the pump and the volume of flow-through cell containing the multi-parameter meter. Samples were collected after field parameters were stabilized within the ranges below for three (3) consecutive measurements:

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

The flow rate was adjusted as needed to maintain approximately 300 mL/min during sampling activities. To reduce possible sample cross contamination, the flow-through cell was bypassed and gloves were replaced prior to sampling.

Sample bottles were provided by TestAmerica Laboratories, Inc. (TestAmerica) for the following analyses:

- VOCs – USEPA SW-846 Method 8260B
- SVOCs were analyzed using USEPA SW-846 Method 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- MNA parameters – alkalinity and carbon dioxide (USEPA Method 310.1), chloride (USEPA Method 352.5), total and dissolved iron and total and dissolved manganese (USEPA SW-846 Method 6010C), methane, ethane and ethylene (RSK-175), nitrate (USEPA Method 353.2), sulfate (USEPA Method 375.4), and total and dissolved organic carbon (USEPA Method 415.1)

VOC and SVOC sample bottles were filled first followed by gas sensitive parameters and general chemistry parameters. Ferrous iron was field analyzed with a HACH 890 Colorimeter and HACH AccuVac® ampules. Samples collected for ferrous iron and dissolved analyses were field filtered using an in-line 0.2 micron disposable filter. Groundwater purging and sampling forms are included in Appendix A.

2.3 Quality Assurance and Sample Handling

Five (5) analytical duplicates (AD), four (4) equipment blanks (EB) and three (3) matrix spike/matrix spike duplicate (MS/MSD) pairs were collected during the 3Q15 LTMP sampling event. Laboratory provided trip blanks were included in each cooler containing samples for VOC analysis, for a total of five (5) trip blanks. Sample bottles were labeled with the date and time of sample collection, sampler initials, analysis requested, preservative used, and sample identification based on the following nomenclature “AAA-MW#-MMYY-QA/QC” or “BBBB-MMYY-QA/QC” where:

- **"AAA"** denotes "Benzene Storage Area (BSA)", "Chlorobenzene Process Area (CPA)", "East St. Louis (ESL)", or "Groundwater Elevation (GWE)" and **"MW#"** denotes "Monitoring Well Number"
- **"BBBB"** denotes PM1M or PM1D for monitoring wells installed in January 2015
- **"MMYY"** denotes month and year of sampling quarter, e.g.: August (3rd quarter), 2015 (0815)
- **"QA/QC"** denotes QA/QC sample
  - **AD** – Analytical Duplicate
  - **EB** – Equipment Blank
  - **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Samples that were field filtered with an in-line 0.2 micron filter include "F(0.2)" prior to the "MMYY" portion of the sample identification. Sample information was recorded on a chain-of-custody (COC) that included project identification, sample identification, date and time of sample collection, analysis requested, preservative used, sample matrix and type, number of sample containers, sampler signature, and date COC was completed. Copies of the COCs are included in Appendix B.

Directly after sampling, sample bottles were placed in an iced cooler to maintain a sample temperature of approximately 4°C. Prior to sample shipment, samples and ice were placed inside two (2) contractor trash bags. The bags were tied and the cooler was sealed between the lid and sides with a signed and dated custody seal. Samples were shipped overnight via FedEx to the TestAmerica facility in Savannah, Georgia.

2.4 Biodegradation Sampling

Bio-Trap® and SIP results are evaluated to provide biodegradation potential information in the SHU, the MHU and the DHU. Bio-Trap® samplers and SIPs are passive sampling tools that collect microbes across the samplers membrane that is, after time, analyzed. SIPs are baited with a specially synthesized form of the contaminant (i.e., benzene, chlorobenzene) in order to measure the degradation of a specific contaminant.

Bio-Trap® samplers and Stable Isotope Probing samplers (SIPs), provided by Microbial Insights, Inc. in Rockford, Tennessee, were deployed on July 1, 2015 in monitoring wells downgradient of the former Chlorobenzene Process Area (CPA-MW-1D through CPA-MW-5D) and downgradient of the former Benzene Storage Area (BSA-MW-1S and BSA-MW-2D through BSA-MW-5D) for PLFA analysis. A benzene SIP was deployed in monitoring well BSA-MW-2D and a chlorobenzene SIP was deployed in monitoring well CPA-MW-3D. Bio-Trap® samplers and SIPs were weighted and fastened to a stainless steel cable. The cable was secured to the well cap and the Bio-Trap® or SIP was lowered into the well and placed in the middle of the well screen.

On July 30, 2015, Bio-Trap® samplers and SIPs were collected from the wells, placed in laboratory provided bags, labeled with appropriate well identification, placed in a cooler with ice, properly sealed, and shipped overnight to the Microbial Insights, Inc. facility in Rockford, Tennessee for analysis.

2.5 Surface Water and Sediment Monitoring

Surface water/sediment sampling is typically performed concurrent to the groundwater sampling event to confirm groundwater is discharging to the river at the time of sampling. In addition, the sampling is performed to assess the relationship between VOC concentrations in the river and in groundwater. The surface water and sediment sampling was conducted on August 19, 2015. Fluid levels in groundwater monitoring wells CPA-MW-5D, BSA-MW-5D, and BSA-MW-4D were measured on August 19, 2015. The water level elevations were measured at the following:

- CPA-MW-5D (393.03 ft AMSL)
- BSA-MW-5D (395.07 ft AMSL)
- BSA-MW-4D (395.80 ft AMSL)

The levels were higher than the Mississippi River on August 19, 2015 (~391.10 ft AMSL); therefore discharge to the river was confirmed.

Surface water and sediment samples were collected at three (3) locations, R2007-1 through R2007-3 as seen on Figure 2. Coordinates for the three sample locations were preloaded into a Trimble Global Positioning System (GPS) unit, and used for navigation to the sample locations. Field personnel positioned the sampling boat at a point where the dredge was able to reach the river bed. Surface water samples were collected prior to sediment samples to collect a sample representing the water column above the sediments and reduce potential contamination from the sediments or the sampling system.

During the 3Q15 River sampling event, samples were analyzed for the following VOCs: benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, and the following 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.

The following field parameters were collected at the three (3) sample locations: temperature, pH, dissolved oxygen, and conductivity. Parameters were recorded using a YSI 556 MPS at a depth of one (1) foot below the water surface and recorded on field data forms.

Surface water samples were collected using LDPE tubing with weighted intake and a peristaltic pump. The pump intake was placed at the sediment-water interface (within one (1) foot of the river bottom). Tubing was fixed to the cable of the sediment sampler (ponar dredge) and lowered to the bottom of the river with the dredge. The flow rate was adjusted as needed to minimize volatilization. New tubing was

used at each sample location. Sample bottles were provided by TestAmerica for VOC and SVOC analysis. VOC and SVOC sample bottles were filled directly from the tubing to reduce VOC and/or preservative loss. The unfiltered samples were submitted to the laboratory for analysis. Sampling forms are included in Appendix A.

Sediment samples were collected using an 11.1 liter ponar grab sampler. The ponar grab sampler was deployed from a davit along the side of the boat, and raised and lowered with a winch. Prior to sampling, the grab sampler and other sampling devices (stainless steel bowl and spoon) were decontaminated with a distilled water and Alconox® wash, followed by a distilled water rinse. The ponar grab sampler was deployed multiple times to collect sufficient sample volume. Sediment samples were collected from the upper two (2) inches of the river bed. Upon recovery, the ponar grab sampler was opened and the sediment was moved to the stainless steel bowl. Samples for VOC analysis were obtained using a five (5) milliliter TerraCore® sampler, which was inserted into the sediment below the surface and carefully removed to prevent VOC loss.

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

2.6 Decontamination and Investigation Derived Waste

Sampling equipment was decontaminated prior to mobilizing to the Site, between sample locations and prior to demobilizing from the Site. Non-dedicated sampling equipment was decontaminated between samples with a non-phosphatic detergent solution and a deionized water rinse.

Investigation derived waste (IDW) was placed in 55-gallon drums, labeled with the generation date and staged for disposal by Solutia. IDW such as gloves and other disposable sampling equipment was bagged for disposal by Solutia.

3.0 QUALITY ASSURANCE

Sample results were provided by TestAmerica in electronic format and reviewed for quality and completeness by Golder in accordance with the Work Plan. Sample results are included in Appendix D. Results were submitted in seven (7) sample delivery groups (SDGs) as follows:

Sample Delivery Group (SDG)	Sample Identification
KPS147	PM1M-0815
	PM1D-0815
	PM1D-0815-AD
	ESL-MW-A-0815
	ESL-MW-C1-0815
	ESL-MW-C1-0815-EB
	ESL-MW-D1-0815
	3Q15 LTM Trip Blank #1
KPS148	GWE-2D-0815
	GWE-3D-0815
	GWE-5S-0815
	GWE-5M-0815
	GWE-5D-0815
	3Q15 LTM Trip Blank #2
KPS149	BSA-MW-5D-0815
	CPA-MW-4D-0815
	CPA-MW-3D-0815
	CPA-MW-3D-0815-AD
	BSA-MW-4D-0815
	BSA-MW-2D
KPS150	BSA-MW-3D-0815
	BSA-MW-3D-0815-EB
	CPA-MW-1D-0815
	CPA-MW-2D-0815
	CPA-MW-2D-0815-AD
	BSA-MW-1S
	BSA-MW-1S-EB
	3Q15 LTM Trip Blank #4
KPS151	CPA-MW-5D-0815
	GWE-1D-0815
	3Q15 LTM Trip Blank #4
KRS013	SW-R2007-1-0815
	SW-R2007-2-0815
	SW-R2007-3-0815
	SW-R2007-1-0815-AD
	SW-R2007-1-0815-EB
	Trip Blank-071415
KRS014	SED-R2007-1-0815
	SED-R2007-2-0815
	SED-R2007-3-0815
	SED-R2007-1-0815-AD

Golder completed validation of the analytical data following the general guidelines in Section 4.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent versions of the national data validation guidelines be used for data review. The following guidelines were generally used:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-10-011, January 2010

Although some data required qualifications due to quality control criteria that were not achieved, the data were deemed usable. The completeness for the data set was 100%.

4.0 OBSERVATIONS

Groundwater analytical data for VOCs and MNA parameters are discussed below and presented in Table 2 and 3, respectively.

4.1 Benzene

Benzene was detected in eight (8) of the twenty-one (21) monitoring wells and piezometers at concentrations ranging from 20 µg/L (GWE-5D) to 900,000 µg/L (BSA-MW-1S). Benzene results are summarized below.

- Former Benzene Storage Area: Benzene was detected in the former Benzene Storage Area source area well (BSA-MW-1S) at a concentration of 900,000 µg/L.
- Downgradient of Former Benzene Storage Area: Benzene was detected in three (3) of four (4) wells downgradient of the former Benzene Storage Area with concentrations ranging from 39 µg/L (BSA-MW-5D), in the DHU north of the GMCS, to 98,000 µg/L (BSA-MW-2D).
- Former Chlorobenzene Process Area: Benzene was detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 5,300 µg/L.
- Downgradient of Former Chlorobenzene Process Area: Benzene was detected in one (1) of four (4) wells downgradient of the former Chlorobenzene Process Area at a concentration of 110 µg/L / 110 µg/L (CPA-MW-3D and AD).
- North of the Site: Benzene was detected in two (2) of eleven (11) wells and piezometers north of the Site at concentrations of 20 µg/L (GWE-5D) and 25 µg/L (GWE-3D).

4.2 Chlorobenzenes (Total)

Total chlorobenzenes (i.e., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene) were detected in thirteen (13) of the twenty-one (21) wells at concentrations ranging from 12 µg/L (PM1D) to 30,000 µg/L (CPA-MW-2D AD). Total chlorobenzenes results are summarized below.

- Former Benzene Storage Area: Total chlorobenzenes were not detected in the former Benzene Storage Area source area well (BSA-MW-1S).

- Downgradient of Former Benzene Storage Area: Total chlorobenzenes were detected in three (3) of four (4) wells downgradient of the former Benzene Storage Area with concentrations ranging from 380 µg/L (BSA-MW-5D) to 2,067 µg/L (BSA-MW-4D) in the DHU north of the GMCS.
- Former Chlorobenzene Process Area: Total chlorobenzenes were detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 42,000 µg/L.
- Downgradient of Former Chlorobenzene Process Area: Total chlorobenzenes were detected in four (4) of four (4) wells downgradient of the former Chlorobenzene Process Area with concentrations ranging from 112.7 µg/L / 112.6 µg/L (CPA-MW-3D and AD) to 29,990 / 31,000 µg/L (CPA-MW-2D and AD). Total chlorobenzenes were detected at a concentration of 1,500 µg/L (CPA-MW-5D) north of the GMCS.
- North of the Site: Total chlorobenzenes were detected in nine (9) of eleven (11) wells and piezometers north of the Site with concentrations ranging from 1.1 µg/L (GWE-5M and ESL-MW-A) to 1,586 µg/L (GWE-3D).

4.3 Semi-Volatile Organic Compounds

On a semi-annual basis (1st and 3rd quarter) specific SVOCs are analyzed at various LTMP wells. The CPA and BSA wells included in the LTMP event were analyzed for 2-chlorophenol and 1,2,4-trichlorobenzene. In addition, wells BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, and BSA-MW-5D were analyzed for 1,4-dioxane, while wells CPA-MW-3D, CPA-MW-4D and CPA-MW-5D were analyzed for 4-chloroaniline.

- Former Benzene Storage Area: 2-Chlorophenol and 1,2,4-trichlorobenzene were not detected in the former Benzene Storage Area source area well (BSA-MW-1S).
- Downgradient of Former Benzene Storage Area: 1,4-Dioxane was detected downgradient of the former Benzene Storage Area in one (1) of four (4) wells (BSA-MW-2D) at a concentration of 27 µg/L. All other SVOCs tested for were not detected downgradient of the former Benzene Storage Area.
- Former Chlorobenzene Process Area: 1,2,4-Trichlorobenzene was detected in the former Chlorobenzene Process Area source area well (CPA-MW-1D) at a concentration of 310 µg/L.
- Downgradient of Former Chlorobenzene Process Area: 4-Chloroaniline was detected in CPA-MW-3D and CPA-MW-4D at 23 µg/L and 140 µg/L respectively, in wells downgradient of the former Chlorobenzene Process Area. 2-Chlorophenol was detected in CPA-MW-2D and CPA-MW-5D at 24 µg/L and 15 µg/L respectively, in wells downgradient of the former Chlorobenzene Process Area.

4.4 Surface Water and Sediment

Surface water and sediment samples were analyzed for VOCs benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dicholorobenzene, along with SVOCs 4-chloroaniline, 2-cholorophenol, 1,4-dioxane and 1,2,4-trichlorobenzene. None of these constituents were detected in the surface water or sediment samples. These results indicate that constituents are attenuating prior to discharge to the river.

4.5 Monitored Natural Attenuation

MNA parameter data for this quarter are presented in Table 3. Laboratory results for PLFA and SIP analysis are included in Appendix E. The SIP study (Appendix E) states the following, “The detection of ^{13}C-enriched biomass and DIC confirmed that benzene biodegradation had occurred at BSA-MW-2D-0815 during the deployment period” and “Incorporation of ^{13}C into the biomass in CPA-MW-3D-0815 demonstrated that some chlorobenzene was biodegraded under existing site conditions”. Dissolved inorganic carbon (DIC) data for BSA-MW-2D-0815 show “substantial benzene mineralization.” Although DIC data for CPA-MW-3D-0815 indicate that “little or no chlorobenzene had been mineralized,” the community structure contains contaminant-reducing bacteria. The PLFA analysis in the remaining BSA and CPA wells also show a community structure containing contaminant-reducing bacteria.

5.0 CLOSING

Golder appreciates the opportunity to assist Solutia Inc. with the Long-Term Monitoring Program sampling events. Please contact the undersigned if you need additional information.

Sincerely,

GOLDER ASSOCIATES INC.

Amanda W. Derhake, Ph.D., P.E.
Senior Project Engineer

Mark N. Haddock, R.G., P.E.
Associate, Senior Consultant

6.0 REFERENCES

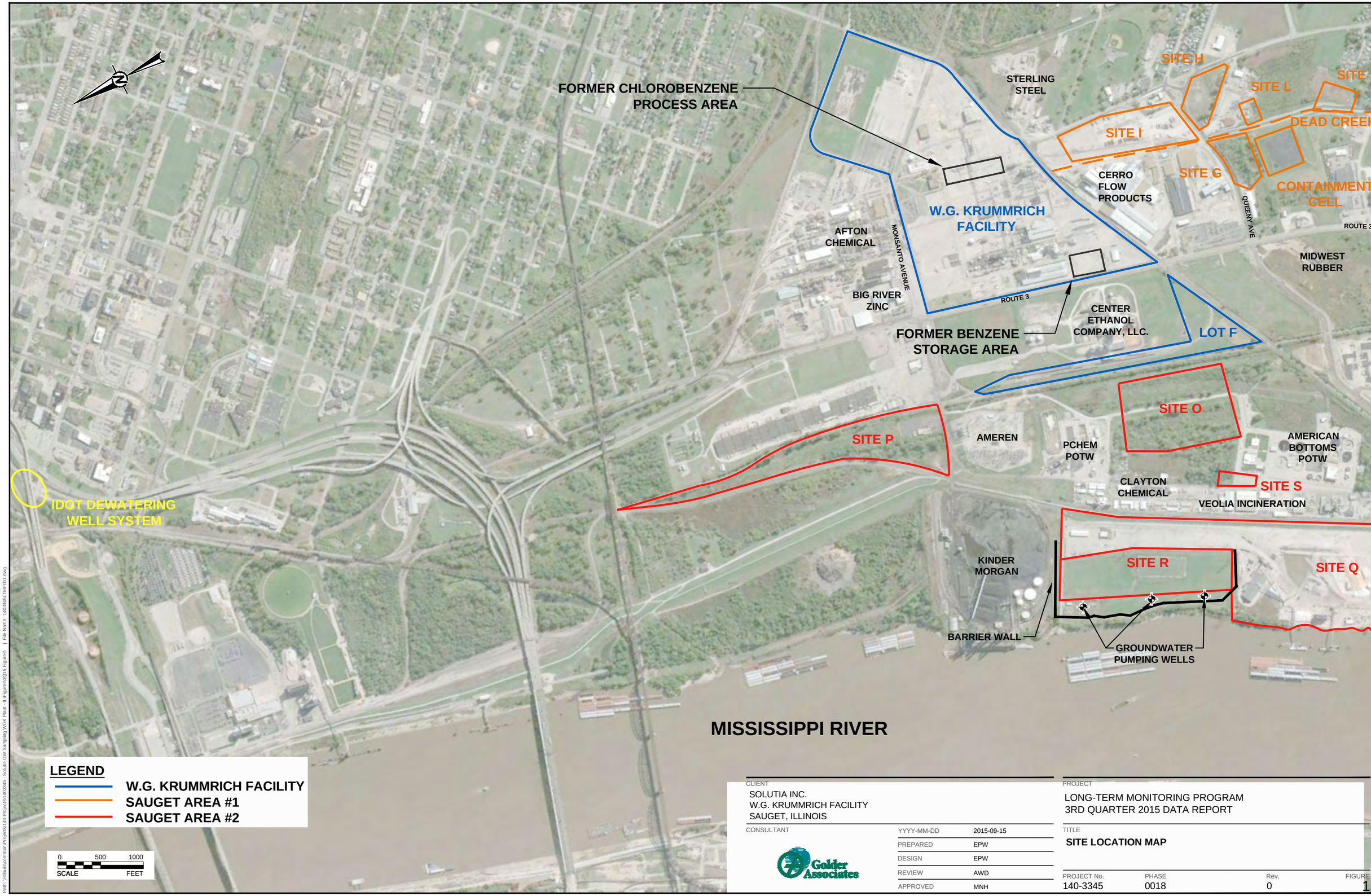
Solutia Inc., 2009. Revised Long Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.

USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review.

USEPA, 2008. Contract Laboratory Program national Functional Guidelines for Superfund Organic Methods Data Review.

USEPA, 2008. Final Decision, Solutia Inc., Sauget, Illinois, February 2008.

FIGURES



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

CONSULTANT
Golder Associates

YYYY-MM-DD	2015-09-15
PREPARED	EPW
DESIGN	EPW
REVIEW	AWD
APPROVED	MNH

PROJECT
LONG-TERM MONITORING PROGRAM
3RD QUARTER 2015 DATA REPORT

TITLE
SITE LOCATION MAP

PROJECT No.	PHASE	Rev.	FIGURE
140-3345	0018	0	1

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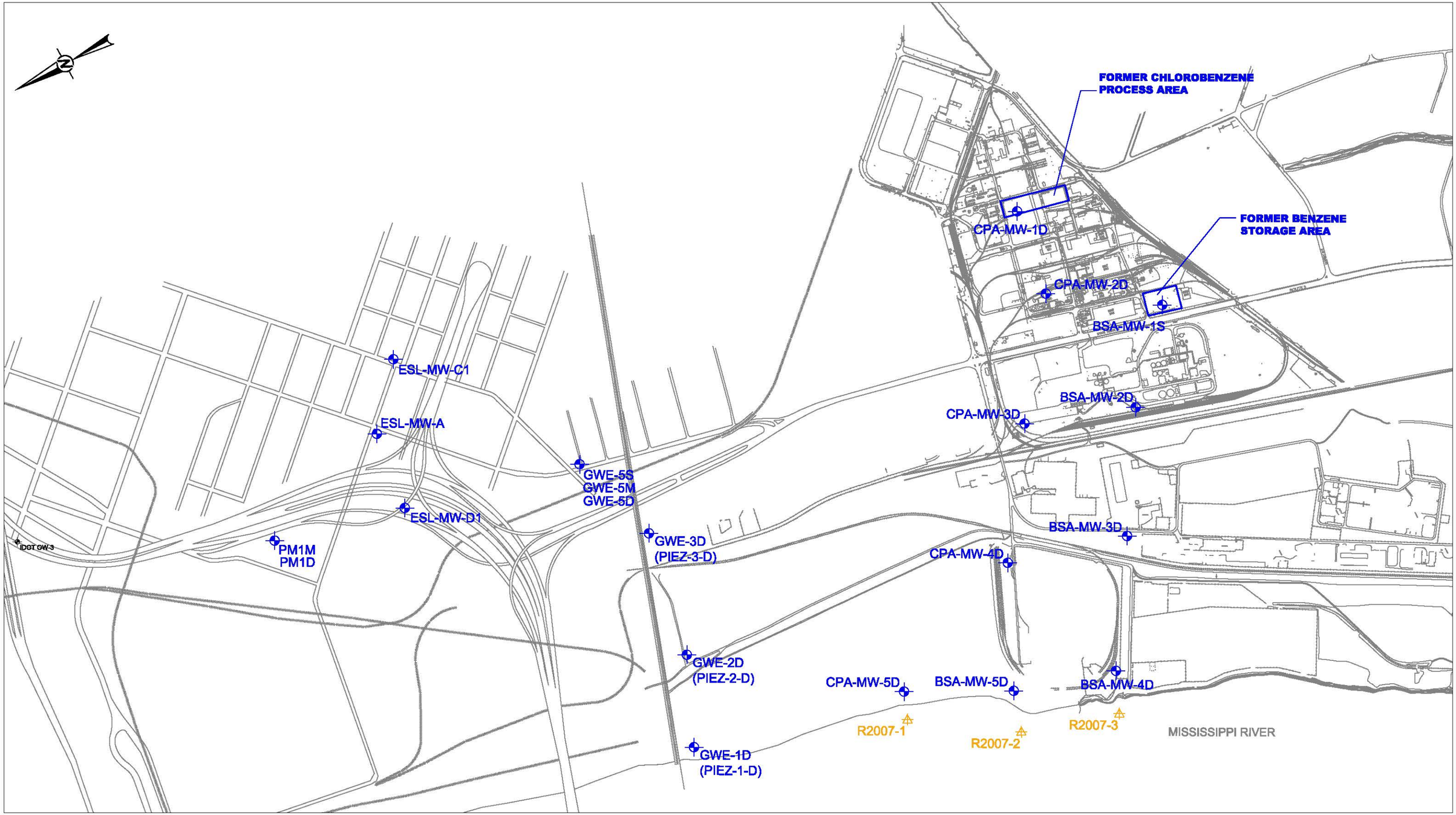


LEGEND

LONG-TERM MONITORING WELL LOCATION

LONG-TERM MONITORING SURFACE WATER/SEDIMENT SAMPLING LOCATION

NOTES

1. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

0 500 1000
SCALE FEET

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

CONSULTANT

Golder Associates

YYYY-MM-DD	2015-07-28
PREPARED	JS
DESIGN	JS
REVIEW	AWD
APPROVED	MNH

PROJECT
LONG-TERM MONITORING PROGRAM
3RD QUARTER 2015 DATA REPORT

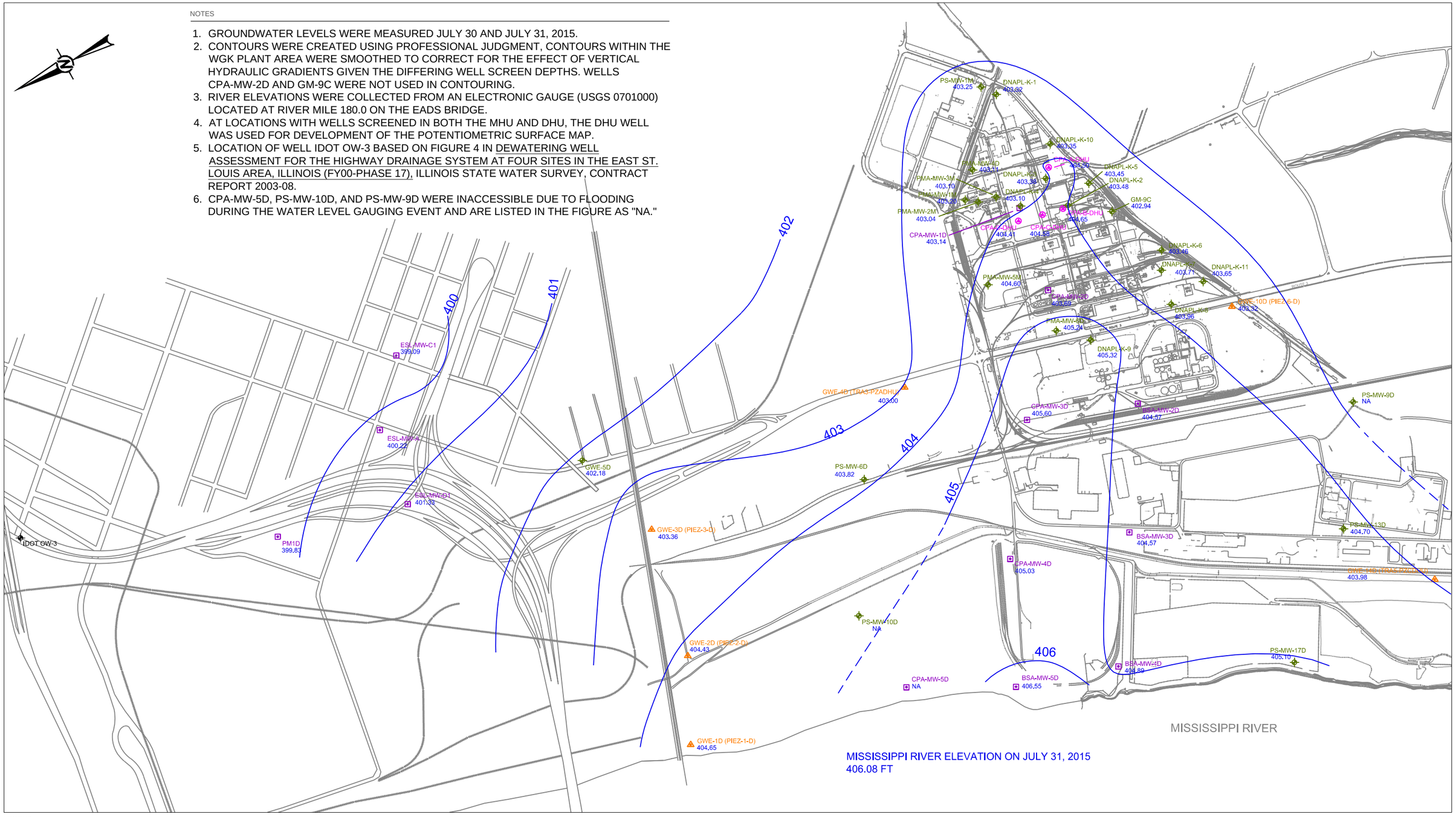
TITLE
LONG-TERM MONITORING PROGRAM WELL LOCATIONS (WITH SURFACE WATER/SEDIMENT SAMPLING LOCATIONS)

PROJECT No.	PHASE:	Rev.	FIGURE:
140-3345	0018	0	2

Path: \\golbal\common\Projects\140\Projects\140345 - Solutia GW Sampling WGK Plant - IL\Figures\3Q15 Figures\ | File Name: 140345_1_TMP 2 WITH RIVER LOCATIONS edited.dwg

NOTES

1. GROUNDWATER LEVELS WERE MEASURED JULY 30 AND JULY 31, 2015.
2. CONTOURS WERE CREATED USING PROFESSIONAL JUDGMENT, CONTOURS WITHIN THE WGK PLANT AREA WERE SMOOTHED TO CORRECT FOR THE EFFECT OF VERTICAL HYDRAULIC GRADIENTS GIVEN THE DIFFERING WELL SCREEN DEPTHS. WELLS CPA-MW-2D AND GM-9C WERE NOT USED IN CONTOURING.
3. RIVER ELEVATIONS WERE COLLECTED FROM AN ELECTRONIC GAUGE (USGS 0701000) LOCATED AT RIVER MILE 180.0 ON THE EADS BRIDGE.
4. AT LOCATIONS WITH WELLS SCREENED IN BOTH THE MHU AND DHU, THE DHU WELL WAS USED FOR DEVELOPMENT OF THE POTENTIOMETRIC SURFACE MAP.
5. LOCATION OF WELL IDOT OW-3 BASED ON FIGURE 4 IN DEWATERING WELL ASSESSMENT FOR THE HIGHWAY DRAINAGE SYSTEM AT FOUR SITES IN THE EAST ST. LOUIS AREA, ILLINOIS (FY00-PHASE 17), ILLINOIS STATE WATER SURVEY, CONTRACT REPORT 2003-08.
6. CPA-MW-5D, PS-MW-10D, AND PS-MW-9D WERE INACCESSIBLE DUE TO FLOODING DURING THE WATER LEVEL GAUGING EVENT AND ARE LISTED IN THE FIGURE AS "NA."



MISSISSIPPI RIVER ELEVATION ON JULY 31, 2015
406.08 FT

LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- CPA MONITORING WELL USED FOR GROUNDWATER CONTOURING
- IDOT GROUNDWATER WELL
- 400 APPROXIMATE GROUNDWATER ELEVATION CONTOUR (FT NAVD)
- NA NOT ACCESSIBLE DUE TO FLOODING

0 500 1000
SCALE FEET

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

CONSULTANT

Golder Associates

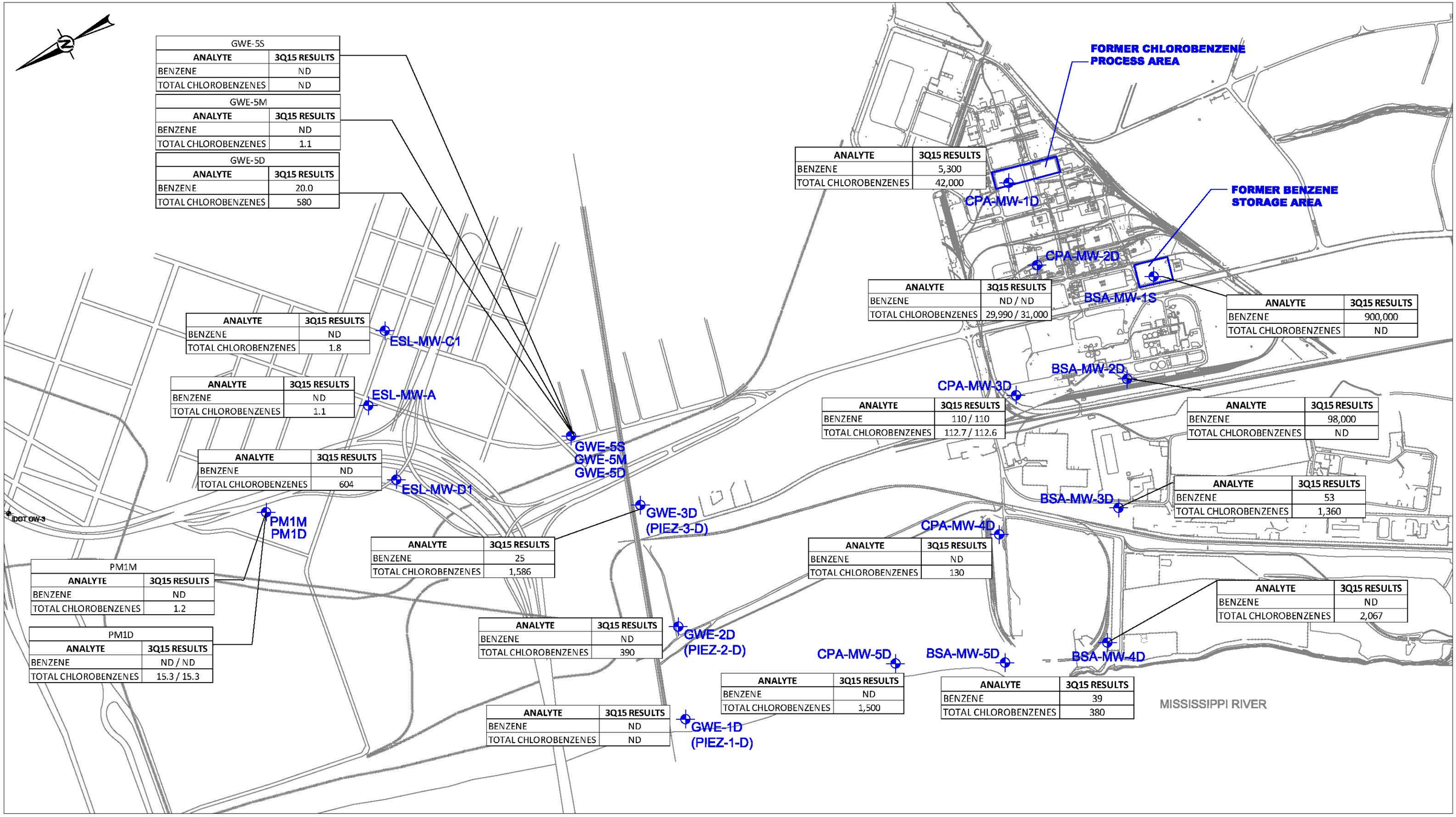
YYYY-MM-DD	2015-08-27
PREPARED	JS
DESIGN	EPW
REVIEW	AWD
APPROVED	MNH

PROJECT
LONG-TERM MONITORING PROGRAM
3RD QUARTER 2015 DATA REPORT

TITLE
POTENTIOMETRIC SURFACE MAP
MIDDLE/DEEP HYDROGEOLOGIC UNIT

PROJECT No.	PHASE:	Rev.	FIGURE:
140-3345	0018	0	3

Path: \\solusia\common\Projects\140 Projects\1403345 - Solutia GW Sampling WGK Plant - IL\Figures\3Q15 Figures\ | File Name: 1403345_LTMP 2 WITH RIVER LOCATIONS edited.dwg



GWE-5S	
ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	ND

GWE-5M	
ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	1.1

GWE-5D	
ANALYTE	3Q15 RESULTS
BENZENE	20.0
TOTAL CHLOROBENZENES	580

ANALYTE	3Q15 RESULTS
BENZENE	5,300
TOTAL CHLOROBENZENES	42,000

ANALYTE	3Q15 RESULTS
BENZENE	ND / ND
TOTAL CHLOROBENZENES	29,990 / 31,000

ANALYTE	3Q15 RESULTS
BENZENE	900,000
TOTAL CHLOROBENZENES	ND

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	1.8

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	1.1

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	604

ANALYTE	3Q15 RESULTS
BENZENE	110 / 110
TOTAL CHLOROBENZENES	112.7 / 112.6

ANALYTE	3Q15 RESULTS
BENZENE	98,000
TOTAL CHLOROBENZENES	ND

ANALYTE	3Q15 RESULTS
BENZENE	53
TOTAL CHLOROBENZENES	1,360

ANALYTE	3Q15 RESULTS
BENZENE	25
TOTAL CHLOROBENZENES	1,586

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	130

PM1M	
ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	1.2

PM1D	
ANALYTE	3Q15 RESULTS
BENZENE	ND / ND
TOTAL CHLOROBENZENES	15.3 / 15.3

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	390

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	2,067

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	1,500

ANALYTE	3Q15 RESULTS
BENZENE	39
TOTAL CHLOROBENZENES	380

ANALYTE	3Q15 RESULTS
BENZENE	ND
TOTAL CHLOROBENZENES	ND

LEGEND

LONG-TERM MONITORING WELL LOCATION

NOTES

1. TOTAL CHLOROBENZENES RESULTS INCLUDE THE SUM OF CHLOROBENZENE, 1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE, AND 1,4-DICHLOROBENZENE.
2. RESULTS SHOWN ARE IN µg/L.
3. ND - NOT DETECTED.
4. MULTIPLE SAMPLE RESULTS INDICATE DUPLICATE SAMPLES.

0 500 1000
SCALE FEET

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

CONSULTANT

Golder Associates

YYYY-MM-DD	2015-09-21
PREPARED	JS
DESIGN	JS
REVIEW	AWD
APPROVED	MNH

PROJECT
LONG-TERM MONITORING PROGRAM
3RD QUARTER 2015 DATA REPORT

TITLE
BENZENE AND TOTAL CHLOROBENZENES RESULTS

PROJECT No.	PHASE:	Rev.	FIGURE:
140-3345	0018	0	4

Path: \\corp\golder\common\Projects\140 Projects\140345 - Solutia GW Sampling WGK Plant - IL\Figures\3Q15 Figures\ | File Name: 140345_LTMP-2.dwg

TABLES

Table 1
Monitoring Well Gauging Information
3Q15 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
Sauget, Illinois

Well Identification	Monitoring Well Construction Data						3Q15 -July 30 and 31, 2015			
	Ground Surface Elevation[1] (ft)	Top of Casing Elevation[1] (ft)	Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Top of Screen Elevation[1] (ft)	Bottom of Screen Elevation[1] (ft)	Water Level (ft btoc)	Depth to NAPL (ft btoc)	Total Depth[2] (ft btoc)	Water Level Elevation[1] (ft)
SHU 395-380 ft NAVD 88										
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	8.59	NP	27.31	403.72
GWE-5S	408.47	408.05	17.91	27.91	390.56	380.56	5.84	NP	27.79	402.21
MHU 380-350 ft NAVD 88										
GWE-5M	408.59	408.20	48.10	58.10	360.49	350.49	6.00	NP	58.03	402.20
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	7.06	NP	59.60	403.02
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	8.89	NP	61.27	403.04
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	9.00	NP	61.81	403.10
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	6.37	NP	56.98	404.60
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	9.34	NP	46.05	403.25
PM1M	413.07	412.80	51.64	61.41	361.43	351.66	12.98	NP	60.59	399.82
DHU 350 ft NAVD 88 - Bedrock										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	10.56	NP	77.00	404.57
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	11.17	NP	114.75	404.57
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	19.80	NP	123.12	404.89
BSA-MW-5D	420.80	420.49	115.85	120.82	304.95	299.95	13.94	NP	120.89	406.55
CPA-A-DHU	413.95	416.24	108.00	113.30	305.95	300.65	11.74	NP	115.15	404.50
CPA-B-DHU	409.12	408.68	101.00	106.50	308.12	302.62	4.03	NP	105.51	404.65
CPA-C-DHU	408.92	408.57	101.00	106.00	307.92	302.92	3.99	NP	105.44	404.58
CPA-D-DHU	409.63	412.20	101.00	105.90	308.63	303.73	7.79	NP	108.24	404.41
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	9.09	NP	74.69	403.14
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	4.51	NP	104.56	403.69
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	5.07	NP	112.76	405.60
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	16.17	NP	120.98	405.03
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	NA	NP	114.64	NA
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	12.24	NP	123.10	403.32
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	4.24	NP	112.40	403.48
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	12.53	NP	123.28	403.38
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	9.43	NP	118.21	403.10
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	8.46	NP	116.54	403.45
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	6.63	NP	116.87	403.46
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	4.01	NP	115.31	403.71
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	7.42	NP	117.56	403.96
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	0.65	NP	111.05	405.32
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	9.90	NP	120.26	403.35
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	8.13	NP	120.18	403.65
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	8.27	NP	108.23	402.94
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	10.95	NP	128.22	404.65
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	12.71	NP	136.59	404.43
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	14.30	NP	114.88	403.36
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	2.74	NP	78.75	403.00
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	6.20	NP	105.14	402.18
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	9.55	NP	114.81	403.32
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	18.92	NP	97.00	403.98
ESL-MW-A	412.93	412.59	105.50	110.50	307.43	302.43	12.37	NP	108.63	400.22
ESL-MW-C1	410.09	409.79	104.00	109.00	306.09	301.09	10.70	NP	109.87	399.09
ESL-MW-D1	416.38	416.04	114.00	119.00	302.38	297.38	14.71	NP	119.22	401.33
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	7.77	NP	73.38	403.11
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	2.08	NP	101.22	405.24
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	2.81	NP	109.81	403.82
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	NA	NP	105.00	NA
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	NA	NP	111.25	NA
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	0.83	NP	110.55	404.70
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	18.16	NP	133.90	405.10
SA2-MW-1D	403.79	406.03	105.01	115.01	301.02	291.02	8.97	NP	102.24	397.06
PM1D	413.41	412.78	101.42	106.45	311.99	306.96	12.95	NP	106.61	399.83

Notes
ft - feet
bgs - below ground surface
btoc - below top of casing
NP - no product observed
SHU - shallow hydrogeologic unit
MHU - middle hydrogeologic unit
DHU - deep hydrogeologic unit
[1] - Elevation based on North American Vertical Datum (NAVD) 88 datum.
[2] - Total depths are measured annually during the first quarter of each year.
NA - Wells were not accessible due to flooding.

Prepared By: LAB 8/12/2015
Checked By: JRS 8/13/2015
Reviewed By: AWD 10/6/2015

Table 2
Groundwater Analytical Results
3Q15 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
Sauget, Illinois

Sample Identification	Sample Date	VOCs (µg/L)					SVOCs (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										
BSA-MW-1S-0815	8/6/2015	**900,000 D**	<10,000	<10,000	<10,000	<10,000	NA	<11 J	NA	<11 J
BSA-MW-2D-0815	8/5/2015	**98,000 D**	<1,000	<1,000	<1,000	<1,000	NA	<11	**27**	<11
BSA-MW-3D-0815	8/6/2015	**53 D**	**1,100 D**	<20	<20	**260 D**	NA	<10 J	<10	<10 J
BSA-MW-4D-0815	8/5/2015	<20	**2,000 D**	<20	<20	**67 D**	NA	<12	<12	<12
BSA-MW-5D-0815	8/5/2015	**39 D**	**380 D**	<2.0	<2.0	<2.0	NA	<11	<11	<11
Chlorobenzene Process Area										
CPA-MW-1D-0815	8/6/2015	**5,300 D**	**19,000 D**	**12,000 D**	**1,200 D**	**9,800 D**	NA	<110 J	NA	**310 JD**
CPA-MW-2D-0815	8/6/2015	<250	**29,000 D**	<250	<250	**990 D**	NA	**24 J**	NA	<10 J
CPA-MW-2D-0815-AD	8/6/2015	<250	**30,000 D**	<250	<250	**1,000 D**	NA	<23 J	NA	<23 J
CPA-MW-3D-0815	8/5/2015	**110**	**110**	**1.1**	<1.0	**1.6**	**23**	<11	NA	<11
CPA-MW-3D-0815-AD	8/5/2015	**110**	**110**	**1.1**	<1.0	**1.5**	<21 J	<11 J	NA	<11 J
CPA-MW-4D-0815	8/5/2015	<2.0	**130 D**	<2.0	<2.0	<2.0	**140**	<10	NA	<10
CPA-MW-5D-0815	8/20/2015	<20	**1,500 D**	<20	<20	<20	<22 J	**15**	NA	<11
North of W.G. Krummrich Facility										
ESL-MW-A-0815	8/3/2015	<1.0	<1.0	**1.1**	<1.0	<1.0	NA	NA	NA	NA
ESL-MW-C1-0815	8/3/2015	<1.0	<1.0	**1.8**	<1.0	<1.0	NA	NA	NA	NA
ESL-MW-D1-0815	8/3/2015	<10	**560 D**	<10	<10	**44 D**	NA	NA	NA	NA
GWE-1D-0815	8/20/2015	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-2D-0815	8/4/2015	<2.0	**390 D**	<2.0	<2.0	<2.0	NA	NA	NA	NA
GWE-3D-0815	8/4/2015	**25 D**	**1,500 D**	<20	<20	**86 D**	NA	NA	NA	NA
GWE-5S-0815	8/4/2015	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA
GWE-5M-0815	8/4/2015	<1.0	<1.0	**1.1**	<1.0	<1.0	NA	NA	NA	NA
GWE-5D-0815	8/4/2015	**20 D**	**520 D**	**8.0 D**	<5.0	**52 D**	NA	NA	NA	NA
PM1M-0815	8/3/2015	<1.0	<1.0	**1.2**	<1.0	<1.0	NA	NA	NA	NA
PM1D-0815	8/3/2015	<1.0	**12**	**2.1**	<1.0	**1.2**	NA	NA	NA	NA
PM1D-0815-AD	8/3/2015	<1.0	**12**	**2.1**	<1.0	**1.2**	NA	NA	NA	NA

Notes
VOCs - volatile organic compounds
SVOCs - semi-volatile organic compounds
* - samples are collected during the 1st and 3rd quarters
µg/L - micrograms per liter
< - result is non-detect, less than the reporting limit
D - compound analyzed at a dilution
AD - analytical duplicate
NA - sample not analyzed for select analyte
Bold - indicates concentration greater than reporting limit
J - Indicates estimated value

Prepared By: JS 9/18/2015
Checked By: EPW 9/20/2015
Reviewed By: AWD 10/6/2015

Table 3
Monitored Natural Attenuation Results
3Q15 Long-Term Monitoring Program
Solutia Inc., W.G. Krummrich Facility
Sauget, Illinois

Sample Identification	Sample Date	Monitored Natural Attenuation Parameters																
		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)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
Benzene Storage Area																		
BSA-MW-1S-0815	8/6/2015	670	32	84 D	0.05	<1.1	<1.0	-	11	-	1.1	-	19,000	<0.050	160 D	34	-	-102.17
BSA-MW-1S-F(0.2)-0815	8/6/2015	-	-	-	-	-	-	>3.30	-	9.6	-	1.1	-	-	-	-	15	-
BSA-MW-2D-0815	8/5/2015	700	40	130 D	0.08	29	<1.0	-	5.9	-	0.76	-	25,000	<0.050	<5.0	10	-	-83.19
BSA-MW-2D-F(0.2)-0815	8/5/2015	-	-	-	-	-	-	>3.30	-	5.7	-	0.74	-	-	-	-	7.9	-
BSA-MW-3D-0815	8/6/2015	460	26	140 D	0.14	1.4	<1.0	-	11	-	0.61	-	480	<0.050 J	210 D	3.5	-	-62.09
BSA-MW-3D-F(0.2)-0815	8/6/2015	-	-	-	-	-	-	>3.30	-	11	-	0.64	-	-	-	-	3.6	-
BSA-MW-4D-0815	8/5/2015	600	35	120 D	0.11	4.0	<1.0	-	7.7	-	0.55	-	280	<0.050 J	54 D	4.1	-	-86.26
BSA-MW-4D-F(0.2)-0815	8/5/2015	-	-	-	-	-	-	>3.30	-	7.7	-	0.55	-	-	-	-	4.2	-
BSA-MW-5D-0815	8/5/2015	730	45	290 D	0.12	29	<1.0	-	10	-	0.52	-	14,000	<0.050 J	<5.0	7.1	-	-110.63
BSA-MW-5D-F(0.2)-0815	8/5/2015	-	-	-	-	-	-	>3.30	-	10	-	0.42	-	-	-	-	7.0	-
Chlorobenzene Process Area																		
CPA-MW-1D-0815	8/6/2015	910	<5.0	88 D	0.07	32	<1.0	-	0.54	-	0.079	-	21,000	<0.050 J	5.1	13	-	0.29
CPA-MW-1D-F(0.2)-0815	8/6/2015	-	-	-	-	-	-	0.00	-	0.18	-	0.048	-	-	-	-	11	-
CPA-MW-2D-0815	8/6/2015	510	26	60 D	0.09	1.7	2.3	-	7.2	-	0.42	-	1,100	<0.050	74 D	8.4	-	-77.12
CPA-MW-2D-F(0.2)-0815	8/6/2015	-	-	-	-	-	-	>3.30	-	7.3	-	0.43	-	-	-	-	7.6	-
CPA-MW-3D-0815	8/5/2015	640	50	310 D	0.03	49	<1.0	-	16	-	0.84	-	37,000	<0.050	<5.0	8.6	-	-100.25
CPA-MW-3D-F(0.2)-0815	8/5/2015	-	-	-	-	-	-	>3.30	-	15	-	0.82	-	-	-	-	8.2	-
CPA-MW-4D-0815	8/5/2015	640	43	280 D	0.09	37	<1.0	-	16	-	0.38	-	28,000	<0.050 J	<5.0	8.0	-	-110.62
CPA-MW-4D-F(0.2)-0815	8/5/2015	-	-	-	-	-	-	>3.30	-	16	-	0.38	-	-	-	-	7.6	-
CPA-MW-5D-0815	8/20/2015	490	42	240 D	0.09	<1.1	<1.0	-	22	-	0.80	-	210	<0.050	150 D	3.3	-	-67.05
CPA-MW-5D-F(0.2)-0815	8/20/2015	-	-	-	-	-	-	>3.30	-	22	-	0.81	-	-	-	-	3.5	-
North of W.G. Krummrich Facility																		
ESL-MW-A-0815	8/3/2015	370	26	96 D	0.10	<1.1	<1.0	-	15	-	0.53	-	8.8	<0.050	620 D	3.2	-	-100.16
ESL-MW-A-F(0.2)-0815	8/3/2015	-	-	-	-	-	-	>3.30	-	15	-	0.52	-	-	-	-	3.3	-
ESL-MW-C1-0815	8/3/2015	400	24	110 D	0.15	<1.1	<1.0	-	12	-	0.47	-	3.5	<0.050	930 D	3.9	-	-93.53
ESL-MW-C1-F(0.2)-0815	8/3/2015	-	-	-	-	-	-	>3.30	-	12	-	0.47	-	-	-	-	5.8	-
ESL-MW-D1-0815	8/3/2015	370	22	98 D	0.09	<1.1	<1.0	-	14	-	0.41	-	61	<0.050	520 D	2.9	-	-92.35
ESL-MW-D1-F(0.2)-0815	8/3/2015	-	-	-	-	-	-	>3.30	-	13	-	0.36	-	-	-	-	4.3	-
GWE-1D-0815	8/20/2015	480	28	70 D	0.01	<1.1	<1.0	-	17	-	2.4	-	8.9	<0.050	260 D	4.6	-	-114.09
GWE-1D-F(0.2)-0815	8/20/2015	-	-	-	-	-	-	>3.30	-	16	-	2.3	-	-	-	-	4.7	-
GWE-2D-0815	8/4/2015	370	46	1,200 D	0.08	<1.1	<1.0	-	42	-	1.0	-	50	<0.050	800 D	3.9	-	-105.97
GWE-2D-F(0.2)-0815	8/4/2015	-	-	-	-	-	-	>3.30	-	46	-	1.1	-	-	-	-	4.0	-
GWE-3D-0815	8/4/2015	410	32	780 D	0.06	<1.1	<1.0	-	22	-	0.66	-	100	<0.050	280 D	4.8	-	-101.49
GWE-3D-F(0.2)-0815	8/4/2015	-	-	-	-	-	-	0.66	-	24	-	0.74	-	-	-	-	4.6	-
GWE-5S-0815	8/4/2015	460	28	46 D	0.09	<1.1	<1.0	-	1.7	-	0.71	-	11	<0.050	96 D	2.9	-	61.54
GWE-5S-F(0.2)-0815	8/4/2015	-	-	-	-	-	-	0.00	-	<0.050	-	0.66	-	-	-	-	2.8	-
GWE-5M-0815	8/4/2015	470	29	61 D	0.10	<1.1	<1.0	-	20	-	1.2	-	50	<0.050	90 D	2.2	-	-114.65
GWE-5M-F(0.2)-0815	8/4/2015	-	-	-	-	-	-	>3.30	-	19	-	1.2	-	-	-	-	2.3	-
GWE-5D-0815	8/4/2015	370	26	95 D	0.11	<1.1	<1.0	-	14	-	0.41	-	87	<0.050	440 D	3.0	-	-89.66
GWE-5D-F(0.2)-0815	8/4/2015	-	-	-	-	-	-	>3.30	-	14	-	0.41	-	-	-	-	3.1	-
PM1M-0815	8/3/2015	540	47	320 D	0.06	<1.1	<1.0	-	1.1	-	2.1	-	68	<0.050	170 D	2.1	-	-15.76
PM1M-F(0.2)-0815	8/3/2015	-	-	-	-	-	-	0.47	-	1.0	-	2.1	-	-	-	-	2.0	-
PM1D-0815	8/3/2015	380	31	94 D	0.10	<1.1	<1.0	-	15	-	0.46	-	44	<0.050	400 D	2.3	-	-122.49
PM1D-F(0.2)-0815	8/3/2015	-	-	-	-	-	-	>3.30	-	15	-	0.43	-	-	-	-	2.7	-

Notes
Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) values represent the final field measurements prior to sampling (In-Situ - SmartTroll™)
Ferrous Iron was field measured using a 0.2 µm field filtered sample (Hach DR-890 Colorimeter)
F(0.2) - sample was field filtered using a 0.2 µm filter during sample collection
µg/L - micrograms per liter
mg/L - milligrams per liter
mV - millivolts
< - result is non-detect, less than the reporting limit
"-" - not analyzed
D - compound analyzed at a dilution
J - Indicates estimated value

Prepared By: JS 9/17/2015
Checked By: EPW 9/20/2015
Reviewed By: AWD 10/6/2015

APPENDIX A
GROUNDWATER PURGING AND SAMPLING FORMS

In-Situ Inc.

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Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	31.00 ft
		Pump Placement from TOC	24.81 ft

Well Information:		**Pumping Information:**	
Well Id	BSA-MW-1S	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	363 mL
Well Total Depth	27.31 ft	Calculated Sample Rate	72 sec
Depth to Top of Screen	22.31 ft	Sample Rate	72 sec
Screen Length	5 ft	Stabilized Drawdown	0.25 ft
Depth to Water	8.9 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:49:55	21.09	7.49	1697.37	70.50	0.06	-91.09
	13:51:07	20.87	7.48	1707.37	60.20	0.05	-94.59
	13:52:19	20.91	7.47	1708.22	48.80	0.06	-97.60
	13:53:31	20.95	7.47	1702.66	50.00	0.05	-100.14
	13:54:43	20.91	7.47	1702.96	44.60	0.05	-102.17
Variance in Last 3 Readings		0.04	-0.01	0.85	-11.40	0.01	-3.01
		0.04	0.00	-5.56	1.20	-0.01	-2.54
		-0.04	0.00	0.30	-5.40	0.00	-2.03

Notes:

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8/5/2015

Low-Flow System
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Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	80.55 ft
		Pump Placement from TOC	74.50 ft

Well Information:		**Pumping Information:**	
Well Id	BSA-MW-2D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	639 mL
Well Total Depth	77.00 ft	Calculated Sample Rate	127 sec
Depth to Top of Screen	72.00 ft	Sample Rate	127 sec
Screen Length	5 ft	Stabilized Drawdown	0.02 ft
Depth to Water	11.41 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:07:25	18.90	7.33	1625.41	3.21	0.16	-63.81
	14:09:32	18.51	7.33	1633.77	1.13	0.12	-72.42
	14:11:39	18.37	7.31	1637.03	1.05	0.10	-77.10
	14:13:47	18.28	7.33	1639.22	0.87	0.09	-80.53
	14:15:57	18.27	7.31	1640.87	0.95	0.08	-83.19
Variance in Last 3 Readings		-0.14	-0.02	3.26	-0.08	-0.02	-4.68
		-0.09	0.02	2.19	-0.18	-0.01	-3.43
		-0.01	-0.02	1.65	0.08	-0.01	-2.66

Notes:

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Low-Flow System
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Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	118.35 ft
		Pump Placement from TOC	112.25 ft

Well Information:		**Pumping Information:**	
Well Id	BSA-MW-3D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	850 mL
Well Total Depth	114.75 ft	Calculated Sample Rate	169 sec
Depth to Top of Screen	109.75 ft	Sample Rate	169 sec
Screen Length	5 ft	Stabilized Drawdown	0.04 ft
Depth to Water	13.11 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:02:13	18.74	7.16	1669.57	5.60	0.37	-5.89
	9:05:02	18.16	7.15	1698.22	6.14	0.26	-34.77
	9:07:51	18.06	7.15	1697.17	4.80	0.20	-48.60
	9:10:41	17.89	7.16	1696.69	5.14	0.16	-56.67
	9:13:31	17.79	7.16	1698.56	4.34	0.14	-62.09
Variance in Last 3 Readings		-0.10	0.00	-1.05	-1.34	-0.06	-13.83
		-0.17	0.01	-0.48	0.34	-0.04	-8.07
		-0.10	0.00	1.87	-0.80	-0.02	-5.42

Notes:

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Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	126.73 ft
		Pump Placement from TOC	120.62 ft

Well Information:		**Pumping Information:**	
Well Id	BSA-MW-4D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	897 mL
Well Total Depth	123.12 ft	Calculated Sample Rate	179 sec
Depth to Top of Screen	118.12 ft	Sample Rate	179 sec
Screen Length	5 ft	Stabilized Drawdown	0.00 ft
Depth to Water	22.50 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	11:18:33	19.04	7.37	1459.17	4.96	0.21	-71.22
	11:21:32	18.78	7.34	1469.81	3.54	0.17	-78.00
	11:24:31	18.60	7.32	1489.58	2.17	0.14	-82.01
	11:27:30	18.46	7.32	1491.44	1.71	0.12	-84.49
	11:30:29	18.40	7.31	1493.85	3.01	0.11	-86.26
Variance in Last 3 Readings		-0.18	-0.02	19.77	-1.37	-0.03	-4.01
		-0.14	0.00	1.86	-0.46	-0.02	-2.48
		-0.06	-0.01	2.41	1.30	-0.01	-1.77

Notes:

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Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	124.04 ft
		Pump Placement from TOC	118.39 ft

Well Information:		**Pumping Information:**	
Well Id	BSA-MW-5D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	882 mL
Well Total Depth	120.89 ft	Calculated Sample Rate	176 sec
Depth to Top of Screen	115.89 ft	Sample Rate	176 sec
Screen Length	5 ft	Stabilized Drawdown	0.06 ft
Depth to Water	17.45 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:04:45	18.08	7.12	2073.39	1.36	0.19	-97.06
	9:07:41	17.97	7.14	2092.96	7.85	0.17	-103.47
	9:10:37	17.88	7.17	2123.89	11.80	0.15	-107.22
	9:13:33	17.85	7.18	2142.64	0.86	0.13	-109.28
	9:16:29	17.86	7.19	2153.16	0.70	0.12	-110.63
Variance in Last 3 Readings		-0.09	0.03	30.93	3.95	-0.02	-3.75
		-0.03	0.01	18.75	-10.94	-0.02	-2.06
		0.01	0.01	10.52	-0.16	-0.01	-1.35

Notes:

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Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	73.32 ft
		Pump Placement from TOC	72.19

Well Information:		**Pumping Information:**	
Well Id	CPA-MW-1D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	599 mL
Well Total Depth	74.69 ft	Calculated Sample Rate	119 sec
Depth to Top of Screen	69.69 ft	Sample Rate	119 sec
Screen Length	5 ft	Stabilized Drawdown	0.09 ft
Depth to Water	9.26 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:50:49	22.13	7.97	1882.45	16.50	0.14	24.50
	10:53:04	21.94	8.03	1893.14	14.60	0.11	19.34
	10:55:03	21.89	8.12	1907.87	9.36	0.09	17.10
	10:57:03	21.81	8.18	1916.99	6.91	0.08	10.69
	10:59:02	21.76	8.24	1940.58	6.51	0.07	0.29
Variance in Last 3 Readings		-0.05	0.09	14.73	-5.24	-0.02	-2.24
		-0.08	0.06	9.12	-2.45	-0.01	-6.41
		-0.05	0.06	23.59	-0.40	-0.01	-10.40

Notes:

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Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	108.15 ft
		Pump Placement from TOC	102.06 ft

Well Information:		**Pumping Information:**	
Well Id	CPA-MW-2D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	793 mL
Well Total Depth	104.56 ft	Calculated Sample Rate	158 sec
Depth to Top of Screen	99.56 ft	Sample Rate	158 sec
Screen Length	5 ft	Stabilized Drawdown	0.09 ft
Depth to Water	4.94 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:36:58	21.37	7.54	1272.40	51.50	0.16	-56.49
	12:39:36	21.01	7.47	1282.03	48.30	0.14	-66.36
	12:42:14	20.79	7.38	1281.96	28.20	0.12	-71.42
	12:44:52	20.70	7.39	1286.78	20.20	0.10	-74.55
	12:47:30	20.80	7.37	1281.98	14.90	0.09	-77.12
Variance in Last 3 Readings		-0.22	-0.09	-0.07	-20.10	-0.02	-5.06
		-0.09	0.01	4.82	-8.00	-0.02	-3.13
		0.10	-0.02	-4.80	-5.30	-0.01	-2.57

Notes:
Conductivity slow to stabalize.

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8/5/2015

Low-Flow System
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Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	116.50 ft
		Pump Placement from TOC	110.26 ft

Well Information:		**Pumping Information:**	
Well Id	CPA-MW-3D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	840 mL
Well Total Depth	112.76 ft	Calculated Sample Rate	167 sec
Depth to Top of Screen	107.76 ft	Sample Rate	167 sec
Screen Length	5 ft	Stabilized Drawdown	0.0 ft
Depth to Water	6.23 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:10:56	19.65	7.22	2090.38	1.61	0.04	-101.29
	13:13:43	19.46	7.23	2092.53	1.32	0.04	-99.86
	13:16:30	19.49	7.23	2094.10	1.17	0.04	-100.00
	13:19:17	19.42	7.23	2087.60	1.29	0.03	-99.98
	13:22:04	19.33	7.23	2094.14	0.95	0.03	-100.25
Variance in Last 3 Readings		0.03	0.00	1.57	-0.15	0.00	-0.14
		-0.07	0.00	-6.50	0.12	-0.01	0.02
		-0.09	0.00	6.54	-0.34	0.00	-0.27

Notes:

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8/5/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	124.57 ft
		Pump Placement from TOC	118.48 ft

Well Information:		**Pumping Information:**	
Well Id	CPA-MW-4D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	885 mL
Well Total Depth	120.98 ft	Calculated Sample Rate	176 sec
Depth to Top of Screen	115.98 ft	Sample Rate	176 sec
Screen Length	5 ft	Stabilized Drawdown	0.05 ft
Depth to Water	18.23 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:12:42	18.40	7.28	1838.16	4.78	0.17	-89.35
	10:15:38	18.11	7.25	1970.85	1.49	0.13	-99.67
	10:18:34	17.89	7.24	2012.37	1.51	0.11	-104.40
	10:21:30	17.99	7.24	2031.66	0.88	0.09	-108.00
	10:24:27	17.95	7.23	2052.15	1.15	0.09	-110.62
Variance in Last 3 Readings		-0.22	-0.01	41.52	0.02	-0.02	-4.73
		0.10	0.00	19.29	-0.63	-0.02	-3.6
		-0.04	-0.01	20.49	0.27	0.00	-2.62

Notes:

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8/20/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	JS	Pump Model/Type	Peristaltic
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	118.25 ft
		Pump Placement from TOC	112.14 ft

Well Information:		**Pumping Information:**	
Well Id	CPA-MW-5D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	849 mL
Well Total Depth	114.64 ft	Calculated Sample Rate	149 sec
Depth to Top of Screen	109.64 ft	Sample Rate	149 sec
Screen Length	5 ft	Stabilized Drawdown	0.01 ft
Depth to Water	20.46		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:21:13	18.30	6.71	1922.55	2.73	0.41	-71.04
	10:23:42	18.17	6.71	1945.55	1.78	0.16	-68.43
	10:26:22	18.17	6.69	1939.63	1.46	0.13	-67.55
	10:28:41	18.21	6.69	1923.78	2.29	0.11	-67.21
	10:31:10	18.23	6.68	1948.58	1.61	0.09	-67.05
Variance in Last 3 Readings		0.00	-0.02	-5.92	-0.32	-0.03	0.88
		0.04	0.00	-15.85	0.83	-0.02	0.34
		0.02	-0.01	24.80	-0.68	-0.02	0.16

Notes:

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8/3/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	112.50 ft
		Pump Placement from TOC	106.13 ft

Well Information:		**Pumping Information:**	
Well Id	ESL-MW-A	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	817 mL
Well Total Depth	108.63 ft	Calculated Sample Rate	163 sec
Depth to Top of Screen	103.63 ft	Sample Rate	163 sec
Screen Length	5 ft	Stabilized Drawdown	0.05 ft
Depth to Water	12.71 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:36:07	17.87	7.34	2089.06	57.30	0.16	-93.13
	13:38:50	17.72	7.34	2078.53	23.50	0.13	-96.02
	13:41:33	17.62	7.30	2080.71	21.90	0.12	-97.69
	13:44:16	17.57	7.32	2064.41	15.80	0.10	-98.50
	13:46:59	17.62	7.29	2087.00	13.30	0.10	-100.16
Variance in Last 3 Readings		-0.10	-0.04	2.18	-1.60	-0.01	-1.67
		-0.05	0.02	-16.3	-6.10	-0.02	-0.81
		0.05	-0.03	22.59	-2.50	0.00	-1.66

Notes:

In-Situ Inc.

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8/3/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	111.19 ft
		Pump Placement from TOC	107.37 ft

Well Information:		**Pumping Information:**	
Well Id	ESL-MW-C1	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	810 mL
Well Total Depth	109.87 ft	Calculated Sample Rate	161 sec
Depth to Top of Screen	104.87 ft	Sample Rate	161 sec
Screen Length	5 ft	Stabilized Drawdown	0.00 ft
Depth to Water	10.96 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:25:52	17.66	7.49	2382.60	21.50	0.25	-101.51
	12:28:33	17.57	7.41	2384.81	14.10	0.21	-97.12
	12:31:14	17.66	7.39	2385.84	6.19	0.19	-95.10
	12:33:56	17.65	7.35	2384.68	4.36	0.18	-94.13
	12:36:37	17.48	7.35	2386.44	4.67	0.15	-93.53
Variance in Last 3 Readings		0.09	-0.02	1.03	-7.91	-0.02	2.02
		-0.01	-0.04	-1.16	-1.83	-0.01	0.97
		-0.17	0.00	1.76	0.31	-0.03	0.60

Notes:

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8/3/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	121.78 ft
		Pump Placement from TOC	116.72 ft

Well Information:		**Pumping Information:**	
Well Id	ESL-MW-D1	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	869 mL
Well Total Depth	119.22 ft	Calculated Sample Rate	173 sec
Depth to Top of Screen	114.22 ft	Sample Rate	173 sec
Screen Length	5 ft	Stabilized Drawdown	0.02 ft
Depth to Water	15.28 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:42:30	18.23	7.26	1787.99	2.40	0.15	-25.91
	10:45:23	18.10	7.27	1821.15	0.70	0.13	-59.79
	10:48:16	18.28	7.26	1830.05	2.25	0.12	-77.42
	10:51:09	17.88	7.27	1855.62	1.03	0.10	-87.00
	10:54:02	18.10	7.28	1856.61	0.69	0.09	-92.35
Variance in Last 3 Readings		0.18	-0.01	8.90	1.55	-0.01	-17.63
		-0.4	0.01	25.57	-1.22	-0.02	-9.58
		0.22	0.01	0.99	-0.34	-0.01	-5.35

Notes:

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8/20/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	JS	Pump Model/Type	Peristaltic
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	135.0 ft
		Pump Placement from TOC	123.22 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-1D	Final Pumping Rate	300 mL/min
Well Diameter	1 in	System Volume	815 mL
Well Total Depth	128.22 ft	Calculated Sample Rate	162 sec
Depth to Top of Screen	118.22 ft	Sample Rate	162 sec
Screen Length	10 ft	Stabilized Drawdown	0.25 ft
Depth to Water	23.65		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:25:42	17.67	7.04	1352.65	74.30	0.02	-116.84
	12:28:33	17.61	7.04	1362.86	57.60	0.01	-114.58
	12:31:15	17.55	7.03	1356.58	70.80	0.01	-113.73
	12:33:57	17.50	7.03	1350.53	68.80	0.01	-113.78
	12:36:39	17.46	7.03	1359.28	81.90	0.01	-114.09
Variance in Last 3 Readings		-0.06	-0.01	-6.28	13.20	0.00	0.85
		-0.05	0.00	-6.05	-2.00	0.00	-0.05
		-0.04	0.00	8.75	13.10	0.00	-0.31

Notes:

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8/4/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	Peristaltic
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	135.59 ft
		Pump Placement from TOC	110 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-2D	Final Pumping Rate	300 mL/min
Well Diameter	1 in	System Volume	853 mL
Well Total Depth	136.59 ft	Calculated Sample Rate	189 sec
Depth to Top of Screen	126.59 ft	Sample Rate	189 sec
Screen Length	10 ft	Stabilized Drawdown	0.04 ft
Depth to Water	14.73 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:43:49	20.06	7.18	4671.68	7.47	0.11	-104.21
	14:46:58	20.01	7.19	4749.98	2.56	0.10	-105.58
	14:50:07	19.69	7.18	4946.38	4.08	0.09	-105.83
	14:53:16	19.4	7.18	5056.62	3.53	0.08	-105.57
	14:56:25	19.35	7.2	5094.56	3.1	0.08	-105.97
Variance in Last 3 Readings		-0.32	-0.01	196.40	1.52	-0.01	-0.25
		-0.29	0.00	110.24	-0.55	-0.01	0.26
		-0.05	0.02	37.94	-0.43	0.00	-0.40

Notes:

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Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	Peristaltic
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	116.0 ft
		Pump Placement from TOC	109.88 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-3D	Final Pumping Rate	300 mL/min
Well Diameter	1 in	System Volume	836mL
Well Total Depth	114.88 ft	Calculated Sample Rate	167 sec
Depth to Top of Screen	104.88 ft	Sample Rate	167 sec
Screen Length	10 ft	Stabilized Drawdown	0.05 ft
Depth to Water	15.4 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:10:11	16.92	7.31	2922.22	0.77	0.07	-101.01
	13:12:58	16.90	7.30	3189.66	2.87	0.07	-100.92
	13:15:45	16.96	7.28	3320.86	2.43	0.06	-101.10
	13:18:32	16.92	7.29	3391.00	1.60	0.06	-101.12
	13:21:19	16.95	7.29	3418.28	1.50	0.06	-101.49
Variance in Last 3 Readings		0.06	-0.02	131.20	-0.44	-0.01	-0.18
		-0.04	0.01	70.14	-0.83	0.00	-0.02
		0.03	0.00	27.28	-0.10	0.00	-0.37

Notes:

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8/4/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	28.49 ft
		Pump Placement from TOC	22.79 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-5S	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	349 mL
Well Total Depth	27.79 ft	Calculated Sample Rate	69 sec
Depth to Top of Screen	17.79 ft	Sample Rate	69 sec
Screen Length	10 ft	Stabilized Drawdown	0.00 ft
Depth to Water	6.51 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	11:13:05	19.40	7.23	1124.57	28.20	0.13	57.67
	11:14:14	19.17	7.22	1128.51	24.90	0.12	58.58
	11:15:23	18.95	7.23	1131.99	22.00	0.11	59.69
	11:16:32	18.90	7.22	1133.62	23.00	0.11	60.65
	11:17:42	18.83	7.22	1128.36	22.00	0.09	61.54
Variance in Last 3 Readings		-0.22	0.01	3.48	-2.90	-0.01	1.11
		-0.05	-0.01	1.63	1.00	0.00	0.96
		-0.07	0.00	-5.26	-1.00	-0.02	0.89

Notes:

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8/4/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	58.71 ft
		Pump Placement from TOC	53.03 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-5M	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	517 mL
Well Total Depth	58.03 ft	Calculated Sample Rate	103 sec
Depth to Top of Screen	48.03 ft	Sample Rate	103 sec
Screen Length	10 ft	Stabilized Drawdown	0.05 ft
Depth to Water	6.65 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:29:45	18.82	7.25	1225.49	39.70	0.15	-97.88
	10:31:28	18.55	7.25	1234.63	38.20	0.14	-105.15
	10:33:11	18.55	7.26	1231.44	49.60	0.12	-109.25
	10:34:54	18.50	7.27	1235.58	45.90	0.11	-112.33
	10:36:37	18.38	7.27	1236.65	43.20	0.10	-114.65
Variance in Last 3 Readings		0.00	0.01	-3.19	11.40	-0.02	-4.10
		-0.05	0.01	4.14	-3.70	-0.01	-3.08
		-0.12	0.00	1.07	-2.70	-0.01	-2.32

Notes:

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8/4/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	108.52 ft
		Pump Placement from TOC	102.64 ft

Well Information:		**Pumping Information:**	
Well Id	GWE-5D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	795 mL
Well Total Depth	105.14 ft	Calculated Sample Rate	159 sec
Depth to Top of Screen	100.14 ft	Sample Rate	159 sec
Screen Length	5 ft	Stabilized Drawdown	0.00 ft
Depth to Water	6.95		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:39:01	18.10	7.09	1687.91	57.60	0.18	-60.17
	9:41:41	18.01	7.12	1691.43	36.30	0.15	-70.80
	9:44:20	17.93	7.14	1701.66	22.00	0.14	-78.16
	9:46:59	17.97	7.15	1713.42	16.70	0.13	-84.36
	9:49:45	18.06	7.17	1714.93	13.00	0.11	-89.66
Variance in Last 3 Readings		-0.08	0.02	10.23	-14.30	-0.01	-7.36
		0.04	0.01	11.76	-5.30	-0.01	-6.20
		0.09	0.02	1.51	-3.70	-0.02	-5.30

Notes:

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8/3/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	67.00 ft
		Pump Placement from TOC	55.59 ft

Well Information:		**Pumping Information:**	
Well Id	PM1M	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	564 mL
Well Total Depth	60.59 ft	Calculated Sample Rate	112 sec
Depth to Top of Screen	50.59 ft	Sample Rate	112 sec
Screen Length	10 ft	Stabilized Drawdown	0.06 ft
Depth to Water	13.33 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:37:14	18.09	7.24	2159.64	28.80	0.11	-27.57
	9:39:06	17.97	7.24	2149.64	25.10	0.09	-22.79
	9:40:58	17.90	7.23	2151.89	22.20	0.07	-19.86
	9:42:51	17.73	7.23	2157.39	17.50	0.07	-17.31
	9:44:43	17.68	7.22	2158.74	16.00	0.06	-15.76
Variance in Last 3 Readings		-0.07	-0.01	2.25	-2.90	-0.02	2.93
		-0.17	0.00	5.5	-4.70	0.00	2.55
		-0.05	-0.01	1.35	-1.50	-0.01	1.55

Notes:

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8/3/2015

Low-Flow System
ISI Low-Flow Log

Project Information:		**Pump Information:**	
Operator Name	LAB	Pump Model/Type	SS Monsoon
Company Name	Golder Associates	Tubing Type	LDPE
Project Name	W.G. Krummrich	Tubing Diameter	0.19 in
Site Name	LTM	Tubing Length	112.00 ft
		Pump Placement from TOC	104.11

Well Information:		**Pumping Information:**	
Well Id	PM1D	Final Pumping Rate	300 mL/min
Well Diameter	2 in	System Volume	814 mL
Well Total Depth	106.61	Calculated Sample Rate	162 sec
Depth to Top of Screen	101.61	Sample Rate	162 sec
Screen Length	5 ft	Stabilized Drawdown	0.06 ft
Depth to Water	13.25 ft		

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	8:19:03	17.26	7.23	1687.58	222.00	0.13	-134.25
	8:21:45	17.18	7.23	1694.22	213.00	0.12	-130.45
	8:24:30	17.15	7.24	1693.29	140.00	0.11	-127.12
	8:27:12	17.10	7.23	1692.51	108.00	0.11	-124.46
	8:29:54	17.10	7.21	1695.68	59.50	0.10	-122.49
Variance in Last 3 Readings		-0.03	0.01	-0.93	-73.00	-0.01	3.33
		-0.05	-0.01	-0.78	-32.00	0.00	2.66
		0.00	-0.02	3.17	-48.50	-0.01	1.97

Notes:

SURFACE WATER AND SEDIMENT SAMPLE COLLECTION FORM

Golder Associates

PROJECT REF: Solutia LTM **PROJECT NO:** 1403345

WEATHER CONDITIONS

Temperature 70's Weather Overcast / slight rain

SAMPLE INFORMATION

Sample Date 8/19/15 Time SW: 1430 SED: 1450 Sampled By JSI / JS

Sample Location R2007-1

Depth Information 17.1 feet

Sample Method Low flow peristaltic ponar sampler

Sample Description (SP) SAND, f to m sands sub-rounded to sub-angular sands; Dark yellowish brown (10YR 4/2); non-cohesive, wet, loose

SAMPLES COLLECTED

Sample Designation	Media		Analysis					Comments
	SW	Sed	VOC	SVOC	Herbs	Pests	Metals	
SW-R2007-1-0815	X		3	2				
SW-R2007-1-0815-AD	X		3	2				
SED-R2007-1-0815		X	4	1				
SED-R2007-1-0815-AD		X	4	1				
SED-R2007-1-0815-EB	X	X	3	2				

SW Parameters	Units	Value	Value	Value	Comments
Sample Designation	-	R2007-1			
pH	Standard	8.80			
Spec. Cond.	m S/CM	0.441			
Temperature	°C	27.39			
Dissolved Oxygen	mg/l	6.25			

REMARKS:
- EB @ 1540
- Flow rate: 300 ml/min
- 11 total ponar drops, easier if you drop ponar slowly.

SURFACE WATER AND SEDIMENT SAMPLE COLLECTION FORM

Golder Associates

PROJECT REF: Solutia LTM **PROJECT NO:** 1403345

WEATHER CONDITIONS

Temperature 70's Weather Overcast

SAMPLE INFORMATION

Sample Date 8/19/15 Time 1245-SW 1315-SED Sampled By JSI/JS

Sample Location R2007-2

Depth Information 38 feet

Sample Method Low flow peristaltic ponar

Sample Description SP (sand), f to m grains, sub-rounded to sub-angular sands, trace f ~~sand~~ gravels; moderate yellowish brown (10YR 5/4); non-cohesive, wet, loose

SAMPLES COLLECTED

Sample Designation	Media		Analysis					Comments
	SW	Sed	VOC	SVOC	Herbs	Pests	Metals	
SW-R2007-2-0815	X		3	2				
SED-R2007-2-0815		X	4	1				

SW Parameters	Units	Value	Value	Value	Comments
Sample Designation	-	R2007-2			
pH	Standard	8.43			
Spec. Cond.	m S/CM	0.441			
Temperature	°C	27.44			
Dissolved Oxygen	mg/l	6.24			

REMARKS:
- HAD to drop ponar while floating with current to get to depth.
- Could not reach depth of river floor if anchored.
- Flow rate: 300 ml/min
- took over 10 drops of ponar to get enough sediment

SURFACE WATER AND SEDIMENT SAMPLE COLLECTION FORM

Golder Associates

PROJECT REF: Solutia LTM **PROJECT NO:** 1403345

WEATHER CONDITIONS

Temperature 70's Weather Sunny

SAMPLE INFORMATION

Sample Date 8/19/15 Time 1020-SW 1100-SED Sampled By JSE / JSB

Sample Location R2007-3

Depth Information 24.6 ft

Sample Method Low Flow Ponar

Sample Description SAND (SW), Medium to Coarse ~~sand~~ Sub-angular Sand, Trace F-C, sub-angular gravels; Moderate yellowish brown (10YR 5/4); NC, wet, loose

SAMPLES COLLECTED

Sample Designation	Media		Analysis					Comments
	SW	Sed	VOC	SVOC	Herbs	Pests	Metals	
SW-R2007-3-0815	X		3	2				
SW-R2007-3-0815-MS	X		3	2				
SW-R2007-3-0815-MSD	X		3	2				
SED-R2007-3-0815		X	4	1				
SED-R2007-3-0815-MS		X	4	1				
SED-R2007-3-0815-MSD		X	4	1				

SW Parameters	Units	Value	Value	Value	Comments
Sample Designation	-	R2007-3			
pH	Standard	8.67			
Spec. Cond.	m S/CM	0.455			
Temperature	°C	27.53			
Dissolved Oxygen	mg/l	6.55			

REMARKS:
- Flow rate = 300 mL/min
- MS/MSD SW & SED collected
- multiple trips to get a good sample (more sediment retrieved when dropped slowly)

APPENDIX B
CHAINS-OF-CUSTODY

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/3/15	COC No
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 2 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client.
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
PMID-0815	8/3/15	0924	G	W	14			3		1	1	1	3	2	3			2 coolers
PMID-F(0.2)-0815					4											1	3	
PMID-0815-AD					3			3										
PMIM-0815		1044			14			3		1	1	1	3	2	3			
PMIM-F(0.2)-0815					4											1	3	
ESL-MW-A-0815		1446			14			3		1	1	1	3	2	3			
ESL-MW-A-F(0.2)-0815					4											1	3	
ESL-MW-A-0815-MS					3			3										
ESL-MW-A-0815-MSD					3			3										
ESL-MW-CI-0815		1336			14			3		1	1	1	3	2	3			
ESL-MW-CI-F(0.2)-0815					4											1	3	
ESL-MW-CI-0815-EB		1408			3			3										
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other								2	1	4	1	1	2	1,3	3	4	3	

680-115161 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/No

680-115161 1.8/3.6(CF)2.3/4.1°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 504801/504802 | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Lori Bindner	Golder	8/3/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
			Amanda	STA.	08/04/15 0943

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/3/15	COC No:
Golder Associates Inc	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	2 of 2 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			Job / SDG No.:
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 376.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
ESL-MW-DI-0815	8/3/15	1150	G	W	14			3		1	1	1	3	2	3			2 coolers
ESL-MW-DI-F(0.2)-0815	↓	↓	↓	↓	4											1	3	
3Q15 LTM Trip Blank #1	—	—	—	—	2			2										
Preservation Used: 1=Ice, 2= HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6= Other								2	1	4	1	1	2	1,3	3	4	3	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes (No)

680-115161 1.8/3.6(CF) 2.3/4.1°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 504801/504802 | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
L. Bindner	Golder	8/3/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
			[signature]	SAV.	08/04/15 0943

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912 354 7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/4/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site. Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
GWE-5D-0815	8/4/15	0950	G	W	14			3		1	1	1	3	2	3			2 coolers
GWE-5D-F(0.2)-0815		1			4											1	3	
GWE-5M-0815		1035			14			3		1	1	1	3	2	3			
GWE-5M-F(0.2)-0815		1			4											1	3	
GWE-5S-0815		1115			14			3		1	1	1	3	2	3			
GWE-5S-F(0.2)-0815		1			4											1	3	
GWE-3D-0815		1307			14			3		1	1	1	3	2	3			
GWE-3D-F(0.2)-0815		1			4											1	3	
GWE-2D-0815		1456			14			3		1	1	1	3	2	3			
GWE-2D-F(0.2)-0815		1	1	1	4											1	3	
3Q15 LTM TripBlank #2	1	—	—	—	2			2										
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								2	1	4	1	1	2	1,3	3	4	3	

680-115226 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes (No)

26/3.1 680-115226

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 504809/504810	Cooler Temp. (°C): Obs'd: 2.8 Corr'd: 2.8	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Golder	8/4/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 8/5/15 09:37

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TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/5/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-5D-0815	8/5/15	0917	G	W	16			3	2	1	1	1	3	2	3			
BSA-MW-5D-F(0.2)-0815	↓	↓	↓	↓	4											1	3	
CPA-MW-4D-0815		1024			16			3	2	1	1	1	3	2	3			
CPA-MW-4D-F(0.2)-0815		↓			4											1	3	
BSA-MW-4D-0815		1130			16			3	2	1	1	1	3	2	3			
BSA-MW-4D-F(0.2)-0815		↓			4											1	3	
CPA-MW-3D-0815		1319			16			3	2	1	1	1	3	2	3			
CPA-MW-3D-F(0.2)-0815		↓			4											1	3	
CPA-MW-3D-0815-AD		↓			3			3										
BSA-MW-2D-0815		1416			16			3	2	1	1	1	3	2	3			
BSA-MW-2D-F(0.2)-0815	↓	↓	↓	↓	4											1	3	
~~3Q15 LTM TripBlank #3~~					~~2~~			~~2~~	* not received by lab, notified client 8/7/15 J.Koppen									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								2	1	4	1	1	2	1,3	3	4	3	

680-115324 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/No

1.8°C / 2.2°C CF
3.4°C / 3.8°C CF

680-115324

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 337200 / 337199 | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
J. Bimones	Golder	8/5/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				TA	08/07/15 1030

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TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date:	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	**Analysis Turnaround Time**			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name. 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No..
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes.
BSA-MW-3D-0815	8/6/15	0914	G	W	16			3	2	1	1	1	3	2	3			2 coolers
BSA-MW-3D-F(0.2)-0815		↓			4											1	3	
BSA-MW-3D-0815-EB		0930			3			3										
CPA-MW-1D-0815		1056			16			3	2	1	1	1	3	2	3			
CPA-MW-1D-F(0.2)-0815		↓			4											1	3	
CPA-MW-2D-0815		1247			16			3	2	1	1	1	3	2	3			
CPA-MW-2D-F(0.2)-0815		↓			4											1	3	
CPA-MW-2D-0815-AD		↓			3			3										
BSA-MW-15-0815		1352			16			3	2	1	1	1	3	2	3			
BSA-MW-15-F(0.2)-0815		↓			4											1	3	
BSA-MW-15-0815-EB		1425			3			3										
3Q15 LTM Trip Blank #4	↓	—	↓	↓	2			2										
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other								2	1	4	1	1	2	1,3	3	4	3	

680-115376 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☑ 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:
VOC headspace upon sampling: Yes/(No)

680-115376 4.4°C 4.8°C 0.2°C 0.6°C

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 504807 / 504808	Cooler Temp (°C): Obs'd: 0.2 Corr'd: 0.6	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company.	Date/Time:
Lori Bindner	Golder	8/6/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
			Michele Kersey	TA	8/8/15 10:00

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Amanda Derhake	Site Contact: ~~Lori Bindner~~ Emily White	Date: 8/20/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	**Analysis Turnaround Time**			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
CPA-MW-5D-0815	8/20/15	1033	G	W	14	N		3	2	1	1	1	3	2	3			
CPA-MW-F(0.2)SD-0815	|	1033	G	W	4	Y										1	3	8/21/15
GWE-10-0815	|	1233	G	W	14	N		3	~~2~~ *	1	1	1	3	2	3			*SVOC not required
GWE-10-~~0815~~ JKE F(0.2)-0815	|	1233	G	W	4	Y										1	3	for this sample per
3Q15 LTM Trip Blank #4	|	—	—	—	2	N		2										E. White
																		[illegible]

680-115905 Chain of Custody

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/No (No circled)

680-115905

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 414398	Cooler Temp. (°C): Obs'd: 1.2 cor Corr'd: 1.6 °C	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Golder	8/20/15 - 1600			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 8/21/15 09:17

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica 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

Client Information	Sampler: Jeff Ingram	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No: 680-66231-28384.1
Client Contact: ~~Lori Bindner~~ Emily White	Phone: 714-213-6546	E-Mail: michele.kersey@testamericainc.com		Page: Page 1 of 2
Company: Golder Associates Inc.				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASK Emily White			
State, Zip: MO, 63301				
Phone: 636-724-4191	PO #:			
Email: ~~lori_bindner@golder.com~~ Emily_white@golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

0815 NOT 0215

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (SW)	8260B - 8260 VOC (SW)	8270C - 8270 SVOC (SED)	8260B - 8260 VOC (SED)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
SW-R2007-1 ~~0215~~ 0815	8/19/15	1430	G	Water	N		2	3			5	
SW-R2007-2 ~~0215~~ 0815		1245	G	Water	N		2	3			5	
SW-R2007-3 ~~0215~~ 0815		1020	G	Water	N		2	3			5	
SW-R2007-3 ~~0215~~ 0815 MS		1020	G	Water	N	X	2	3			5	
SW-R2007-3 ~~0215~~ 0815 MSD		1020	G	Water	N	X	2	3			5	
SW-R2007-1 ~~0215~~ 0815 AD		1430	G	Water	N		2	3			5	
SED-R2007-1 ~~0215~~ 0815 EB		1450	G	Water	N		2	3			5	
~~SW-R2007- -0215~~			~~G~~	~~Water~~								
SED-R2007-1-~~0215~~ 0815		1450	G	Solid	N				1	4	5	
SED-R2007-2-~~0215~~ 0815		1315	G	Solid	N				1	4	5	
SED-R2007-3-~~0215~~ 0815		1100	G	Solid	N				1	4	5	

680-115876 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements. 2.8/3.2

Empty Kit Relinquished by: | Date: 8/19/15 | Time: 1940 | Method of Shipment: fedex

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Jeff Ingram	8/19/15 1940	golder	[signature]	8/20/15 9:42	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica 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

Client Information	Sampler: Jeff Fryer	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No: 680-66231-28384.2
Client Contact: ~~Lori Bindner~~ Emily White	Phone: 919-213-8548	E-Mail: michele.kersey@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASAP Emily White			
State, Zip: MO, 63301				
Phone	PO #:			
Email: ~~lori_bindner@golder.com~~ Emily_white@golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (Sw)	8260B - 8260 VOC (Sw)	8270C - 8270 SVOC (Sw)	8260B - 8260 VOC (Sw)	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N		
SED-R2007-3-0215-MS	8/19/15	1100	G	Solid	N	X			1	4	5	
SED-R2007-3-0215-MSD		1100	G	Solid	N	X			1	4	5	
SED-R2007-1-0215-AD		1450	G	Solid	N				1	4	5	
~~SED-R2007-0216~~			~~G~~	~~Solid~~								
TB1-071415	8/18/15	—	—	Water	N			3			3	
												680-115876

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: 2.8/3.7

Empty Kit Relinquished by:	Date: 8/19/15	Time: 1700	Method of Shipment: Ram		
Relinquished by: Jeff Fryer	Date/Time: 8/19/15 - 1700	Company: GW	Received by:	Date/Time: 8/20/15 9:40	Company: TA
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

APPENDIX C
QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPORT

LONG-TERM MONITORING PROGRAM
SOLUTIA INC. W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared For: Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141 USA

Submitted By: Golder Associates Inc.
820 S. Main Street, Suite 100
St. Charles, MO 63301 USA

October 2015 **140-3345**

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Table of Contents

1.0 INTRODUCTION 1
2.0 VOLATILE ORGANIC COMPOUNDS 4
2.1 Receipt Condition and Sample Holding Times 4
2.2 Blanks 4
2.3 Surrogate Spike Recoveries 5
2.4 Laboratory Control Sample Recoveries 5
2.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples 5
2.6 Analytical Duplicates 5
2.7 Internal Standard Responses 5
2.8 Results Reported From Dilutions 5
3.0 SEMI-VOLATILE ORGANIC COMPOUNDS 5
3.1 Receipt Condition and Sample Holding Times 6
3.2 Blanks 6
3.3 Surrogate Spike Recoveries 6
3.4 Laboratory Control Sample Recoveries 6
3.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples 7
3.6 Analytical Duplicates 7
3.7 Internal Standard Responses 7
3.8 Results Reported From Dilutions 7
4.0 INORGANICS AND GENERAL CHEMISTRY 7
4.1 Receipt Condition and Sample Holding Times 8
4.2 Blanks 8
4.3 Laboratory Control Sample Recoveries 8
4.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples 8
4.5 Results Reported From Dilutions 8
5.0 SUMMARY 9
6.0 REFERENCES 10

1.0 INTRODUCTION

Golder Associates Inc. (Golder) completed a review of analytical data for the groundwater samples collected on August 3 and August 20, 2015 at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. Golder collected a total of thirty six (36) samples from groundwater monitoring wells and piezometers and eleven (11) samples from three river sampling locations as part of the 3rd Quarter 2015 (3Q15) Long-Term Monitoring Program (LTMP). Twenty-one (21) groundwater samples, five (5) trip blanks, four (4) equipment blanks (EB), five (5) analytical duplicates (AD), and three (3) matrix spike/matrix spike duplicate (MS/MSD) pairs were prepared. Groundwater monitoring locations were located at the WGK facility or approximately 1.0 to 1.5 miles north of the Site. Surface water and sediment river sampling locations were located approximately 1 mile west-northwest of the Site. The samples were submitted to the TestAmerica Laboratories, Inc. (TestAmerica) facility located in Savannah, Georgia for analysis using United States Environmental Protection Agency (USEPA) methods, standard methods and USEPA SW-846 test methods. Samples submitted to TestAmerica were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total and dissolved metals, dissolved gases, and general chemistry parameters. The analytical results were placed into seven (7) sample delivery groups (SDGs) and described in the table below:

Sample Delivery Group (SDG)	Sample Identification
KPS147	PM1M-0815
	PM1D-0815
	PM1D-0815-AD
	ESL-MW-A-0815
	ESL-MW-C1-0815
	ESL-MW-C1-0815-EB
	ESL-MW-D1-0815
	3Q15 LTM Trip Blank #1
KPS148	GWE-2D-0815
	GWE-3D-0815
	GWE-5S-0815
	GWE-5M-0815
	GWE-5D-0815
	3Q15 LTM Trip Blank #2
KPS149	BSA-MW-2D-0815
	BSA-MW-4D-0815
	BSA-MW-5D-0815
	CPA-MW-3D-0815
	CPA-MW-3D-0815-AD

KPS150	BSA-MW-3D-0815
	BSA-MW-3D-0815-EB
	CPA-MW-1D-0815
	CPA-MW-2D-0815
	CPA-MW-2D-0815-AD
	3Q15 LTM Trip Blank #4
	BSA-MW-1S-0815
	BSA-MW-1S-0815-EB
KPS151	CPA-MW-5D-0815
	GWE-1D-0815
	3Q15 LTM Trip Blank #4
KRS013	SW-R2007-1-0815
	SW-R2007-2-0815
	SW-R2007-3-0815
	SW-R2007-1-0815-AD
	SW-R2007-1-0815-EB
	Trip Blank-071415
KRS014	SED-R2007-1-0815
	SED-R2007-2-0815
	SED-R2007-3-0815
	SED-R2007-1-0815-AD

The samples were collected and analyzed in general accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Work Plan) (Solutia 2009). Groundwater samples were analyzed for VOCs, SVOCs, total and dissolved metals, dissolved gases, and general chemistry parameters. The general chemistry parameters included chloride, nitrate, sulfate, total organic carbon (TOC), alkalinity, carbon dioxide, and dissolved organic carbon (DOC). Five (5) trip blanks, four (4) EBs, five (5) ADs, and three (3) MS/MSD pairs were submitted and analyzed for VOC and SVOC analysis. The following analytical methods used are from USEPA document SW-846, Test Methods for Evaluating Solid Waste, Revision 6 contained in Final Update III August 2002 and listed below:

- VOCs were analyzed using USEPA SW-846 Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- SVOCs were analyzed using USEPA SW-846 Method 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)
- Total and Dissolved Iron and Manganese were analyzed by USEPA SW-846 Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry

The following standard methods were used to analyze monitored natural attenuation (MNA) parameters:

- Dissolved Gases analyzed by Method RSK-175
- Alkalinity and Free Carbon Dioxide analyzed by USEPA Method 310.1 by Titration
- Chloride analyzed by USEPA Method 325.2 by Automated Colorimetry

- Nitrogen, Nitrate analyzed by USEPA Method 353.2 by Automated Colorimetry
- Sulfate analyzed by USEPA Method 375.4 by Spectrophotometer
- Total and Dissolved Organic Carbon analyzed by USEPA Method 415.1

Golder completed validation of the analytical data following the general guidelines in Section 4.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent versions of the national data validation guidelines be used for data review. The following guidelines were generally used:

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-08-01, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-10-011, January 2010

These documents are hereafter referred to as the "functional guidelines". If there was a conflict between the functional guidelines and the quality control criteria specified in the analytical method, the method-specific criteria were used. The SDGs were prepared as a Level IV data report package containing quality control information and raw data. Golder completed Level III review of 100% of the analytical data and Level IV review of 10% of the analytical data.

Data that has been qualified by the data validator has been added to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed. Laboratory data qualifiers are defined below:

- U – The analyte was analyzed for but not was not detected
- 4 – The analyte present in the original sample is greater than 4 times the matrix spike concentration for the MS/MSD; therefore, control limits are not applicable.
- H – Sample was prepped or analyzed beyond specified holding time.
- F1 – MS/MSD Recovery exceeds the control limits
- * – LCS or LCSD exceed the control limits

Golder data qualifiers are defined below:

- UJ – The analyte was not detected at or above the MDL; the detection limit is estimated
- D – The analyte was analyzed at a dilution
- J – Indicates estimated value

Sections 2 and 3 summarize the specific instances where quality control criteria in the functional guidelines were not met. As specified in the functional guidelines, if the non-adherence to quality control criteria is slight, professional judgment was used in qualification of the data. However, if the non-adherence is significant, qualification and rejection of the data may be necessary. A summary of qualified data is provided in Section 5.0.

2.0 VOLATILE ORGANIC COMPOUNDS

Samples were collected from twenty-one (21) groundwater monitoring locations and three (3) river sampling locations and analyzed for VOCs. Analytical duplicate samples were collected from five (5) sampling locations, PM1D, CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1.. Four (4) EBs and five (5) trip blanks were also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into seven (7) data packages or SDGs (KPS147, KPS148, KPS149, KPS150, KPS151, KRS013, and KRS014) and were prepared and analyzed using SW-846 Method 8260B. Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.

2.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.

KPS150 and KPS151 – Samples were received at temperatures below the 4°C+/-2°C criteria. The samples were otherwise received in good condition and data qualification was not required.

2.2 Blanks

Laboratory and field blanks, including trip blanks, method blanks and equipment blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory or field activities.

Six (6) laboratory prepared trip blanks were shipped and analyzed for VOCs during the 3Q15 event to evaluate whether cross contamination occurred during sample shipment. 3Q15 LTM Trip Blank #3, associated with samples in SDG KPS149, was not received by TestAmerica. Results for the received trip blanks were non-detect.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

Four (4) EBs were collected during the 3Q15 event to assess the effectiveness of the decontamination procedure. Detections were noted in the following EBs:

- BSA-MW-3D-0815-EB (SDG KPS150): benzene at 1.1 µg/L
- BSA-MW-1S-0815-EB (SDG KPS150): benzene at 99 µg/L and chlorobenzene at 2.2 µg/L

The samples associated with the EBs were not qualified based on the 5Xs concentration criteria.

2.3 Surrogate Spike Recoveries

Samples to be analyzed for VOCs were spiked with surrogate compounds: 4-bromofluorobenzene, 1,2-dichloroethane-d4, dibromofluoromethane, and toluene-d8, prior to analysis, to evaluate overall laboratory performance. Surrogate recoveries were within control limits.

2.4 Laboratory Control Sample Recoveries

A laboratory control sample (LCS) is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS recoveries were within acceptance criteria.

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

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. One (1) MS/MSD pair is sampled for every twenty (20) field samples. Three (3) MS/MSD pairs were collected during the 3Q15 event associated with samples ESL-MW-A , SW-R2007-3, and SED-R2007-3. MS/MSD accuracy and precision data met criteria; therefore qualification was not required.

2.6 Analytical Duplicates

One (1) AD is collected for every ten (10) field samples to determine the overall precision of field and laboratory methods. Five (5) ADs were collected during the 3Q15 event associated with samples PM1D, CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. The relative percent difference (RPD) between the samples and the associated ADs did not exceed 25%; therefore, data qualification was not required.

2.7 Internal Standard Responses

Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standard area counts did not vary by more than a factor of two (2) from the associated 12 hour calibration standard. Internal standard retention times did not vary more than +/-30 seconds from the retention time of the associated 12 hour calibration standard. Data qualification was not required.

2.8 Results Reported From Dilutions

Several VOC samples required dilutions due to high levels of target analytes. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

3.0 SEMI-VOLATILE ORGANIC COMPOUNDS

Samples were collected from ten (10) groundwater monitoring locations and three (3) river sampling locations as well as analyzed for SVOCs. An AD sample was collected from four (4) sampling locations, CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. Three (3) EBs were also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into seven (7) data

packages or SDGs (KPS147, KPS148, KPS149, KPS150, KPS151, KRS013, and KRS014), and were prepared and analyzed using SW-846 Method 8270D. Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.

3.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.

KPS150 and KPS151 – Samples were received at temperatures below the 4°C+/-2°C criteria. The samples were otherwise received in good condition and data qualification was not required.

3.2 Blanks

Laboratory and field blanks, including method blanks and equipment blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory or field activities.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

Three (3) EBs were collected during the 3Q15 event, associated with sample BSA-MW-1S, BSA-MW-3D and SW-R2007-1 to assess the effectiveness of the decontamination procedure. Results for the EBs were non-detect.

3.3 Surrogate Spike Recoveries

Samples to be analyzed for SVOCs were spiked with surrogate compounds: 2-flourobiphenyl, 2-fluorophenol, nitrobenzene-d5, phenol-d5, terphenyl-d14, and 2,4,6-tribromophenol, prior to analysis, to evaluate overall laboratory performance. Surrogates were not recovered for sample CPA-MW-1D-0815 due to the extract being diluted out. Result qualifications are shown in Section 5.0.

3.4 Laboratory Control Sample Recoveries

A LCS is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS/LCSD recoveries exceeded acceptance criteria for 4-chloroanaline in batch 680-397732 associated with SDG KPS151. LCS recoveries were low for 2-chlorophenol and 1,2,4-trichlorobenzene in batch 396244 associated with SDG KPS 150. Result qualifications are shown in Section 5.0.

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

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. One (1) MS/MSD pair is sampled for every twenty (20) field samples. Three (3) MS/MSD pairs were collected during the 3Q15 event associated with samples ESL-MW-A, SW-R2007-3, and SED-R2007-3. MS/MSD accuracy and precision data met criteria.

3.6 Analytical Duplicates

One (1) AD is collected for every ten (10) field samples to determine the overall precision of field and laboratory methods. Four (4) ADs were collected during the 3Q15 event associated with samples CPA-MW-2D, CPA-MW-3D, SW-R2007-1, and SED-R2007-1. Samples CPA-MW-2D-AD and CPA-MW-3D-AD were received out of hold time. The relative percent difference (RPD) between the samples and the associated ADs did not exceed 25%. Therefore data qualification as not required.

3.7 Internal Standard Responses

Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standard area counts did not vary by more than a factor of two (2) from the associated 12 hour calibration standard. Internal standard retention times did not vary more than +/-30 seconds from the retention time of the associated 12 hour calibration standard. Data qualification was not required.

3.8 Results Reported From Dilutions

Sample CPA-MW-1D-0815 required dilution due to high levels of 1,2,4-trichlorobenzene. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

4.0 INORGANICS AND GENERAL CHEMISTRY

Samples were collected from twenty-one (21) groundwater monitoring locations and analyzed for inorganics and general chemistry. The samples were submitted to TestAmerica, placed into five (5) data packages or SDGs (KPS147, KPS148, KPS149, KPS 150, and KPS151), and were prepared and analyzed using the following methods:

- Total and Dissolved Iron and Manganese analyzed by Method 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry
- Dissolved Gases analyzed by Method RSK-175
- Alkalinity and Free Carbon Dioxide analyzed by USEPA Method 310.1 by Titration
- Chloride analyzed by USEPA Method 325.2 by Automated Colorimetry
- Nitrogen, Nitrate analyzed by USEPA Method 353.2 by Automated Colorimetry
- Sulfate analyzed by USEPA Method 375.4 by Spectrophotometer
- Total and Dissolved Organic Carbon analyzed by USEPA Method 415.1

Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.

4.1 Receipt Condition and Sample Holding Times

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. A summary of affected SDGs is provided below.

KPS150 and KPS151 – Samples were received at temperatures below the 4°C+/-2°C criteria. The samples were otherwise received in good condition and data qualification was not required.

4.2 Blanks

Laboratory method blanks are prepared and analyzed to determine if contamination occurred as a result of laboratory activities.

Laboratory method blanks were performed for each laboratory system as outlined for each analytical method to evaluate whether cross contamination occurred during laboratory analysis activities. Results for the method blanks were non-detect.

4.3 Laboratory Control Sample Recoveries

A LCS is analyzed on each laboratory system to evaluate the analytical method accuracy and laboratory performance. LCS recoveries were within acceptance criteria; therefore, data qualification was not required.

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

MS/MSD samples are analyzed to determine long term precision and accuracy of the analytical method on various matrices. Although MS/MSD analysis was not required for inorganic and general chemistry per the Work Plan, the laboratory spiked groundwater samples PM1D, GWE-5S, GWE-2D, CPA-MW-5D, ESL-MW-D1, BSA-MW-5D and BSA-MW-3D for various analytes. Some MS/MSD data for these samples was outside acceptance criteria. Since MS/MSD data alone cannot be used to evaluate the precision and accuracy of data, data qualification was not required for associated samples.

4.5 Results Reported From Dilutions

Samples in each SDG required dilutions due to high levels of target analytes. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 5.0.

5.0 SUMMARY

Golder validated the data collected during the 3Q15 sampling event from the Solutia Inc. WGK facility in general accordance with the Work Plan and USEPA functional guidelines. Although some data required qualifications due to quality control criteria that were not achieved, the data were deemed usable. Where a positive result was qualified as estimated, the analyte should be considered present. Similarly, a result that was qualified as an estimated reporting limit should be considered not present for the purposes of this program, although the limit itself may not be precise. The completeness for the entire data set was 100%.

Qualification Summary Table

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2,4, Trichlorobenzene, Chloride, Sulfate	D	PM1M, PM1D, ESL-MW-A, ESL-MW-C1, ESL-MW-D1, GWE-1D, GWE-2D, GWE-3D, GWE-5D, GWE-5M, GWE-5S, BSA-MW-1S, BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, BSA-MW-5D, CPA-MW-1D, CPA-MW-2D, CPA-MW-2D-AD, CPA-MW-3D, CPA-MW-4D, and CPA-MW-5D
Compounds analyzed out of hold time	4-Chloroanaline, 2-Chlorophenol, 1,2,4, Trichlorobenzene	UJ	CPA-MW-2D-AD, CPA-MW-3D-AD
LCS/LCSD recovery low/surrogates diluted out	4-Chloroanaline, 2-Chlorophenol, 1,2,4, Trichlorobenzene	UJ	BSA-MW-1S, BSA-MW-3D, CPA-MW-1D, CPA-MW-2D, CPA-MW-5D

6.0 REFERENCES

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

USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review.

USEPA, 2008. Contract Laboratory Program national Functional Guidelines for Superfund Organic Methods Data Review.

APPENDIX D
GROUNDWATER ANALYTICAL RESULTS
(INCLUDING DATA VALIDATION REPORTS)

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS147
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: PM1D-0815, PM1D-F(0.2)-0815, PM1D-0815-AD, PM1M-0815, PM1M-F(0.2)-0815, ESL-MW-A-0815, ESL-MW-A-F(0.2)-0815, ESL-MW-C1-0815, ESL-MW-C1-F(0.2)-0815, ESL-MW-C1-0815-EB, ESL-MW-D1-0815, ESL-MW-D1-F(0.2)-0815, 3Q15 LTM Trip Blank #1

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: Sample ESL-MW-D1-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 395520.

Metals: ESL-MW-D1-F(0.2)-0815 required pH adjustment.

Alkalinity: No deficiencies noted.

Chloride: Samples PM1M-0815, PM1D-0815, ESL-MW-A-0815, ESL-MW-C1-0815, and ESL-MW-D1-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples PM1M-0815, PM1D-0815, ESL-MW-A-0815, ESL-MW-C1-0815, and ESL-MW-D1-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 2.3°C and 4.1°C, within the 4°C +/- 2°C criteria.

General	**YES**	**NO**	**NA**
a) Were hold times met for sample analysis?	☒	☐	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☒	☐	☐

Comments: Detections in diluted analysis were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	**YES**	**NO**	**NA**
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	**YES**	**NO**	**NA**
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	**YES**	**NO**	**NA**
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: None

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	**YES**	**NO**	**NA**
a) Was MS/MSD accuracy criteria met?	☒	☐	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: None

Laboratory Control Sample (LCS)	**YES**	**NO**	**NA**
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Surrogate (System Monitoring) Compounds	**YES**	**NO**	**NA**
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates	**YES**	**NO**	**NA**
a) Were field duplicates collected?	☒	☐	☐
b) Was field duplicate precision criteria met?	☒	☐	☐

Comments: Duplicate sample PM1D-0815-AD was submitted with SDG KPS147.

Additional Comments: None

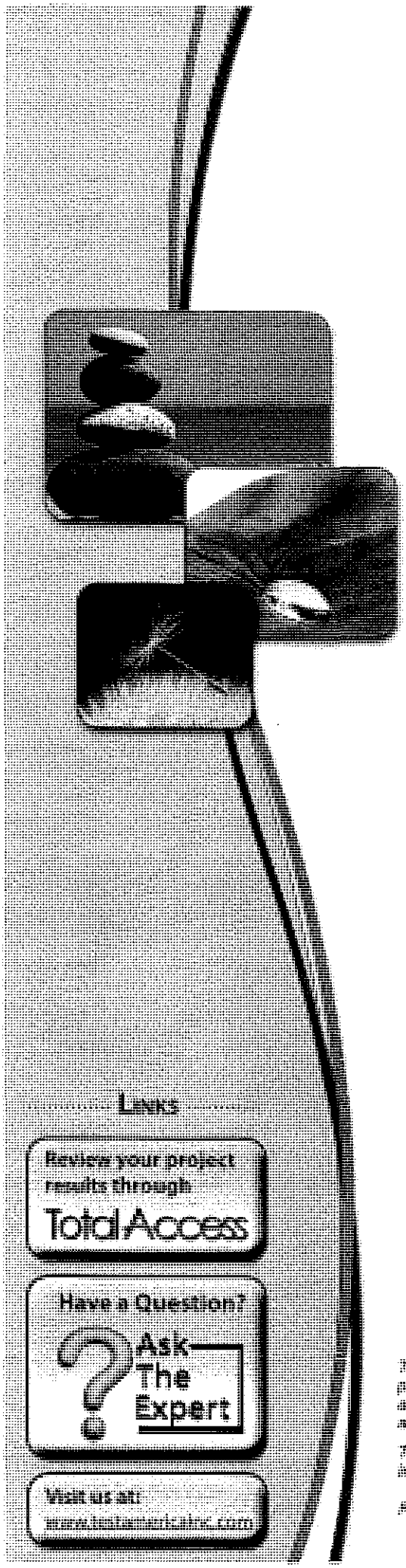
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Chlorobenzene, 1,4-Dichlorobenzene, Chloride and Sulfate	D	PM1D, PM1M, ESL-MW-A, ESL-MW-C1, and ESL-MW-D1

SDG KPS147

Sample Results from:

PM1D
PM1M
ESL-MW-A
ESL-MW-C1
ESL-MW-D1



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115161-1
TestAmerica Sample Delivery Group: KPS147
Client Project/Site: 3Q15 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
8/18/2015 3:39:22 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory. AMD 8/20/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 5
Method Summary 6
Definitions 7
Detection Summary 8
Client Sample Results 11
Surrogate Summary 24
QC Sample Results 25
QC Association 33
Chronicle 36
Chain of Custody 40
Receipt Checklists 42
Certification Summary 44

AWP 8/20/15

Job ID: 680-115161-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 3Q15 LTM GW Sampling - 1403345

Report Number: 680-115161-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/4/2015 9:43 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.3° C and 4.1° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples PM1D-0815 (680-115161-1), PM1D-0815-AD (680-115161-3), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8), ESL-MW-C1-0815-EB (680-115161-10), ESL-MW-D1-0815 (680-115161-11) and 3Q15 LTM Trip Blank #1 (680-115161-13) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/06/2015.

Sample ESL-MW-D1-0815 (680-115161-11)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 08/11/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395520.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples PM1D-F(0.2)-0815 (680-115161-2), PM1M-F(0.2)-0815 (680-115161-5), ESL-MW-A-F(0.2)-0815 (680-115161-7), ESL-MW-C1-F(0.2)-0815 (680-115161-9) and ESL-MW-D1-F(0.2)-0815 (680-115161-12) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/07/2015 and 08/11/2015 and analyzed on 08/08/2015 and 08/12/2015.

During pH adjustment, the following sample required 1.5 mL of nitric acid to reach the desired pH: ESL-MW-D1-F(0.2)-0815 (680-115161-12).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD 8/20/15

METALS (ICP)
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8)

Job ID: 680-115161-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

and ESL-MW-D1-0815 (680-115161-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/07/2015 and analyzed on 08/08/2015 and 08/09/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 08/05/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 08/12/2015.

Samples PM1D-0815 (680-115161-1)[2X], PM1M-0815 (680-115161-4)[10X], ESL-MW-A-0815 (680-115161-6)[2X], ESL-MW-C1-0815 (680-115161-8)[5X] and ESL-MW-D1-0815 (680-115161-11)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/04/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 08/12/2015 and 08/13/2015.

Samples PM1D-0815 (680-115161-1)[20X], PM1M-0815 (680-115161-4)[5X], ESL-MW-A-0815 (680-115161-6)[20X], ESL-MW-C1-0815 (680-115161-8)[50X] and ESL-MW-D1-0815 (680-115161-11)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON
Samples PM1D-0815 (680-115161-1), PM1M-0815 (680-115161-4), ESL-MW-A-0815 (680-115161-6), ESL-MW-C1-0815 (680-115161-8) and ESL-MW-D1-0815 (680-115161-11) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)
Samples PM1D-F(0.2)-0815 (680-115161-2), PM1M-F(0.2)-0815 (680-115161-5), ESL-MW-A-F(0.2)-0815 (680-115161-7), ESL-MW-C1-F(0.2)-0815 (680-115161-9) and ESL-MW-D1-F(0.2)-0815 (680-115161-12) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD 9/20/15

Sample Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115161-1	PM1D-0815	Water	08/03/15 09:24	08/04/15 09:43
680-115161-2	PM1D-F(0.2)-0815	Water	08/03/15 09:24	08/04/15 09:43
680-115161-3	PM1D-0815-AD	Water	08/03/15 09:24	08/04/15 09:43
680-115161-4	PM1M-0815	Water	08/03/15 10:44	08/04/15 09:43
680-115161-5	PM1M-F(0.2)-0815	Water	08/03/15 10:44	08/04/15 09:43
680-115161-6	ESL-MW-A-0815	Water	08/03/15 14:46	08/04/15 09:43
680-115161-7	ESL-MW-A-F(0.2)-0815	Water	08/03/15 14:46	08/04/15 09:43
680-115161-8	ESL-MW-C1-0815	Water	08/03/15 13:36	08/04/15 09:43
680-115161-9	ESL-MW-C1-F(0.2)-0815	Water	08/03/15 13:36	08/04/15 09:43
680-115161-10	ESL-MW-C1-0815-EB	Water	08/03/15 14:08	08/04/15 09:43
680-115161-11	ESL-MW-D1-0815	Water	08/03/15 11:50	08/04/15 09:43
680-115161-12	ESL-MW-D1-F(0.2)-0815	Water	08/03/15 11:50	08/04/15 09:43
680-115161-13	3Q15 LTM Trip Blank #1	Water	08/03/15 00:00	08/04/15 09:43

AWD 8/20/15

Method Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SL
415.1	DOC	MCAWW	TAL SL

Protocol 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.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWD 8/20/15

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWD
8/20/15

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1D-0815 — Lab Sample ID: 680-115161-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	12		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0		ug/L	1		8260B	Total/NA
Methane	44		0.58		ug/L	1		RSK-175	Total/NA
Iron	15		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.46		0.010		mg/L	1		6010C	Total Recoverable
Chloride	94	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	400	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	2.3		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	380		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	31		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: PM1D-F(0.2)-0815 — Lab Sample ID: 680-115161-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.43		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.7		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: PM1D-0815-AD — Lab Sample ID: 680-115161-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	12		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: PM1M-0815 — Lab Sample ID: 680-115161-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.2		1.0		ug/L	1		8260B	Total/NA
Methane	68		0.58		ug/L	1		RSK-175	Total/NA
Iron	1.1		0.050		mg/L	1		6010C	Total Recoverable
Manganese	2.1		0.010		mg/L	1		6010C	Total Recoverable
Chloride	320	D	10		mg/L	10		325.2	Total/NA
Sulfate	170	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	2.1		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	540		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	47		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: PM1M-F(0.2)-0815 — Lab Sample ID: 680-115161-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	1.0		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	2.1		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.0		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

AWD 8/20/15

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-A-0815 — Lab Sample ID: 680-115161-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA
Methane	8.8		0.58		ug/L	1		RSK-175	Total/NA
Iron	15		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.53		0.010		mg/L	1		6010C	Total Recoverable
Chloride	96	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	620	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	3.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	26		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-A-F(0.2)-0815 — Lab Sample ID: 680-115161-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.52		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-C1-0815 — Lab Sample ID: 680-115161-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.8		1.0		ug/L	1		8260B	Total/NA
Methane	3.5		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.47		0.010		mg/L	1		6010C	Total Recoverable
Chloride	110	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	930	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.9		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	400		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	24		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-C1-F(0.2)-0815 — Lab Sample ID: 680-115161-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	12		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.47		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-C1-0815-EB — Lab Sample ID: 680-115161-10

No Detections.

Client Sample ID: ESL-MW-D1-0815 — Lab Sample ID: 680-115161-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	560	D	10		ug/L	10		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

AWD 9/20/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-D1-0815 (Continued) — Lab Sample ID: 680-115161-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	44	D	10		ug/L	10		8260B	Total/NA
Methane	61		0.58		ug/L	1		RSK-175	Total/NA
Iron	14		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.41		0.010		mg/L	1		6010C	Total Recoverable
Chloride	98	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	520	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	2.9		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	22		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-D1-F(0.2)-0815 — Lab Sample ID: 680-115161-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.36		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 3Q15 LTM Trip Blank #1 — Lab Sample ID: 680-115161-13

No Detections.

This Detection Summary does not include radiochemical test results.

AWD 9/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1D-0815

Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 14:02	1
Chlorobenzene	**12**		1.0		ug/L			08/06/15 14:02	1
1,2-Dichlorobenzene	**2.1**		1.0		ug/L			08/06/15 14:02	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 14:02	1
1,4-Dichlorobenzene	**1.2**		1.0		ug/L			08/06/15 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/06/15 14:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*08/06/15 14:02*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*08/06/15 14:02*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*08/06/15 14:02*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 19:45	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 19:45	1
Methane	**44**		0.58		ug/L			08/11/15 19:45	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**15**		0.050		mg/L		08/07/15 10:00	08/08/15 22:08	1
Manganese	**0.46**		0.010		mg/L		08/07/15 10:00	08/08/15 22:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**94**	D	2.0		mg/L			08/12/15 14:51	2
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:54	1
Sulfate	**400**	D	100		mg/L			08/12/15 16:53	20
Total Organic Carbon	**2.3**		1.0		mg/L			08/12/15 18:38	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**380**		5.0		mg/L			08/05/15 11:50	1
Carbon Dioxide, Free	**31**		5.0		mg/L			08/05/15 11:50	1

PWD 8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1D-F(0.2)-0815
Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		08/07/15 10:00	08/08/15 22:31	1
Manganese, Dissolved	0.43		0.010		mg/L		08/07/15 10:00	08/08/15 22:31	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		1.0		mg/L			08/12/15 20:55	1

MWP 8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1D-0815-AD

Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 14:23	1
Chlorobenzene	**12**		1.0		ug/L			08/06/15 14:23	1
1,2-Dichlorobenzene	**2.1**		1.0		ug/L			08/06/15 14:23	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 14:23	1
1,4-Dichlorobenzene	**1.2**		1.0		ug/L			08/06/15 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/06/15 14:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*08/06/15 14:23*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*08/06/15 14:23*	*1*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*		*08/06/15 14:23*	*1*

AWD 8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1M-0815

Date Collected: 08/03/15 10:44
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 14:43	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 14:43	1
1,2-Dichlorobenzene	**1.2**		1.0		ug/L			08/06/15 14:43	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 14:43	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/06/15 14:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*08/06/15 14:43*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*08/06/15 14:43*	*1*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*		*08/06/15 14:43*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 19:58	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 19:58	1
Methane	**68**		0.58		ug/L			08/11/15 19:58	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.1**		0.050		mg/L		08/07/15 10:00	08/08/15 22:35	1
Manganese	**2.1**		0.010		mg/L		08/07/15 10:00	08/08/15 22:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**320**	D	10		mg/L			08/12/15 16:06	10
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:55	1
Sulfate	**170**	D	25		mg/L			08/12/15 15:40	5
Total Organic Carbon	**2.1**		1.0		mg/L			08/12/15 18:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**540**		5.0		mg/L			08/05/15 12:00	1
Carbon Dioxide, Free	**47**		5.0		mg/L			08/05/15 12:00	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1M-F(0.2)-0815
Date Collected: 08/03/15 10:44
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-5
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	1.0		0.050		mg/L		08/07/15 10:00	08/08/15 22:49	1
Manganese, Dissolved	2.1		0.010		mg/L		08/07/15 10:00	08/08/15 22:49	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.0		1.0		mg/L			08/12/15 21:10	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-A-0815

Lab Sample ID: 680-115161-6

Date Collected: 08/03/15 14:46
Matrix: Water
Date Received: 08/04/15 09:43

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 15:04	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:04	1
1,2-Dichlorobenzene	**1.1**		1.0		ug/L			08/06/15 15:04	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:04	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/06/15 15:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*08/06/15 15:04*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*08/06/15 15:04*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/06/15 15:04*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 20:11	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 20:11	1
Methane	**8.8**		0.58		ug/L			08/11/15 20:11	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**15**		0.050		mg/L		08/07/15 07:24	08/08/15 23:45	1
Manganese	**0.53**		0.010		mg/L		08/07/15 07:24	08/08/15 23:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**96**	D	2.0		mg/L			08/12/15 14:52	2
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:56	1
Sulfate	**620**	D	100		mg/L			08/12/15 16:27	20
Total Organic Carbon	**3.2**		1.0		mg/L			08/12/15 18:57	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			08/05/15 12:08	1
Carbon Dioxide, Free	**26**		5.0		mg/L			08/05/15 12:08	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-A-F(0.2)-0815

Lab Sample ID: 680-115161-7

Date Collected: 08/03/15 14:46
Matrix: Water
Date Received: 08/04/15 09:43

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		08/07/15 07:24	08/08/15 23:50	1
Manganese, Dissolved	0.52		0.010		mg/L		08/07/15 07:24	08/08/15 23:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.3		1.0		mg/L			08/12/15 21:14	1

AWD
8/20/15

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-C1-0815

Lab Sample ID: 680-115161-8

Date Collected: 08/03/15 13:36
Matrix: Water
Date Received: 08/04/15 09:43

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 15:24	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:24	1
1,2-Dichlorobenzene	**1.8**		1.0		ug/L			08/06/15 15:24	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:24	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/06/15 15:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*08/06/15 15:24*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*08/06/15 15:24*	*1*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*		*08/06/15 15:24*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 20:24	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 20:24	1
Methane	**3.5**		0.58		ug/L			08/11/15 20:24	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**		0.050		mg/L		08/07/15 07:24	08/08/15 23:54	1
Manganese	**0.47**		0.010		mg/L		08/07/15 07:24	08/08/15 23:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**110**	D	5.0		mg/L			08/12/15 16:06	5
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:57	1
Sulfate	**930**	D	250		mg/L			08/13/15 08:40	50
Total Organic Carbon	**3.9**		1.0		mg/L			08/12/15 19:01	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**400**		5.0		mg/L			08/05/15 12:30	1
Carbon Dioxide, Free	**24**		5.0		mg/L			08/05/15 12:30	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-C1-F(0.2)-0815

Lab Sample ID: 680-115161-9

Date Collected: 08/03/15 13:36
Matrix: Water
Date Received: 08/04/15 09:43

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12		0.050		mg/L		08/07/15 07:24	08/08/15 23:59	1
Manganese, Dissolved	0.47		0.010		mg/L		08/07/15 07:24	08/08/15 23:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.8		1.0		mg/L			08/12/15 21:19	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-C1-0815-EB

Lab Sample ID: 680-115161-10

Date Collected: 08/03/15 14:08
Matrix: Water
Date Received: 08/04/15 09:43

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 15:45	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:45	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:45	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:45	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/06/15 15:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*08/06/15 15:45*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*08/06/15 15:45*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*08/06/15 15:45*	*1*

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-D1-0815

Lab Sample ID: 680-115161-11

Date Collected: 08/03/15 11:50
Matrix: Water
Date Received: 08/04/15 09:43

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	10	U	10		ug/L			08/06/15 16:26	10
Chlorobenzene	**560**	D	10		ug/L			08/06/15 16:26	10
1,2-Dichlorobenzene	10	U	10		ug/L			08/06/15 16:26	10
1,3-Dichlorobenzene	10	U	10		ug/L			08/06/15 16:26	10
1,4-Dichlorobenzene	**44**	D	10		ug/L			08/06/15 16:26	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*08/06/15 16:26*	*10*
1,2-Dichloroethane-d4 (Surr)	*106*		*70 - 130*		*08/06/15 16:26*	*10*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*08/06/15 16:26*	*10*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*		*08/06/15 16:26*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 20:37	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 20:37	1
Methane	**61**		0.58		ug/L			08/11/15 20:37	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**14**		0.050		mg/L		08/07/15 07:24	08/09/15 00:03	1
Manganese	**0.41**		0.010		mg/L		08/07/15 07:24	08/09/15 00:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**98**	D	2.0		mg/L			08/12/15 15:57	2
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:58	1
Sulfate	**520**	D	100		mg/L			08/12/15 16:29	20
Total Organic Carbon	**2.9**		1.0		mg/L			08/12/15 19:06	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			08/05/15 12:38	1
Carbon Dioxide, Free	**22**		5.0		mg/L			08/05/15 12:38	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-D1-F(0.2)-0815

Lab Sample ID: 680-115161-12

Date Collected: 08/03/15 11:50
Matrix: Water
Date Received: 08/04/15 09:43

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13		0.050		mg/L		08/11/15 09:34	08/12/15 12:41	1
Manganese, Dissolved	0.36		0.010		mg/L		08/11/15 09:34	08/12/15 12:41	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.3		1.0		mg/L			08/12/15 21:24	1

AWD
8/20/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: 3Q15 LTM Trip Blank #1

Lab Sample ID: 680-115161-13

Date Collected: 08/03/15 00:00
Matrix: Water
Date Received: 08/04/15 09:43

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 10:18	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 10:18	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 10:18	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 10:18	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 10:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/06/15 10:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*08/06/15 10:18*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*08/06/15 10:18*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/06/15 10:18*	*1*

AWD
8/20/15

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	**Client Sample ID**	(70-130)	(70-130)	(70-130)	(70-130)
680-115161-1	PM1D-0815	95	93	100	85
680-115161-3	PM1D-0815-AD	95	91	98	84
680-115161-4	PM1M-0815	96	92	100	84
680-115161-6	ESL-MW-A-0815	95	93	98	86
680-115161-6 MS	ESL-MW-A-0815	99	94	100	91
680-115161-6 MSD	ESL-MW-A-0815	98	93	98	88
680-115161-8	ESL-MW-C1-0815	95	91	99	84
680-115161-10	ESL-MW-C1-0815-EB	95	92	99	85
680-115161-11	ESL-MW-D1-0815	98	106	109	83
680-115161-13	3Q15 LTM Trip Blank #1	94	91	100	86
LCS 680-394789/3	Lab Control Sample	101	98	107	93
LCSD 680-394789/4	Lab Control Sample Dup	102	98	105	91
MB 680-394789/8	Method Blank	96	92	101	86

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

AWD
8/20/15

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-394789/8
Matrix: Water
Analysis Batch: 394789

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/06/15 09:57	1
Chlorobenzene	1.0	U	1.0		ug/L			08/06/15 09:57	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 09:57	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 09:57	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/06/15 09:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/06/15 09:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*08/06/15 09:57*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*08/06/15 09:57*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/06/15 09:57*	*1*

Lab Sample ID: LCS 680-394789/3
Matrix: Water
Analysis Batch: 394789

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.5		ug/L		103	73 - 131
Chlorobenzene	50.0	53.0		ug/L		106	80 - 120
1,2-Dichlorobenzene	50.0	50.9		ug/L		102	80 - 120
1,3-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,4-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 680-394789/4
Matrix: Water
Analysis Batch: 394789

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.2		ug/L		102	73 - 131	1	30
Chlorobenzene	50.0	52.9		ug/L		106	80 - 120	0	20
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 120	1	20
1,3-Dichlorobenzene	50.0	50.4		ug/L		101	80 - 120	2	20
1,4-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*

AWP 8/20/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-115161-6 MS — **Client Sample ID: ESL-MW-A-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394789

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	50.0	50.7		ug/L		101	73 - 131
Chlorobenzene	1.0	U	50.0	53.0		ug/L		106	80 - 120
1,2-Dichlorobenzene	1.1		50.0	51.4		ug/L		101	80 - 120
1,3-Dichlorobenzene	1.0	U	50.0	51.1		ug/L		102	80 - 120
1,4-Dichlorobenzene	1.0	U	50.0	50.4		ug/L		101	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*

Lab Sample ID: 680-115161-6 MSD — **Client Sample ID: ESL-MW-A-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394789

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	50.4		ug/L		101	73 - 131	0	30
Chlorobenzene	1.0	U	50.0	53.0		ug/L		106	80 - 120	0	20
1,2-Dichlorobenzene	1.1		50.0	50.4		ug/L		99	80 - 120	2	20
1,3-Dichlorobenzene	1.0	U	50.0	50.3		ug/L		101	80 - 120	1	20
1,4-Dichlorobenzene	1.0	U	50.0	49.7		ug/L		99	80 - 120	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-395520/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395520

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 15:29	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 15:29	1
Methane	0.58	U	0.58		ug/L			08/11/15 15:29	1

Lab Sample ID: LCS 680-395520/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	348		ug/L		121	75 - 125
Ethylene	269	328		ug/L		122	75 - 125

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Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-395520/2
Matrix: Water
Analysis Batch: 395520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	154	185		ug/L		120	75 - 125

Lab Sample ID: LCSD 680-395520/29
Matrix: Water
Analysis Batch: 395520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	320		ug/L		111	75 - 125	8	30
Ethylene	269	290		ug/L		108	75 - 125	12	30
Methane	154	172		ug/L		112	75 - 125	7	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-394967/1-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 394967

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		08/07/15 07:24	08/08/15 23:03	1
Iron, Dissolved	0.050	U	0.050		mg/L		08/07/15 07:24	08/08/15 23:03	1
Manganese	0.010	U	0.010		mg/L		08/07/15 07:24	08/08/15 23:03	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/07/15 07:24	08/08/15 23:03	1

Lab Sample ID: LCS 680-394967/2-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 394967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.16		mg/L		103	80 - 120
Iron, Dissolved	5.00	5.16		mg/L		103	80 - 120
Manganese	0.500	0.541		mg/L		108	80 - 120
Manganese, Dissolved	0.500	0.541		mg/L		108	80 - 120

Lab Sample ID: MB 680-394998/1-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 394998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		08/07/15 10:00	08/08/15 21:58	1
Iron, Dissolved	0.050	U	0.050		mg/L		08/07/15 10:00	08/08/15 21:58	1
Manganese	0.010	U	0.010		mg/L		08/07/15 10:00	08/08/15 21:58	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/07/15 10:00	08/08/15 21:58	1

Lab Sample ID: LCS 680-394998/2-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 394998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.20		mg/L		104	80 - 120

AWD 8/20/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-394998/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395189 — **Prep Batch: 394998**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	5.00	5.20		mg/L		104	80 - 120
Manganese	0.500	0.546		mg/L		109	80 - 120
Manganese, Dissolved	0.500	0.546		mg/L		109	80 - 120

Lab Sample ID: 680-115161-1 MS — **Client Sample ID: PM1D-0815**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395189 — **Prep Batch: 394998**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	15		5.00	19.7		mg/L		94	75 - 125
Iron, Dissolved	15		5.00	19.7		mg/L		94	75 - 125
Manganese	0.46		0.500	0.978		mg/L		103	75 - 125
Manganese, Dissolved	0.46		0.500	0.978		mg/L		103	75 - 125

Lab Sample ID: 680-115161-1 MSD — **Client Sample ID: PM1D-0815**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395189 — **Prep Batch: 394998**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	15		5.00	19.5		mg/L		92	75 - 125	1	20
Iron, Dissolved	15		5.00	19.5		mg/L		92	75 - 125	1	20
Manganese	0.46		0.500	0.975		mg/L		103	75 - 125	0	20
Manganese, Dissolved	0.46		0.500	0.975		mg/L		103	75 - 125	0	20

Lab Sample ID: MB 680-395447/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		08/11/15 09:34	08/12/15 12:32	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/11/15 09:34	08/12/15 12:32	1

Lab Sample ID: LCS 680-395447/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	5.00	4.76		mg/L		95	80 - 120
Manganese, Dissolved	0.500	0.492		mg/L		98	80 - 120

Lab Sample ID: 680-115161-12 MS — **Client Sample ID: ESL-MW-D1-F(0.2)-0815**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	13		5.00	18.2		mg/L		112	75 - 125
Manganese, Dissolved	0.36		0.500	0.910		mg/L		109	75 - 125

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-115161-12 MSD — **Client Sample ID: ESL-MW-D1-F(0.2)-0815**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron, Dissolved	13		5.00	18.3		mg/L		115	75 - 125	1	20
Manganese, Dissolved	0.36		0.500	0.910		mg/L		109	75 - 125	0	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-394720/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394720

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			08/05/15 10:48	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/05/15 10:48	1

Lab Sample ID: LCS 680-394720/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394720

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	228		mg/L		91	80 - 120

Lab Sample ID: LCSD 680-394720/29 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394720

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	251		mg/L		100	80 - 120	9	30

Lab Sample ID: 680-115161-6 DU — **Client Sample ID: ESL-MW-A-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394720

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	370		379		mg/L		3	30
Carbon Dioxide, Free	26		25.7		mg/L		0.1	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-395888/22 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			08/12/15 16:00	1

AWP 8/20/15

TestAmerica Savannah

Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCS 680-395888/15 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.1		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-395888/21 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.3		mg/L		105	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-394578/13 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394578

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			08/04/15 18:34	1

Lab Sample ID: LCS 680-394578/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394578

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.527		mg/L		105	75 - 125
Nitrate Nitrite as N	1.00	1.05		mg/L		105	90 - 110
Nitrite as N	0.500	0.528		mg/L		106	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-395889/52 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			08/13/15 08:41	1

Lab Sample ID: LCS 680-395889/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

Lab Sample ID: LCSD 680-395889/42 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	19.9		mg/L		100	75 - 125	0	30

AWP 8/20/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 415.1 - DOC

Lab Sample ID: MB 160-205387/28
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			08/12/15 20:37	1

Lab Sample ID: LCS 160-205387/29
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Lab Sample ID: 680-115161-2 MS
Matrix: Water
Analysis Batch: 205387

Client Sample ID: PM1D-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	2.7		5.00	7.93		mg/L		105	82 - 132

Lab Sample ID: 680-115161-2 DU
Matrix: Water
Analysis Batch: 205387

Client Sample ID: PM1D-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	2.7		2.63		mg/L		3	20

Method: 415.1 - TOC

Lab Sample ID: MB 160-205386/4
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			08/12/15 18:24	1

Lab Sample ID: LCS 160-205386/5
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

Lab Sample ID: 680-115161-1 MS
Matrix: Water
Analysis Batch: 205386

Client Sample ID: PM1D-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.3		5.00	7.41		mg/L		102	76 - 120

AWP 8/20/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Method: 415.1 - TOC (Continued)

Lab Sample ID: 680-115161-1 DU
Matrix: Water
Analysis Batch: 205386

Client Sample ID: PM1D-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	2.3			2.38		mg/L				3	20

MWD 8/20/15

TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

GC/MS VOA

Analysis Batch: 394789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	8260B	
680-115161-3	PM1D-0815-AD	Total/NA	Water	8260B	
680-115161-4	PM1M-0815	Total/NA	Water	8260B	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	8260B	
680-115161-6 MS	ESL-MW-A-0815	Total/NA	Water	8260B	
680-115161-6 MSD	ESL-MW-A-0815	Total/NA	Water	8260B	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	8260B	
680-115161-10	ESL-MW-C1-0815-EB	Total/NA	Water	8260B	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	8260B	
680-115161-13	3Q15 LTM Trip Blank #1	Total/NA	Water	8260B	
LCS 680-394789/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-394789/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-394789/8	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 395520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	RSK-175	
680-115161-4	PM1M-0815	Total/NA	Water	RSK-175	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	RSK-175	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	RSK-175	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	RSK-175	
LCS 680-395520/2	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-395520/29	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-395520/7	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 394967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-6	ESL-MW-A-0815	Total Recoverable	Water	3005A	
680-115161-7	ESL-MW-A-F(0.2)-0815	Dissolved	Water	3005A	
680-115161-8	ESL-MW-C1-0815	Total Recoverable	Water	3005A	
680-115161-9	ESL-MW-C1-F(0.2)-0815	Dissolved	Water	3005A	
680-115161-11	ESL-MW-D1-0815	Total Recoverable	Water	3005A	
LCS 680-394967/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-394967/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 394998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total Recoverable	Water	3005A	
680-115161-1 MS	PM1D-0815	Total Recoverable	Water	3005A	
680-115161-1 MSD	PM1D-0815	Total Recoverable	Water	3005A	
680-115161-2	PM1D-F(0.2)-0815	Dissolved	Water	3005A	
680-115161-4	PM1M-0815	Total Recoverable	Water	3005A	
680-115161-5	PM1M-F(0.2)-0815	Dissolved	Water	3005A	
LCS 680-394998/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-394998/1-A	Method Blank	Total Recoverable	Water	3005A	

AWP 8/20/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Metals (Continued)

Analysis Batch: 395189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total Recoverable	Water	6010C	394998
680-115161-1 MS	PM1D-0815	Total Recoverable	Water	6010C	394998
680-115161-1 MSD	PM1D-0815	Total Recoverable	Water	6010C	394998
680-115161-2	PM1D-F(0.2)-0815	Dissolved	Water	6010C	394998
680-115161-4	PM1M-0815	Total Recoverable	Water	6010C	394998
680-115161-5	PM1M-F(0.2)-0815	Dissolved	Water	6010C	394998
680-115161-6	ESL-MW-A-0815	Total Recoverable	Water	6010C	394967
680-115161-7	ESL-MW-A-F(0.2)-0815	Dissolved	Water	6010C	394967
680-115161-8	ESL-MW-C1-0815	Total Recoverable	Water	6010C	394967
680-115161-9	ESL-MW-C1-F(0.2)-0815	Dissolved	Water	6010C	394967
680-115161-11	ESL-MW-D1-0815	Total Recoverable	Water	6010C	394967
LCS 680-394967/2-A	Lab Control Sample	Total Recoverable	Water	6010C	394967
LCS 680-394998/2-A	Lab Control Sample	Total Recoverable	Water	6010C	394998
MB 680-394967/1-A	Method Blank	Total Recoverable	Water	6010C	394967
MB 680-394998/1-A	Method Blank	Total Recoverable	Water	6010C	394998

Prep Batch: 395447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-12	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	3005A	
680-115161-12 MS	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	3005A	
680-115161-12 MSD	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	3005A	
LCS 680-395447/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-395447/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 395850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-12	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115161-12 MS	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115161-12 MSD	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	6010C	395447
LCS 680-395447/2-A	Lab Control Sample	Total Recoverable	Water	6010C	395447
MB 680-395447/1-A	Method Blank	Total Recoverable	Water	6010C	395447

General Chemistry

Analysis Batch: 205386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	415.1	
680-115161-1 DU	PM1D-0815	Total/NA	Water	415.1	
680-115161-1 MS	PM1D-0815	Total/NA	Water	415.1	
680-115161-4	PM1M-0815	Total/NA	Water	415.1	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	415.1	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	415.1	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	415.1	
LCS 160-205386/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-205386/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 205387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-2	PM1D-F(0.2)-0815	Dissolved	Water	415.1	
680-115161-2 DU	PM1D-F(0.2)-0815	Dissolved	Water	415.1	

MMD 8/20/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

General Chemistry (Continued)

Analysis Batch: 205387 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-2 MS	PM1D-F(0.2)-0815	Dissolved	Water	415.1	
680-115161-5	PM1M-F(0.2)-0815	Dissolved	Water	415.1	
680-115161-7	ESL-MW-A-F(0.2)-0815	Dissolved	Water	415.1	
680-115161-9	ESL-MW-C1-F(0.2)-0815	Dissolved	Water	415.1	
680-115161-12	ESL-MW-D1-F(0.2)-0815	Dissolved	Water	415.1	
LCS 160-205387/29	Lab Control Sample	Dissolved	Water	415.1	
MB 160-205387/28	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 394578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	353.2	
680-115161-4	PM1M-0815	Total/NA	Water	353.2	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	353.2	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	353.2	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	353.2	
LCS 680-394578/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-394578/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 394720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	310.1	
680-115161-4	PM1M-0815	Total/NA	Water	310.1	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	310.1	
680-115161-6 DU	ESL-MW-A-0815	Total/NA	Water	310.1	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	310.1	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	310.1	
LCS 680-394720/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-394720/29	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-394720/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 395888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	325.2	
680-115161-4	PM1M-0815	Total/NA	Water	325.2	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	325.2	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	325.2	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	325.2	
LCS 680-395888/15	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-395888/21	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-395888/22	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 395889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115161-1	PM1D-0815	Total/NA	Water	375.4	
680-115161-4	PM1M-0815	Total/NA	Water	375.4	
680-115161-6	ESL-MW-A-0815	Total/NA	Water	375.4	
680-115161-8	ESL-MW-C1-0815	Total/NA	Water	375.4	
680-115161-11	ESL-MW-D1-0815	Total/NA	Water	375.4	
LCS 680-395889/16	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-395889/42	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-395889/52	Method Blank	Total/NA	Water	375.4	

AWD 8/20/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1D-0815
Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 14:02	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 19:45	AAH	TAL SAV
Total Recoverable	Prep	3005A			394998	08/07/15 10:00	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395189	08/08/15 22:08	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394720	08/05/15 11:50	KLD	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 14:51	JME	TAL SAV
Total/NA	Analysis	353.2		1	394578	08/04/15 18:54	GRX	TAL SAV
Total/NA	Analysis	375.4		20	395889	08/12/15 16:53	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 18:38	BLH	TAL SL

Client Sample ID: PM1D-F(0.2)-0815
Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394998	08/07/15 10:00	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/08/15 22:31	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 20:55	BLH	TAL SL

Client Sample ID: PM1D-0815-AD
Date Collected: 08/03/15 09:24
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 14:23	CEJ	TAL SAV

Client Sample ID: PM1M-0815
Date Collected: 08/03/15 10:44
Date Received: 08/04/15 09:43

Lab Sample ID: 680-115161-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 14:43	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 19:58	AAH	TAL SAV
Total Recoverable	Prep	3005A			394998	08/07/15 10:00	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395189	08/08/15 22:35	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394720	08/05/15 12:00	KLD	TAL SAV
Total/NA	Analysis	325.2		10	395888	08/12/15 16:06	JME	TAL SAV
Total/NA	Analysis	353.2		1	394578	08/04/15 18:55	GRX	TAL SAV
Total/NA	Analysis	375.4		5	395889	08/12/15 15:40	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 18:52	BLH	TAL SL

MWD 8/20/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: PM1M-F(0.2)-0815

Lab Sample ID: 680-115161-5
Date Collected: 08/03/15 10:44
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394998	08/07/15 10:00	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/08/15 22:49	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 21:10	BLH	TAL SL

Client Sample ID: ESL-MW-A-0815

Lab Sample ID: 680-115161-6
Date Collected: 08/03/15 14:46
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 15:04	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 20:11	AAH	TAL SAV
Total Recoverable	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395189	08/08/15 23:45	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394720	08/05/15 12:08	KLD	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 14:52	JME	TAL SAV
Total/NA	Analysis	353.2		1	394578	08/04/15 18:56	GRX	TAL SAV
Total/NA	Analysis	375.4		20	395889	08/12/15 16:27	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 18:57	BLH	TAL SL

Client Sample ID: ESL-MW-A-F(0.2)-0815

Lab Sample ID: 680-115161-7
Date Collected: 08/03/15 14:46
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/08/15 23:50	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 21:14	BLH	TAL SL

Client Sample ID: ESL-MW-C1-0815

Lab Sample ID: 680-115161-8
Date Collected: 08/03/15 13:36
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 15:24	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 20:24	AAH	TAL SAV
Total Recoverable	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395189	08/08/15 23:54	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394720	08/05/15 12:30	KLD	TAL SAV
Total/NA	Analysis	325.2		5	395888	08/12/15 16:06	JME	TAL SAV
Total/NA	Analysis	353.2		1	394578	08/04/15 18:57	GRX	TAL SAV
Total/NA	Analysis	375.4		50	395889	08/13/15 08:40	JME	TAL SAV

RWD 8/20/15

TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: ESL-MW-C1-0815
Lab Sample ID: 680-115161-8
Date Collected: 08/03/15 13:36
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	415.1		1	205386	08/12/15 19:01	BLH	TAL SL

Client Sample ID: ESL-MW-C1-F(0.2)-0815
Lab Sample ID: 680-115161-9
Date Collected: 08/03/15 13:36
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/08/15 23:59	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 21:19	BLH	TAL SL

Client Sample ID: ESL-MW-C1-0815-EB
Lab Sample ID: 680-115161-10
Date Collected: 08/03/15 14:08
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 15:45	CEJ	TAL SAV

Client Sample ID: ESL-MW-D1-0815
Lab Sample ID: 680-115161-11
Date Collected: 08/03/15 11:50
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	394789	08/06/15 16:26	CEJ	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 20:37	AAH	TAL SAV
Total Recoverable	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395189	08/09/15 00:03	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394720	08/05/15 12:38	KLD	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 15:57	JME	TAL SAV
Total/NA	Analysis	353.2		1	394578	08/04/15 18:58	GRX	TAL SAV
Total/NA	Analysis	375.4		20	395889	08/12/15 16:29	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:06	BLH	TAL SL

Client Sample ID: ESL-MW-D1-F(0.2)-0815
Lab Sample ID: 680-115161-12
Date Collected: 08/03/15 11:50
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 12:41	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 21:24	BLH	TAL SL

AWD 8/20/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Client Sample ID: 3Q15 LTM Trip Blank #1

Lab Sample ID: 680-115161-13

Date Collected: 08/03/15 00:00
Matrix: Water
Date Received: 08/04/15 09:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	394789	08/06/15 10:18	CEJ	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

MWD 8/20/15

TestAmerica Savannah

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/3/15	COC No
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 2 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client.
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummnch Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
PMID-0815	8/3/15	0924	G	W	14			3		1	1	1	3	2	3			2 coolers
PMID-F(0.2)-0815					4											1	3	
PMID-0815-AD					3			3										
PMIM-0815		1044			14			3		1	1	1	3	2	3			
PMIM-F(0.2)-0815					4											1	3	
ESL-MW-A-0815		1446			14			3		1	1	1	3	2	3			
ESL-MW-A-F(0.2)-0815					4											1	3	
ESL-MW-A-0815-MS					3			3										
ESL-MW-A-0815-MSD					3			3										
ESL-MW-CI-0815		1336			14			3		1	1	1	3	2	3			
ESL-MW-CI-F(0.2)-0815					4											1	3	
ESL-MW-CI-0815-EB		1408			3			3										
Preservation (1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other)								2		4	1	1	2	1,3	3	4	3	

680-115161 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/No

680-115161 1.8/3.6(CF)2.3/4.1°C

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 504801/504802	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____	Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
L. Bindner	Golder	8/3/15			
Relinquished by: 8/5/15	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Amanda	Company: SAV.	Date/Time: 08/04/15 0943

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/3/15	COC No:
Golder Associates Inc	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	2 of 2 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 326.2/Sulfate by 376.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
ESL-MW-DI-0815	8/3/15	1150	G	W	14			3		1	1	1	3	2	3			2 coolers
ESL-MW-DI-F(0.2)-0815	↓	↓	↓	↓	4											1	3	
3Q15 LTM Trip Blank #1	—	—	—	—	2			2										

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/(No)

680-115161 1.8/3.6(CF) 23/4.1°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 504801/504802 | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Lori Bindner	Golder	8/3/15			
Relinquished by: 8/3/2015	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Amanda	Company: SAV	Date/Time: 08/04/15 0943

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115161-1
SDG Number: KPS147

Login Number: 115161
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWP 8/20/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115161-1
SDG Number: KPS147

Login Number: 115161
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/06/15 09:15 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	3.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWD 8/20/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-15 *
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-15 *
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	09-30-15
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-15 *
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-15 *
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

AWD 8/20/15

TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115161-1
SDG: KPS147

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	10-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-15 *
Nevada	State Program	9	MO000542013-1	07-31-16
New Jersey	NELAP	2	MO002	09-30-15
New York	NELAP	2	11616	03-31-16
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15 *
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15 *
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542013-5	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-15 *
West Virginia DEP	State Program	3	381	08-31-15 *

* Certification renewal pending - certification considered valid.

AWP 8/20/15

TestAmerica Savannah

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS148
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: GWE-2D-0815, GWE-2D-F(0.2)-0815, GWE-3D-0815, GWE-3D-F(0.2)-0815, GWE-5S-0815, GWE-5S-F(0.2)-0815, GWE-5M-0815, GWE-5M-F(0.2)-0815, GWE-5D-0815, GWE-5D-F(0.2)-0815, and 3Q15 LTM Trip Blank #2

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batches 395122 and 395225. Samples GWE-2D-0815, GWE-3D-0815 and GWE-5D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 395520.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples GWE-2D-0815, GWE-3D-0815, GWE-5S-0815, GWE-5M-0815, and GWE-5D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Sulfate recovered low for the GWE-5S-0815MS and GWE-5S-0815MSD in batch 395889. Samples GWE-2D-0815, GWE-3D-0815, GWE-5S-0815, GWE-5M-0815, and GWE-5D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 3.1°C and 3.3°C, within the 4°C +/- 2°C criteria.

General	YES	NO	NA
a) Were hold times met for sample analysis?	☒	☐	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☒	☐	☐

Comments: Detections in diluted analysis were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	YES	NO	NA
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	YES	NO	NA
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	YES	NO	NA
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: Equipment blanks were not submitted with SDG KPS148.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA
a) Was MS/MSD accuracy criteria met?	☐	☒	☐
b) Was MS/MSD precision criteria met?	☐	☒	☐

Comments: Sulfate recoveries were outside control limits associated with batch 395889. Data was not qualified based on MS/MSD data alone.

Laboratory Control Sample (LCS)	YES	NO	NA
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Surrogate (System Monitoring) Compounds	YES	NO	NA
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates

	YES	NO	NA
a) Were field duplicates collected?	☐	☒	☐
b) Was field duplicate precision criteria met?	☐	☐	☒

Comments: Duplicate samples were not submitted with SDG KPS148.

Additional Comments: None

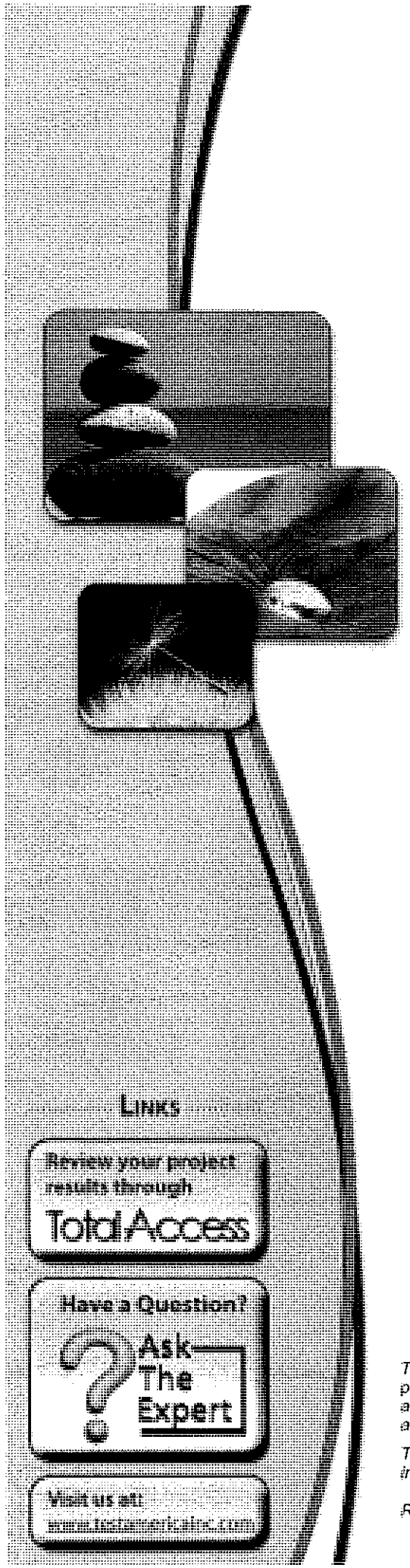
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, and 1,4-Dichlorobenzene, Chloride, and Sulfate	D	GWE-2D, GWE-3D, GWE-5S, GWE-5M, and GWE-5D

SDG KPS148

Sample Results from:

GWE-2D
GWE-3D
GWE-5S
GWE-5M
GWE-5D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115226-1
TestAmerica Sample Delivery Group: KPS148
Client Project/Site: 3Q15 LTM GW Sampling - 1403345
Revision: 1

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
8/25/2015 4:33:22 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally hendwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AWD 8/26/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 6
Method Summary 7
Definitions 8
Detection Summary 9
Client Sample Results 12
Surrogate Summary 23
QC Sample Results 24
QC Association 31
Chronicle 34
Chain of Custody 37
Receipt Checklists 38
Certification Summary 40

AUD
8/26/15

Job ID: 680-115226-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 3Q15 LTM GW Sampling - 1403345

Report Number: 680-115226-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/5/2015 9:37 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.1° C and 3.3° C.

Note: 8/25/15 Report revised to include total metals analysis which was not included in original report.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7), GWE-2D-0815 (680-115226-9) and 3Q15 LTM Trip Blank #2 (680-115226-11) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/08/2015 and 08/10/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395122.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 680-395225.

Samples GWE-5D-0815 (680-115226-1)[5X], GWE-3D-0815 (680-115226-7)[20X] and GWE-2D-0815 (680-115226-9)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 08/11/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395520.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples GWE-5D-F(0.2)-0815 (680-115226-2), GWE-5M-F(0.2)-0815 (680-115226-4), GWE-5S-F(0.2)-0815 (680-115226-6), GWE-3D-F(0.2)-0815 (680-115226-8) and GWE-2D-F(0.2)-0815 (680-115226-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/07/2015 and analyzed on 08/08/2015 and 08/09/2015.

AWD 8/26/15

Job ID: 680-115226-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/24/2015 and analyzed on 08/25/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 08/06/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 08/12/2015.

Samples GWE-5D-0815 (680-115226-1)[2X], GWE-5M-0815 (680-115226-3)[2X], GWE-5S-0815 (680-115226-5)[2X], GWE-3D-0815 (680-115226-7)[20X] and GWE-2D-0815 (680-115226-9)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/05/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 08/12/2015.

Sulfate exceeded the recovery criteria low for the MS and MSD of sample GWE-5S-0815 (680-115226-5) in batch 680-395889.

Refer to the QC report for details.

Samples GWE-5D-0815 (680-115226-1)[20X], GWE-5M-0815 (680-115226-3)[5X], GWE-5S-0815 (680-115226-5)[5X], GWE-3D-0815 (680-115226-7)[10X] and GWE-2D-0815 (680-115226-9)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON
Samples GWE-5D-0815 (680-115226-1), GWE-5M-0815 (680-115226-3), GWE-5S-0815 (680-115226-5), GWE-3D-0815 (680-115226-7) and GWE-2D-0815 (680-115226-9) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD 8/26/15

Job ID: 680-115226-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

DISSOLVED ORGANIC CARBON (DOC)

Samples GWE-5D-F(0.2)-0815 (680-115226-2), GWE-5M-F(0.2)-0815 (680-115226-4), GWE-5S-F(0.2)-0815 (680-115226-6), GWE-3D-F(0.2)-0815 (680-115226-8) and GWE-2D-F(0.2)-0815 (680-115226-10) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD
8/26/15
TestAmerica Savannah

Sample Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115226-1	GWE-5D-0815	Water	08/04/15 09:50	08/05/15 09:37
680-115226-2	GWE-5D-F(0.2)-0815	Water	08/04/15 09:50	08/05/15 09:37
680-115226-3	GWE-5M-0815	Water	08/04/15 10:35	08/05/15 09:37
680-115226-4	GWE-5M-F(0.2)-0815	Water	08/04/15 10:35	08/05/15 09:37
680-115226-5	GWE-5S-0815	Water	08/04/15 11:15	08/05/15 09:37
680-115226-6	GWE-5S-F(0.2)-0815	Water	08/04/15 11:15	08/05/15 09:37
680-115226-7	GWE-3D-0815	Water	08/04/15 13:07	08/05/15 09:37
680-115226-8	GWE-3D-F(0.2)-0815	Water	08/04/15 13:07	08/05/15 09:37
680-115226-9	GWE-2D-0815	Water	08/04/15 14:56	08/05/15 09:37
680-115226-10	GWE-2D-F(0.2)-0815	Water	08/04/15 14:56	08/05/15 09:37
680-115226-11	3Q15 LTM Trip Blank #2	Water	08/04/15 00:00	08/05/15 09:37

MWD 8/26/15
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SL
415.1	DOC	MCAWW	TAL SL

Protocol 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.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWP 8/26/15
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWD
8/26/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5D-0815 — Lab Sample ID: 680-115226-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	20	D	5.0		ug/L	5		8260B	Total/NA
Chlorobenzene	520	D	5.0		ug/L	5		8260B	Total/NA
1,2-Dichlorobenzene	8.0	D	5.0		ug/L	5		8260B	Total/NA
1,4-Dichlorobenzene	52	D	5.0		ug/L	5		8260B	Total/NA
Methane	87		0.58		ug/L	1		RSK-175	Total/NA
Iron	14		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.41		0.010		mg/L	1		6010C	Total Recoverable
Chloride	95	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	440	D	100		mg/L	20		375.4	Total/NA
Total Organic Carbon	3.0		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	26		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5D-F(0.2)-0815 — Lab Sample ID: 680-115226-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	14		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.41		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-5M-0815 — Lab Sample ID: 680-115226-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA
Methane	50		0.58		ug/L	1		RSK-175	Total/NA
Iron	20		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.2		0.010		mg/L	1		6010C	Total Recoverable
Chloride	61	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	90	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	2.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	470		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	29		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5M-F(0.2)-0815 — Lab Sample ID: 680-115226-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	19		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	1.2		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-5S-0815 — Lab Sample ID: 680-115226-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	11		0.58		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

AWD 8/26/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5S-0815 (Continued) — Lab Sample ID: 680-115226-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1.7		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.71		0.010		mg/L	1		6010C	Total Recoverable
Chloride	46	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	96	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	2.9		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	460		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	28		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5S-F(0.2)-0815 — Lab Sample ID: 680-115226-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	0.66		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-3D-0815 — Lab Sample ID: 680-115226-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	25	D	20		ug/L	20		8260B	Total/NA
Chlorobenzene	1500	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	86	D	20		ug/L	20		8260B	Total/NA
Methane	100		0.58		ug/L	1		RSK-175	Total/NA
Iron	22		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.66		0.010		mg/L	1		6010C	Total Recoverable
Chloride	780	D	20		mg/L	20		325.2	Total/NA
Sulfate	280	D	50		mg/L	10		375.4	Total/NA
Total Organic Carbon	4.8		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	410		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	32		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-3D-F(0.2)-0815 — Lab Sample ID: 680-115226-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	24		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.74		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-2D-0815 — Lab Sample ID: 680-115226-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	390	D	2.0		ug/L	2		8260B	Total/NA
Methane	50		0.58		ug/L	1		RSK-175	Total/NA
Iron	42		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.0		0.010		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

AWD 8/26/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-2D-0815 (Continued) — Lab Sample ID: 680-115226-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1200	D	50		mg/L	50		325.2	Total/NA
Sulfate	800	D	250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.9		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	46		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-2D-F(0.2)-0815 — Lab Sample ID: 680-115226-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	46		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	1.1		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.0		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 3Q15 LTM Trip Blank #2 — Lab Sample ID: 680-115226-11

No Detections.

This Detection Summary does not include radiochemical test results.

AWM 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5D-0815

Lab Sample ID: 680-115226-1

Date Collected: 08/04/15 09:50
Date Received: 08/05/15 09:37

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**20**	D	5.0		ug/L			08/10/15 13:10	5
Chlorobenzene	**520**	D	5.0		ug/L			08/10/15 13:10	5
1,2-Dichlorobenzene	**8.0**	D	5.0		ug/L			08/10/15 13:10	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			08/10/15 13:10	5
1,4-Dichlorobenzene	**52**	D	5.0		ug/L			08/10/15 13:10	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*70 - 130*		*08/10/15 13:10*	*5*
1,2-Dichloroethane-d4 (Surr)	*114*		*70 - 130*		*08/10/15 13:10*	*5*
Dibromofluoromethane (Surr)	*115*		*70 - 130*		*08/10/15 13:10*	*5*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*08/10/15 13:10*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 21:02	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 21:02	1
Methane	**87**		0.58		ug/L			08/11/15 21:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**14**		0.050		mg/L		08/24/15 12:58	08/25/15 12:17	1
Manganese	**0.41**		0.010		mg/L		08/24/15 12:58	08/25/15 12:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**95**	D	2.0		mg/L			08/12/15 15:57	2
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 14:58	1
Sulfate	**440**	D	100		mg/L			08/12/15 16:29	20
Total Organic Carbon	**3.0**		1.0		mg/L			08/12/15 19:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			08/06/15 17:45	1
Carbon Dioxide, Free	**26**		5.0		mg/L			08/06/15 17:45	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5D-F(0.2)-0815
Date Collected: 08/04/15 09:50
Date Received: 08/05/15 09:37

Lab Sample ID: 680-115226-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	14		0.050		mg/L		08/07/15 07:24	08/09/15 00:08	1
Manganese, Dissolved	0.41		0.010		mg/L		08/07/15 07:24	08/09/15 00:08	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.1		1.0		mg/L			08/12/15 21:33	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5M-0815

Lab Sample ID: 680-115226-3

Date Collected: 08/04/15 10:35
Matrix: Water
Date Received: 08/05/15 09:37

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/08/15 12:16	1
Chlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:16	1
1,2-Dichlorobenzene	**1.1**		1.0		ug/L			08/08/15 12:16	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:16	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/08/15 12:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/08/15 12:16*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*08/08/15 12:16*	*1*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/08/15 12:16*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 21:15	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 21:15	1
Methane	**50**		0.58		ug/L			08/11/15 21:15	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**20**		0.050		mg/L		08/24/15 12:58	08/25/15 12:13	1
Manganese	**1.2**		0.010		mg/L		08/24/15 12:58	08/25/15 12:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61**	▽	2.0		mg/L			08/12/15 15:57	2
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 14:59	1
Sulfate	**90**	▷	25		mg/L			08/12/15 16:29	5
Total Organic Carbon	**2.2**		1.0		mg/L			08/12/15 19:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**470**		5.0		mg/L			08/06/15 17:54	1
Carbon Dioxide, Free	**29**		5.0		mg/L			08/06/15 17:54	1

AWB 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5M-F(0.2)-0815

Lab Sample ID: 680-115226-4

Date Collected: 08/04/15 10:35
Matrix: Water
Date Received: 08/05/15 09:37

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19		0.050		mg/L		08/07/15 07:24	08/09/15 00:13	1
Manganese, Dissolved	1.2		0.010		mg/L		08/07/15 07:24	08/09/15 00:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3		1.0		mg/L			08/12/15 21:56	1

AWR 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5S-0815

Lab Sample ID: 680-115226-5

Date Collected: 08/04/15 11:15
Date Received: 08/05/15 09:37

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/08/15 12:36	1
Chlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:36	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:36	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:36	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/08/15 12:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/08/15 12:36*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*08/08/15 12:36*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*08/08/15 12:36*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 21:28	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 21:28	1
Methane	**11**		0.58		ug/L			08/11/15 21:28	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.7**		0.050		mg/L		08/24/15 12:58	08/25/15 12:10	1
Manganese	**0.71**		0.010		mg/L		08/24/15 12:58	08/25/15 12:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**46**	D	2.0		mg/L			08/12/15 14:51	2
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 15:01	1
Sulfate	**96**	D	25		mg/L			08/12/15 15:48	5
Total Organic Carbon	**2.9**		1.0		mg/L			08/12/15 19:43	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**460**		5.0		mg/L			08/06/15 18:04	1
Carbon Dioxide, Free	**28**		5.0		mg/L			08/06/15 18:04	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5S-F(0.2)-0815

Lab Sample ID: 680-115226-6

Date Collected: 08/04/15 11:15
Matrix: Water
Date Received: 08/05/15 09:37

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		08/07/15 07:24	08/09/15 00:17	1
Manganese, Dissolved	**0.66**		0.010		mg/L		08/07/15 07:24	08/09/15 00:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	**2.8**		1.0		mg/L			08/12/15 22:01	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-3D-0815

Lab Sample ID: 680-115226-7

Date Collected: 08/04/15 13:07
Date Received: 08/05/15 09:37

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**25**	D	20		ug/L			08/08/15 17:02	20
Chlorobenzene	**1500**	D	20		ug/L			08/08/15 17:02	20
1,2-Dichlorobenzene	20	U	20		ug/L			08/08/15 17:02	20
1,3-Dichlorobenzene	20	U	20		ug/L			08/08/15 17:02	20
1,4-Dichlorobenzene	**86**	D	20		ug/L			08/08/15 17:02	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*70 - 130*		*08/08/15 17:02*	*20*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 130*		*08/08/15 17:02*	*20*
Dibromofluoromethane (Surr)	*112*		*70 - 130*		*08/08/15 17:02*	*20*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*08/08/15 17:02*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 21:41	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 21:41	1
Methane	**100**		0.58		ug/L			08/11/15 21:41	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**22**		0.050		mg/L		08/24/15 12:58	08/25/15 12:06	1
Manganese	**0.66**		0.010		mg/L		08/24/15 12:58	08/25/15 12:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**780**	D	20		mg/L			08/12/15 16:34	20
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 15:02	1
Sulfate	**280**	D	50		mg/L			08/12/15 16:32	10
Total Organic Carbon	**4.8**		1.0		mg/L			08/12/15 19:48	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**410**		5.0		mg/L			08/06/15 18:12	1
Carbon Dioxide, Free	**32**		5.0		mg/L			08/06/15 18:12	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-3D-F(0.2)-0815

Lab Sample ID: 680-115226-8

Date Collected: 08/04/15 13:07
Matrix: Water
Date Received: 08/05/15 09:37

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	24		0.050		mg/L		08/07/15 07:24	08/09/15 00:22	1
Manganese, Dissolved	0.74		0.010		mg/L		08/07/15 07:24	08/09/15 00:22	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.6		1.0		mg/L			08/12/15 22:05	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-2D-0815

Lab Sample ID: 680-115226-9

Date Collected: 08/04/15 14:56
Date Received: 08/05/15 09:37

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0		ug/L			08/08/15 17:22	2
Chlorobenzene	**390**	D	2.0		ug/L			08/08/15 17:22	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			08/08/15 17:22	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			08/08/15 17:22	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			08/08/15 17:22	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/08/15 17:22*	*2*
1,2-Dichloroethane-d4 (Surr)	*124*		*70 - 130*		*08/08/15 17:22*	*2*
Dibromofluoromethane (Surr)	*123*		*70 - 130*		*08/08/15 17:22*	*2*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/08/15 17:22*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 21:54	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 21:54	1
Methane	**50**		0.58		ug/L			08/11/15 21:54	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**42**		0.050		mg/L		08/24/15 12:58	08/25/15 11:47	1
Manganese	**1.0**		0.010		mg/L		08/24/15 12:58	08/25/15 11:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1200**	D	50		mg/L			08/12/15 16:34	50
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 15:03	1
Sulfate	**800**	D	250		mg/L			08/12/15 16:32	50
Total Organic Carbon	**3.9**		1.0		mg/L			08/12/15 19:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			08/06/15 18:20	1
Carbon Dioxide, Free	**46**		5.0		mg/L			08/06/15 18:20	1

AWD 8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-2D-F(0.2)-0815

Lab Sample ID: 680-115226-10

Date Collected: 08/04/15 14:56
Matrix: Water
Date Received: 08/05/15 09:37

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	46		0.050		mg/L		08/07/15 10:00	08/08/15 22:59	1
Manganese, Dissolved	1.1		0.010		mg/L		08/07/15 10:00	08/08/15 22:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.0		1.0		mg/L			08/12/15 22:10	1

AWD
8/26/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: 3Q15 LTM Trip Blank #2

Lab Sample ID: 680-115226-11

Date Collected: 08/04/15 00:00
Matrix: Water
Date Received: 08/05/15 09:37

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/08/15 11:35	1
Chlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:35	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:35	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:35	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*08/08/15 11:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*08/08/15 11:35*	*1*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*08/08/15 11:35*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*08/08/15 11:35*	*1*

AWD 8/20/15
TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	**Client Sample ID**	(70-130)	(70-130)	(70-130)	(70-130)
680-115226-1	GWE-5D-0815	99	114	115	106
680-115226-3	GWE-5M-0815	94	98	106	88
680-115226-5	GWE-5S-0815	95	98	108	90
680-115226-7	GWE-3D-0815	92	108	112	93
680-115226-9	GWE-2D-0815	95	124	123	88
680-115226-11	3Q15 LTM Trip Blank #2	93	99	109	92
LCS 680-395122/4	Lab Control Sample	93	99	104	98
LCS 680-395225/4	Lab Control Sample	107	94	105	105
LCSD 680-395122/5	Lab Control Sample Dup	95	100	104	96
LCSD 680-395225/5	Lab Control Sample Dup	107	94	105	106
MB 680-395122/9	Method Blank	92	98	107	90
MB 680-395225/9	Method Blank	107	91	102	106

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

AWR 8/20/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-395122/9
Matrix: Water
Analysis Batch: 395122

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/08/15 11:14	1
Chlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:14	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:14	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:14	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/08/15 11:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*70 - 130*		*08/08/15 11:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/08/15 11:14*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*08/08/15 11:14*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*08/08/15 11:14*	*1*

Lab Sample ID: LCS 680-395122/4
Matrix: Water
Analysis Batch: 395122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	49.2		ug/L		98	73 - 131
Chlorobenzene	50.0	51.3		ug/L		103	80 - 120
1,2-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 120
1,3-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*93*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 680-395122/5
Matrix: Water
Analysis Batch: 395122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.7		ug/L		99	73 - 131	1	30
Chlorobenzene	50.0	51.3		ug/L		103	80 - 120	0	20
1,2-Dichlorobenzene	50.0	47.7		ug/L		95	80 - 120	1	20
1,3-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 120	1	20
1,4-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

AWD 8/20/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-395225/9
Matrix: Water
Analysis Batch: 395225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/10/15 10:54	1
Chlorobenzene	1.0	U	1.0		ug/L			08/10/15 10:54	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/10/15 10:54	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/10/15 10:54	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/10/15 10:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*70 - 130*		*08/10/15 10:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*08/10/15 10:54*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*08/10/15 10:54*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*08/10/15 10:54*	*1*

Lab Sample ID: LCS 680-395225/4
Matrix: Water
Analysis Batch: 395225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.5		ug/L		101	73 - 131
Chlorobenzene	50.0	50.6		ug/L		101	80 - 120
1,2-Dichlorobenzene	50.0	49.4		ug/L		99	80 - 120
1,3-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 120
1,4-Dichlorobenzene	50.0	50.0		ug/L		100	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 680-395225/5
Matrix: Water
Analysis Batch: 395225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	50.0		ug/L		100	73 - 131	1	30
Chlorobenzene	50.0	50.3		ug/L		101	80 - 120	0	20
1,2-Dichlorobenzene	50.0	49.8		ug/L		100	80 - 120	1	20
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*

AWD 8/26/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-395520/7
Matrix: Water
Analysis Batch: 395520

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/11/15 15:29	1
Ethylene	1.0	U	1.0		ug/L			08/11/15 15:29	1
Methane	0.58	U	0.58		ug/L			08/11/15 15:29	1

Lab Sample ID: LCS 680-395520/2
Matrix: Water
Analysis Batch: 395520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	348		ug/L		121	75 - 125
Ethylene	269	328		ug/L		122	75 - 125
Methane	154	185		ug/L		120	75 - 125

Lab Sample ID: LCSD 680-395520/29
Matrix: Water
Analysis Batch: 395520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	320		ug/L		111	75 - 125	8	30
Ethylene	269	290		ug/L		108	75 - 125	12	30
Methane	154	172		ug/L		112	75 - 125	7	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-394967/1-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 394967

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		08/07/15 07:24	08/08/15 23:03	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/07/15 07:24	08/08/15 23:03	1

Lab Sample ID: LCS 680-394967/2-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 394967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	5.00	5.16		mg/L		103	80 - 120
Manganese, Dissolved	0.500	0.541		mg/L		108	80 - 120

Lab Sample ID: MB 680-394998/1-A
Matrix: Water
Analysis Batch: 395189

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 394998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		08/07/15 10:00	08/08/15 21:58	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/07/15 10:00	08/08/15 21:58	1

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Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-394998/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395189 — **Prep Batch: 394998**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	5.00	5.20		mg/L		104	80 - 120
Manganese, Dissolved	0.500	0.546		mg/L		109	80 - 120

Lab Sample ID: MB 680-397762/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 397961 — **Prep Batch: 397762**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		08/24/15 12:58	08/25/15 11:32	1
Manganese	0.010	U	0.010		mg/L		08/24/15 12:58	08/25/15 11:32	1

Lab Sample ID: LCS 680-397762/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 397961 — **Prep Batch: 397762**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.77		mg/L		95	80 - 120
Manganese	0.500	0.497		mg/L		99	80 - 120

Lab Sample ID: 680-115226-9 MS — **Client Sample ID: GWE-2D-0815**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 397961 — **Prep Batch: 397762**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	42		5.00	45.9	4	mg/L		78	75 - 125
Manganese	1.0		0.500	1.48		mg/L		94	75 - 125

Lab Sample ID: 680-115226-9 MSD — **Client Sample ID: GWE-2D-0815**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 397961 — **Prep Batch: 397762**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	42		5.00	46.0	4	mg/L		80	75 - 125	0	20
Manganese	1.0		0.500	1.49		mg/L		96	75 - 125	1	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-394962/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394962

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			08/06/15 17:21	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/06/15 17:21	1

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Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCS 680-394962/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394962

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	247		mg/L		99	80 - 120

Lab Sample ID: LCSD 680-394962/32 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 394962

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	248		mg/L		99	80 - 120	0	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-395888/22 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			08/12/15 16:00	1

Lab Sample ID: LCS 680-395888/15 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.1		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-395888/21 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.3		mg/L		105	85 - 115	0	30

Lab Sample ID: 680-115226-5 MS — **Client Sample ID: GWE-5S-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	46		25.0	69.3		mg/L		94	85 - 115

Lab Sample ID: 680-115226-5 MSD — **Client Sample ID: GWE-5S-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	46		25.0	70.1		mg/L		97	85 - 115	1	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-394748/13
Matrix: Water
Analysis Batch: 394748

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			08/05/15 14:43	1

Lab Sample ID: LCS 680-394748/16
Matrix: Water
Analysis Batch: 394748

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.512		mg/L		102	75 - 125
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.526		mg/L		105	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-395889/52
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			08/13/15 08:41	1

Lab Sample ID: LCS 680-395889/16
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

Lab Sample ID: LCSD 680-395889/42
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	19.9		mg/L		100	75 - 125	0	30

Lab Sample ID: 680-115226-5 MS
Matrix: Water
Analysis Batch: 395889

Client Sample ID: GWE-5S-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	96		20.0	110	4	mg/L		69	75 - 125

Lab Sample ID: 680-115226-5 MSD
Matrix: Water
Analysis Batch: 395889

Client Sample ID: GWE-5S-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	96		20.0	109	4	mg/L		62	75 - 125	1	30

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Method: 415.1 - DOC

Lab Sample ID: MB 160-205387/28
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			08/12/15 20:37	1

Lab Sample ID: LCS 160-205387/29
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Method: 415.1 - TOC

Lab Sample ID: MB 160-205386/4
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			08/12/15 18:24	1

Lab Sample ID: LCS 160-205386/5
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

AWQ 8/26/15
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

GC/MS VOA

Analysis Batch: 395122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-3	GWE-5M-0815	Total/NA	Water	8260B	
680-115226-5	GWE-5S-0815	Total/NA	Water	8260B	
680-115226-7	GWE-3D-0815	Total/NA	Water	8260B	
680-115226-9	GWE-2D-0815	Total/NA	Water	8260B	
680-115226-11	3Q15 LTM Trip Blank #2	Total/NA	Water	8260B	
LCS 680-395122/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-395122/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-395122/9	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 395225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	8260B	
LCS 680-395225/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-395225/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-395225/9	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 395520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	RSK-175	
680-115226-3	GWE-5M-0815	Total/NA	Water	RSK-175	
680-115226-5	GWE-5S-0815	Total/NA	Water	RSK-175	
680-115226-7	GWE-3D-0815	Total/NA	Water	RSK-175	
680-115226-9	GWE-2D-0815	Total/NA	Water	RSK-175	
LCS 680-395520/2	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-395520/29	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-395520/7	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 394967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-2	GWE-5D-F(0.2)-0815	Dissolved	Water	3005A	
680-115226-4	GWE-5M-F(0.2)-0815	Dissolved	Water	3005A	
680-115226-6	GWE-5S-F(0.2)-0815	Dissolved	Water	3005A	
680-115226-8	GWE-3D-F(0.2)-0815	Dissolved	Water	3005A	
LCS 680-394967/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-394967/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 394998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-10	GWE-2D-F(0.2)-0815	Dissolved	Water	3005A	
LCS 680-394998/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-394998/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 395189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-2	GWE-5D-F(0.2)-0815	Dissolved	Water	6010C	394967
680-115226-4	GWE-5M-F(0.2)-0815	Dissolved	Water	6010C	394967

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AWD 8/20/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Metals (Continued)

Analysis Batch: 395189 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-6	GWE-5S-F(0.2)-0815	Dissolved	Water	6010C	394967
680-115226-8	GWE-3D-F(0.2)-0815	Dissolved	Water	6010C	394967
680-115226-10	GWE-2D-F(0.2)-0815	Dissolved	Water	6010C	394998
LCS 680-394967/2-A	Lab Control Sample	Total Recoverable	Water	6010C	394967
LCS 680-394998/2-A	Lab Control Sample	Total Recoverable	Water	6010C	394998
MB 680-394967/1-A	Method Blank	Total Recoverable	Water	6010C	394967
MB 680-394998/1-A	Method Blank	Total Recoverable	Water	6010C	394998

Prep Batch: 397762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total Recoverable	Water	3005A	
680-115226-3	GWE-5M-0815	Total Recoverable	Water	3005A	
680-115226-5	GWE-5S-0815	Total Recoverable	Water	3005A	
680-115226-7	GWE-3D-0815	Total Recoverable	Water	3005A	
680-115226-9	GWE-2D-0815	Total Recoverable	Water	3005A	
680-115226-9 MS	GWE-2D-0815	Total Recoverable	Water	3005A	
680-115226-9 MSD	GWE-2D-0815	Total Recoverable	Water	3005A	
LCS 680-397762/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-397762/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 397961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total Recoverable	Water	6010C	397762
680-115226-3	GWE-5M-0815	Total Recoverable	Water	6010C	397762
680-115226-5	GWE-5S-0815	Total Recoverable	Water	6010C	397762
680-115226-7	GWE-3D-0815	Total Recoverable	Water	6010C	397762
680-115226-9	GWE-2D-0815	Total Recoverable	Water	6010C	397762
680-115226-9 MS	GWE-2D-0815	Total Recoverable	Water	6010C	397762
680-115226-9 MSD	GWE-2D-0815	Total Recoverable	Water	6010C	397762
LCS 680-397762/2-A	Lab Control Sample	Total Recoverable	Water	6010C	397762
MB 680-397762/1-A	Method Blank	Total Recoverable	Water	6010C	397762

General Chemistry

Analysis Batch: 205386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	415.1	
680-115226-3	GWE-5M-0815	Total/NA	Water	415.1	
680-115226-5	GWE-5S-0815	Total/NA	Water	415.1	
680-115226-7	GWE-3D-0815	Total/NA	Water	415.1	
680-115226-9	GWE-2D-0815	Total/NA	Water	415.1	
LCS 160-205386/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-205386/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 205387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-2	GWE-5D-F(0.2)-0815	Dissolved	Water	415.1	
680-115226-4	GWE-5M-F(0.2)-0815	Dissolved	Water	415.1	
680-115226-6	GWE-5S-F(0.2)-0815	Dissolved	Water	415.1	
680-115226-8	GWE-3D-F(0.2)-0815	Dissolved	Water	415.1	

AWD 8/26/15

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QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

General Chemistry (Continued)

Analysis Batch: 205387 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-10	GWE-2D-F(0.2)-0815	Dissolved	Water	415.1	
LCS 160-205387/29	Lab Control Sample	Dissolved	Water	415.1	
MB 160-205387/28	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 394748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	353.2	
680-115226-3	GWE-5M-0815	Total/NA	Water	353.2	
680-115226-5	GWE-5S-0815	Total/NA	Water	353.2	
680-115226-7	GWE-3D-0815	Total/NA	Water	353.2	
680-115226-9	GWE-2D-0815	Total/NA	Water	353.2	
LCS 680-394748/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-394748/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 394962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	310.1	
680-115226-3	GWE-5M-0815	Total/NA	Water	310.1	
680-115226-5	GWE-5S-0815	Total/NA	Water	310.1	
680-115226-7	GWE-3D-0815	Total/NA	Water	310.1	
680-115226-9	GWE-2D-0815	Total/NA	Water	310.1	
LCS 680-394962/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-394962/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-394962/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 395888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	325.2	
680-115226-3	GWE-5M-0815	Total/NA	Water	325.2	
680-115226-5	GWE-5S-0815	Total/NA	Water	325.2	
680-115226-5 MS	GWE-5S-0815	Total/NA	Water	325.2	
680-115226-5 MSD	GWE-5S-0815	Total/NA	Water	325.2	
680-115226-7	GWE-3D-0815	Total/NA	Water	325.2	
680-115226-9	GWE-2D-0815	Total/NA	Water	325.2	
LCS 680-395888/15	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-395888/21	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-395888/22	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 395889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115226-1	GWE-5D-0815	Total/NA	Water	375.4	
680-115226-3	GWE-5M-0815	Total/NA	Water	375.4	
680-115226-5	GWE-5S-0815	Total/NA	Water	375.4	
680-115226-5 MS	GWE-5S-0815	Total/NA	Water	375.4	
680-115226-5 MSD	GWE-5S-0815	Total/NA	Water	375.4	
680-115226-7	GWE-3D-0815	Total/NA	Water	375.4	
680-115226-9	GWE-2D-0815	Total/NA	Water	375.4	
LCS 680-395889/16	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-395889/42	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-395889/52	Method Blank	Total/NA	Water	375.4	

MWD 8/26/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5D-0815

Lab Sample ID: 680-115226-1
Date Collected: 08/04/15 09:50
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	395225	08/10/15 13:10	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 21:02	AAH	TAL SAV
Total Recoverable	Prep	3005A			397762	08/24/15 12:58	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	397961	08/25/15 12:17	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394962	08/06/15 17:45	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 15:57	JME	TAL SAV
Total/NA	Analysis	353.2		1	394748	08/05/15 14:58	GRX	TAL SAV
Total/NA	Analysis	375.4		20	395889	08/12/15 16:29	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:11	BLH	TAL SL

Client Sample ID: GWE-5D-F(0.2)-0815

Lab Sample ID: 680-115226-2
Date Collected: 08/04/15 09:50
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/09/15 00:08	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 21:33	BLH	TAL SL

Client Sample ID: GWE-5M-0815

Lab Sample ID: 680-115226-3
Date Collected: 08/04/15 10:35
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395122	08/08/15 12:16	DJK	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 21:15	AAH	TAL SAV
Total Recoverable	Prep	3005A			397762	08/24/15 12:58	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	397961	08/25/15 12:13	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394962	08/06/15 17:54	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 15:57	JME	TAL SAV
Total/NA	Analysis	353.2		1	394748	08/05/15 14:59	GRX	TAL SAV
Total/NA	Analysis	375.4		5	395889	08/12/15 16:29	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:39	BLH	TAL SL

Client Sample ID: GWE-5M-F(0.2)-0815

Lab Sample ID: 680-115226-4
Date Collected: 08/04/15 10:35
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/09/15 00:13	BCB	TAL SAV

AWD 8/26/15

TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-5M-F(0.2)-0815

Lab Sample ID: 680-115226-4
Date Collected: 08/04/15 10:35
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	205387	08/12/15 21:56	BLH	TAL SL

Client Sample ID: GWE-5S-0815

Lab Sample ID: 680-115226-5
Date Collected: 08/04/15 11:15
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395122	08/08/15 12:36	DJK	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 21:28	AAH	TAL SAV
Total Recoverable	Prep	3005A			397762	08/24/15 12:58	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	397961	08/25/15 12:10	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394962	08/06/15 18:04	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 14:51	JME	TAL SAV
Total/NA	Analysis	353.2		1	394748	08/05/15 15:01	GRX	TAL SAV
Total/NA	Analysis	375.4		5	395889	08/12/15 15:48	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:43	BLH	TAL SL

Client Sample ID: GWE-5S-F(0.2)-0815

Lab Sample ID: 680-115226-6
Date Collected: 08/04/15 11:15
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/09/15 00:17	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:01	BLH	TAL SL

Client Sample ID: GWE-3D-0815

Lab Sample ID: 680-115226-7
Date Collected: 08/04/15 13:07
Matrix: Water
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	395122	08/08/15 17:02	DJK	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 21:41	AAH	TAL SAV
Total Recoverable	Prep	3005A			397762	08/24/15 12:58	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	397961	08/25/15 12:06	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394962	08/06/15 18:12	DAM	TAL SAV
Total/NA	Analysis	325.2		20	395888	08/12/15 16:34	JME	TAL SAV
Total/NA	Analysis	353.2		1	394748	08/05/15 15:02	GRX	TAL SAV
Total/NA	Analysis	375.4		10	395889	08/12/15 16:32	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:48	BLH	TAL SL

AWP
8/20/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Client Sample ID: GWE-3D-F(0.2)-0815 — Lab Sample ID: 680-115226-8

Date Collected: 08/04/15 13:07 — **Matrix: Water**
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394967	08/07/15 07:24	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/09/15 00:22	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:05	BLH	TAL SL

Client Sample ID: GWE-2D-0815 — Lab Sample ID: 680-115226-9

Date Collected: 08/04/15 14:56 — **Matrix: Water**
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	395122	08/08/15 17:22	DJK	TAL SAV
Total/NA	Analysis	RSK-175		1	395520	08/11/15 21:54	AAH	TAL SAV
Total Recoverable	Prep	3005A			397762	08/24/15 12:58	CRW	TAL SAV
Total Recoverable	Analysis	6010C		1	397961	08/25/15 11:47	BCB	TAL SAV
Total/NA	Analysis	310.1		1	394962	08/06/15 18:20	DAM	TAL SAV
Total/NA	Analysis	325.2		50	395888	08/12/15 16:34	JME	TAL SAV
Total/NA	Analysis	353.2		1	394748	08/05/15 15:03	GRX	TAL SAV
Total/NA	Analysis	375.4		50	395889	08/12/15 16:32	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:53	BLH	TAL SL

Client Sample ID: GWE-2D-F(0.2)-0815 — Lab Sample ID: 680-115226-10

Date Collected: 08/04/15 14:56 — **Matrix: Water**
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			394998	08/07/15 10:00	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395189	08/08/15 22:59	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:10	BLH	TAL SL

Client Sample ID: 3Q15 LTM Trip Blank #2 — Lab Sample ID: 680-115226-11

Date Collected: 08/04/15 00:00 — **Matrix: Water**
Date Received: 08/05/15 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395122	08/08/15 11:35	DJK	TAL SAV

Laboratory References:
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWD
8/26/15

TestAmerica Savannah

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912 354 7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lon Bindner	Date: 8/4/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
GWE-5D-0815	8/4/15	0950	G	W	14			3		1	1	1	3	2	3			2 coolers
GWE-5D-F(0.2)-0815		1			4											1	3	
GWE-5M-0815		1035			14			3		1	1	1	3	2	3			
GWE-5M-F(0.2)-0815		1			4											1	3	
GWE-5S-0815		1115			14			3		1	1	1	3	2	3			
GWE-5S-F(0.2)-0815		1			4											1	3	
GWE-3D-0815		1307			14			3		1	1	1	3	2	3			
GWE-3D-F(0.2)-0815		1			4											1	3	
GWE-2D-0815		1456			14			3		1	1	1	3	2	3			
GWE-2D-F(0.2)-0815		1	1	1	4											1	3	
3Q15 LTM TripBlank #2	1	—	—	—	2			2										
								2	1	4	1	1	2	1	3	4	3	

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

680-115226 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/(No)

26/3.1 680-115226

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 504809/504810	Cooler Temp. (°C): Obs'd: 2.8 Corr'd: 3.5	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Golder	8/4/15			
Relinquished by: [signature] 8/5/15	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 8/5/15 09:37

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115226-1
SDG Number: KPS148

Login Number: 115226
List Number: 1
Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

PWD
8/20/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115226-1
SDG Number: KPS148

Login Number: 115226
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/06/15 03:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	4.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWD
8/20/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-15 *
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-15 *
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	09-30-15
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-15 *
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-15 *
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

AWD
8/26/15
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115226-1
SDG: KPS148

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	10-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-15 *
Nevada	State Program	9	MO000542015-1	07-31-16
New Jersey	NELAP	2	MO002	09-30-15
New York	NELAP	2	11616	03-31-16
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15 *
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15 *
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-15 *
West Virginia DEP	State Program	3	381	08-31-15 *

* Certification renewal pending - certification considered valid.

AWD
8/26/15
TestAmerica Savannah

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS149
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: BSA-MW-5D-0815, BSA-MW-5D-F(0.2)-0815, BSA-MW-4D-0815, BSA-MW-4D-F(0.2)-0815, BSA-MW-2D-0815, BSA-MW-2D-F(0.2)-0815, CPA-MW-4D-0815, CPA-MW-4D-F(0.2)-0815, CPA-MW-3D-0815, CPA-MW-3D-0815-AD, and CPA-MW-3D-F(0.2)-0815

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 395414. Samples BSA-MW-5D-0815, BSA-MW-4D-0815, BSA-MW-2D-0815, and CPA-MW-4D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: Insufficient volume to perform MS/MSD associated with batch 395015.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 395774.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples BSA-MW-5D-0815, BSA-MW-4D-0815, BSA-MW-2D-0815, CPA-MW-4D-0815, and CPA-MW-3D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: Samples BSA-MW-5D-0815, BSA-MW-4D-0815, and CPA-MW-4D-0815 were analyzed out of hold time.

Sulfate: Sample BSA-MW-4D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 2.2°C and 3.8°C, within the 4°C +/- 2°C criteria.

General	YES	NO	NA
a) Were hold times met for sample analysis?	☐	☒	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☒	☐	☐

Comments: Detections in diluted analysis were qualified. Detections in samples analyzed out of hold time were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	YES	NO	NA
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	YES	NO	NA
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	YES	NO	NA
a) Were blanks (trip, equipment, method) performed at required frequency?	☐	☒	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: Equipment blank BSA-MW-1S-0515-EB was submitted with SDG KPS144. Benzene was detected in the EB. Qualification was not required based on the 5 times rule. Trip blanks were not submitted with SDG KPS149.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA
a) Was MS/MSD accuracy criteria met?	☒	☐	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: None

Laboratory Control Sample (LCS)	YES	NO	NA
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Surrogate (System Monitoring) Compounds	YES	NO	NA
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates

	YES	NO	NA
a) Were field duplicates collected?	☒	☐	☐
b) Was field duplicate precision criteria met?	☒	☐	☐

Comments: Duplicate sample CPA-MW-3D-0815-AD was submitted with SDG KPS149.

Additional Comments: None

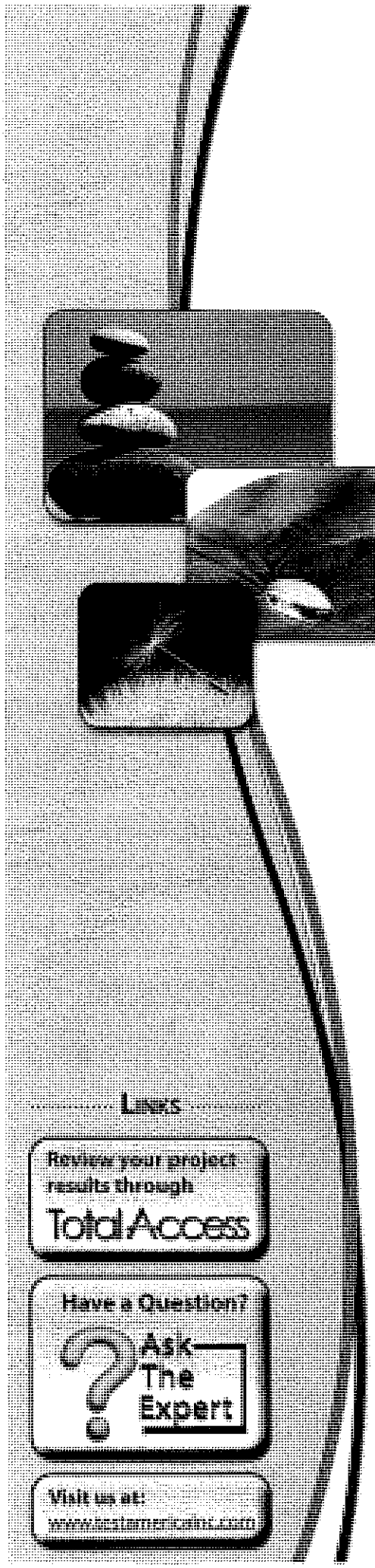
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, and 1,4-Dichlorobenzene, Chloride, and Sulfate	D	BSA-MW-5D, BSA-MW-4D, BSA-MW-2D, CPA-MW-3D, and CPA-MW-4D
Analysis exceeded hold time	4-Chloroaniline, 2-Chlorophenol, 1,2,3-Trichlorobenzene, and Nitrate/Nitrite	J	BSA-MW-5D, BSA-MW-4D, CPA-MW-4D, and CPA-MW-3D-AD

SDG KPS149

Sample Results from:

BSA-MW-5D
CPA-MW-4D
BSA-MW-4D
CPA-MW-3D
BSA-MW-2D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115324-1
TestAmerica Sample Delivery Group: KPS149
Client Project/Site: 3Q15 LTM GW Sampling - 1403345
Revision: 1

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
8/31/2015 2:36:41 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AWD
9/3/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 6
Method Summary 7
Definitions 8
Detection Summary 9
Client Sample Results 12
Surrogate Summary 24
QC Sample Results 25
QC Association 32
Chronicle 36
Chain of Custody 40
Receipt Checklists 41
Certification Summary 43

AWD
9/3/15

Job ID: 680-115324-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 3Q15 LTM GW Sampling - 1403345

Report Number: 680-115324-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/7/2015 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.2° C and 3.8° C.

Receipt Exceptions

Method(s) 353.2: The following samples were received outside of holding time for method 353.2: BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10). Per the client the lab is to proceed with the analysis.

The following trip blank was listed on the Chain of Custody ; however, no vials were received: 3Q15 LTM TripBlank #3 (680-115324-12). Client was notified.

NOTE: Report revised 08/31/15 to include duplicate analysis for sample CPA-MW-3D-0815-AD (680-115324-13). Sample was analyzed outside of holding time per client request.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7), CPA-MW-3D-0815-AD (680-115324-9) and BSA-MW-2D-0815 (680-115324-10) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/11/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395414.

Samples BSA-MW-5D-0815 (680-115324-1)[2X], CPA-MW-4D-0815 (680-115324-3)[2X], BSA-MW-4D-0815 (680-115324-5)[20X] and BSA-MW-2D-0815 (680-115324-10)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7), BSA-MW-2D-0815 (680-115324-10) and CPA-MW-3D-0815-AD (680-115324-13) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 08/07/2015 and 08/26/2015 and analyzed on 08/11/2015 and 08/27/2015.

AWD
9/3/15

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated

Job ID: 680-115324-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

with prep batch 395015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 08/12/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395774.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples BSA-MW-5D-F(0.2)-0815 (680-115324-2), CPA-MW-4D-F(0.2)-0815 (680-115324-4), BSA-MW-4D-F(0.2)-0815 (680-115324-6), CPA-MW-3D-F(0.2)-0815 (680-115324-8) and BSA-MW-2D-F(0.2)-0815 (680-115324-11) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/11/2015 and analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/11/2015 and analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 08/09/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 08/12/2015.

Samples BSA-MW-5D-0815 (680-115324-1)[10X], CPA-MW-4D-0815 (680-115324-3)[10X], BSA-MW-4D-0815 (680-115324-5)[5X], CPA-MW-3D-0815 (680-115324-7)[10X] and BSA-MW-2D-0815 (680-115324-10)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/07/2015.

The following samples was received outside of holding time: BSA-MW-5D-0815 (680-115324-1) and CPA-MW-4D-0815 (680-115324-3).

The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding

AWD
9/3/15

Job ID: 680-115324-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

time: BSA-MW-4D-0815 (680-115324-5).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 08/12/2015 and 08/13/2015.

Sample BSA-MW-4D-0815 (680-115324-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples BSA-MW-5D-0815 (680-115324-1), CPA-MW-4D-0815 (680-115324-3), BSA-MW-4D-0815 (680-115324-5), CPA-MW-3D-0815 (680-115324-7) and BSA-MW-2D-0815 (680-115324-10) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples BSA-MW-5D-F(0.2)-0815 (680-115324-2), CPA-MW-4D-F(0.2)-0815 (680-115324-4), BSA-MW-4D-F(0.2)-0815 (680-115324-6), CPA-MW-3D-F(0.2)-0815 (680-115324-8) and BSA-MW-2D-F(0.2)-0815 (680-115324-11) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 08/12/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD
9/3/15

Sample Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115324-1	BSA-MW-5D-0815	Water	08/05/15 09:17	08/07/15 10:30
680-115324-2	BSA-MW-5D-F(0.2)-0815	Water	08/05/15 09:17	08/07/15 10:30
680-115324-3	CPA-MW-4D-0815	Water	08/05/15 10:24	08/07/15 10:30
680-115324-4	CPA-MW-4D-F(0.2)-0815	Water	08/05/15 10:24	08/07/15 10:30
680-115324-5	BSA-MW-4D-0815	Water	08/05/15 11:30	08/07/15 10:30
680-115324-6	BSA-MW-4D-F(0.2)-0815	Water	08/05/15 11:30	08/07/15 10:30
680-115324-7	CPA-MW-3D-0815	Water	08/05/15 13:19	08/07/15 10:30
680-115324-8	CPA-MW-3D-F(0.2)-0815	Water	08/05/15 13:19	08/07/15 10:30
680-115324-9	CPA-MW-3D-0815-AD	Water	08/05/15 13:19	08/07/15 10:30
680-115324-10	BSA-MW-2D-0815	Water	08/05/15 14:16	08/07/15 10:30
680-115324-11	BSA-MW-2D-F(0.2)-0815	Water	08/05/15 14:16	08/07/15 10:30
680-115324-13	CPA-MW-3D-0815-AD	Water	08/05/15 13:19	08/07/15 10:30

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9/3/15
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SL
415.1	DOC	MCAWW	TAL SL

Protocol 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.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AMD
9/3/15
TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

RWD
9/3/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-5D-0815 — Lab Sample ID: 680-115324-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	39	D	2.0		ug/L	2		8260B	Total/NA
Chlorobenzene	380	D	2.0		ug/L	2		8260B	Total/NA
Ethane	29		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	14000		390		ug/L	1		RSK-175	Total/NA
Iron	10		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.52		0.010		mg/L	1		6010C	Total Recoverable
Chloride	290	D	10		mg/L	10		325.2	Total/NA
Total Organic Carbon	7.1		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	730		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	45		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-5D-F(0.2)-0815 — Lab Sample ID: 680-115324-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	10		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.42		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.0		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-4D-0815 — Lab Sample ID: 680-115324-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	130	D	2.0		ug/L	2		8260B	Total/NA
4-Chloroaniline	140	~~D~~ OK-10	20		ug/L	1		8270D	Total/NA
Ethane	37		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	28000		390		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.38		0.010		mg/L	1		6010C	Total Recoverable
Chloride	280	D	10		mg/L	10		325.2	Total/NA
Total Organic Carbon	8.0		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	640		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	43		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-4D-F(0.2)-0815 — Lab Sample ID: 680-115324-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.38		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-4D-0815 — Lab Sample ID: 680-115324-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2000	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	67	D	20		ug/L	20		8260B	Total/NA
Ethane	4.0		1.1		ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

AWB 9/3/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-4D-0815 (Continued) — Lab Sample ID: 680-115324-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	280		0.58		ug/L	1		RSK-175	Total/NA
Iron	7.7		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.55		0.010		mg/L	1		6010C	Total Recoverable
Chloride	120	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	54	D	10		mg/L	2		375.4	Total/NA
Total Organic Carbon	4.1		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	600		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	35		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-4D-F(0.2)-0815 — Lab Sample ID: 680-115324-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.7		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.55		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0815 — Lab Sample ID: 680-115324-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	110		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	110		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.6		1.0		ug/L	1		8260B	Total/NA
4-Chloroaniline	23		22		ug/L	1		8270D	Total/NA
Ethane	49		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	37000		390		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.84		0.010		mg/L	1		6010C	Total Recoverable
Chloride	310	D	10		mg/L	10		325.2	Total/NA
Total Organic Carbon	8.6		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	640		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	50		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-3D-F(0.2)-0815 — Lab Sample ID: 680-115324-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.82		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0815-AD — Lab Sample ID: 680-115324-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	110		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	110		1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

AWD 9/3/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-0815-AD (Continued) — Lab Sample ID: 680-115324-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.5		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: BSA-MW-2D-0815 — Lab Sample ID: 680-115324-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	98000	D	1000		ug/L	1000		8260B	Total/NA
1,4-Dioxane	27		11		ug/L	1		8270D	Total/NA
Ethane	29		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	25000		390		ug/L	1		RSK-175	Total/NA
Iron	5.9		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.76		0.010		mg/L	1		6010C	Total Recoverable
Chloride	130	D	5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	10		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	700		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	40		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-2D-F(0.2)-0815 — Lab Sample ID: 680-115324-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	5.7		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.74		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-0815-AD — Lab Sample ID: 680-115324-13

No Detections.

This Detection Summary does not include radiochemical test results.

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-5D-0815

Lab Sample ID: 680-115324-1

Date Collected: 08/05/15 09:17
Date Received: 08/07/15 10:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**39**	D	2.0		ug/L			08/11/15 14:20	2
Chlorobenzene	**380**	D	2.0		ug/L			08/11/15 14:20	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 14:20	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 14:20	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 14:20	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 14:20*	*2*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 130*		*08/11/15 14:20*	*2*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*08/11/15 14:20*	*2*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/11/15 14:20*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	11	U	11		ug/L		08/07/15 15:04	08/11/15 18:52	1
1,4-Dioxane	11	U	11		ug/L		08/07/15 15:04	08/11/15 18:52	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		08/07/15 15:04	08/11/15 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*32 - 114*	*08/07/15 15:04*	*08/11/15 18:52*	*1*
2-Fluorophenol	*55*		*26 - 107*	*08/07/15 15:04*	*08/11/15 18:52*	*1*
Nitrobenzene-d5	*71*		*30 - 117*	*08/07/15 15:04*	*08/11/15 18:52*	*1*
Phenol-d5	*53*		*25 - 109*	*08/07/15 15:04*	*08/11/15 18:52*	*1*
Terphenyl-d14	*87*		*10 - 132*	*08/07/15 15:04*	*08/11/15 18:52*	*1*
2,4,6-Tribromophenol	*74*		*34 - 140*	*08/07/15 15:04*	*08/11/15 18:52*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**29**		1.1		ug/L			08/12/15 22:14	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 22:14	1
Methane (TCD)	**14000**		390		ug/L			08/12/15 22:14	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**10**		0.050		mg/L		08/11/15 09:34	08/12/15 13:36	1
Manganese	**0.52**		0.010		mg/L		08/11/15 09:34	08/12/15 13:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**290**	D	10		mg/L			08/12/15 16:25	10
Nitrate as N	0.050	U HJ	0.050		mg/L			08/07/15 12:50	1
Sulfate	5.0	U	5.0		mg/L			08/12/15 15:32	1
Total Organic Carbon	**7.1**		1.0		mg/L			08/12/15 19:57	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**730**		5.0		mg/L			08/09/15 16:19	1
Carbon Dioxide, Free	**45**		5.0		mg/L			08/09/15 16:19	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-5D-F(0.2)-0815

Lab Sample ID: 680-115324-2

Date Collected: 08/05/15 09:17
Matrix: Water
Date Received: 08/07/15 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10		0.050		mg/L		08/11/15 09:34	08/12/15 13:41	1
Manganese, Dissolved	0.42		0.010		mg/L		08/11/15 09:34	08/12/15 13:41	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.0		1.0		mg/L			08/12/15 22:15	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-4D-0815

Lab Sample ID: 680-115324-3
Date Collected: 08/05/15 10:24
Matrix: Water
Date Received: 08/07/15 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0		ug/L			08/11/15 13:59	2
Chlorobenzene	**130**	D	2.0		ug/L			08/11/15 13:59	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 13:59	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 13:59	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			08/11/15 13:59	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*08/11/15 13:59*	*2*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*08/11/15 13:59*	*2*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*08/11/15 13:59*	*2*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/11/15 13:59*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	**140**		20		ug/L		08/07/15 15:04	08/11/15 19:17	1
2-Chlorophenol	10	U	10		ug/L		08/07/15 15:04	08/11/15 19:17	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/07/15 15:04	08/11/15 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*32 - 114*	*08/07/15 15:04*	*08/11/15 19:17*	*1*
2-Fluorophenol	*55*		*26 - 107*	*08/07/15 15:04*	*08/11/15 19:17*	*1*
Nitrobenzene-d5	*69*		*30 - 117*	*08/07/15 15:04*	*08/11/15 19:17*	*1*
Phenol-d5	*58*		*25 - 109*	*08/07/15 15:04*	*08/11/15 19:17*	*1*
Terphenyl-d14	*77*		*10 - 132*	*08/07/15 15:04*	*08/11/15 19:17*	*1*
2,4,6-Tribromophenol	*71*		*34 - 140*	*08/07/15 15:04*	*08/11/15 19:17*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**37**		1.1		ug/L			08/12/15 22:27	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 22:27	1
Methane (TCD)	**28000**		390		ug/L			08/12/15 22:27	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**16**		0.050		mg/L		08/11/15 09:34	08/12/15 13:45	1
Manganese	**0.38**		0.010		mg/L		08/11/15 09:34	08/12/15 13:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**	D	10		mg/L			08/12/15 16:25	10
Nitrate as N	0.050	U ~~H~~ J	0.050		mg/L			08/07/15 12:51	1
Sulfate	5.0	U	5.0		mg/L			08/12/15 15:32	1
Total Organic Carbon	**8.0**		1.0		mg/L			08/12/15 20:07	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**640**		5.0		mg/L			08/09/15 16:29	1
Carbon Dioxide, Free	**43**		5.0		mg/L			08/09/15 16:29	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-4D-F(0.2)-0815

Lab Sample ID: 680-115324-4

Date Collected: 08/05/15 10:24
Matrix: Water
Date Received: 08/07/15 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.050		mg/L		08/11/15 09:34	08/12/15 13:50	1
Manganese, Dissolved	0.38		0.010		mg/L		08/11/15 09:34	08/12/15 13:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.6		1.0		mg/L			08/12/15 22:24	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-4D-0815

Lab Sample ID: 680-115324-5

Date Collected: 08/05/15 11:30
Date Received: 08/07/15 10:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			08/11/15 13:39	20
Chlorobenzene	**2000**	D	20		ug/L			08/11/15 13:39	20
1,2-Dichlorobenzene	20	U	20		ug/L			08/11/15 13:39	20
1,3-Dichlorobenzene	20	U	20		ug/L			08/11/15 13:39	20
1,4-Dichlorobenzene	**67**	D	20		ug/L			08/11/15 13:39	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*08/11/15 13:39*	*20*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*08/11/15 13:39*	*20*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*08/11/15 13:39*	*20*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*08/11/15 13:39*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	12	U	12		ug/L		08/07/15 15:04	08/11/15 19:42	1
1,4-Dioxane	12	U	12		ug/L		08/07/15 15:04	08/11/15 19:42	1
1,2,4-Trichlorobenzene	12	U	12		ug/L		08/07/15 15:04	08/11/15 19:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*32 - 114*	*08/07/15 15:04*	*08/11/15 19:42*	*1*
2-Fluorophenol	*38*		*26 - 107*	*08/07/15 15:04*	*08/11/15 19:42*	*1*
Nitrobenzene-d5	*49*		*30 - 117*	*08/07/15 15:04*	*08/11/15 19:42*	*1*
Phenol-d5	*37*		*25 - 109*	*08/07/15 15:04*	*08/11/15 19:42*	*1*
Terphenyl-d14	*79*		*10 - 132*	*08/07/15 15:04*	*08/11/15 19:42*	*1*
2,4,6-Tribromophenol	*59*		*34 - 140*	*08/07/15 15:04*	*08/11/15 19:42*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**4.0**		1.1		ug/L			08/12/15 22:39	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 22:39	1
Methane	**280**		0.58		ug/L			08/12/15 22:39	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**7.7**		0.050		mg/L		08/11/15 09:34	08/12/15 13:54	1
Manganese	**0.55**		0.010		mg/L		08/11/15 09:34	08/12/15 13:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**	D	5.0		mg/L			08/12/15 16:25	5
Nitrate as N	0.050	U HJ	0.050		mg/L			08/07/15 12:52	1
Sulfate	**54**	D	10		mg/L			08/13/15 08:40	2
Total Organic Carbon	**4.1**		1.0		mg/L			08/12/15 20:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**600**		5.0		mg/L			08/09/15 16:40	1
Carbon Dioxide, Free	**35**		5.0		mg/L			08/09/15 16:40	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-4D-F(0.2)-0815

Lab Sample ID: 680-115324-6

Date Collected: 08/05/15 11:30
Matrix: Water
Date Received: 08/07/15 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.7		0.050		mg/L		08/11/15 09:34	08/12/15 13:59	1
Manganese, Dissolved	0.55		0.010		mg/L		08/11/15 09:34	08/12/15 13:59	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.2		1.0		mg/L			08/12/15 22:29	1

AWR 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-0815

Date Collected: 08/05/15 13:19
Date Received: 08/07/15 10:30

Lab Sample ID: 680-115324-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**110**		1.0		ug/L			08/11/15 16:02	1
Chlorobenzene	**110**		1.0		ug/L			08/11/15 16:02	1
1,2-Dichlorobenzene	**1.1**		1.0		ug/L			08/11/15 16:02	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 16:02	1
1,4-Dichlorobenzene	**1.6**		1.0		ug/L			08/11/15 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*08/11/15 16:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*		*08/11/15 16:02*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*08/11/15 16:02*	*1*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*08/11/15 16:02*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	**23**		22		ug/L		08/07/15 15:04	08/11/15 20:06	1
2-Chlorophenol	11	U	11		ug/L		08/07/15 15:04	08/11/15 20:06	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		08/07/15 15:04	08/11/15 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*52*		*32 - 114*	*08/07/15 15:04*	*08/11/15 20:06*	*1*
2-Fluorophenol	*47*		*26 - 107*	*08/07/15 15:04*	*08/11/15 20:06*	*1*
Nitrobenzene-d5	*69*		*30 - 117*	*08/07/15 15:04*	*08/11/15 20:06*	*1*
Phenol-d5	*47*		*25 - 109*	*08/07/15 15:04*	*08/11/15 20:06*	*1*
Terphenyl-d14	*81*		*10 - 132*	*08/07/15 15:04*	*08/11/15 20:06*	*1*
2,4,6-Tribromophenol	*68*		*34 - 140*	*08/07/15 15:04*	*08/11/15 20:06*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**49**		1.1		ug/L			08/12/15 22:52	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 22:52	1
Methane (TCD)	**37000**		390		ug/L			08/12/15 22:52	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**16**		0.050		mg/L		08/11/15 09:34	08/12/15 14:03	1
Manganese	**0.84**		0.010		mg/L		08/11/15 09:34	08/12/15 14:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**310**	D	10		mg/L			08/12/15 16:25	10
Nitrate as N	0.050	U	0.050		mg/L			08/07/15 12:54	1
Sulfate	5.0	U	5.0		mg/L			08/12/15 15:32	1
Total Organic Carbon	**8.6**		1.0		mg/L			08/12/15 20:16	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**640**		5.0		mg/L			08/09/15 16:50	1
Carbon Dioxide, Free	**50**		5.0		mg/L			08/09/15 16:50	1

AWD 9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-F(0.2)-0815

Lab Sample ID: 680-115324-8

Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		08/11/15 09:34	08/12/15 14:08	1
Manganese, Dissolved	0.82		0.010		mg/L		08/11/15 09:34	08/12/15 14:08	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.2		1.0		mg/L			08/12/15 22:34	1

AWD
9/3/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-0815-AD

Lab Sample ID: 680-115324-9

Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**110**		1.0		ug/L			08/11/15 17:19	1
Chlorobenzene	**110**		1.0		ug/L			08/11/15 17:19	1
1,2-Dichlorobenzene	**1.1**		1.0		ug/L			08/11/15 17:19	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 17:19	1
1,4-Dichlorobenzene	**1.5**		1.0		ug/L			08/11/15 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*70 - 130*		*08/11/15 17:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*08/11/15 17:19*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*08/11/15 17:19*	*1*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*08/11/15 17:19*	*1*

AWD
9/3/15
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Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-2D-0815

Lab Sample ID: 680-115324-10

Date Collected: 08/05/15 14:16
Date Received: 08/07/15 10:30

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**98000**	D	1000		ug/L			08/11/15 15:00	1000
Chlorobenzene	1000	U	1000		ug/L			08/11/15 15:00	1000
1,2-Dichlorobenzene	1000	U	1000		ug/L			08/11/15 15:00	1000
1,3-Dichlorobenzene	1000	U	1000		ug/L			08/11/15 15:00	1000
1,4-Dichlorobenzene	1000	U	1000		ug/L			08/11/15 15:00	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/11/15 15:00*	*1000*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/11/15 15:00*	*1000*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*08/11/15 15:00*	*1000*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*08/11/15 15:00*	*1000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	11	U	11		ug/L		08/07/15 15:04	08/11/15 20:31	1
1,4-Dioxane	**27**		11		ug/L		08/07/15 15:04	08/11/15 20:31	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		08/07/15 15:04	08/11/15 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*72*		*32 - 114*	*08/07/15 15:04*	*08/11/15 20:31*	*1*
2-Fluorophenol	*64*		*26 - 107*	*08/07/15 15:04*	*08/11/15 20:31*	*1*
Nitrobenzene-d5	*69*		*30 - 117*	*08/07/15 15:04*	*08/11/15 20:31*	*1*
Phenol-d5	*71*		*25 - 109*	*08/07/15 15:04*	*08/11/15 20:31*	*1*
Terphenyl-d14	*79*		*10 - 132*	*08/07/15 15:04*	*08/11/15 20:31*	*1*
2,4,6-Tribromophenol	*78*		*34 - 140*	*08/07/15 15:04*	*08/11/15 20:31*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**29**		1.1		ug/L			08/12/15 23:05	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 23:05	1
Methane (TCD)	**25000**		390		ug/L			08/12/15 23:05	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**5.9**		0.050		mg/L		08/11/15 09:34	08/12/15 14:22	1
Manganese	**0.76**		0.010		mg/L		08/11/15 09:34	08/12/15 14:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**130**	D	5.0		mg/L			08/12/15 15:58	5
Nitrate as N	0.050	U	0.050		mg/L			08/07/15 12:57	1
Sulfate	5.0	U	5.0		mg/L			08/12/15 15:33	1
Total Organic Carbon	**10**		1.0		mg/L			08/12/15 20:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**700**		5.0		mg/L			08/09/15 17:02	1
Carbon Dioxide, Free	**40**		5.0		mg/L			08/09/15 17:02	1

AWP 9/3/15
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Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-2D-F(0.2)-0815

Lab Sample ID: 680-115324-11

Date Collected: 08/05/15 14:16
Matrix: Water
Date Received: 08/07/15 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	5.7		0.050		mg/L		08/11/15 09:34	08/12/15 14:26	1
Manganese, Dissolved	0.74		0.010		mg/L		08/11/15 09:34	08/12/15 14:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.9		1.0		mg/L			08/12/15 22:38	1

AMD
9/3/15
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Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-0815-AD

Lab Sample ID: 680-115324-13

Date Collected: 08/05/15 13:19
Date Received: 08/07/15 10:30

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	21	U ~~H~~ J	21		ug/L		08/26/15 15:30	08/27/15 19:29	1
2-Chlorophenol	11	U ~~H~~ J	11		ug/L		08/26/15 15:30	08/27/15 19:29	1
1,2,4-Trichlorobenzene	11	U ~~H~~ J	11		ug/L		08/26/15 15:30	08/27/15 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*51*		*32 - 114*	*08/26/15 15:30*	*08/27/15 19:29*	*1*
2-Fluorophenol	*48*		*26 - 107*	*08/26/15 15:30*	*08/27/15 19:29*	*1*
Nitrobenzene-d5	*58*		*30 - 117*	*08/26/15 15:30*	*08/27/15 19:29*	*1*
Phenol-d5	*51*		*25 - 109*	*08/26/15 15:30*	*08/27/15 19:29*	*1*
Terphenyl-d14	*89*		*10 - 132*	*08/26/15 15:30*	*08/27/15 19:29*	*1*
2,4,6-Tribromophenol	*89*		*34 - 140*	*08/26/15 15:30*	*08/27/15 19:29*	*1*

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9/3/15
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Surrogate Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	**Client Sample ID**	(70-130)	(70-130)	(70-130)	(70-130)
680-115324-1	BSA-MW-5D-0815	94	92	104	86
680-115324-3	CPA-MW-4D-0815	93	93	101	86
680-115324-5	BSA-MW-4D-0815	93	95	107	90
680-115324-7	CPA-MW-3D-0815	98	91	103	86
680-115324-9	CPA-MW-3D-0815-AD	92	95	106	87
680-115324-10	BSA-MW-2D-0815	97	98	107	87
LCS 680-395414/7	Lab Control Sample	98	99	105	90
LCSD 680-395414/8	Lab Control Sample Dup	96	102	109	92
MB 680-395414/11	Method Blank	94	96	107	89

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	**Client Sample ID**	(32-114)	(26-107)	(30-117)	(25-109)	(10-132)	(34-140)
680-115324-1	BSA-MW-5D-0815	61	55	71	53	87	74
680-115324-3	CPA-MW-4D-0815	60	55	69	58	77	71
680-115324-5	BSA-MW-4D-0815	43	38	49	37	79	59
680-115324-7	CPA-MW-3D-0815	52	47	69	47	81	68
680-115324-10	BSA-MW-2D-0815	72	64	69	71	79	78
680-115324-13	CPA-MW-3D-0815-AD	51	48	58	51	89	89
LCS 680-395015/10-A	Lab Control Sample	60	53	68	63	87	68
LCS 680-398157/4-A	Lab Control Sample	67	54	58	55	87	91
LCSD 680-395015/11-A	Lab Control Sample Dup	52	45	57	42	86	67
LCSD 680-398157/5-A	Lab Control Sample Dup	57	51	56	54	89	94
MB 680-395015/9-A	Method Blank	62	55	77	62	91	78
MB 680-398157/3-A	Method Blank	41	64	58	61	79	65

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPH = Terphenyl-d14
TBP = 2,4,6-Tribromophenol

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-395414/11
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
Chlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 11:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/11/15 11:36*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*08/11/15 11:36*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*08/11/15 11:36*	*1*

Lab Sample ID: LCS 680-395414/7
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.9		ug/L		104	73 - 131
Chlorobenzene	50.0	53.6		ug/L		107	80 - 120
1,2-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120
1,3-Dichlorobenzene	50.0	53.0		ug/L		106	80 - 120
1,4-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 680-395414/8
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	52.0		ug/L		104	73 - 131	0	30
Chlorobenzene	50.0	53.5		ug/L		107	80 - 120	0	20
1,2-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 120	2	20
1,3-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120	0	20
1,4-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*
Dibromofluoromethane (Surr)	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-395015/9-A
Matrix: Water
Analysis Batch: 395463

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 395015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		08/07/15 15:04	08/11/15 15:07	1
2-Chlorophenol	10	U	10		ug/L		08/07/15 15:04	08/11/15 15:07	1
1,4-Dioxane	10	U	10		ug/L		08/07/15 15:04	08/11/15 15:07	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/07/15 15:04	08/11/15 15:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*32 - 114*	*08/07/15 15:04*	*08/11/15 15:07*	*1*
2-Fluorophenol	*55*		*26 - 107*	*08/07/15 15:04*	*08/11/15 15:07*	*1*
Nitrobenzene-d5	*77*		*30 - 117*	*08/07/15 15:04*	*08/11/15 15:07*	*1*
Phenol-d5	*62*		*25 - 109*	*08/07/15 15:04*	*08/11/15 15:07*	*1*
Terphenyl-d14	*91*		*10 - 132*	*08/07/15 15:04*	*08/11/15 15:07*	*1*
2,4,6-Tribromophenol	*78*		*34 - 140*	*08/07/15 15:04*	*08/11/15 15:07*	*1*

Lab Sample ID: LCS 680-395015/10-A
Matrix: Water
Analysis Batch: 395463

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	59.0		ug/L		59	10 - 112
2-Chlorophenol	100	63.2		ug/L		63	38 - 98
1,4-Dioxane	100	48.1		ug/L		48	16 - 79
1,2,4-Trichlorobenzene	100	37.1		ug/L		37	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*60*		*32 - 114*
2-Fluorophenol	*53*		*26 - 107*
Nitrobenzene-d5	*68*		*30 - 117*
Phenol-d5	*63*		*25 - 109*
Terphenyl-d14	*87*		*10 - 132*
2,4,6-Tribromophenol	*68*		*34 - 140*

Lab Sample ID: LCSD 680-395015/11-A
Matrix: Water
Analysis Batch: 395463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 395015

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	54.3		ug/L		54	10 - 112	8	50
2-Chlorophenol	100	52.8		ug/L		53	38 - 98	18	50
1,4-Dioxane	100	44.7		ug/L		45	16 - 79	7	50
1,2,4-Trichlorobenzene	100	30.7		ug/L		31	16 - 80	19	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*52*		*32 - 114*
2-Fluorophenol	*45*		*26 - 107*
Nitrobenzene-d5	*57*		*30 - 117*
Phenol-d5	*42*		*25 - 109*
Terphenyl-d14	*86*		*10 - 132*

MWD
9/3/15
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Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-395015/11-A
Matrix: Water
Analysis Batch: 395463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 395015

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*67*		*34 - 140*

Lab Sample ID: MB 680-398157/3-A
Matrix: Water
Analysis Batch: 398499

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		08/26/15 15:30	08/28/15 16:51	1
2-Chlorophenol	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1
1,4-Dioxane	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*32 - 114*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
2-Fluorophenol	*64*		*26 - 107*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Nitrobenzene-d5	*58*		*30 - 117*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Phenol-d5	*61*		*25 - 109*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Terphenyl-d14	*79*		*10 - 132*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
2,4,6-Tribromophenol	*65*		*34 - 140*	*08/26/15 15:30*	*08/28/15 16:51*	*1*

Lab Sample ID: LCS 680-398157/4-A
Matrix: Water
Analysis Batch: 398322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	67.5		ug/L		67	10 - 112
2-Chlorophenol	100	62.4		ug/L		62	38 - 98
1,4-Dioxane	100	40.1		ug/L		40	16 - 79
1,2,4-Trichlorobenzene	100	47.5		ug/L		48	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*67*		*32 - 114*
2-Fluorophenol	*54*		*26 - 107*
Nitrobenzene-d5	*58*		*30 - 117*
Phenol-d5	*55*		*25 - 109*
Terphenyl-d14	*87*		*10 - 132*
2,4,6-Tribromophenol	*91*		*34 - 140*

Lab Sample ID: LCSD 680-398157/5-A
Matrix: Water
Analysis Batch: 398322

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 398157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	68.5		ug/L		68	10 - 112	1	50
2-Chlorophenol	100	63.5		ug/L		64	38 - 98	2	50
1,4-Dioxane	100	38.9		ug/L		39	16 - 79	3	50
1,2,4-Trichlorobenzene	100	50.1		ug/L		50	16 - 80	5	50

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Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-398157/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398322 — **Prep Batch: 398157**

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*32 - 114*
2-Fluorophenol	*51*		*26 - 107*
Nitrobenzene-d5	*56*		*30 - 117*
Phenol-d5	*54*		*25 - 109*
Terphenyl-d14	*89*		*10 - 132*
2,4,6-Tribromophenol	*94*		*34 - 140*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-395774/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/12/15 21:22	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 21:22	1
Methane	0.58	U	0.58		ug/L			08/12/15 21:22	1
Methane (TCD)	390	U	390		ug/L			08/12/15 21:22	1

Lab Sample ID: LCS 680-395774/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	263		ug/L		91	75 - 125
Ethylene	269	250		ug/L		93	75 - 125
Methane	154	139		ug/L		90	75 - 125

Lab Sample ID: LCS 680-395774/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	2100		ug/L		109	75 - 125

Lab Sample ID: LCSD 680-395774/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2080		ug/L		108	75 - 125	1	30

Lab Sample ID: LCSD 680-395774/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	307		ug/L		106	75 - 125	15	30
Ethylene	269	292		ug/L		108	75 - 125	16	30

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AWD 9/3/15

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 680-395774/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane	154	159		ug/L		103	75 - 125	13	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-395447/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		08/11/15 09:34	08/12/15 12:32	1
Iron, Dissolved	0.050	U	0.050		mg/L		08/11/15 09:34	08/12/15 12:32	1
Manganese	0.010	U	0.010		mg/L		08/11/15 09:34	08/12/15 12:32	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/11/15 09:34	08/12/15 12:32	1

Lab Sample ID: LCS 680-395447/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 395850 — **Prep Batch: 395447**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.76		mg/L		95	80 - 120
Iron, Dissolved	5.00	4.76		mg/L		95	80 - 120
Manganese	0.500	0.492		mg/L		98	80 - 120
Manganese, Dissolved	0.500	0.492		mg/L		98	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-395214/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			08/09/15 16:00	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/09/15 16:00	1

Lab Sample ID: LCS 680-395214/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	245		mg/L		98	80 - 120

Lab Sample ID: LCSD 680-395214/32 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	254		mg/L		102	80 - 120	4	30

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AWD 9/3/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Method: 325.2 - Chloride

Lab Sample ID: MB 680-395888/22
Matrix: Water
Analysis Batch: 395888

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			08/12/15 16:00	1

Lab Sample ID: LCS 680-395888/15
Matrix: Water
Analysis Batch: 395888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.1		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-395888/21
Matrix: Water
Analysis Batch: 395888

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.3		mg/L		105	85 - 115	0	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-395067/13
Matrix: Water
Analysis Batch: 395067

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			08/07/15 12:29	1

Lab Sample ID: LCS 680-395067/16
Matrix: Water
Analysis Batch: 395067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.520		mg/L		104	75 - 125
Nitrate Nitrite as N	1.00	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.525		mg/L		105	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-395889/52
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			08/13/15 08:41	1

Lab Sample ID: LCS 680-395889/16
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

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AWD 9/3/15

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Lab Sample ID: LCSD 680-395889/42
Matrix: Water
Analysis Batch: 395889

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	19.9		mg/L		100	75 - 125	0	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-205387/28
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			08/12/15 20:37	1

Lab Sample ID: LCS 160-205387/29
Matrix: Water
Analysis Batch: 205387

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.76		mg/L		98	90 - 110

Lab Sample ID: 680-115324-2 MS
Matrix: Water
Analysis Batch: 205387

Client Sample ID: BSA-MW-5D-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	7.0		5.00	12.0		mg/L		100	82 - 132

Method: 415.1 - TOC

Lab Sample ID: MB 160-205386/4
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			08/12/15 18:24	1

Lab Sample ID: LCS 160-205386/5
Matrix: Water
Analysis Batch: 205386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

Lab Sample ID: 680-115324-1 MS
Matrix: Water
Analysis Batch: 205386

Client Sample ID: BSA-MW-5D-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	7.1		5.00	11.9		mg/L		96	76 - 120

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AWD 9/3/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

GC/MS VOA

Analysis Batch: 395414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	8260B	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	8260B	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	8260B	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	8260B	
680-115324-9	CPA-MW-3D-0815-AD	Total/NA	Water	8260B	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	8260B	
LCS 680-395414/7	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-395414/8	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-395414/11	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 395015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	3520C	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	3520C	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	3520C	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	3520C	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	3520C	
LCS 680-395015/10-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-395015/11-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-395015/9-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 395463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	8270D	395015
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	8270D	395015
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	8270D	395015
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	8270D	395015
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	8270D	395015
LCS 680-395015/10-A	Lab Control Sample	Total/NA	Water	8270D	395015
LCSD 680-395015/11-A	Lab Control Sample Dup	Total/NA	Water	8270D	395015
MB 680-395015/9-A	Method Blank	Total/NA	Water	8270D	395015

Prep Batch: 398157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-13	CPA-MW-3D-0815-AD	Total/NA	Water	3520C	
LCS 680-398157/4-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-398157/5-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-398157/3-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 398322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-13	CPA-MW-3D-0815-AD	Total/NA	Water	8270D	398157
LCS 680-398157/4-A	Lab Control Sample	Total/NA	Water	8270D	398157
LCSD 680-398157/5-A	Lab Control Sample Dup	Total/NA	Water	8270D	398157

Analysis Batch: 398499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-398157/3-A	Method Blank	Total/NA	Water	8270D	398157

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AWD 9/3/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

GC VOA

Analysis Batch: 395774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	RSK-175	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	RSK-175	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	RSK-175	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	RSK-175	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	RSK-175	
LCS 680-395774/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-395774/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-395774/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-395774/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-395774/9	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 395447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total Recoverable	Water	3005A	
680-115324-2	BSA-MW-5D-F(0.2)-0815	Dissolved	Water	3005A	
680-115324-3	CPA-MW-4D-0815	Total Recoverable	Water	3005A	
680-115324-4	CPA-MW-4D-F(0.2)-0815	Dissolved	Water	3005A	
680-115324-5	BSA-MW-4D-0815	Total Recoverable	Water	3005A	
680-115324-6	BSA-MW-4D-F(0.2)-0815	Dissolved	Water	3005A	
680-115324-7	CPA-MW-3D-0815	Total Recoverable	Water	3005A	
680-115324-8	CPA-MW-3D-F(0.2)-0815	Dissolved	Water	3005A	
680-115324-10	BSA-MW-2D-0815	Total Recoverable	Water	3005A	
680-115324-11	BSA-MW-2D-F(0.2)-0815	Dissolved	Water	3005A	
LCS 680-395447/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-395447/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 395850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total Recoverable	Water	6010C	395447
680-115324-2	BSA-MW-5D-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115324-3	CPA-MW-4D-0815	Total Recoverable	Water	6010C	395447
680-115324-4	CPA-MW-4D-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115324-5	BSA-MW-4D-0815	Total Recoverable	Water	6010C	395447
680-115324-6	BSA-MW-4D-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115324-7	CPA-MW-3D-0815	Total Recoverable	Water	6010C	395447
680-115324-8	CPA-MW-3D-F(0.2)-0815	Dissolved	Water	6010C	395447
680-115324-10	BSA-MW-2D-0815	Total Recoverable	Water	6010C	395447
680-115324-11	BSA-MW-2D-F(0.2)-0815	Dissolved	Water	6010C	395447
LCS 680-395447/2-A	Lab Control Sample	Total Recoverable	Water	6010C	395447
MB 680-395447/1-A	Method Blank	Total Recoverable	Water	6010C	395447

General Chemistry

Analysis Batch: 205386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	415.1	
680-115324-1 MS	BSA-MW-5D-0815	Total/NA	Water	415.1	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	415.1	

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QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

General Chemistry (Continued)

Analysis Batch: 205386 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	415.1	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	415.1	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	415.1	
LCS 160-205386/5	Lab Control Sample	Total/NA	Water	415.1	
MB 160-205386/4	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 205387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-2	BSA-MW-5D-F(0.2)-0815	Dissolved	Water	415.1	
680-115324-2 MS	BSA-MW-5D-F(0.2)-0815	Dissolved	Water	415.1	
680-115324-4	CPA-MW-4D-F(0.2)-0815	Dissolved	Water	415.1	
680-115324-6	BSA-MW-4D-F(0.2)-0815	Dissolved	Water	415.1	
680-115324-8	CPA-MW-3D-F(0.2)-0815	Dissolved	Water	415.1	
680-115324-11	BSA-MW-2D-F(0.2)-0815	Dissolved	Water	415.1	
LCS 160-205387/29	Lab Control Sample	Dissolved	Water	415.1	
MB 160-205387/28	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 395067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	353.2	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	353.2	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	353.2	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	353.2	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	353.2	
LCS 680-395067/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-395067/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 395214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	310.1	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	310.1	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	310.1	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	310.1	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	310.1	
LCS 680-395214/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-395214/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-395214/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 395888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	325.2	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	325.2	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	325.2	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	325.2	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	325.2	
LCS 680-395888/15	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-395888/21	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-395888/22	Method Blank	Total/NA	Water	325.2	

TestAmerica Savannah
AWD 9/3/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

General Chemistry (Continued)

Analysis Batch: 395889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115324-1	BSA-MW-5D-0815	Total/NA	Water	375.4	
680-115324-3	CPA-MW-4D-0815	Total/NA	Water	375.4	
680-115324-5	BSA-MW-4D-0815	Total/NA	Water	375.4	
680-115324-7	CPA-MW-3D-0815	Total/NA	Water	375.4	
680-115324-10	BSA-MW-2D-0815	Total/NA	Water	375.4	
LCS 680-395889/16	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-395889/42	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-395889/52	Method Blank	Total/NA	Water	375.4	

TestAmerica Savannah
AWD 9/3/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-5D-0815

Lab Sample ID: 680-115324-1
Date Collected: 08/05/15 09:17
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	395414	08/11/15 14:20	JD1	TAL SAV
Total/NA	Prep	3520C			395015	08/07/15 15:04	RBS	TAL SAV
Total/NA	Analysis	8270D		1	395463	08/11/15 18:52	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/12/15 22:14	AAH	TAL SAV
Total Recoverable	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395850	08/12/15 13:36	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 16:19	DAM	TAL SAV
Total/NA	Analysis	325.2		10	395888	08/12/15 16:25	JME	TAL SAV
Total/NA	Analysis	353.2		1	395067	08/07/15 12:50	GRX	TAL SAV
Total/NA	Analysis	375.4		1	395889	08/12/15 15:32	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 19:57	BLH	TAL SL

Client Sample ID: BSA-MW-5D-F(0.2)-0815

Lab Sample ID: 680-115324-2
Date Collected: 08/05/15 09:17
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 13:41	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:15	BLH	TAL SL

Client Sample ID: CPA-MW-4D-0815

Lab Sample ID: 680-115324-3
Date Collected: 08/05/15 10:24
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	395414	08/11/15 13:59	JD1	TAL SAV
Total/NA	Prep	3520C			395015	08/07/15 15:04	RBS	TAL SAV
Total/NA	Analysis	8270D		1	395463	08/11/15 19:17	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/12/15 22:27	AAH	TAL SAV
Total Recoverable	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395850	08/12/15 13:45	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 16:29	DAM	TAL SAV
Total/NA	Analysis	325.2		10	395888	08/12/15 16:25	JME	TAL SAV
Total/NA	Analysis	353.2		1	395067	08/07/15 12:51	GRX	TAL SAV
Total/NA	Analysis	375.4		1	395889	08/12/15 15:32	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 20:07	BLH	TAL SL

TestAmerica Savannah
AWD 9/3/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-4D-F(0.2)-0815 — Lab Sample ID: 680-115324-4

Date Collected: 08/05/15 10:24 — **Matrix: Water**
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 13:50	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:24	BLH	TAL SL

Client Sample ID: BSA-MW-4D-0815 — Lab Sample ID: 680-115324-5

Date Collected: 08/05/15 11:30 — **Matrix: Water**
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	395414	08/11/15 13:39	JD1	TAL SAV
Total/NA	Prep	3520C			395015	08/07/15 15:04	RBS	TAL SAV
Total/NA	Analysis	8270D		1	395463	08/11/15 19:42	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/12/15 22:39	AAH	TAL SAV
Total Recoverable	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395850	08/12/15 13:54	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 16:40	DAM	TAL SAV
Total/NA	Analysis	325.2		5	395888	08/12/15 16:25	JME	TAL SAV
Total/NA	Analysis	353.2		1	395067	08/07/15 12:52	GRX	TAL SAV
Total/NA	Analysis	375.4		2	395889	08/13/15 08:40	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 20:11	BLH	TAL SL

Client Sample ID: BSA-MW-4D-F(0.2)-0815 — Lab Sample ID: 680-115324-6

Date Collected: 08/05/15 11:30 — **Matrix: Water**
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 13:59	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:29	BLH	TAL SL

Client Sample ID: CPA-MW-3D-0815 — Lab Sample ID: 680-115324-7

Date Collected: 08/05/15 13:19 — **Matrix: Water**
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395414	08/11/15 16:02	JD1	TAL SAV
Total/NA	Prep	3520C			395015	08/07/15 15:04	RBS	TAL SAV
Total/NA	Analysis	8270D		1	395463	08/11/15 20:06	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/12/15 22:52	AAH	TAL SAV
Total Recoverable	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395850	08/12/15 14:03	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 16:50	DAM	TAL SAV

TestAmerica Savannah
AWD 9/3/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: CPA-MW-3D-0815
Lab Sample ID: 680-115324-7
Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	325.2		10	395888	08/12/15 16:25	JME	TAL SAV
Total/NA	Analysis	353.2		1	395067	08/07/15 12:54	GRX	TAL SAV
Total/NA	Analysis	375.4		1	395889	08/12/15 15:32	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 20:16	BLH	TAL SL

Client Sample ID: CPA-MW-3D-F(0.2)-0815
Lab Sample ID: 680-115324-8
Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 14:08	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:34	BLH	TAL SL

Client Sample ID: CPA-MW-3D-0815-AD
Lab Sample ID: 680-115324-9
Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395414	08/11/15 17:19	JD1	TAL SAV

Client Sample ID: BSA-MW-2D-0815
Lab Sample ID: 680-115324-10
Date Collected: 08/05/15 14:16
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1000	395414	08/11/15 15:00	JD1	TAL SAV
Total/NA	Prep	3520C			395015	08/07/15 15:04	RBS	TAL SAV
Total/NA	Analysis	8270D		1	395463	08/11/15 20:31	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/12/15 23:05	AAH	TAL SAV
Total Recoverable	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	395850	08/12/15 14:22	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 17:02	DAM	TAL SAV
Total/NA	Analysis	325.2		5	395888	08/12/15 15:58	JME	TAL SAV
Total/NA	Analysis	353.2		1	395067	08/07/15 12:57	GRX	TAL SAV
Total/NA	Analysis	375.4		1	395889	08/12/15 15:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	205386	08/12/15 20:21	BLH	TAL SL

TestAmerica Savannah
RWD 9/3/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Client Sample ID: BSA-MW-2D-F(0.2)-0815

Lab Sample ID: 680-115324-11

Date Collected: 08/05/15 14:16
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395447	08/11/15 09:34	BJB	TAL SAV
Dissolved	Analysis	6010C		1	395850	08/12/15 14:26	BCB	TAL SAV
Dissolved	Analysis	415.1		1	205387	08/12/15 22:38	BLH	TAL SL

Client Sample ID: CPA-MW-3D-0815-AD

Lab Sample ID: 680-115324-13

Date Collected: 08/05/15 13:19
Matrix: Water
Date Received: 08/07/15 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			398157	08/26/15 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		1	398322	08/27/15 19:29	RAM	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

TestAmerica Savannah
AWD 9/3/15

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date: 8/5/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-5D-0815	8/5/15	0917	G	W	16			3	2	1	1	1	3	2	3			
BSA-MW-5D-F(0.2)-0815		1			4											1	3	
CPA-MW-4D-0815		1024			16			3	2	1	1	1	3	2	3			
CPA-MW-4D-F(0.2)-0815		1			4											1	3	
BSA-MW-4D-0815		1130			16			3	2	1	1	1	3	2	3			
BSA-MW-4D-F(0.2)-0815		1			4											1	3	
CPA-MW-3D-0815		1319			16			3	2	1	1	1	3	2	3			
CPA-MW-3D-F(0.2)-0815		1			4											1	3	
CPA-MW-3D-0815-AD		1			3			3										
BSA-MW-2D-0815		1416			16			3	2	1	1	1	3	2	3			
BSA-MW-2D-F(0.2)-0815		1			4											1	3	
~~3Q15 LTM Trip Blank #3~~					~~2~~			~~2~~										*not received by lab, not filled client 8/7/15 2 Vial
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other								2	1	4	1	1	2	1,3	3	4	3	

680-115324 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/(No)

1.8°C / 2.2°C
3.4°C / 3.8°C
680-115324

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 337200 / 337199	Cooler Temp. (°C): Obs'd:_____ Corr'd:_____	Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
J. Bindner	Golder	8/5/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				TA	08/07/15 1030

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115324-1
SDG Number: KPS149

Login Number: 115324
List Number: 1
Creator: Barnett, Eddie T

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	trip blank on COC, not received
Samples are received within Holding Time.	False	Fed Ex delay, 353.2 analysis received outside of method holding time
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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWD
9/3/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115324-1
SDG Number: KPS149

Login Number: 115324
List Number: 2
Creator: Daniels, Brian J

List Source: TestAmerica St. Louis
List Creation: 08/10/15 03:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	False	
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	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWP
9/3/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-15 *
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	09-30-15
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-15 *
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-15 *
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

TestAmerica Savannah
AWD 9/3/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115324-1
SDG: KPS149

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	10-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-15 *
Nevada	State Program	9	MO000542015-1	07-31-16
New Jersey	NELAP	2	MO002	09-30-15 *
New York	NELAP	2	11616	03-31-16
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15 *
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15 *
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-15 *
West Virginia DEP	State Program	3	381	08-31-15 *

* Certification renewal pending - certification considered valid.

TestAmerica Savannah
AWD 9/3/15

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS150
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: CPA-MW-1D-0815, CPA-MW-1D-F(0.2)-0815, CPA-MW-2D-0815, CPA-MW-2D-0815-AD, CPA-MW-2D-F(0.2)-0815, BSA-MW-3D-0815, BSA-MW-3D-F(0.2)-0815, BSA-MW-3D-0815-EB, and 3Q15 LTM Trip Blank #4

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: Insufficient volume to perform MS/MSD associated with batch 395414. Samples CPA-MW-1D-0815, CPA-MW-2D-0815, CPA-MW-2D-0815-AD, BSA-MW-3D-0815, and BSA-MW-1S-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: Insufficient volume to perform MS/MSD associated with batch 395260, batch 396711 and batch 398157. LCS recovered outside control limits for 2-chlorophenol associated with batch 396244. Sample CPA-MW-1D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 395774 and batch 396021.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples CPA-MW-1D-0815, CPA-MW-2D-0815, BSA-MW-1S-0815, and BSA-MW-3D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: Sample CPA-MW-1D-0815 was analyzed outside of hold time.

Sulfate: Samples CPA-MW-2D-0815, BSA-MW-1S-0815, and BSA-MW-3D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: Sample BSA-MW-1S-0815 required dilution prior to analysis, reporting limits were adjusted accordingly..

DOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 0.6°C and 4.8°C, some outside the 4°C +/- 2°C criteria.

General	YES	NO	NA
a) Were hold times met for sample analysis?	☐	☒	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☒	☐	☐

Comments: Detections in diluted analysis were qualified. Detections in samples analyzed out of hold time were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	YES	NO	NA
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	YES	NO	NA
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	YES	NO	NA
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☒	☐	☐

Comments: Equipment blanks BSA-MW-3D-0815 and BSA-MW-1S-0815 were submitted with SDG KPS150. Benzene and chlorobenzene were detected in the EB. Qualification was not required based on the 5 times rule.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA
a) Was MS/MSD accuracy criteria met?	☐	☒	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: MS/MSD for CPA-MW-1D-F(0.2)-0515 recovered low for DOC in batch 191880. Data was not qualified based on MS/MSD data alone.

Laboratory Control Sample (LCS)	YES	NO	NA
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☐	☒	☐

Comments: LCS/LCSD recovered outside control limits for 2-chlorophenol and 1,2,4-trichlorobenzene and detections were qualified.

Surrogate (System Monitoring) Compounds	YES	NO	NA
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☐	☒	☐

Comments: Surrogates were diluted out of CPA-MW-1D-0815 and detections were qualified.

Duplicates

	YES	NO	NA
a) Were field duplicates collected?	☒	☐	☐
b) Was field duplicate precision criteria met?	☒	☐	☐

Comments: Duplicate sample CPA-MW-2D-0815-AD was submitted with SDG KPS150.

Additional Comments: None

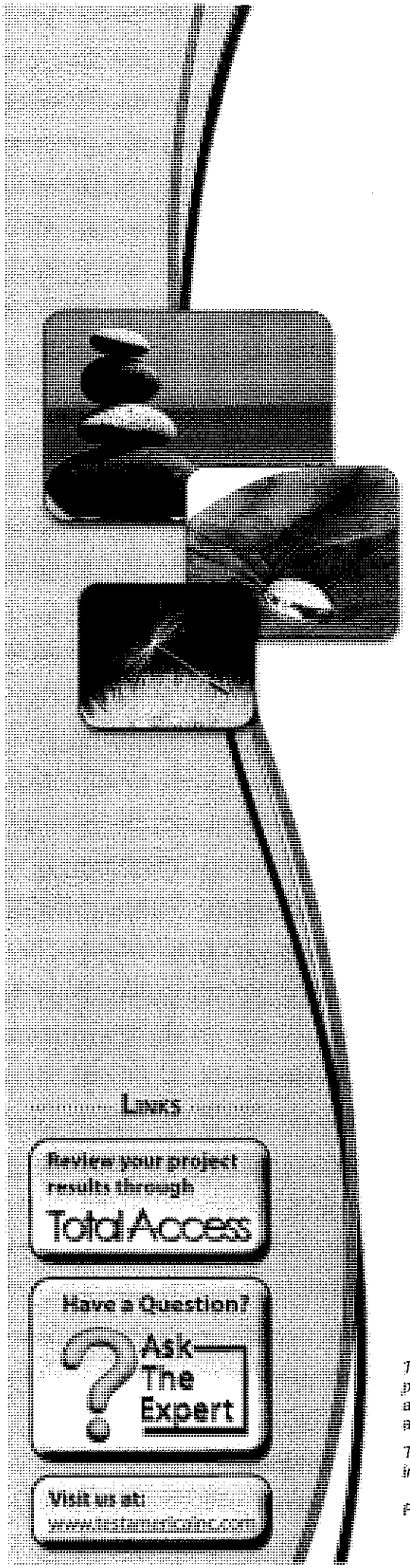
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Chlorophenol, 1,2,4-Trichlorobenzene, Chloride, and Sulfate	D	CPA-MW-1D, CPA-MW-2D, CPA-MW-2D-AD, BSA-MW-3D, and BSA-MW-1S
Surrogates diluted out	2-Chlorophenol	J	CPA-MW-1D
LCS recovery outside control limits	2-Chlorophenol and 1,2,4-Trichlorobenzene	J	CPA-MW-1D, CPA-MW-2D, BSA-MW-3D, and BSA-MW-1S
Analysis exceeded hold time	2-Chlorophenol, 1,2,4-Trichlorobenzene, and Nitrite/Nitrate	J	CPA-MW-1D, BSA-MW-3D, and CPA-MW-2D-AD

SDG KPS150

Sample Results from:

BSA-MW-3D
BSA-MW-1S
CPA-MW-1D
CPA-MW-2D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115376-1
TestAmerica Sample Delivery Group: KPS150
Client Project/Site: 3Q15 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
8/31/2015 2:49:01 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AWP 9/15/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 6
Method Summary 7
Definitions 8
Detection Summary 9
Client Sample Results 12
Surrogate Summary 29
QC Sample Results 30
QC Association 40
Chronicle 44
Chain of Custody 48
Receipt Checklists 49
Certification Summary 51

AWD
9/15/15

Job ID: 680-115376-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 3Q15 LTM GW Sampling - 1403345

Report Number: 680-115376-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/8/2015 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.6° C and 4.8° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples BSA-MW-3D-0815 (680-115376-1), BSA-MW-3D-0815-EB (680-115376-3), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6), CPA-MW-2D-0815-AD (680-115376-8), BSA-MW-1S-0815 (680-115376-9), BSA-MW-1S-0815-EB (680-115376-11) and 3Q15 LTM Trip Blank #4 (680-115376-12) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/11/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395414.

Samples BSA-MW-3D-0815 (680-115376-1)[20X], CPA-MW-1D-0815 (680-115376-4)[250X], CPA-MW-2D-0815 (680-115376-6)[250X], CPA-MW-2D-0815-AD (680-115376-8)[250X] and BSA-MW-1S-0815 (680-115376-9)[10000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6), BSA-MW-1S-0815 (680-115376-9) and CPA-MW-2D-0815-AD (680-115376-13) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 08/10/2015, 08/18/2015 and 08/26/2015 and analyzed on 08/14/2015, 08/21/2015, 08/22/2015, 08/24/2015 and 08/27/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with prep batch 395260.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with prep batch 396711.

The laboratory control sample (LCS) for 680-396244 recovered outside control limits for 2-chlorophenol: The associated sample(s) was re-prepared and/or re-analyzed outside holding time. Both sets of data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with prep batch 398157.

AWD
9/15/15
TestAmerica Savannah

Job ID: 680-115376-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Sample CPA-MW-1D-0815 (680-115376-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 08/13/2015 and 08/14/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-395774.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-396021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples BSA-MW-3D-F(0.2)-0815 (680-115376-2), CPA-MW-1D-F(0.2)-0815 (680-115376-5), CPA-MW-2D-F(0.2)-0815 (680-115376-7) and BSA-MW-1S-F(0.2)0815 (680-115376-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/13/2015 and analyzed on 08/14/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/13/2015 and analyzed on 08/14/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 08/09/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 08/12/2015.

Samples BSA-MW-3D-0815 (680-115376-1)[5X], CPA-MW-1D-0815 (680-115376-4)[2X], CPA-MW-2D-0815 (680-115376-6)[2X] and BSA-MW-1S-0815 (680-115376-9)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/08/2015.

The following sample was received outside of holding time: CPA-MW-1D-0815 (680-115376-4).

AWD 9/15/15

Job ID: 680-115376-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: BSA-MW-3D-0815 (680-115376-1).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE

Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 08/12/2015.

Samples BSA-MW-3D-0815 (680-115376-1)[10X], CPA-MW-2D-0815 (680-115376-6)[5X] and BSA-MW-1S-0815 (680-115376-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples BSA-MW-3D-0815 (680-115376-1), CPA-MW-1D-0815 (680-115376-4), CPA-MW-2D-0815 (680-115376-6) and BSA-MW-1S-0815 (680-115376-9) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 08/20/2015.

The following sample in TOC Batch 160-206910 was diluted to bring the concentration of target analytes within the calibration range: BSA-MW-1S-0815 (680-115376-9). Elevated reporting limits (RLs) are provided.

Sample BSA-MW-1S-0815 (680-115376-9)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)

Samples BSA-MW-3D-F(0.2)-0815 (680-115376-2), CPA-MW-1D-F(0.2)-0815 (680-115376-5), CPA-MW-2D-F(0.2)-0815 (680-115376-7) and BSA-MW-1S-F(0.2)0815 (680-115376-10) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 08/20/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PWP 9/15/15

Sample Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115376-1	BSA-MW-3D-0815	Water	08/06/15 09:14	08/08/15 10:00
680-115376-2	BSA-MW-3D-F(0.2)-0815	Water	08/06/15 09:14	08/08/15 10:00
680-115376-3	BSA-MW-3D-0815-EB	Water	08/06/15 09:30	08/08/15 10:00
680-115376-4	CPA-MW-1D-0815	Water	08/06/15 10:56	08/08/15 10:00
680-115376-5	CPA-MW-1D-F(0.2)-0815	Water	08/06/15 10:56	08/08/15 10:00
680-115376-6	CPA-MW-2D-0815	Water	08/06/15 12:47	08/08/15 10:00
680-115376-7	CPA-MW-2D-F(0.2)-0815	Water	08/06/15 12:47	08/08/15 10:00
680-115376-8	CPA-MW-2D-0815-AD	Water	08/06/15 12:47	08/08/15 10:00
680-115376-9	BSA-MW-1S-0815	Water	08/06/15 13:52	08/08/15 10:00
680-115376-10	BSA-MW-1S-F(0.2)0815	Water	08/06/15 13:52	08/08/15 10:00
680-115376-11	BSA-MW-1S-0815-EB	Water	08/06/15 14:25	08/08/15 10:00
680-115376-12	3Q15 LTM Trip Blank #4	Water	08/06/15 00:00	08/08/15 10:00
680-115376-13	CPA-MW-2D-0815-AD	Water	08/06/15 12:47	08/08/15 10:00

AWP 9/15/15
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SL
415.1	DOC	MCAWW	TAL SL

Protocol 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.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

RWD
9/15/15

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWD
9/15/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-0815 — Lab Sample ID: 680-115376-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	53	D	20		ug/L	20		8260B	Total/NA
Chlorobenzene	1100	D	20		ug/L	20		8260B	Total/NA
1,4-Dichlorobenzene	260	D	20		ug/L	20		8260B	Total/NA
Ethane	1.4		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	480		390		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.61		0.010		mg/L	1		6010C	Total Recoverable
Chloride	140	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	210	D	50		mg/L	10		375.4	Total/NA
Total Organic Carbon	3.5		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	460		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	26		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-3D-F(0.2)-0815 — Lab Sample ID: 680-115376-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.64		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0815-EB — Lab Sample ID: 680-115376-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.1		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: CPA-MW-1D-0815 — Lab Sample ID: 680-115376-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5300	D	250		ug/L	250		8260B	Total/NA
Chlorobenzene	19000	D	250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	12000	D	250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	1200	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	9800	D	250		ug/L	250		8260B	Total/NA
1,2,4-Trichlorobenzene	310	* JD	110		ug/L	10		8270D	Total/NA
1,2,4-Trichlorobenzene - RE	710	H	98		ug/L	10		8270D	Total/NA
Ethane	32		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	21000		390		ug/L	1		RSK-175	Total/NA
Iron	0.54		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.079		0.010		mg/L	1		6010C	Total Recoverable
Chloride	88	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	5.1		5.0		mg/L	1		375.4	Total/NA
Total Organic Carbon	13		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	910		5.0		mg/L	1		310.1	Total/NA

This Detection Summary does not include radiochemical test results.

PWD 9/15/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-1D-F(0.2)-0815 — Lab Sample ID: 680-115376-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.18		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.048		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	11		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0815 — Lab Sample ID: 680-115376-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	29000	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	990	D	250		ug/L	250		8260B	Total/NA
2-Chlorophenol	24	J	10		ug/L	1		8270D	Total/NA
2-Chlorophenol - RE	26	H	10		ug/L	1		8270D	Total/NA
Ethane	1.7		1.1		ug/L	1		RSK-175	Total/NA
Ethylene	2.3		1.0		ug/L	1		RSK-175	Total/NA
Methane (TCD)	1100		390		ug/L	1		RSK-175	Total/NA
Iron	7.2		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.42		0.010		mg/L	1		6010C	Total Recoverable
Chloride	60	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	74	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	8.4		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	510		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	26		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-2D-F(0.2)-0815 — Lab Sample ID: 680-115376-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.3		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.43		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-0815-AD — Lab Sample ID: 680-115376-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	30000	D	250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	1000	D	250		ug/L	250		8260B	Total/NA

Client Sample ID: BSA-MW-1S-0815 — Lab Sample ID: 680-115376-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	900000	D	10000		ug/L	10000		8260B	Total/NA
Methane (TCD)	19000		390		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.1		0.010		mg/L	1		6010C	Total Recoverable
Chloride	84	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	160	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon - RADL	34	D	2.0		mg/L	2		415.1	Total/NA

This Detection Summary does not include radiochemical test results.

AWP 9/15/15
TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-0815 (Continued) — Lab Sample ID: 680-115376-9

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	670		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	32		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-1S-F(0.2)0815 — Lab Sample ID: 680-115376-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	9.6		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	1.1		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	15		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-1S-0815-EB — Lab Sample ID: 680-115376-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	99		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	2.2		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: 3Q15 LTM Trip Blank #4 — Lab Sample ID: 680-115376-12

No Detections.

Client Sample ID: CPA-MW-2D-0815-AD — Lab Sample ID: 680-115376-13

No Detections.

This Detection Summary does not include radiochemical test results.

AWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-0815

Lab Sample ID: 680-115376-1

Date Collected: 08/06/15 09:14
Date Received: 08/08/15 10:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**53**	D	20		ug/L			08/11/15 14:40	20
Chlorobenzene	**1100**	D	20		ug/L			08/11/15 14:40	20
1,2-Dichlorobenzene	20	U	20		ug/L			08/11/15 14:40	20
1,3-Dichlorobenzene	20	U	20		ug/L			08/11/15 14:40	20
1,4-Dichlorobenzene	**260**	D	20		ug/L			08/11/15 14:40	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/11/15 14:40*	*20*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*08/11/15 14:40*	*20*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*08/11/15 14:40*	*20*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*08/11/15 14:40*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	10	U J	10		ug/L		08/10/15 15:00	08/14/15 21:09	1
1,4-Dioxane	10	U	10		ug/L		08/10/15 15:00	08/14/15 21:09	1
1,2,4-Trichlorobenzene	10	U J	10		ug/L		08/10/15 15:00	08/14/15 21:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*32 - 114*	*08/10/15 15:00*	*08/14/15 21:09*	*1*
2-Fluorophenol	*52*		*26 - 107*	*08/10/15 15:00*	*08/14/15 21:09*	*1*
Nitrobenzene-d5	*72*		*30 - 117*	*08/10/15 15:00*	*08/14/15 21:09*	*1*
Phenol-d5	*58*		*25 - 109*	*08/10/15 15:00*	*08/14/15 21:09*	*1*
Terphenyl-d14	*74*		*10 - 132*	*08/10/15 15:00*	*08/14/15 21:09*	*1*
2,4,6-Tribromophenol	*67*		*34 - 140*	*08/10/15 15:00*	*08/14/15 21:09*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	11	U H	11		ug/L		08/18/15 14:29	08/21/15 20:46	1
1,4-Dioxane	11	U H	11		ug/L		08/18/15 14:29	08/21/15 20:46	1
1,2,4-Trichlorobenzene	11	U H	11		ug/L		08/18/15 14:29	08/21/15 20:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*32 - 114*	*08/18/15 14:29*	*08/21/15 20:46*	*1*
2-Fluorophenol	*49*		*26 - 107*	*08/18/15 14:29*	*08/21/15 20:46*	*1*
Nitrobenzene-d5	*55*		*30 - 117*	*08/18/15 14:29*	*08/21/15 20:46*	*1*
Phenol-d5	*42*		*25 - 109*	*08/18/15 14:29*	*08/21/15 20:46*	*1*
Terphenyl-d14	*74*		*10 - 132*	*08/18/15 14:29*	*08/21/15 20:46*	*1*
2,4,6-Tribromophenol	*59*		*34 - 140*	*08/18/15 14:29*	*08/21/15 20:46*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**1.4**		1.1		ug/L			08/13/15 01:01	1
Ethylene	1.0	U	1.0		ug/L			08/13/15 01:01	1
Methane (TCD)	**480**		390		ug/L			08/13/15 01:01	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**11**		0.050		mg/L		08/13/15 09:29	08/14/15 22:12	1
Manganese	**0.61**		0.010		mg/L		08/13/15 09:29	08/14/15 22:12	1

9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-0815

Lab Sample ID: 680-115376-1

Date Collected: 08/06/15 09:14
Date Received: 08/08/15 10:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	140	D	5.0		mg/L			08/12/15 16:06	5
Nitrate as N	0.050	UJ+J	0.050		mg/L			08/08/15 11:45	1
Sulfate	210	D	50		mg/L			08/12/15 16:37	10
Total Organic Carbon	3.5		1.0		mg/L			08/20/15 18:30	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	460		5.0		mg/L			08/09/15 17:12	1
Carbon Dioxide, Free	26		5.0		mg/L			08/09/15 17:12	1

PMD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-F(0.2)-0815

Lab Sample ID: 680-115376-2

Date Collected: 08/06/15 09:14
Matrix: Water
Date Received: 08/08/15 10:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		08/13/15 09:29	08/14/15 22:17	1
Manganese, Dissolved	0.64		0.010		mg/L		08/13/15 09:29	08/14/15 22:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.6		1.0		mg/L			08/20/15 03:56	1

MWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-0815-EB

Lab Sample ID: 680-115376-3

Date Collected: 08/06/15 09:30
Matrix: Water
Date Received: 08/08/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.1**		1.0		ug/L			08/11/15 12:17	1
Chlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:17	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:17	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:17	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 12:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*08/11/15 12:17*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*08/11/15 12:17*	*1*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/11/15 12:17*	*1*

AWP 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-1D-0815

Lab Sample ID: 680-115376-4

Date Collected: 08/06/15 10:56
Matrix: Water
Date Received: 08/08/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**5300**	D	250		ug/L			08/11/15 15:21	250
Chlorobenzene	**19000**	D	250		ug/L			08/11/15 15:21	250
1,2-Dichlorobenzene	**12000**	D	250		ug/L			08/11/15 15:21	250
1,3-Dichlorobenzene	**1200**	D	250		ug/L			08/11/15 15:21	250
1,4-Dichlorobenzene	**9800**	D	250		ug/L			08/11/15 15:21	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 15:21*	*250*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*		*08/11/15 15:21*	*250*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*08/11/15 15:21*	*250*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/11/15 15:21*	*250*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	110	U J	110		ug/L		08/10/15 15:00	08/24/15 15:24	10
1,2,4-Trichlorobenzene	**310**	J D	110		ug/L		08/10/15 15:00	08/24/15 15:24	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*32 - 114*	*08/10/15 15:00*	*08/24/15 15:24*	*10*
2-Fluorophenol	*0*	*D*	*26 - 107*	*08/10/15 15:00*	*08/24/15 15:24*	*10*
Nitrobenzene-d5	*0*	*D*	*30 - 117*	*08/10/15 15:00*	*08/24/15 15:24*	*10*
Phenol-d5	*0*	*D*	*25 - 109*	*08/10/15 15:00*	*08/24/15 15:24*	*10*
Terphenyl-d14	*0*	*D*	*10 - 132*	*08/10/15 15:00*	*08/24/15 15:24*	*10*
2,4,6-Tribromophenol	*0*	*D*	*34 - 140*	*08/10/15 15:00*	*08/24/15 15:24*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	98	U H	98		ug/L		08/18/15 14:29	08/24/15 15:48	10
1,2,4-Trichlorobenzene	**710**	H	98		ug/L		08/18/15 14:29	08/24/15 15:48	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*32 - 114*	*08/18/15 14:29*	*08/24/15 15:48*	*10*
2-Fluorophenol	*0*	*D*	*26 - 107*	*08/18/15 14:29*	*08/24/15 15:48*	*10*
Nitrobenzene-d5	*0*	*D*	*30 - 117*	*08/18/15 14:29*	*08/24/15 15:48*	*10*
Phenol-d5	*0*	*D*	*25 - 109*	*08/18/15 14:29*	*08/24/15 15:48*	*10*
Terphenyl-d14	*0*	*D*	*10 - 132*	*08/18/15 14:29*	*08/24/15 15:48*	*10*
2,4,6-Tribromophenol	*0*	*D*	*34 - 140*	*08/18/15 14:29*	*08/24/15 15:48*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**32**		1.1		ug/L			08/14/15 00:08	1
Ethylene	1.0	U	1.0		ug/L			08/14/15 00:08	1
Methane (TCD)	**21000**		390		ug/L			08/14/15 00:08	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.54**		0.050		mg/L		08/13/15 09:29	08/14/15 22:21	1
Manganese	**0.079**		0.010		mg/L		08/13/15 09:29	08/14/15 22:21	1

RWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-1D-0815

Lab Sample ID: 680-115376-4

Date Collected: 08/06/15 10:56
Date Received: 08/08/15 10:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**88**	D	2.0		mg/L			08/12/15 16:06	2
Nitrate as N	0.050	U ~~D~~	0.050		mg/L			08/08/15 11:46	1
Sulfate	**5.1**		5.0		mg/L			08/12/15 15:33	1
Total Organic Carbon	**13**		1.0		mg/L			08/20/15 18:45	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**910**		5.0		mg/L			08/09/15 17:24	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/09/15 17:24	1

RWD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-1D-F(0.2)-0815

Lab Sample ID: 680-115376-5

Date Collected: 08/06/15 10:56
Matrix: Water
Date Received: 08/08/15 10:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.18		0.050		mg/L		08/13/15 09:29	08/14/15 22:26	1
Manganese, Dissolved	0.048		0.010		mg/L		08/13/15 09:29	08/14/15 22:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	11		1.0		mg/L			08/20/15 04:10	1

MMP
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-0815

Lab Sample ID: 680-115376-6
Date Collected: 08/06/15 12:47
Matrix: Water
Date Received: 08/08/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			08/11/15 13:18	250
Chlorobenzene	**29000**	D	250		ug/L			08/11/15 13:18	250
1,2-Dichlorobenzene	250	U	250		ug/L			08/11/15 13:18	250
1,3-Dichlorobenzene	250	U	250		ug/L			08/11/15 13:18	250
1,4-Dichlorobenzene	**990**	D	250		ug/L			08/11/15 13:18	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 13:18*	*250*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/11/15 13:18*	*250*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*08/11/15 13:18*	*250*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*08/11/15 13:18*	*250*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	**24**	J	10		ug/L		08/10/15 15:00	08/14/15 21:57	1
1,2,4-Trichlorobenzene	10	U J	10		ug/L		08/10/15 15:00	08/14/15 21:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*52*		*32 - 114*	*08/10/15 15:00*	*08/14/15 21:57*	*1*
2-Fluorophenol	*45*		*26 - 107*	*08/10/15 15:00*	*08/14/15 21:57*	*1*
Nitrobenzene-d5	*56*		*30 - 117*	*08/10/15 15:00*	*08/14/15 21:57*	*1*
Phenol-d5	*47*		*25 - 109*	*08/10/15 15:00*	*08/14/15 21:57*	*1*
Terphenyl-d14	*68*		*10 - 132*	*08/10/15 15:00*	*08/14/15 21:57*	*1*
2,4,6-Tribromophenol	*60*		*34 - 140*	*08/10/15 15:00*	*08/14/15 21:57*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	**26**	H	10		ug/L		08/18/15 14:29	08/22/15 00:10	1
1,2,4-Trichlorobenzene	10	U H	10		ug/L		08/18/15 14:29	08/22/15 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*32 - 114*	*08/18/15 14:29*	*08/22/15 00:10*	*1*
2-Fluorophenol	*48*		*26 - 107*	*08/18/15 14:29*	*08/22/15 00:10*	*1*
Nitrobenzene-d5	*61*		*30 - 117*	*08/18/15 14:29*	*08/22/15 00:10*	*1*
Phenol-d5	*56*		*25 - 109*	*08/18/15 14:29*	*08/22/15 00:10*	*1*
Terphenyl-d14	*61*		*10 - 132*	*08/18/15 14:29*	*08/22/15 00:10*	*1*
2,4,6-Tribromophenol	*61*		*34 - 140*	*08/18/15 14:29*	*08/22/15 00:10*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**1.7**		1.1		ug/L			08/14/15 00:20	1
Ethylene	**2.3**		1.0		ug/L			08/14/15 00:20	1
Methane (TCD)	**1100**		390		ug/L			08/14/15 00:20	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**7.2**		0.050		mg/L		08/13/15 09:29	08/14/15 22:30	1
Manganese	**0.42**		0.010		mg/L		08/13/15 09:29	08/14/15 22:30	1

AWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-0815

Lab Sample ID: 680-115376-6

Date Collected: 08/06/15 12:47
Date Received: 08/08/15 10:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	60	D	2.0		mg/L			08/12/15 14:51	2
Nitrate as N	0.050	U	0.050		mg/L			08/08/15 11:47	1
Sulfate	74	D	25		mg/L			08/12/15 15:37	5
Total Organic Carbon	8.4		1.0		mg/L			08/20/15 18:51	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	510		5.0		mg/L			08/09/15 17:50	1
Carbon Dioxide, Free	26		5.0		mg/L			08/09/15 17:50	1

AWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-F(0.2)-0815

Lab Sample ID: 680-115376-7

Date Collected: 08/06/15 12:47
Matrix: Water
Date Received: 08/08/15 10:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.3		0.050		mg/L		08/13/15 09:29	08/14/15 22:44	1
Manganese, Dissolved	0.43		0.010		mg/L		08/13/15 09:29	08/14/15 22:44	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.6		1.0		mg/L			08/20/15 04:15	1

AWD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-0815-AD

Lab Sample ID: 680-115376-8

Date Collected: 08/06/15 12:47
Date Received: 08/08/15 10:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	250	U	250		ug/L			08/11/15 17:40	250
Chlorobenzene	**30000**	D	250		ug/L			08/11/15 17:40	250
1,2-Dichlorobenzene	250	U	250		ug/L			08/11/15 17:40	250
1,3-Dichlorobenzene	250	U	250		ug/L			08/11/15 17:40	250
1,4-Dichlorobenzene	**1000**	P	250		ug/L			08/11/15 17:40	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 17:40*	*250*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*08/11/15 17:40*	*250*
Dibromofluoromethane (Surr)	*110*		*70 - 130*		*08/11/15 17:40*	*250*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*08/11/15 17:40*	*250*

AWP 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-0815

Lab Sample ID: 680-115376-9

Date Collected: 08/06/15 13:52
Matrix: Water
Date Received: 08/08/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**900000**	D	10000		ug/L			08/11/15 15:41	10000
Chlorobenzene	10000	U	10000		ug/L			08/11/15 15:41	10000
1,2-Dichlorobenzene	10000	U	10000		ug/L			08/11/15 15:41	10000
1,3-Dichlorobenzene	10000	U	10000		ug/L			08/11/15 15:41	10000
1,4-Dichlorobenzene	10000	U	10000		ug/L			08/11/15 15:41	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/11/15 15:41*	*10000*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*08/11/15 15:41*	*10000*
Dibromofluoromethane (Surr)	*110*		*70 - 130*		*08/11/15 15:41*	*10000*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/11/15 15:41*	*10000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	11	U J	11		ug/L		08/10/15 15:00	08/14/15 22:21	1
1,2,4-Trichlorobenzene	11	U J	11		ug/L		08/10/15 15:00	08/14/15 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*32 - 114*	*08/10/15 15:00*	*08/14/15 22:21*	*1*
2-Fluorophenol	*55*		*26 - 107*	*08/10/15 15:00*	*08/14/15 22:21*	*1*
Nitrobenzene-d5	*82*		*30 - 117*	*08/10/15 15:00*	*08/14/15 22:21*	*1*
Phenol-d5	*63*		*25 - 109*	*08/10/15 15:00*	*08/14/15 22:21*	*1*
Terphenyl-d14	*72*		*10 - 132*	*08/10/15 15:00*	*08/14/15 22:21*	*1*
2,4,6-Tribromophenol	*72*		*34 - 140*	*08/10/15 15:00*	*08/14/15 22:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	11	U H	11		ug/L		08/18/15 14:29	08/21/15 21:37	1
1,2,4-Trichlorobenzene	11	U H	11		ug/L		08/18/15 14:29	08/21/15 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*57*		*32 - 114*	*08/18/15 14:29*	*08/21/15 21:37*	*1*
2-Fluorophenol	*54*		*26 - 107*	*08/18/15 14:29*	*08/21/15 21:37*	*1*
Nitrobenzene-d5	*79*		*30 - 117*	*08/18/15 14:29*	*08/21/15 21:37*	*1*
Phenol-d5	*56*		*25 - 109*	*08/18/15 14:29*	*08/21/15 21:37*	*1*
Terphenyl-d14	*75*		*10 - 132*	*08/18/15 14:29*	*08/21/15 21:37*	*1*
2,4,6-Tribromophenol	*62*		*34 - 140*	*08/18/15 14:29*	*08/21/15 21:37*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/14/15 00:33	1
Ethylene	1.0	U	1.0		ug/L			08/14/15 00:33	1
Methane (TCD)	**19000**		390		ug/L			08/14/15 00:33	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**11**		0.050		mg/L		08/13/15 09:29	08/14/15 22:49	1
Manganese	**1.1**		0.010		mg/L		08/13/15 09:29	08/14/15 22:49	1

AWD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-0815

Lab Sample ID: 680-115376-9

Date Collected: 08/06/15 13:52
Date Received: 08/08/15 10:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84	D	2.0		mg/L			08/12/15 16:06	2
Nitrate as N	0.050	U	0.050		mg/L			08/08/15 11:49	1
Sulfate	160	D	25		mg/L			08/12/15 16:09	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	670		5.0		mg/L			08/09/15 18:01	1
Carbon Dioxide, Free	32		5.0		mg/L			08/09/15 18:01	1

General Chemistry - RADL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	34		2.0		mg/L			08/20/15 18:56	2

AWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-F(0.2)0815

Lab Sample ID: 680-115376-10

Date Collected: 08/06/15 13:52
Matrix: Water
Date Received: 08/08/15 10:00

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	9.6		0.050		mg/L		08/13/15 09:29	08/14/15 22:53	1
Manganese, Dissolved	1.1		0.010		mg/L		08/13/15 09:29	08/14/15 22:53	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	15		1.0		mg/L			08/20/15 04:19	1

AWP 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-0815-EB

Lab Sample ID: 680-115376-11

Date Collected: 08/06/15 14:25
Matrix: Water
Date Received: 08/08/15 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**99**		1.0		ug/L			08/11/15 12:37	1
Chlorobenzene	**2.2**		1.0		ug/L			08/11/15 12:37	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:37	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:37	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 12:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*08/11/15 12:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/11/15 12:37*	*1*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*08/11/15 12:37*	*1*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*		*08/11/15 12:37*	*1*

AWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: 3Q15 LTM Trip Blank #4

Lab Sample ID: 680-115376-12

Date Collected: 08/06/15 00:00
Date Received: 08/08/15 10:00

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/11/15 11:56	1
Chlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:56	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:56	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:56	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 11:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/11/15 11:56*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*08/11/15 11:56*	*1*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*08/11/15 11:56*	*1*

RWD
9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-0815-AD

Lab Sample ID: 680-115376-13

Date Collected: 08/06/15 12:47
Date Received: 08/08/15 10:00

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	23	U ~~H~~ J	23		ug/L		08/26/15 15:30	08/27/15 19:54	1
1,2,4-Trichlorobenzene	23	U ~~H~~ J	23		ug/L		08/26/15 15:30	08/27/15 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*32 - 114*	*08/26/15 15:30*	*08/27/15 19:54*	*1*
2-Fluorophenol	*33*		*26 - 107*	*08/26/15 15:30*	*08/27/15 19:54*	*1*
Nitrobenzene-d5	*42*		*30 - 117*	*08/26/15 15:30*	*08/27/15 19:54*	*1*
Phenol-d5	*35*		*25 - 109*	*08/26/15 15:30*	*08/27/15 19:54*	*1*
Terphenyl-d14	*70*		*10 - 132*	*08/26/15 15:30*	*08/27/15 19:54*	*1*
2,4,6-Tribromophenol	*61*		*34 - 140*	*08/26/15 15:30*	*08/27/15 19:54*	*1*

MWP 9/15/15
TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	**Client Sample ID**	**(70-130)**	**(70-130)**	**(70-130)**	**(70-130)**
680-115376-1	BSA-MW-3D-0815	96	95	105	90
680-115376-3	BSA-MW-3D-0815-EB	94	95	105	88
680-115376-4	CPA-MW-1D-0815	94	100	106	88
680-115376-6	CPA-MW-2D-0815	94	98	108	89
680-115376-8	CPA-MW-2D-0815-AD	94	98	110	90
680-115376-9	BSA-MW-1S-0815	96	102	110	88
680-115376-11	BSA-MW-1S-0815-EB	95	96	109	88
680-115376-12	3Q15 LTM Trip Blank #4	94	96	106	87
LCS 680-395414/7	Lab Control Sample	98	99	105	90
LCSD 680-395414/8	Lab Control Sample Dup	96	102	109	92
MB 680-395414/11	Method Blank	94	96	107	89

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	**Client Sample ID**	**(32-114)**	**(26-107)**	**(30-117)**	**(25-109)**	**(10-132)**	**(34-140)**
680-115376-1	BSA-MW-3D-0815	61	52	72	58	74	67
680-115376-1 - RE	BSA-MW-3D-0815	43	49	55	42	74	59
680-115376-4	CPA-MW-1D-0815	0 D	0 D	0 D	0 D	0 D	0 D
680-115376-4 - RE	CPA-MW-1D-0815	0 D	0 D	0 D	0 D	0 D	0 D
680-115376-6	CPA-MW-2D-0815	52	45	56	47	68	60
680-115376-6 - RE	CPA-MW-2D-0815	59	48	61	56	61	61
680-115376-9	BSA-MW-1S-0815	60	55	82	63	72	72
680-115376-9 - RE	BSA-MW-1S-0815	57	54	79	56	75	62
680-115376-13	CPA-MW-2D-0815-AD	41	33	42	35	70	61
LCS 680-395260/11-A	Lab Control Sample	35	32	40	26	43	41
LCS 680-396711/17-A	Lab Control Sample	67	72	68	75	84	74
LCS 680-398157/4-A	Lab Control Sample	67	54	58	55	87	91
LCSD 680-395260/12-A	Lab Control Sample Dup	59	51	63	56	77	61
LCSD 680-396711/18-A	Lab Control Sample Dup	69	80	68	63	84	72
LCSD 680-398157/5-A	Lab Control Sample Dup	57	51	56	54	89	94
MB 680-395260/10-A	Method Blank	63	58	73	63	75	66
MB 680-396711/16-A	Method Blank	58	58	68	65	85	72
MB 680-398157/3-A	Method Blank	41	64	58	61	79	65

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPH = Terphenyl-d14
TBP = 2,4,6-Tribromophenol

AWD 9/15/15

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-395414/11
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
Chlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/11/15 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/11/15 11:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/11/15 11:36*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*08/11/15 11:36*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*08/11/15 11:36*	*1*

Lab Sample ID: LCS 680-395414/7
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.9		ug/L		104	73 - 131
Chlorobenzene	50.0	53.6		ug/L		107	80 - 120
1,2-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120
1,3-Dichlorobenzene	50.0	53.0		ug/L		106	80 - 120
1,4-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 680-395414/8
Matrix: Water
Analysis Batch: 395414

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	52.0		ug/L		104	73 - 131	0	30
Chlorobenzene	50.0	53.5		ug/L		107	80 - 120	0	20
1,2-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 120	2	20
1,3-Dichlorobenzene	50.0	52.8		ug/L		106	80 - 120	0	20
1,4-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*
Dibromofluoromethane (Surr)	*109*		*70 - 130*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*

AWD 9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-395260/10-A
Matrix: Water
Analysis Batch: 396244

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 395260

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	10	U	10		ug/L		08/10/15 15:00	08/14/15 18:43	1
1,4-Dioxane	10	U	10		ug/L		08/10/15 15:00	08/14/15 18:43	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/10/15 15:00	08/14/15 18:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*63*		*32 - 114*	*08/10/15 15:00*	*08/14/15 18:43*	*1*
2-Fluorophenol	*58*		*26 - 107*	*08/10/15 15:00*	*08/14/15 18:43*	*1*
Nitrobenzene-d5	*73*		*30 - 117*	*08/10/15 15:00*	*08/14/15 18:43*	*1*
Phenol-d5	*63*		*25 - 109*	*08/10/15 15:00*	*08/14/15 18:43*	*1*
Terphenyl-d14	*75*		*10 - 132*	*08/10/15 15:00*	*08/14/15 18:43*	*1*
2,4,6-Tribromophenol	*66*		*34 - 140*	*08/10/15 15:00*	*08/14/15 18:43*	*1*

Lab Sample ID: LCS 680-395260/11-A
Matrix: Water
Analysis Batch: 396244

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395260

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	36.4		ug/L		36	10 - 112
2-Chlorophenol	100	36.6	*	ug/L		37	38 - 98
1,4-Dioxane	100	33.5		ug/L		33	16 - 79
1,2,4-Trichlorobenzene	100	24.0		ug/L		24	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*35*		*32 - 114*
2-Fluorophenol	*32*		*26 - 107*
Nitrobenzene-d5	*40*		*30 - 117*
Phenol-d5	*26*		*25 - 109*
Terphenyl-d14	*43*		*10 - 132*
2,4,6-Tribromophenol	*41*		*34 - 140*

Lab Sample ID: LCSD 680-395260/12-A
Matrix: Water
Analysis Batch: 396244

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 395260

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	60.6		ug/L		61	10 - 112	50	50
2-Chlorophenol	100	57.4		ug/L		57	38 - 98	44	50
1,4-Dioxane	100	50.8		ug/L		51	16 - 79	41	50
1,2,4-Trichlorobenzene	100	45.1	*	ug/L		45	16 - 80	61	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*59*		*32 - 114*
2-Fluorophenol	*51*		*26 - 107*
Nitrobenzene-d5	*63*		*30 - 117*
Phenol-d5	*56*		*25 - 109*
Terphenyl-d14	*77*		*10 - 132*
2,4,6-Tribromophenol	*61*		*34 - 140*

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-396711/16-A
Matrix: Water
Analysis Batch: 397458

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 396711

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	10	U	10		ug/L		08/18/15 14:29	08/21/15 18:12	1
1,4-Dioxane	10	U	10		ug/L		08/18/15 14:29	08/21/15 18:12	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/18/15 14:29	08/21/15 18:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*58*		*32 - 114*	*08/18/15 14:29*	*08/21/15 18:12*	*1*
2-Fluorophenol	*58*		*26 - 107*	*08/18/15 14:29*	*08/21/15 18:12*	*1*
Nitrobenzene-d5	*68*		*30 - 117*	*08/18/15 14:29*	*08/21/15 18:12*	*1*
Phenol-d5	*65*		*25 - 109*	*08/18/15 14:29*	*08/21/15 18:12*	*1*
Terphenyl-d14	*85*		*10 - 132*	*08/18/15 14:29*	*08/21/15 18:12*	*1*
2,4,6-Tribromophenol	*72*		*34 - 140*	*08/18/15 14:29*	*08/21/15 18:12*	*1*

Lab Sample ID: LCS 680-396711/17-A
Matrix: Water
Analysis Batch: 397458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 396711

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	65.6		ug/L		66	10 - 112
2-Chlorophenol	100	67.1		ug/L		67	38 - 98
1,4-Dioxane	100	70.2		ug/L		70	16 - 79
1,2,4-Trichlorobenzene	100	52.7		ug/L		53	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*67*		*32 - 114*
2-Fluorophenol	*72*		*26 - 107*
Nitrobenzene-d5	*68*		*30 - 117*
Phenol-d5	*75*		*25 - 109*
Terphenyl-d14	*84*		*10 - 132*
2,4,6-Tribromophenol	*74*		*34 - 140*

Lab Sample ID: LCSD 680-396711/18-A
Matrix: Water
Analysis Batch: 397458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 396711

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	76.9		ug/L		77	10 - 112	16	50
2-Chlorophenol	100	65.8		ug/L		66	38 - 98	2	50
1,4-Dioxane	100	54.9		ug/L		55	16 - 79	24	50
1,2,4-Trichlorobenzene	100	56.9		ug/L		57	16 - 80	8	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*69*		*32 - 114*
2-Fluorophenol	*80*		*26 - 107*
Nitrobenzene-d5	*68*		*30 - 117*
Phenol-d5	*63*		*25 - 109*
Terphenyl-d14	*84*		*10 - 132*
2,4,6-Tribromophenol	*72*		*34 - 140*

AWD 9/15/15

TestAmerica Savannah

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-398157/3-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398499 — **Prep Batch: 398157**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1
1,4-Dioxane	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/26/15 15:30	08/28/15 16:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*32 - 114*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
2-Fluorophenol	*64*		*26 - 107*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Nitrobenzene-d5	*58*		*30 - 117*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Phenol-d5	*61*		*25 - 109*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
Terphenyl-d14	*79*		*10 - 132*	*08/26/15 15:30*	*08/28/15 16:51*	*1*
2,4,6-Tribromophenol	*65*		*34 - 140*	*08/26/15 15:30*	*08/28/15 16:51*	*1*

Lab Sample ID: LCS 680-398157/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398322 — **Prep Batch: 398157**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	67.5		ug/L		67	10 - 112
2-Chlorophenol	100	62.4		ug/L		62	38 - 98
1,4-Dioxane	100	40.1		ug/L		40	16 - 79
1,2,4-Trichlorobenzene	100	47.5		ug/L		48	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*67*		*32 - 114*
2-Fluorophenol	*54*		*26 - 107*
Nitrobenzene-d5	*58*		*30 - 117*
Phenol-d5	*55*		*25 - 109*
Terphenyl-d14	*87*		*10 - 132*
2,4,6-Tribromophenol	*91*		*34 - 140*

Lab Sample ID: LCSD 680-398157/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398322 — **Prep Batch: 398157**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	68.5		ug/L		68	10 - 112	1	50
2-Chlorophenol	100	63.5		ug/L		64	38 - 98	2	50
1,4-Dioxane	100	38.9		ug/L		39	16 - 79	3	50
1,2,4-Trichlorobenzene	100	50.1		ug/L		50	16 - 80	5	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*57*		*32 - 114*
2-Fluorophenol	*51*		*26 - 107*
Nitrobenzene-d5	*56*		*30 - 117*
Phenol-d5	*54*		*25 - 109*
Terphenyl-d14	*89*		*10 - 132*
2,4,6-Tribromophenol	*94*		*34 - 140*

PWD
9/15/15
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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-395774/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/12/15 21:22	1
Ethylene	1.0	U	1.0		ug/L			08/12/15 21:22	1
Methane	0.58	U	0.58		ug/L			08/12/15 21:22	1
Methane (TCD)	390	U	390		ug/L			08/12/15 21:22	1

Lab Sample ID: LCS 680-395774/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	263		ug/L		91	75 - 125
Ethylene	269	250		ug/L		93	75 - 125
Methane	154	139		ug/L		90	75 - 125

Lab Sample ID: LCS 680-395774/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	2100		ug/L		109	75 - 125

Lab Sample ID: LCSD 680-395774/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2080		ug/L		108	75 - 125	1	30

Lab Sample ID: LCSD 680-395774/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395774

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	307		ug/L		106	75 - 125	15	30
Ethylene	269	292		ug/L		108	75 - 125	16	30
Methane	154	159		ug/L		103	75 - 125	13	30

Lab Sample ID: MB 680-396021/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 396021

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/13/15 23:16	1
Ethylene	1.0	U	1.0		ug/L			08/13/15 23:16	1
Methane	0.58	U	0.58		ug/L			08/13/15 23:16	1
Methane (TCD)	390	U	390		ug/L			08/13/15 23:16	1

AWD 9/15/15
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Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-396021/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 396021

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	316		ug/L		109	75 - 125
Ethylene	269	298		ug/L		111	75 - 125
Methane	154	167		ug/L		108	75 - 125

Lab Sample ID: LCS 680-396021/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 396021

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	2080		ug/L		108	75 - 125

Lab Sample ID: LCSD 680-396021/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 396021

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	300		ug/L		104	75 - 125	5	30
Ethylene	269	283		ug/L		105	75 - 125	5	30
Methane	154	158		ug/L		103	75 - 125	5	30

Lab Sample ID: LCSD 680-396021/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 396021

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2110		ug/L		110	75 - 125	2	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-395870/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 396333 — **Prep Batch: 395870**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		08/13/15 09:29	08/14/15 21:26	1
Iron, Dissolved	0.050	U	0.050		mg/L		08/13/15 09:29	08/14/15 21:26	1
Manganese	0.010	U	0.010		mg/L		08/13/15 09:29	08/14/15 21:26	1
Manganese, Dissolved	0.010	U	0.010		mg/L		08/13/15 09:29	08/14/15 21:26	1

Lab Sample ID: LCS 680-395870/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 396333 — **Prep Batch: 395870**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.19		mg/L		104	80 - 120
Iron, Dissolved	5.00	5.19		mg/L		104	80 - 120
Manganese	0.500	0.534		mg/L		107	80 - 120
Manganese, Dissolved	0.500	0.534		mg/L		107	80 - 120

AWD 9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-395214/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			08/09/15 16:00	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/09/15 16:00	1

Lab Sample ID: LCS 680-395214/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	245		mg/L		98	80 - 120

Lab Sample ID: LCSD 680-395214/32 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	254		mg/L		102	80 - 120	4	30

Lab Sample ID: 680-115376-4 DU — **Client Sample ID: CPA-MW-1D-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395214

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	910		898		mg/L		2	30
Carbon Dioxide, Free	5.0	U	5.0	U	mg/L		NC	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-395888/22 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			08/12/15 16:00	1

Lab Sample ID: LCS 680-395888/15 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.1		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-395888/21 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.3		mg/L		105	85 - 115	0	30

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Method: 325.2 - Chloride (Continued)

Lab Sample ID: 680-115376-6 DU — **Client Sample ID: CPA-MW-2D-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395888

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	60		59.8		mg/L		0.3	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-395164/13 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			08/08/15 11:27	1

Lab Sample ID: LCS 680-395164/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.555		mg/L		111	75 - 125
Nitrate Nitrite as N	1.00	1.07		mg/L		107	90 - 110
Nitrite as N	0.500	0.518		mg/L		104	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-395889/52 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			08/13/15 08:41	1

Lab Sample ID: LCS 680-395889/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

Lab Sample ID: LCSD 680-395889/42 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	19.9		mg/L		100	75 - 125	0	30

Lab Sample ID: 680-115376-6 DU — **Client Sample ID: CPA-MW-2D-0815**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 395889

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	74		71.8		mg/L		3	30

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 415.1 - DOC

Lab Sample ID: MB 160-206911/83
Matrix: Water
Analysis Batch: 206911

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			08/20/15 02:35	1

Lab Sample ID: LCS 160-206911/84
Matrix: Water
Analysis Batch: 206911

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.64		mg/L		96	90 - 110

Lab Sample ID: 680-115376-2 MS
Matrix: Water
Analysis Batch: 206911

Client Sample ID: BSA-MW-3D-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	3.6		5.00	8.62		mg/L		100	82 - 132

Lab Sample ID: 680-115376-2 DU
Matrix: Water
Analysis Batch: 206911

Client Sample ID: BSA-MW-3D-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	3.6		3.62		mg/L		0.6	20

Method: 415.1 - TOC

Lab Sample ID: MB 160-206910/5
Matrix: Water
Analysis Batch: 206910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			08/20/15 18:15	1

Lab Sample ID: LCS 160-206910/6
Matrix: Water
Analysis Batch: 206910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.0		mg/L		100	90 - 110

Lab Sample ID: 680-115376-1 MS
Matrix: Water
Analysis Batch: 206910

Client Sample ID: BSA-MW-3D-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	3.5		5.00	8.64		mg/L		103	76 - 120

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Method: 415.1 - TOC (Continued)

Lab Sample ID: 680-115376-1 DU
Matrix: Water
Analysis Batch: 206910

Client Sample ID: BSA-MW-3D-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	3.5		3.51		mg/L		0.3	20

PWD 9/15/15
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

GC/MS VOA

Analysis Batch: 395414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	8260B	
680-115376-3	BSA-MW-3D-0815-EB	Total/NA	Water	8260B	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	8260B	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	8260B	
680-115376-8	CPA-MW-2D-0815-AD	Total/NA	Water	8260B	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	8260B	
680-115376-11	BSA-MW-1S-0815-EB	Total/NA	Water	8260B	
680-115376-12	3Q15 LTM Trip Blank #4	Total/NA	Water	8260B	
LCS 680-395414/7	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-395414/8	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-395414/11	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 395260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	3520C	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	3520C	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	3520C	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	3520C	
LCS 680-395260/11-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-395260/12-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-395260/10-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 396244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	8270D	395260
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	8270D	395260
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	8270D	395260
LCS 680-395260/11-A	Lab Control Sample	Total/NA	Water	8270D	395260
LCSD 680-395260/12-A	Lab Control Sample Dup	Total/NA	Water	8270D	395260
MB 680-395260/10-A	Method Blank	Total/NA	Water	8270D	395260

Prep Batch: 396711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1 - RE	BSA-MW-3D-0815	Total/NA	Water	3520C	
680-115376-4 - RE	CPA-MW-1D-0815	Total/NA	Water	3520C	
680-115376-6 - RE	CPA-MW-2D-0815	Total/NA	Water	3520C	
680-115376-9 - RE	BSA-MW-1S-0815	Total/NA	Water	3520C	
LCS 680-396711/17-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-396711/18-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-396711/16-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 397458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1 - RE	BSA-MW-3D-0815	Total/NA	Water	8270D	396711
680-115376-6 - RE	CPA-MW-2D-0815	Total/NA	Water	8270D	396711
680-115376-9 - RE	BSA-MW-1S-0815	Total/NA	Water	8270D	396711
LCS 680-396711/17-A	Lab Control Sample	Total/NA	Water	8270D	396711
LCSD 680-396711/18-A	Lab Control Sample Dup	Total/NA	Water	8270D	396711

AWD 9/15/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

GC/MS Semi VOA (Continued)

Analysis Batch: 397458 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-396711/16-A	Method Blank	Total/NA	Water	8270D	396711

Analysis Batch: 397701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	8270D	395260
680-115376-4 - RE	CPA-MW-1D-0815	Total/NA	Water	8270D	396711

Prep Batch: 398157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-13	CPA-MW-2D-0815-AD	Total/NA	Water	3520C	
LCS 680-398157/4-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-398157/5-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-398157/3-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 398322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-13	CPA-MW-2D-0815-AD	Total/NA	Water	8270D	398157
LCS 680-398157/4-A	Lab Control Sample	Total/NA	Water	8270D	398157
LCSD 680-398157/5-A	Lab Control Sample Dup	Total/NA	Water	8270D	398157

Analysis Batch: 398499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-398157/3-A	Method Blank	Total/NA	Water	8270D	398157

GC VOA

Analysis Batch: 395774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	RSK-175	
LCS 680-395774/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-395774/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-395774/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-395774/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-395774/9	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 396021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	RSK-175	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	RSK-175	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	RSK-175	
LCS 680-396021/2	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-396021/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-396021/3	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-396021/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-396021/7	Method Blank	Total/NA	Water	RSK-175	

AWD 9/15/15
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QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Metals

Prep Batch: 395870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total Recoverable	Water	3005A	
680-115376-2	BSA-MW-3D-F(0.2)-0815	Dissolved	Water	3005A	
680-115376-4	CPA-MW-1D-0815	Total Recoverable	Water	3005A	
680-115376-5	CPA-MW-1D-F(0.2)-0815	Dissolved	Water	3005A	
680-115376-6	CPA-MW-2D-0815	Total Recoverable	Water	3005A	
680-115376-7	CPA-MW-2D-F(0.2)-0815	Dissolved	Water	3005A	
680-115376-9	BSA-MW-1S-0815	Total Recoverable	Water	3005A	
680-115376-10	BSA-MW-1S-F(0.2)0815	Dissolved	Water	3005A	
LCS 680-395870/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-395870/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 396333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total Recoverable	Water	6010C	395870
680-115376-2	BSA-MW-3D-F(0.2)-0815	Dissolved	Water	6010C	395870
680-115376-4	CPA-MW-1D-0815	Total Recoverable	Water	6010C	395870
680-115376-5	CPA-MW-1D-F(0.2)-0815	Dissolved	Water	6010C	395870
680-115376-6	CPA-MW-2D-0815	Total Recoverable	Water	6010C	395870
680-115376-7	CPA-MW-2D-F(0.2)-0815	Dissolved	Water	6010C	395870
680-115376-9	BSA-MW-1S-0815	Total Recoverable	Water	6010C	395870
680-115376-10	BSA-MW-1S-F(0.2)0815	Dissolved	Water	6010C	395870
LCS 680-395870/2-A	Lab Control Sample	Total Recoverable	Water	6010C	395870
MB 680-395870/1-A	Method Blank	Total Recoverable	Water	6010C	395870

General Chemistry

Analysis Batch: 206910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	415.1	
680-115376-1 DU	BSA-MW-3D-0815	Total/NA	Water	415.1	
680-115376-1 MS	BSA-MW-3D-0815	Total/NA	Water	415.1	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	415.1	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	415.1	
680-115376-9 - RADL	BSA-MW-1S-0815	Total/NA	Water	415.1	
LCS 160-206910/6	Lab Control Sample	Total/NA	Water	415.1	
MB 160-206910/5	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 206911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-2	BSA-MW-3D-F(0.2)-0815	Dissolved	Water	415.1	
680-115376-2 DU	BSA-MW-3D-F(0.2)-0815	Dissolved	Water	415.1	
680-115376-2 MS	BSA-MW-3D-F(0.2)-0815	Dissolved	Water	415.1	
680-115376-5	CPA-MW-1D-F(0.2)-0815	Dissolved	Water	415.1	
680-115376-7	CPA-MW-2D-F(0.2)-0815	Dissolved	Water	415.1	
680-115376-10	BSA-MW-1S-F(0.2)0815	Dissolved	Water	415.1	
LCS 160-206911/84	Lab Control Sample	Dissolved	Water	415.1	
MB 160-206911/83	Method Blank	Dissolved	Water	415.1	

AWD 9/15/15
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QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

General Chemistry (Continued)

Analysis Batch: 395164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	353.2	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	353.2	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	353.2	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	353.2	
LCS 680-395164/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-395164/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 395214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	310.1	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	310.1	
680-115376-4 DU	CPA-MW-1D-0815	Total/NA	Water	310.1	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	310.1	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	310.1	
LCS 680-395214/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-395214/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-395214/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 395888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	325.2	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	325.2	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	325.2	
680-115376-6 DU	CPA-MW-2D-0815	Total/NA	Water	325.2	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	325.2	
LCS 680-395888/15	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-395888/21	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-395888/22	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 395889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115376-1	BSA-MW-3D-0815	Total/NA	Water	375.4	
680-115376-4	CPA-MW-1D-0815	Total/NA	Water	375.4	
680-115376-6	CPA-MW-2D-0815	Total/NA	Water	375.4	
680-115376-6 DU	CPA-MW-2D-0815	Total/NA	Water	375.4	
680-115376-9	BSA-MW-1S-0815	Total/NA	Water	375.4	
LCS 680-395889/16	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-395889/42	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-395889/52	Method Blank	Total/NA	Water	375.4	

AWD 9/15/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-3D-0815
Lab Sample ID: 680-115376-1
Date Collected: 08/06/15 09:14
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	395414	08/11/15 14:40	JD1	TAL SAV
Total/NA	Prep	3520C			395260	08/10/15 15:00	RBS	TAL SAV
Total/NA	Analysis	8270D		1	396244	08/14/15 21:09	RAM	TAL SAV
Total/NA	Prep	3520C	RE		396711	08/18/15 14:29	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	1	397458	08/21/15 20:46	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	395774	08/13/15 01:01	AAH	TAL SAV
Total Recoverable	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	396333	08/14/15 22:12	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 17:12	DAM	TAL SAV
Total/NA	Analysis	325.2		5	395888	08/12/15 16:06	JME	TAL SAV
Total/NA	Analysis	353.2		1	395164	08/08/15 11:45	GRX	TAL SAV
Total/NA	Analysis	375.4		10	395889	08/12/15 16:37	JME	TAL SAV
Total/NA	Analysis	415.1		1	206910	08/20/15 18:30	BLH	TAL SL

Client Sample ID: BSA-MW-3D-F(0.2)-0815
Lab Sample ID: 680-115376-2
Date Collected: 08/06/15 09:14
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Dissolved	Analysis	6010C		1	396333	08/14/15 22:17	BCB	TAL SAV
Dissolved	Analysis	415.1		1	206911	08/20/15 03:56	BLH	TAL SL

Client Sample ID: BSA-MW-3D-0815-EB
Lab Sample ID: 680-115376-3
Date Collected: 08/06/15 09:30
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395414	08/11/15 12:17	JD1	TAL SAV

Client Sample ID: CPA-MW-1D-0815
Lab Sample ID: 680-115376-4
Date Collected: 08/06/15 10:56
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	395414	08/11/15 15:21	JD1	TAL SAV
Total/NA	Prep	3520C			395260	08/10/15 15:00	RBS	TAL SAV
Total/NA	Analysis	8270D		10	397701	08/24/15 15:24	RAM	TAL SAV
Total/NA	Prep	3520C	RE		396711	08/18/15 14:29	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	10	397701	08/24/15 15:48	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	396021	08/14/15 00:08	AAH	TAL SAV
Total Recoverable	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV

AWD 9/15/15

TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-1D-0815

Lab Sample ID: 680-115376-4
Date Collected: 08/06/15 10:56
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6010C		1	396333	08/14/15 22:21	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 17:24	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 16:06	JME	TAL SAV
Total/NA	Analysis	353.2		1	395164	08/08/15 11:46	GRX	TAL SAV
Total/NA	Analysis	375.4		1	395889	08/12/15 15:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	206910	08/20/15 18:45	BLH	TAL SL

Client Sample ID: CPA-MW-1D-F(0.2)-0815

Lab Sample ID: 680-115376-5
Date Collected: 08/06/15 10:56
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Dissolved	Analysis	6010C		1	396333	08/14/15 22:26	BCB	TAL SAV
Dissolved	Analysis	415.1		1	206911	08/20/15 04:10	BLH	TAL SL

Client Sample ID: CPA-MW-2D-0815

Lab Sample ID: 680-115376-6
Date Collected: 08/06/15 12:47
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	395414	08/11/15 13:18	JD1	TAL SAV
Total/NA	Prep	3520C			395260	08/10/15 15:00	RBS	TAL SAV
Total/NA	Analysis	8270D		1	396244	08/14/15 21:57	RAM	TAL SAV
Total/NA	Prep	3520C	RE		396711	08/18/15 14:29	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	1	397458	08/22/15 00:10	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	396021	08/14/15 00:20	AAH	TAL SAV
Total Recoverable	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	396333	08/14/15 22:30	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 17:50	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 14:51	JME	TAL SAV
Total/NA	Analysis	353.2		1	395164	08/08/15 11:47	GRX	TAL SAV
Total/NA	Analysis	375.4		5	395889	08/12/15 15:37	JME	TAL SAV
Total/NA	Analysis	415.1		1	206910	08/20/15 18:51	BLH	TAL SL

Client Sample ID: CPA-MW-2D-F(0.2)-0815

Lab Sample ID: 680-115376-7
Date Collected: 08/06/15 12:47
Matrix: Water
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Dissolved	Analysis	6010C		1	396333	08/14/15 22:44	BCB	TAL SAV

RWD 9/16/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: CPA-MW-2D-F(0.2)-0815 — Lab Sample ID: 680-115376-7

Date Collected: 08/06/15 12:47 — **Matrix: Water**
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	206911	08/20/15 04:15	BLH	TAL SL

Client Sample ID: CPA-MW-2D-0815-AD — Lab Sample ID: 680-115376-8

Date Collected: 08/06/15 12:47 — **Matrix: Water**
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	395414	08/11/15 17:40	JD1	TAL SAV

Client Sample ID: BSA-MW-1S-0815 — Lab Sample ID: 680-115376-9

Date Collected: 08/06/15 13:52 — **Matrix: Water**
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	395414	08/11/15 15:41	JD1	TAL SAV
Total/NA	Prep	3520C			395260	08/10/15 15:00	RBS	TAL SAV
Total/NA	Analysis	8270D		1	396244	08/14/15 22:21	RAM	TAL SAV
Total/NA	Prep	3520C	RE		396711	08/18/15 14:29	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	1	397458	08/21/15 21:37	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	396021	08/14/15 00:33	AAH	TAL SAV
Total Recoverable	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	396333	08/14/15 22:49	BCB	TAL SAV
Total/NA	Analysis	310.1		1	395214	08/09/15 18:01	DAM	TAL SAV
Total/NA	Analysis	325.2		2	395888	08/12/15 16:06	JME	TAL SAV
Total/NA	Analysis	353.2		1	395164	08/08/15 11:49	GRX	TAL SAV
Total/NA	Analysis	375.4		5	395889	08/12/15 16:09	JME	TAL SAV
Total/NA	Analysis	415.1	RADL	2	206910	08/20/15 18:56	BLH	TAL SL

Client Sample ID: BSA-MW-1S-F(0.2)0815 — Lab Sample ID: 680-115376-10

Date Collected: 08/06/15 13:52 — **Matrix: Water**
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			395870	08/13/15 09:29	BJB	TAL SAV
Dissolved	Analysis	6010C		1	396333	08/14/15 22:53	BCB	TAL SAV
Dissolved	Analysis	415.1		1	206911	08/20/15 04:19	BLH	TAL SL

AWD 09/15/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Client Sample ID: BSA-MW-1S-0815-EB

Lab Sample ID: 680-115376-11
Matrix: Water

Date Collected: 08/06/15 14:25
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395414	08/11/15 12:37	JD1	TAL SAV

Client Sample ID: 3Q15 LTM Trip Blank #4

Lab Sample ID: 680-115376-12
Matrix: Water

Date Collected: 08/06/15 00:00
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	395414	08/11/15 11:56	JD1	TAL SAV

Client Sample ID: CPA-MW-2D-0815-AD

Lab Sample ID: 680-115376-13
Matrix: Water

Date Collected: 08/06/15 12:47
Date Received: 08/08/15 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			398157	08/26/15 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		1	398322	08/27/15 19:54	RAM	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

RWD 9/15/15
TestAmerica Savannah

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: Lori Bindner	Date:	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name. 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No..
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes.
BSA-MW-3D-0815	8/6/15	0914	G	W	16			3	2	1	1	1	3	2	3			2 coolers
BSA-MW-3D-F(0.2)-0815		1			4											1	3	
BSA-MW-3D-0815-EB		0930			3			3										
CPA-MW-1D-0815		1056			16			3	2	1	1	1	3	2	3			
CPA-MW-1D-F(0.2)-0815		1			4											1	3	
CPA-MW-2D-0815		1247			16			3	2	1	1	1	3	2	3			
CPA-MW-2D-F(0.2)-0815					4											1	3	
CPA-MW-2D-0815-AD		1			3			3										
BSA-MW-15-0815		1352			16			3	2	1	1	1	3	2	3			
BSA-MW-15-F(0.2)-0815		1			4											1	3	
BSA-MW-15-0815-EB		1425			3			3										
3Q15 LTM Trip Blank #4	1	—	1	1	2			2										
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other								2	1		1	1	3	3		4	3	

680-115376 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☑ 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:
VOC headspace upon sampling: Yes/(No)

680-115376 4.4°C 4.8°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 504807/504808 | Cooler Temp (°C): Obs'd: 0.2 Corr'd: 0.6 | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Lori Bindner	Golder	8/6/15			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
8/7/15					
Relinquished by:	Company	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
			m. Kersey	TA	8/8/15 10:00

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115376-1
SDG Number: KPS150

Login Number: 115376
List Number: 1
Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AMD
9/15/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115376-1
SDG Number: KPS150

Login Number: 115376
List Number: 2
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/12/15 04:33 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	2.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

MW D
9/15/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-15 *
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	09-30-15
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-15 *
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-15 *
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

MWD 9/15/15
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115376-1
SDG: KPS150

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	10-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-15 *
Nevada	State Program	9	MO000542015-1	07-31-16
New Jersey	NELAP	2	MO002	09-30-15 *
New York	NELAP	2	11616	03-31-16
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-15 *
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15 *
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16
Washington	State Program	10	C592	08-30-15 *
West Virginia DEP	State Program	3	381	08-31-15 *

* Certification renewal pending - certification considered valid.

AMD 9/15/15
TestAmerica Savannah

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 LTM
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KPS151
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B), SVOC (8270D), Dissolved Gases (RSK-175), Metals (6010C), Alkalinity (310.1), Chloride (325.2), Nitrogen, Nitrate-Nitrite (353.2), Sulfate (375.4), TOC (415.1), and DOC (415.1)

Sample Names: CPA-MW-5D-0815, CPA-MW-F(0.2)-0815, GWE-1D-0815, GWE-1D-F(0.2)-0815, and 3Q15 LTM Trip Blank #4

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: Sample CPA-MW-5D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

SVOC: Insufficient volume to perform MS/MSD associated with batch 397732. The RPD for LCS/LCSD recovered outside control limits for 4-chloroaniline associated with batch 397732.

Dissolved Gases: Insufficient volume to perform MS/MSD associated with batch 398462.

Metals: No deficiencies noted.

Alkalinity: No deficiencies noted.

Chloride: Samples CPA-MW-5D-0815 and GWE-1D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

Nitrate-Nitrite as Nitrogen: No deficiencies noted.

Sulfate: Samples CPA-MW-5D-0815 and GWE-1D-0815 required dilution prior to analysis, reporting limits were adjusted accordingly.

TOC: No deficiencies noted.

DOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 1.6°C, outside the 4°C +/- 2°C criteria.

General	YES	NO	NA
a) Were hold times met for sample analysis?	☒	☐	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☒	☐	☐

Comments: Detections in diluted analysis were qualified.

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	YES	NO	NA
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	YES	NO	NA
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	YES	NO	NA
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: Equipment blanks were not submitted with SDG KPS151.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA
a) Was MS/MSD accuracy criteria met?	☒	☐	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: None

Laboratory Control Sample (LCS)	YES	NO	NA
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☐	☒	☐

Comments: The RPD for LCS/LCSD recovered outside control limits for 4-chloroaniline. Detections were qualified.

Surrogate (System Monitoring) Compounds	YES	NO	NA
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates

	YES	NO	NA
a) Were field duplicates collected?	☐	☒	☐
b) Was field duplicate precision criteria met?	☐	☐	☒

Comments: Duplicate samples were not submitted with SDG KPS151.

Additional Comments: None

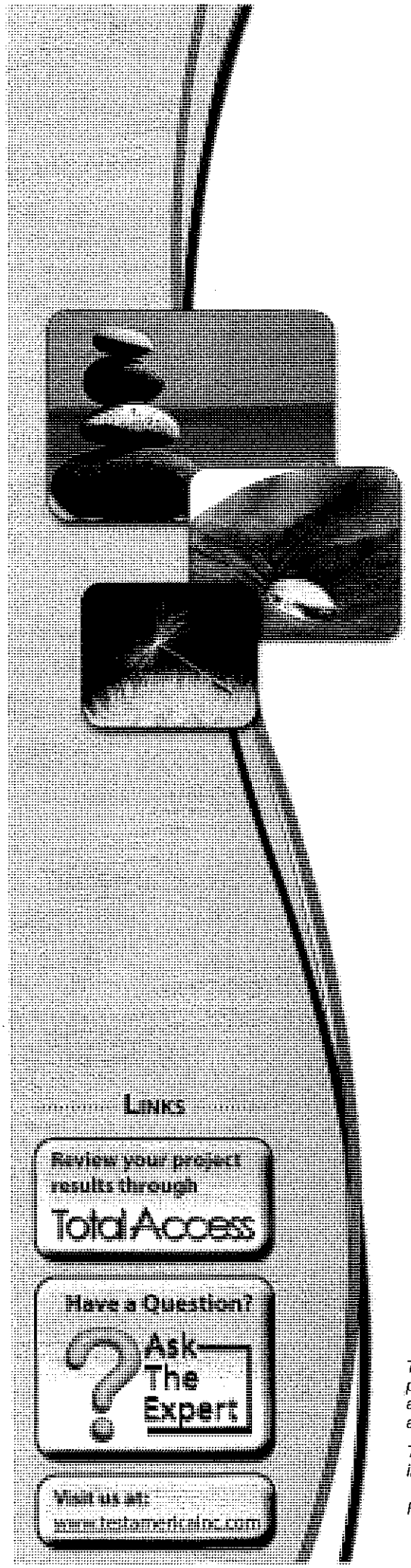
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Chlorobenzene, Chloride, and Sulfate	D	CPA-MW-5D and GWE-1D
RPD for LCS/LCSD recovery outside control limits	4-Chloroaniline	J	CPA-MW-5D

SDG KPS151

Sample Results from:

CPA-MW-5D
GWE-1D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115905-1
TestAmerica Sample Delivery Group: KPS151
Client Project/Site: 3Q15 LTM GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
9/4/2015 11:21:17 AM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For quastions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AND 9/15/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 5
Method Summary 6
Definitions 7
Detection Summary 8
Client Sample Results 9
Surrogate Summary 14
QC Sample Results 15
QC Association 22
Chronicle 25
Chain of Custody 27
Receipt Checklists 28
Certification Summary 31

MWD
9/15/15

Job ID: 680-115905-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: 3Q15 LTM GW Sampling - 1403345

Report Number: 680-115905-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/21/2015 9:17 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples CPA-MW-5D-0815 (680-115905-1), GWE-1D-0815 (680-115905-3) and 3Q15 LTM Trip Blank #4 (680-115905-5) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/27/2015.

Sample CPA-MW-5D-0815 (680-115905-1)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)
Sample CPA-MW-5D-0815 (680-115905-1) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 08/24/2015 and analyzed on 08/27/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with prep batch 397732.

The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 680-397732 recovered outside control limits for the following analytes: 4 chloroaniline.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 08/28/2015.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-398462.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples CPA-MW-F(0.2)-0815 (680-115905-2) and GWE-1D-F(0.2)-0815 (680-115905-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/24/2015 and analyzed on 08/25/2015 and 08/26/2015.

AWP 9/15/15

Job ID: 680-115905-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/24/2015 and analyzed on 08/25/2015 and 08/26/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 08/25/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CHLORIDE
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 08/26/2015.

Samples CPA-MW-5D-0815 (680-115905-1)[5X] and GWE-1D-0815 (680-115905-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 08/21/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFATE
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 08/26/2015.

Samples CPA-MW-5D-0815 (680-115905-1)[5X] and GWE-1D-0815 (680-115905-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON
Samples CPA-MW-5D-0815 (680-115905-1) and GWE-1D-0815 (680-115905-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 09/03/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED ORGANIC CARBON (DOC)
Samples CPA-MW-F(0.2)-0815 (680-115905-2) and GWE-1D-F(0.2)-0815 (680-115905-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 09/03/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AWD
9/15/15

Sample Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115905-1	CPA-MW-5D-0815	Water	08/20/15 10:33	08/21/15 09:17
680-115905-2	CPA-MW-F(0.2)-0815	Water	08/20/15 10:33	08/21/15 09:17
680-115905-3	GWE-1D-0815	Water	08/20/15 12:33	08/21/15 09:17
680-115905-4	GWE-1D-F(0.2)-0815	Water	08/20/15 12:33	08/21/15 09:17
680-115905-5	3Q15 LTM Trip Blank #4	Water	08/20/15 00:00	08/21/15 09:17

9/15/15
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL PIT
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SL
415.1	DOC	MCAWW	TAL SL

Protocol 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.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

MWD 9/15/15

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	RPD of the LCS and LCSD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

PWD
9/15/15

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: CPA-MW-5D-0815 — Lab Sample ID: 680-115905-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1500	D	20		ug/L	20		8260B	Total/NA
2-Chlorophenol	15		11		ug/L	1		8270D	Total/NA
Methane	210		0.58		ug/L	1		RSK-175	Total/NA
Iron	22		0.10		mg/L	1		6010C	Total Recoverable
Manganese	0.80		0.015		mg/L	1		6010C	Total Recoverable
Chloride	240	D	5.0		mg/L	5		325.2	Total/NA
Sulfate	150	D	25		mg/L	5		375.4	Total/NA
Total Organic Carbon	3.3		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	490		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	42		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-F(0.2)-0815 — Lab Sample ID: 680-115905-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	22		0.10		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.81		0.015		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.5		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-1D-0815 — Lab Sample ID: 680-115905-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	8.9		0.58		ug/L	1		RSK-175	Total/NA
Iron	17		0.10		mg/L	1		6010C	Total Recoverable
Manganese	2.4		0.015		mg/L	1		6010C	Total Recoverable
Chloride	70	D	2.0		mg/L	2		325.2	Total/NA
Sulfate	260	D	50		mg/L	10		375.4	Total/NA
Total Organic Carbon	4.6		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	480		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	28		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-1D-F(0.2)-0815 — Lab Sample ID: 680-115905-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.10		mg/L	1		6010C	Dissolved
Manganese, Dissolved	2.3		0.015		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.7		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 3Q15 LTM Trip Blank #4 — Lab Sample ID: 680-115905-5

No Detections.

This Detection Summary does not include radiochemical test results.

AWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: CPA-MW-5D-0815

Lab Sample ID: 680-115905-1

Date Collected: 08/20/15 10:33
Matrix: Water
Date Received: 08/21/15 09:17

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			08/27/15 19:52	20
Chlorobenzene	**1500**	D	20		ug/L			08/27/15 19:52	20
1,2-Dichlorobenzene	20	U	20		ug/L			08/27/15 19:52	20
1,3-Dichlorobenzene	20	U	20		ug/L			08/27/15 19:52	20
1,4-Dichlorobenzene	20	U	20		ug/L			08/27/15 19:52	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/27/15 19:52*	*20*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*		*08/27/15 19:52*	*20*
Dibromofluoromethane (Surr)	*99*		*70 - 130*		*08/27/15 19:52*	*20*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*08/27/15 19:52*	*20*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	22	U J	22		ug/L		08/24/15 15:42	08/27/15 20:20	1
2-Chlorophenol	**15**		11		ug/L		08/24/15 15:42	08/27/15 20:20	1
1,2,4-Trichlorobenzene	11	U	11		ug/L		08/24/15 15:42	08/27/15 20:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*32 - 114*	*08/24/15 15:42*	*08/27/15 20:20*	*1*
2-Fluorophenol	*49*		*26 - 107*	*08/24/15 15:42*	*08/27/15 20:20*	*1*
Nitrobenzene-d5	*56*		*30 - 117*	*08/24/15 15:42*	*08/27/15 20:20*	*1*
Phenol-d5	*50*		*25 - 109*	*08/24/15 15:42*	*08/27/15 20:20*	*1*
Terphenyl-d14	*87*		*10 - 132*	*08/24/15 15:42*	*08/27/15 20:20*	*1*
2,4,6-Tribromophenol	*90*		*34 - 140*	*08/24/15 15:42*	*08/27/15 20:20*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/28/15 14:12	1
Ethylene	1.0	U	1.0		ug/L			08/28/15 14:12	1
Methane	**210**		0.58		ug/L			08/28/15 14:12	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**22**		0.10		mg/L		08/24/15 07:46	08/25/15 15:27	1
Manganese	**0.80**		0.015		mg/L		08/24/15 07:46	08/26/15 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**240**	D	5.0		mg/L			08/26/15 09:21	5
Nitrate as N	0.050	U	0.050		mg/L			08/21/15 13:09	1
Sulfate	**150**	D	25		mg/L			08/26/15 09:35	5
Total Organic Carbon	**3.3**		1.0		mg/L			09/03/15 03:07	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**490**		5.0		mg/L			08/25/15 08:45	1
Carbon Dioxide, Free	**42**		5.0		mg/L			08/25/15 08:45	1

MWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: CPA-MW-F(0.2)-0815

Lab Sample ID: 680-115905-2

Date Collected: 08/20/15 10:33
Matrix: Water
Date Received: 08/21/15 09:17

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	22		0.10		mg/L		08/24/15 07:47	08/25/15 16:53	1
Manganese, Dissolved	0.81		0.015		mg/L		08/24/15 07:47	08/26/15 19:24	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.5		1.0		mg/L			09/03/15 03:36	1

AWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: GWE-1D-0815

Lab Sample ID: 680-115905-3

Date Collected: 08/20/15 12:33
Matrix: Water
Date Received: 08/21/15 09:17

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/27/15 14:29	1
Chlorobenzene	1.0	U	1.0		ug/L			08/27/15 14:29	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 14:29	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 14:29	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*70 - 130*		*08/27/15 14:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*08/27/15 14:29*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*		*08/27/15 14:29*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*08/27/15 14:29*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/28/15 14:25	1
Ethylene	1.0	U	1.0		ug/L			08/28/15 14:25	1
Methane	**8.9**		0.58		ug/L			08/28/15 14:25	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**17**		0.10		mg/L		08/24/15 07:46	08/25/15 15:43	1
Manganese	**2.4**		0.015		mg/L		08/24/15 07:46	08/26/15 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**70**	D	2.0		mg/L			08/26/15 09:21	2
Nitrate as N	0.050	U	0.050		mg/L			08/21/15 13:10	1
Sulfate	**260**	D	50		mg/L			08/26/15 09:33	10
Total Organic Carbon	**4.6**		1.0		mg/L			09/03/15 03:18	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**480**		5.0		mg/L			08/25/15 08:55	1
Carbon Dioxide, Free	**28**		5.0		mg/L			08/25/15 08:55	1

AWD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: GWE-1D-F(0.2)-0815

Lab Sample ID: 680-115905-4

Date Collected: 08/20/15 12:33
Matrix: Water
Date Received: 08/21/15 09:17

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.10		mg/L		08/24/15 07:47	08/25/15 16:58	1
Manganese, Dissolved	2.3		0.015		mg/L		08/24/15 07:47	08/26/15 19:30	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.7		1.0		mg/L			09/03/15 04:36	1

AWD 9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: 3Q15 LTM Trip Blank #4

Lab Sample ID: 680-115905-5
Matrix: Water

Date Collected: 08/20/15 00:00
Date Received: 08/21/15 09:17

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/27/15 13:46	1
Chlorobenzene	1.0	U	1.0		ug/L			08/27/15 13:46	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 13:46	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 13:46	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*70 - 130*		*08/27/15 13:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*		*08/27/15 13:46*	*1*
Dibromofluoromethane (Surr)	*94*		*70 - 130*		*08/27/15 13:46*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*08/27/15 13:46*	*1*

AWD
9/15/15

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	DBFM	BFB
Lab Sample ID	**Client Sample ID**	(70-130)	(70-130)	(70-130)	(70-130)
680-115905-1	CPA-MW-5D-0815	94	88	99	104
680-115905-3	GWE-1D-0815	108	89	94	104
680-115905-5	3Q15 LTM Trip Blank #4	108	88	94	104
LCS 680-398299/3	Lab Control Sample	104	91	97	106
LCSD 680-398299/4	Lab Control Sample Dup	107	86	94	108
MB 680-398299/8	Method Blank	109	85	93	103

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	**Client Sample ID**	(32-114)	(26-107)	(30-117)	(25-109)	(10-132)	(34-140)
680-115905-1	CPA-MW-5D-0815	68	49	56	50	87	90
LCS 680-397732/7-A	Lab Control Sample	78	48	60	46	92	98
LCSD 680-397732/8-A	Lab Control Sample Dup	54	33	43	35	86	82
MB 680-397732/6-A	Method Blank	74	51	60	53	87	88

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPH = Terphenyl-d14
TBP = 2,4,6-Tribromophenol

AWD
9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-398299/8
Matrix: Water
Analysis Batch: 398299

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			08/27/15 12:54	1
Chlorobenzene	1.0	U	1.0		ug/L			08/27/15 12:54	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 12:54	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 12:54	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			08/27/15 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*109*		*70 - 130*		*08/27/15 12:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 130*		*08/27/15 12:54*	*1*
Dibromofluoromethane (Surr)	*93*		*70 - 130*		*08/27/15 12:54*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*08/27/15 12:54*	*1*

Lab Sample ID: LCS 680-398299/3
Matrix: Water
Analysis Batch: 398299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.1		ug/L		96	73 - 131
Chlorobenzene	50.0	51.5		ug/L		103	80 - 120
1,2-Dichlorobenzene	50.0	53.3		ug/L		107	80 - 120
1,3-Dichlorobenzene	50.0	53.2		ug/L		106	80 - 120
1,4-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 680-398299/4
Matrix: Water
Analysis Batch: 398299

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	47.6		ug/L		95	73 - 131	1	30
Chlorobenzene	50.0	51.7		ug/L		103	80 - 120	0	20
1,2-Dichlorobenzene	50.0	53.8		ug/L		108	80 - 120	1	20
1,3-Dichlorobenzene	50.0	55.1		ug/L		110	80 - 120	4	20
1,4-Dichlorobenzene	50.0	51.9		ug/L		104	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 130*
Dibromofluoromethane (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*

AWP 9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-397732/6-A
Matrix: Water
Analysis Batch: 398322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397732

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20		ug/L		08/24/15 15:42	08/27/15 19:03	1
2-Chlorophenol	10	U	10		ug/L		08/24/15 15:42	08/27/15 19:03	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		08/24/15 15:42	08/27/15 19:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*74*		*32 - 114*	*08/24/15 15:42*	*08/27/15 19:03*	*1*
2-Fluorophenol	*51*		*26 - 107*	*08/24/15 15:42*	*08/27/15 19:03*	*1*
Nitrobenzene-d5	*60*		*30 - 117*	*08/24/15 15:42*	*08/27/15 19:03*	*1*
Phenol-d5	*53*		*25 - 109*	*08/24/15 15:42*	*08/27/15 19:03*	*1*
Terphenyl-d14	*87*		*10 - 132*	*08/24/15 15:42*	*08/27/15 19:03*	*1*
2,4,6-Tribromophenol	*88*		*34 - 140*	*08/24/15 15:42*	*08/27/15 19:03*	*1*

Lab Sample ID: LCS 680-397732/7-A
Matrix: Water
Analysis Batch: 398322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397732

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	73.5		ug/L		74	10 - 112
2-Chlorophenol	100	55.3		ug/L		55	38 - 98
1,4-Dioxane	100	39.5		ug/L		40	16 - 79
1,2,4-Trichlorobenzene	100	59.3		ug/L		59	16 - 80

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*78*		*32 - 114*
2-Fluorophenol	*48*		*26 - 107*
Nitrobenzene-d5	*60*		*30 - 117*
Phenol-d5	*46*		*25 - 109*
Terphenyl-d14	*92*		*10 - 132*
2,4,6-Tribromophenol	*98*		*34 - 140*

Lab Sample ID: LCSD 680-397732/8-A
Matrix: Water
Analysis Batch: 398322

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 397732

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	100	33.0	*	ug/L		33	10 - 112	76	50
2-Chlorophenol	100	40.8		ug/L		41	38 - 98	30	50
1,4-Dioxane	100	28.6		ug/L		29	16 - 79	32	50
1,2,4-Trichlorobenzene	100	41.7		ug/L		42	16 - 80	35	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*54*		*32 - 114*
2-Fluorophenol	*33*		*26 - 107*
Nitrobenzene-d5	*43*		*30 - 117*
Phenol-d5	*35*		*25 - 109*
Terphenyl-d14	*86*		*10 - 132*
2,4,6-Tribromophenol	*82*		*34 - 140*

AWD 9/15/15

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QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-398462/11
Matrix: Water
Analysis Batch: 398462

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			08/28/15 13:59	1
Ethylene	1.0	U	1.0		ug/L			08/28/15 13:59	1
Methane	0.58	U	0.58		ug/L			08/28/15 13:59	1

Lab Sample ID: LCS 680-398462/9
Matrix: Water
Analysis Batch: 398462

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	243		ug/L		84	75 - 125
Ethylene	269	229		ug/L		85	75 - 125
Methane	154	128		ug/L		83	75 - 125

Lab Sample ID: LCSD 680-398462/26
Matrix: Water
Analysis Batch: 398462

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	220		ug/L		76	75 - 125	10	30
Ethylene	269	203		ug/L		75	75 - 125	12	30
Methane	154	119		ug/L		77	75 - 125	7	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 180-151568/1-A
Matrix: Water
Analysis Batch: 151798

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 151568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.10	U	0.10		mg/L		08/24/15 07:46	08/25/15 15:17	1

Lab Sample ID: MB 180-151568/1-A
Matrix: Water
Analysis Batch: 151952

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 151568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.015	U	0.015		mg/L		08/24/15 07:46	08/26/15 17:44	1

Lab Sample ID: LCS 180-151568/2-A
Matrix: Water
Analysis Batch: 151798

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 151568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.923		mg/L		92	80 - 120

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Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 180-151568/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 151952 — **Prep Batch: 151568**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.500	0.495		mg/L		99	80 - 120

Lab Sample ID: MB 180-151569/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 151798 — **Prep Batch: 151569**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.10	U	0.10		mg/L		08/24/15 07:47	08/25/15 16:43	1

Lab Sample ID: MB 180-151569/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 151952 — **Prep Batch: 151569**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese, Dissolved	0.015	U	0.015		mg/L		08/24/15 07:47	08/26/15 19:14	1

Lab Sample ID: LCS 180-151569/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 151798 — **Prep Batch: 151569**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron, Dissolved	1.00	0.928		mg/L		93	80 - 120

Lab Sample ID: LCS 180-151569/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 151952 — **Prep Batch: 151569**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese, Dissolved	0.500	0.485		mg/L		97	80 - 120

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-397875/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 397875

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			08/25/15 05:54	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			08/25/15 05:54	1

Lab Sample ID: LCS 680-397875/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 397875

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	248	251		mg/L		101	80 - 120

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Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCSD 680-397875/32 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 397875

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	248	240		mg/L		97	80 - 120	4	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-398179/8 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398179

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			08/26/15 09:16	1

Lab Sample ID: LCS 680-398179/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398179

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.4		mg/L		105	85 - 115

Lab Sample ID: LCSD 680-398179/12 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 398179

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	25.0	26.5		mg/L		106	85 - 115	1	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-397455/13 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 397455

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			08/21/15 12:18	1

Lab Sample ID: LCS 680-397455/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 397455

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.500	0.509		mg/L		102	75 - 125
Nitrate Nitrite as N	1.00	0.985		mg/L		99	90 - 110
Nitrite as N	0.500	0.476		mg/L		95	90 - 110

MWP 9/15/15

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-398180/25
Matrix: Water
Analysis Batch: 398180

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			08/26/15 09:58	1

Lab Sample ID: LCS 680-398180/12
Matrix: Water
Analysis Batch: 398180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.1		mg/L		100	75 - 125

Lab Sample ID: LCSD 680-398180/7
Matrix: Water
Analysis Batch: 398180

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	20.0		mg/L		100	75 - 125	1	30

Method: 415.1 - DOC

Lab Sample ID: MB 160-209364/31
Matrix: Water
Analysis Batch: 209364

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			09/02/15 23:54	1

Lab Sample ID: LCS 160-209364/32
Matrix: Water
Analysis Batch: 209364

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.28		mg/L		93	90 - 110

Lab Sample ID: 680-115905-2 MS
Matrix: Water
Analysis Batch: 209364

Client Sample ID: CPA-MW-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	3.5		5.00	8.99		mg/L		110	82 - 132

Lab Sample ID: 680-115905-2 DU
Matrix: Water
Analysis Batch: 209364

Client Sample ID: CPA-MW-F(0.2)-0815
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	3.5		3.53		mg/L		0.8	20

MWD
9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Method: 415.1 - TOC

Lab Sample ID: MB 160-209363/31
Matrix: Water
Analysis Batch: 209363

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			09/02/15 23:54	1

Lab Sample ID: LCS 160-209363/32
Matrix: Water
Analysis Batch: 209363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.28		mg/L		93	90 - 110

AWD
9/15/15
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

GC/MS VOA

Analysis Batch: 398299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	8260B	
680-115905-3	GWE-1D-0815	Total/NA	Water	8260B	
680-115905-5	3Q15 LTM Trip Blank #4	Total/NA	Water	8260B	
LCS 680-398299/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-398299/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-398299/8	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 397732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	3520C	
LCS 680-397732/7-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-397732/8-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-397732/6-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 398322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	8270D	397732
LCS 680-397732/7-A	Lab Control Sample	Total/NA	Water	8270D	397732
LCSD 680-397732/8-A	Lab Control Sample Dup	Total/NA	Water	8270D	397732
MB 680-397732/6-A	Method Blank	Total/NA	Water	8270D	397732

GC VOA

Analysis Batch: 398462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	RSK-175	
680-115905-3	GWE-1D-0815	Total/NA	Water	RSK-175	
LCS 680-398462/9	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-398462/26	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-398462/11	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 151568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total Recoverable	Water	3005A	
680-115905-3	GWE-1D-0815	Total Recoverable	Water	3005A	
LCS 180-151568/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 180-151568/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 151569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-2	CPA-MW-F(0.2)-0815	Dissolved	Water	3005A	
680-115905-4	GWE-1D-F(0.2)-0815	Dissolved	Water	3005A	
LCS 180-151569/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 180-151569/1-A	Method Blank	Total Recoverable	Water	3005A	

AWD
9/15/15

TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Metals (Continued)

Analysis Batch: 151798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total Recoverable	Water	6010C	151568
680-115905-2	CPA-MW-F(0.2)-0815	Dissolved	Water	6010C	151569
680-115905-3	GWE-1D-0815	Total Recoverable	Water	6010C	151568
680-115905-4	GWE-1D-F(0.2)-0815	Dissolved	Water	6010C	151569
LCS 180-151568/2-A	Lab Control Sample	Total Recoverable	Water	6010C	151568
LCS 180-151569/2-A	Lab Control Sample	Total Recoverable	Water	6010C	151569
MB 180-151568/1-A	Method Blank	Total Recoverable	Water	6010C	151568
MB 180-151569/1-A	Method Blank	Total Recoverable	Water	6010C	151569

Analysis Batch: 151952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total Recoverable	Water	6010C	151568
680-115905-2	CPA-MW-F(0.2)-0815	Dissolved	Water	6010C	151569
680-115905-3	GWE-1D-0815	Total Recoverable	Water	6010C	151568
680-115905-4	GWE-1D-F(0.2)-0815	Dissolved	Water	6010C	151569
LCS 180-151568/2-A	Lab Control Sample	Total Recoverable	Water	6010C	151568
LCS 180-151569/2-A	Lab Control Sample	Total Recoverable	Water	6010C	151569
MB 180-151568/1-A	Method Blank	Total Recoverable	Water	6010C	151568
MB 180-151569/1-A	Method Blank	Total Recoverable	Water	6010C	151569

General Chemistry

Analysis Batch: 209363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	415.1	
680-115905-3	GWE-1D-0815	Total/NA	Water	415.1	
LCS 160-209363/32	Lab Control Sample	Total/NA	Water	415.1	
MB 160-209363/31	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 209364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-2	CPA-MW-F(0.2)-0815	Dissolved	Water	415.1	
680-115905-2 DU	CPA-MW-F(0.2)-0815	Dissolved	Water	415.1	
680-115905-2 MS	CPA-MW-F(0.2)-0815	Dissolved	Water	415.1	
680-115905-4	GWE-1D-F(0.2)-0815	Dissolved	Water	415.1	
LCS 160-209364/32	Lab Control Sample	Dissolved	Water	415.1	
MB 160-209364/31	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 397455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	353.2	
680-115905-3	GWE-1D-0815	Total/NA	Water	353.2	
LCS 680-397455/16	Lab Control Sample	Total/NA	Water	353.2	
MB 680-397455/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 397875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	310.1	
680-115905-3	GWE-1D-0815	Total/NA	Water	310.1	
LCS 680-397875/6	Lab Control Sample	Total/NA	Water	310.1	

AWP 9/15/15

QC Association Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

General Chemistry (Continued)

Analysis Batch: 397875 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-397875/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-397875/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 398179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	325.2	
680-115905-3	GWE-1D-0815	Total/NA	Water	325.2	
LCS 680-398179/1	Lab Control Sample	Total/NA	Water	325.2	
LCSD 680-398179/12	Lab Control Sample Dup	Total/NA	Water	325.2	
MB 680-398179/8	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 398180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115905-1	CPA-MW-5D-0815	Total/NA	Water	375.4	
680-115905-3	GWE-1D-0815	Total/NA	Water	375.4	
LCS 680-398180/12	Lab Control Sample	Total/NA	Water	375.4	
LCSD 680-398180/7	Lab Control Sample Dup	Total/NA	Water	375.4	
MB 680-398180/25	Method Blank	Total/NA	Water	375.4	

AWD 9/15/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: CPA-MW-5D-0815

Lab Sample ID: 680-115905-1
Date Collected: 08/20/15 10:33
Matrix: Water
Date Received: 08/21/15 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	398299	08/27/15 19:52	JD1	TAL SAV
Total/NA	Prep	3520C			397732	08/24/15 15:42	RBS	TAL SAV
Total/NA	Analysis	8270D		1	398322	08/27/15 20:20	RAM	TAL SAV
Total/NA	Analysis	RSK-175		1	398462	08/28/15 14:12	AAH	TAL SAV
Total Recoverable	Prep	3005A			151568	08/24/15 07:46	BMH	TAL PIT
Total Recoverable	Analysis	6010C		1	151798	08/25/15 15:27	RJR	TAL PIT
Total Recoverable	Prep	3005A			151568	08/24/15 07:46	BMH	TAL PIT
Total Recoverable	Analysis	6010C		1	151952	08/26/15 17:54	RJR	TAL PIT
Total/NA	Analysis	310.1		1	397875	08/25/15 08:45	DAM	TAL SAV
Total/NA	Analysis	325.2		5	398179	08/26/15 09:21	JME	TAL SAV
Total/NA	Analysis	353.2		1	397455	08/21/15 13:09	GRX	TAL SAV
Total/NA	Analysis	375.4		5	398180	08/26/15 09:35	JME	TAL SAV
Total/NA	Analysis	415.1		1	209363	09/03/15 03:07	JCB	TAL SL

Client Sample ID: CPA-MW-F(0.2)-0815

Lab Sample ID: 680-115905-2
Date Collected: 08/20/15 10:33
Matrix: Water
Date Received: 08/21/15 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			151569	08/24/15 07:47	BMH	TAL PIT
Dissolved	Analysis	6010C		1	151798	08/25/15 16:53	RJR	TAL PIT
Dissolved	Prep	3005A			151569	08/24/15 07:47	BMH	TAL PIT
Dissolved	Analysis	6010C		1	151952	08/26/15 19:24	RJR	TAL PIT
Dissolved	Analysis	415.1		1	209364	09/03/15 03:36	JCB	TAL SL

Client Sample ID: GWE-1D-0815

Lab Sample ID: 680-115905-3
Date Collected: 08/20/15 12:33
Matrix: Water
Date Received: 08/21/15 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	398299	08/27/15 14:29	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	398462	08/28/15 14:25	AAH	TAL SAV
Total Recoverable	Prep	3005A			151568	08/24/15 07:46	BMH	TAL PIT
Total Recoverable	Analysis	6010C		1	151798	08/25/15 15:43	RJR	TAL PIT
Total Recoverable	Prep	3005A			151568	08/24/15 07:46	BMH	TAL PIT
Total Recoverable	Analysis	6010C		1	151952	08/26/15 18:09	RJR	TAL PIT
Total/NA	Analysis	310.1		1	397875	08/25/15 08:55	DAM	TAL SAV
Total/NA	Analysis	325.2		2	398179	08/26/15 09:21	JME	TAL SAV
Total/NA	Analysis	353.2		1	397455	08/21/15 13:10	GRX	TAL SAV
Total/NA	Analysis	375.4		10	398180	08/26/15 09:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	209363	09/03/15 03:18	JCB	TAL SL

MWP
9/15/15

TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Client Sample ID: GWE-1D-F(0.2)-0815

Lab Sample ID: 680-115905-4

Date Collected: 08/20/15 12:33
Matrix: Water
Date Received: 08/21/15 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			151569	08/24/15 07:47	BMH	TAL PIT
Dissolved	Analysis	6010C		1	151798	08/25/15 16:58	RJR	TAL PIT
Dissolved	Prep	3005A			151569	08/24/15 07:47	BMH	TAL PIT
Dissolved	Analysis	6010C		1	151952	08/26/15 19:30	RJR	TAL PIT
Dissolved	Analysis	415.1		1	209364	09/03/15 04:36	JCB	TAL SL

Client Sample ID: 3Q15 LTM Trip Blank #4

Lab Sample ID: 680-115905-5

Date Collected: 08/20/15 00:00
Matrix: Water
Date Received: 08/21/15 09:17

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	398299	08/27/15 13:46	JD1	TAL SAV

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

AWP 9/15/15

TestAmerica Savannah

TestAmerica Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other:

Client Contact	Project Manager: Amanda Derhake	Site Contact: ~~Lori Bindner~~	Date: 8/20/15	COC No:
Golder Associates Inc.	Tel/Fax: 636-724-9191	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
820 South Main Street	Analysis Turnaround Time			Sampler:
St. Charles, MO 63301	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(636) 724-9191 Phone	TAT if different from Below Standard			Walk-in Client:
(636) 724-9323 FAX	☑ 2 weeks			Lab Sampling:
Project Name: 3Q15 LTM GW Sampling-1403345	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			Job / SDG No.:
P O # 42447936	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs by 8260	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
CPA-MW-5D-0815	8/20/15	1033	G	W	16	N		3	2	1	1	1	3	2	3			
CPA-MW-F(0.2)-0815		1033	G	W	4	Y										1	3	8/21/15
GWE-1D-0815		1233	G	W	16	N		3	~~2~~ *	1	1	1	3	2	3			*SVOC not required
GWE-1D-~~0815~~ JKI F(0.2)-0815		1233	G	W	4	Y										1	3	for this sample per
3Q15 LTM Trip Blank #4		—	—	—	2	N		2										Fluoride
																		discrepancy

680-115905 Chain of Custody

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ 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:
VOC headspace upon sampling: Yes/No

680-115905

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: 414398 | Cooler Temp. (°C): Obs'd: 1.2 Corr'd: 1.6 | Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Golder	8/20/15 1600			
Relinquished by: [signature]	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by: [signature] 8/20/15	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 8/21/15 09:17

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115905-1
SDG Number: KPS151

Login Number: 115905
List Number: 1
Creator: Kicklighter, Marilyn D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

RWD
9/15/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115905-1
SDG Number: KPS151

Login Number: 115905
List Number: 2
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh
List Creation: 08/22/15 01:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWD
9/15/15

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115905-1
SDG Number: KPS151

Login Number: 115905
List Number: 3
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis
List Creation: 08/24/15 12:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWD
9/15/15

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-16
Arkansas DEQ	State Program	6	88-0692	01-31-16
California	State Program	9	2939	07-31-16
Colorado	State Program	8	N/A	12-31-15
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-16
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	803	06-30-16
Guam	State Program	9	14-004r	04-16-16
Hawaii	State Program	9	N/A	06-30-16
Illinois	NELAP	5	200022	11-30-15
Indiana	State Program	5	N/A	06-30-15 *
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-15
Kentucky (UST)	State Program	4	18	06-30-16
Kentucky (WW)	State Program	4	90084	12-31-15
Louisiana	NELAP	6	30690	06-30-16
Louisiana (DW)	NELAP	6	LA150014	12-31-15
Maine	State Program	1	GA00006	09-24-16
Maryland	State Program	3	250	12-31-15
Massachusetts	State Program	1	M-GA006	06-30-16
Michigan	State Program	5	9925	03-05-16
Mississippi	State Program	4	N/A	06-30-15 *
Montana	State Program	8	CERT0081	12-31-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-16
New Jersey	NELAP	2	GA769	09-30-15 *
New Mexico	State Program	6	N/A	06-30-16
New York	NELAP	2	10842	03-31-16
North Carolina (DW)	State Program	4	13701	07-31-16
North Carolina (WW/SW)	State Program	4	269	12-31-15
Oklahoma	State Program	6	9984	08-31-15 *
Pennsylvania	NELAP	3	68-00474	06-30-16
Puerto Rico	State Program	2	GA00006	12-31-15
South Carolina	State Program	4	98001	06-30-15 *
Tennessee	State Program	4	TN02961	06-30-16
Texas	NELAP	6	T104704185-14-7	11-30-15
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-16
Washington	State Program	10	C805	06-10-16
West Virginia (DW)	State Program	3	9950C	12-31-15
West Virginia DEP	State Program	3	094	06-30-16
Wisconsin	State Program	5	999819810	08-31-15 *
Wyoming	State Program	8	8TMS-L	06-30-16

Laboratory: TestAmerica Pittsburgh

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

* Certification renewal pending - certification considered valid.

AWD 9/15/15
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Laboratory: TestAmerica Pittsburgh (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-16
California	State Program	9	2891	03-31-16
Connecticut	State Program	1	PH-0688	09-30-16
Florida	NELAP	4	E871008	06-30-16
Illinois	NELAP	5	200005	06-30-16
Kansas	NELAP	7	E-10350	09-30-15
Louisiana	NELAP	6	04041	06-30-16
New Hampshire	NELAP	1	2030	04-04-16
New Jersey	NELAP	2	PA005	09-30-15
New York	NELAP	2	11182	03-31-16
North Carolina (WW/SW)	State Program	4	434	12-31-15
Pennsylvania	NELAP	3	02-00416	04-30-16
South Carolina	State Program	4	89014	04-30-16
Texas	NELAP	6	T104704528-15-2	03-31-16
US Fish & Wildlife	Federal		LE94312A-1	11-30-15
USDA	Federal		P-Soil-01	05-23-16
Utah	NELAP	8	PA001462015-4	05-31-16
Virginia	NELAP	3	460189	09-14-15 *
West Virginia DEP	State Program	3	142	01-31-16
Wisconsin	State Program	5	998027800	08-31-16

Laboratory: TestAmerica St. Louis

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-16
California	ELAP	9	2886	03-31-16
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-16
Illinois	NELAP	5	200023	11-30-15
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	10-31-15 *
Kentucky (DW)	State Program	4	90125	12-31-15
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	04080	06-30-16
Louisiana (DW)	NELAP	6	LA150017	12-31-16
Maryland	State Program	3	310	09-30-16
Missouri	State Program	7	780	06-30-15 *
Nevada	State Program	9	MO000542015-1	07-31-16
New Jersey	NELAP	2	MO002	09-30-15 *
New York	NELAP	2	11616	03-31-16
North Dakota	State Program	8	R207	06-30-16
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-16
Pennsylvania	NELAP	3	68-00540	02-28-16
South Carolina	State Program	4	85002001	06-30-15 *
Texas	NELAP	6	T104704193-15-9	07-31-16
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16
Virginia	NELAP	3	460230	06-14-16

* Certification renewal pending - certification considered valid.

AWP 9/15/15
TestAmerica Savannah

Certification Summary

Client: Solutia Inc.
Project/Site: 3Q15 LTM GW Sampling - 1403345

TestAmerica Job ID: 680-115905-1
SDG: KPS151

Laboratory: TestAmerica St. Louis (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C592	08-30-16
West Virginia DEP	State Program	3	381	08-31-16

9/15/15
TestAmerica Savannah

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 River Sampling/Surface Water
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KRS013
Matrix: Water

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B) and SVOC (8270D)

Sample Names: SW-R2007-1-0815, SW-R2007-2-0815, SW-R2007-3-0815, SW-R2007-1-0815-AD, SW-R2007-1-0815-EB, TB-071415

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: No deficiencies noted.

SVOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 2.8°C, within the 4°C +/- 2°C criteria.

General	**YES**	**NO**	**NA**
a) Were hold times met for sample analysis?	☒	☐	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☐	☒	☐

Comments: None

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	**YES**	**NO**	**NA**
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	YES	NO	NA
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	YES	NO	NA
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: Equipment blank SW-R2007-1-0815-EB was submitted with SDG KRS013.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA
a) Was MS/MSD accuracy criteria met?	☒	☐	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: None

Laboratory Control Sample (LCS)	YES	NO	NA
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Surrogate (System Monitoring) Compounds	YES	NO	NA
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates	YES	NO	NA
a) Were field duplicates collected?	☒	☐	☐
b) Was field duplicate precision criteria met?	☒	☐	☐

Comments: Duplicate sample SW-R2007-1-0815-AD was submitted with SDG KRS013.

Additional Comments: None

Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
None	None	None	None

SDG KRS013

Sample Results from:

SW-R2007-1
SW-R2007-2
SW-R2007-3

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115876-1
TestAmerica Sample Delivery Group: KRS013
Client Project/Site: WGK River Sampling / Surface Water

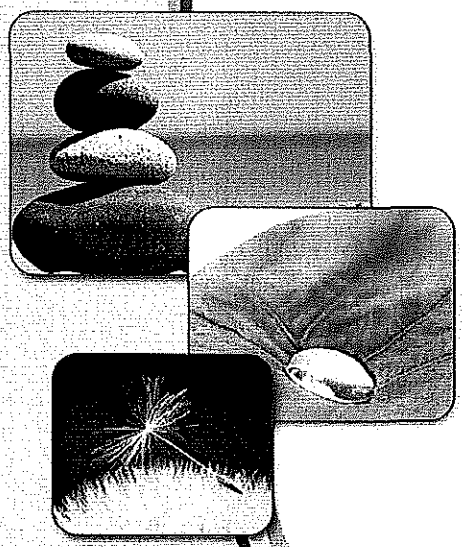
For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
9/4/2015 2:30:25 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com



LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AMD 9/15/15

Table of Contents

Cover Page 1
Table of Contents 2
Sample Summary 3
Method Summary 4
Definitions/Glossary 5
Detection Summary 6
Client Sample Results 7
QC Sample Results 13
QC Association Summary 17
Lab Chronicle 18
Chain of Custody 20
Receipt Checklists 22
Certification Summary 23

AWD
9/15/15

Sample Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115876-15	SW-R2007-1-0815	Water	08/19/15 14:30	08/20/15 09:42
680-115876-16	SW-R2007-2-0815	Water	08/19/15 12:45	08/20/15 09:42
680-115876-17	SW-R2007-3-0815	Water	08/19/15 10:20	08/20/15 09:42
680-115876-18	SW-R2007-1-0815-AD	Water	08/19/15 14:30	08/20/15 09:42
680-115876-19	SW-R2007-1-0815-EB	Water	08/19/15 14:50	08/20/15 09:42
680-115876-24	TB-071415	Water	08/19/15 00:00	08/20/15 09:42

AWD
TestAmerica Savannah
9/15/15

Method Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV

Protocol References:

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah
AWP 9/15/15

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

5

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Savannah
AWD
9/15/15

Detection Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

6

Client Sample ID: SW-R2007-1-0815 — **Lab Sample ID: 680-115876-15**

No Detections.

Client Sample ID: SW-R2007-2-0815 — **Lab Sample ID: 680-115876-16**

No Detections.

Client Sample ID: SW-R2007-3-0815 — **Lab Sample ID: 680-115876-17**

No Detections.

Client Sample ID: SW-R2007-1-0815-AD — **Lab Sample ID: 680-115876-18**

No Detections.

Client Sample ID: SW-R2007-1-0815-EB — **Lab Sample ID: 680-115876-19**

No Detections.

Client Sample ID: TB-071415 — **Lab Sample ID: 680-115876-24**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

AWO 9/15/15

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-1-0815

Date Collected: 08/19/15 14:30
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-15

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:33	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 11:33	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 11:33	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:33	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 11:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*70 - 130*		*08/28/15 11:33*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*08/28/15 11:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*		*08/28/15 11:33*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*08/28/15 11:33*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		08/25/15 14:57	08/28/15 12:38	1
2-Chlorophenol	10	U	10	0.88	ug/L		08/25/15 14:57	08/28/15 12:38	1
1,4-Dioxane	10	U	10	3.5	ug/L		08/25/15 14:57	08/28/15 12:38	1
1,2,4-Trichlorobenzene	10	U	10	0.57	ug/L		08/25/15 14:57	08/28/15 12:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*32 - 113*	*08/25/15 14:57*	*08/28/15 12:38*	*1*
2-Fluorophenol	*54*		*26 - 109*	*08/25/15 14:57*	*08/28/15 12:38*	*1*
Nitrobenzene-d5	*56*		*32 - 118*	*08/25/15 14:57*	*08/28/15 12:38*	*1*
Phenol-d5	*63*		*27 - 110*	*08/25/15 14:57*	*08/28/15 12:38*	*1*
Terphenyl-d14	*25*		*10 - 126*	*08/25/15 14:57*	*08/28/15 12:38*	*1*
2,4,6-Tribromophenol	*55*		*39 - 124*	*08/25/15 14:57*	*08/28/15 12:38*	*1*

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-2-0815

Date Collected: 08/19/15 12:45
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-16

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:56	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 11:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 11:56	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 11:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*08/28/15 11:56*	*1*
Dibromofluoromethane (Surr)	*91*		*70 - 130*		*08/28/15 11:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*08/28/15 11:56*	*1*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*08/28/15 11:56*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	19	U	19	2.1	ug/L		08/25/15 14:57	08/28/15 13:03	1
2-Chlorophenol	9.6	U	9.6	0.83	ug/L		08/25/15 14:57	08/28/15 13:03	1
1,4-Dioxane	9.6	U	9.6	3.3	ug/L		08/25/15 14:57	08/28/15 13:03	1
1,2,4-Trichlorobenzene	9.6	U	9.6	0.54	ug/L		08/25/15 14:57	08/28/15 13:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*34*		*32 - 113*	*08/25/15 14:57*	*08/28/15 13:03*	*1*
2-Fluorophenol	*38*		*26 - 109*	*08/25/15 14:57*	*08/28/15 13:03*	*1*
Nitrobenzene-d5	*63*		*32 - 118*	*08/25/15 14:57*	*08/28/15 13:03*	*1*
Phenol-d5	*42*		*27 - 110*	*08/25/15 14:57*	*08/28/15 13:03*	*1*
Terphenyl-d14	*19*		*10 - 126*	*08/25/15 14:57*	*08/28/15 13:03*	*1*
2,4,6-Tribromophenol	*36*	*X*	*39 - 124*	*08/25/15 14:57*	*08/28/15 13:03*	*1*

AWD 9/15/15

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-3-0815

Date Collected: 08/19/15 10:20
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-17

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 12:19	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 12:19	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 12:19	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 12:19	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*70 - 130*		*08/28/15 12:19*	*1*
Dibromofluoromethane (Surr)	*92*		*70 - 130*		*08/28/15 12:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*08/28/15 12:19*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*08/28/15 12:19*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		08/25/15 14:57	08/28/15 13:28	1
2-Chlorophenol	10	U F1	10	0.88	ug/L		08/25/15 14:57	08/28/15 13:28	1
1,4-Dioxane	10	U	10	3.4	ug/L		08/25/15 14:57	08/28/15 13:28	1
1,2,4-Trichlorobenzene	10	U	10	0.56	ug/L		08/25/15 14:57	08/28/15 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*46*		*32 - 113*	*08/25/15 14:57*	*08/28/15 13:28*	*1*
2-Fluorophenol	*45*		*26 - 109*	*08/25/15 14:57*	*08/28/15 13:28*	*1*
Nitrobenzene-d5	*47*		*32 - 118*	*08/25/15 14:57*	*08/28/15 13:28*	*1*
Phenol-d5	*44*		*27 - 110*	*08/25/15 14:57*	*08/28/15 13:28*	*1*
Terphenyl-d14	*33*		*10 - 126*	*08/25/15 14:57*	*08/28/15 13:28*	*1*
2,4,6-Tribromophenol	*53*		*39 - 124*	*08/25/15 14:57*	*08/28/15 13:28*	*1*

MWB 9/15/15

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-1-0815-AD

Date Collected: 08/19/15 14:30
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-18

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 12:41	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 12:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 12:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 12:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 12:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*70 - 130*		*08/28/15 12:41*	*1*
Dibromofluoromethane (Surr)	*93*		*70 - 130*		*08/28/15 12:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*08/28/15 12:41*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*08/28/15 12:41*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		08/25/15 14:57	08/28/15 13:53	1
2-Chlorophenol	10	U	10	0.88	ug/L		08/25/15 14:57	08/28/15 13:53	1
1,4-Dioxane	10	U	10	3.5	ug/L		08/25/15 14:57	08/28/15 13:53	1
1,2,4-Trichlorobenzene	10	U	10	0.57	ug/L		08/25/15 14:57	08/28/15 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*32 - 113*	*08/25/15 14:57*	*08/28/15 13:53*	*1*
2-Fluorophenol	*48*		*26 - 109*	*08/25/15 14:57*	*08/28/15 13:53*	*1*
Nitrobenzene-d5	*59*		*32 - 118*	*08/25/15 14:57*	*08/28/15 13:53*	*1*
Phenol-d5	*56*		*27 - 110*	*08/25/15 14:57*	*08/28/15 13:53*	*1*
Terphenyl-d14	*25*		*10 - 126*	*08/25/15 14:57*	*08/28/15 13:53*	*1*
2,4,6-Tribromophenol	*60*		*39 - 124*	*08/25/15 14:57*	*08/28/15 13:53*	*1*

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-1-0815-EB

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-19

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 13:04	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 13:04	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 13:04	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 13:04	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*08/28/15 13:04*	*1*
Dibromofluoromethane (Surr)	*92*		*70 - 130*		*08/28/15 13:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*		*08/28/15 13:04*	*1*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*		*08/28/15 13:04*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		08/25/15 14:57	08/28/15 14:18	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/25/15 14:57	08/28/15 14:18	1
1,4-Dioxane	10	U	10	3.4	ug/L		08/25/15 14:57	08/28/15 14:18	1
1,2,4-Trichlorobenzene	10	U	10	0.56	ug/L		08/25/15 14:57	08/28/15 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*32 - 113*	*08/25/15 14:57*	*08/28/15 14:18*	*1*
2-Fluorophenol	*39*		*26 - 109*	*08/25/15 14:57*	*08/28/15 14:18*	*1*
Nitrobenzene-d5	*43*		*32 - 118*	*08/25/15 14:57*	*08/28/15 14:18*	*1*
Phenol-d5	*42*		*27 - 110*	*08/25/15 14:57*	*08/28/15 14:18*	*1*
Terphenyl-d14	*48*		*10 - 126*	*08/25/15 14:57*	*08/28/15 14:18*	*1*
2,4,6-Tribromophenol	*39*		*39 - 124*	*08/25/15 14:57*	*08/28/15 14:18*	*1*

7

TestAmerica Savannah
AWD 9/15/15

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: TB-071415

Date Collected: 08/19/15 00:00
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-24

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 13:27	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 13:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 13:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 13:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*08/28/15 13:27*	*1*
Dibromofluoromethane (Surr)	*93*		*70 - 130*		*08/28/15 13:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*		*08/28/15 13:27*	*1*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*		*08/28/15 13:27*	*1*

7

TestAmerica Savannah
AWD 9/15/15

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-398473/9
Matrix: Water
Analysis Batch: 398473

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:11	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			08/28/15 11:11	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			08/28/15 11:11	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			08/28/15 11:11	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			08/28/15 11:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*08/28/15 11:11*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*08/28/15 11:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*70 - 130*		*08/28/15 11:11*	*1*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*08/28/15 11:11*	*1*

Lab Sample ID: LCS 680-398473/4
Matrix: Water
Analysis Batch: 398473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	50.6		ug/L		101	73 - 131
Chlorobenzene	50.0	48.3		ug/L		97	80 - 120
1,2-Dichlorobenzene	50.0	48.8		ug/L		98	80 - 120
1,3-Dichlorobenzene	50.0	52.0		ug/L		104	80 - 120
1,4-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 680-398473/5
Matrix: Water
Analysis Batch: 398473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.1		ug/L		102	73 - 131	1	30
Chlorobenzene	50.0	48.1		ug/L		96	80 - 120	0	20
1,2-Dichlorobenzene	50.0	50.0		ug/L		100	80 - 120	2	20
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 120	1	20
1,4-Dichlorobenzene	50.0	49.9		ug/L		100	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*

TestAmerica Savannah
MWD 9/15/15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-115876-17 MS
Matrix: Water
Analysis Batch: 398473

Client Sample ID: SW-R2007-3-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	50.0	53.7		ug/L		107	73 - 131
Chlorobenzene	1.0	U	50.0	45.6		ug/L		91	80 - 120
1,2-Dichlorobenzene	1.0	U	50.0	43.9		ug/L		88	80 - 120
1,3-Dichlorobenzene	1.0	U	50.0	49.9		ug/L		100	80 - 120
1,4-Dichlorobenzene	1.0	U	50.0	47.0		ug/L		94	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 680-115876-17 MSD
Matrix: Water
Analysis Batch: 398473

Client Sample ID: SW-R2007-3-0815
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	50.0	53.2		ug/L		106	73 - 131	1	30
Chlorobenzene	1.0	U	50.0	46.4		ug/L		93	80 - 120	2	20
1,2-Dichlorobenzene	1.0	U	50.0	47.9		ug/L		96	80 - 120	9	20
1,3-Dichlorobenzene	1.0	U	50.0	52.5		ug/L		105	80 - 120	5	20
1,4-Dichlorobenzene	1.0	U	50.0	49.3		ug/L		99	80 - 120	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-397868/12-A
Matrix: Water
Analysis Batch: 398501

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397868

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	2.2	ug/L		08/25/15 14:57	08/28/15 11:47	1
2-Chlorophenol	10	U	10	0.87	ug/L		08/25/15 14:57	08/28/15 11:47	1
1,4-Dioxane	10	U	10	3.4	ug/L		08/25/15 14:57	08/28/15 11:47	1
1,2,4-Trichlorobenzene	10	U	10	0.56	ug/L		08/25/15 14:57	08/28/15 11:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*32 - 113*	*08/25/15 14:57*	*08/28/15 11:47*	*1*
2-Fluorophenol	*55*		*26 - 109*	*08/25/15 14:57*	*08/28/15 11:47*	*1*
Nitrobenzene-d5	*72*		*32 - 118*	*08/25/15 14:57*	*08/28/15 11:47*	*1*
Phenol-d5	*64*		*27 - 110*	*08/25/15 14:57*	*08/28/15 11:47*	*1*
Terphenyl-d14	*63*		*10 - 126*	*08/25/15 14:57*	*08/28/15 11:47*	*1*

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-397868/12-A
Matrix: Water
Analysis Batch: 398501

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397868

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*61*		*39 - 124*	*08/25/15 14:57*	*08/28/15 11:47*	*1*

Lab Sample ID: LCS 680-397868/13-A
Matrix: Water
Analysis Batch: 398501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	100	60.4		ug/L		60	10 - 130
2-Chlorophenol	100	59.3		ug/L		59	45 - 100
1,4-Dioxane	100	50.8		ug/L		51	30 - 76
1,2,4-Trichlorobenzene	100	63.0		ug/L		63	39 - 87

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*63*		*32 - 113*
2-Fluorophenol	*53*		*26 - 109*
Nitrobenzene-d5	*66*		*32 - 118*
Phenol-d5	*62*		*27 - 110*
Terphenyl-d14	*64*		*10 - 126*
2,4,6-Tribromophenol	*65*		*39 - 124*

Lab Sample ID: 680-115876-17 MS
Matrix: Water
Analysis Batch: 398501

Client Sample ID: SW-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397868

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	20	U	99.9	51.0		ug/L		51	10 - 130
2-Chlorophenol	10	U F1	99.9	54.2		ug/L		54	45 - 100
1,4-Dioxane	10	U	99.9	44.8		ug/L		45	30 - 76
1,2,4-Trichlorobenzene	10	U	99.9	50.4		ug/L		50	39 - 87

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl	*59*		*32 - 113*
2-Fluorophenol	*46*		*26 - 109*
Nitrobenzene-d5	*54*		*32 - 118*
Phenol-d5	*55*		*27 - 110*
Terphenyl-d14	*24*		*10 - 126*
2,4,6-Tribromophenol	*59*		*39 - 124*

Lab Sample ID: 680-115876-17 MSD
Matrix: Water
Analysis Batch: 398501

Client Sample ID: SW-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397868

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	20	U	101	43.2		ug/L		43	10 - 130	17	50
2-Chlorophenol	10	U F1	101	41.3	F1	ug/L		41	45 - 100	27	50
1,4-Dioxane	10	U	101	34.7		ug/L		34	30 - 76	25	50
1,2,4-Trichlorobenzene	10	U	101	44.1		ug/L		44	39 - 87	13	50

TestAmerica Savannah
MMD 9/15/15

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-115876-17 MSD
Matrix: Water
Analysis Batch: 398501

Client Sample ID: SW-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397868

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*54*		*32 - 113*
2-Fluorophenol	*40*		*26 - 109*
Nitrobenzene-d5	*51*		*32 - 118*
Phenol-d5	*48*		*27 - 110*
Terphenyl-d14	*25*		*10 - 126*
2,4,6-Tribromophenol	*63*		*39 - 124*

8

TestAmerica Savannah
MWD 9/15/15

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

GC/MS VOA

Analysis Batch: 398473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-15	SW-R2007-1-0815	Total/NA	Water	8260B	
680-115876-16	SW-R2007-2-0815	Total/NA	Water	8260B	
680-115876-17	SW-R2007-3-0815	Total/NA	Water	8260B	
680-115876-17 MS	SW-R2007-3-0815	Total/NA	Water	8260B	
680-115876-17 MSD	SW-R2007-3-0815	Total/NA	Water	8260B	
680-115876-18	SW-R2007-1-0815-AD	Total/NA	Water	8260B	
680-115876-19	SW-R2007-1-0815-EB	Total/NA	Water	8260B	
680-115876-24	TB-071415	Total/NA	Water	8260B	
LCS 680-398473/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-398473/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-398473/9	Method Blank	Total/NA	Water	8260B	

9

GC/MS Semi VOA

Prep Batch: 397868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-15	SW-R2007-1-0815	Total/NA	Water	3520C	
680-115876-16	SW-R2007-2-0815	Total/NA	Water	3520C	
680-115876-17	SW-R2007-3-0815	Total/NA	Water	3520C	
680-115876-17 MS	SW-R2007-3-0815	Total/NA	Water	3520C	
680-115876-17 MSD	SW-R2007-3-0815	Total/NA	Water	3520C	
680-115876-18	SW-R2007-1-0815-AD	Total/NA	Water	3520C	
680-115876-19	SW-R2007-1-0815-EB	Total/NA	Water	3520C	
LCS 680-397868/13-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-397868/12-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 398501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-15	SW-R2007-1-0815	Total/NA	Water	8270C	397868
680-115876-16	SW-R2007-2-0815	Total/NA	Water	8270C	397868
680-115876-17	SW-R2007-3-0815	Total/NA	Water	8270C	397868
680-115876-17 MS	SW-R2007-3-0815	Total/NA	Water	8270C	397868
680-115876-17 MSD	SW-R2007-3-0815	Total/NA	Water	8270C	397868
680-115876-18	SW-R2007-1-0815-AD	Total/NA	Water	8270C	397868
680-115876-19	SW-R2007-1-0815-EB	Total/NA	Water	8270C	397868
LCS 680-397868/13-A	Lab Control Sample	Total/NA	Water	8270C	397868
MB 680-397868/12-A	Method Blank	Total/NA	Water	8270C	397868

TestAmerica Savannah
MWD 09/15/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: SW-R2007-1-0815

Lab Sample ID: 680-115876-15
Matrix: Water

Date Collected: 08/19/15 14:30
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 11:33	JD1	TAL SAV
Total/NA	Prep	3520C			983.1 mL	1.0 mL	397868	08/25/15 14:57	RBS	TAL SAV
Total/NA	Analysis	8270C		1	983.1 mL	1.0 mL	398501	08/28/15 12:38	RAM	TAL SAV

Client Sample ID: SW-R2007-2-0815

Lab Sample ID: 680-115876-16
Matrix: Water

Date Collected: 08/19/15 12:45
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 11:56	JD1	TAL SAV
Total/NA	Prep	3520C			1045.6 mL	1.0 mL	397868	08/25/15 14:57	RBS	TAL SAV
Total/NA	Analysis	8270C		1	1045.6 mL	1.0 mL	398501	08/28/15 13:03	RAM	TAL SAV

Client Sample ID: SW-R2007-3-0815

Lab Sample ID: 680-115876-17
Matrix: Water

Date Collected: 08/19/15 10:20
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 12:19	JD1	TAL SAV
Total/NA	Prep	3520C			993.1 mL	1.0 mL	397868	08/25/15 14:57	RBS	TAL SAV
Total/NA	Analysis	8270C		1	993.1 mL	1.0 mL	398501	08/28/15 13:28	RAM	TAL SAV

Client Sample ID: SW-R2007-1-0815-AD

Lab Sample ID: 680-115876-18
Matrix: Water

Date Collected: 08/19/15 14:30
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 12:41	JD1	TAL SAV
Total/NA	Prep	3520C			984.7 mL	1.0 mL	397868	08/25/15 14:57	RBS	TAL SAV
Total/NA	Analysis	8270C		1	984.7 mL	1.0 mL	398501	08/28/15 13:53	RAM	TAL SAV

Client Sample ID: SW-R2007-1-0815-EB

Lab Sample ID: 680-115876-19
Matrix: Water

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 13:04	JD1	TAL SAV
Total/NA	Prep	3520C			995.3 mL	1.0 mL	397868	08/25/15 14:57	RBS	TAL SAV
Total/NA	Analysis	8270C		1	995.3 mL	1.0 mL	398501	08/28/15 14:18	RAM	TAL SAV

TestAmerica Savannah
AWD 9/15/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Client Sample ID: TB-071415

Date Collected: 08/19/15 00:00
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	398473	08/28/15 13:27	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

10

TestAmerica Savannah
AWD 9/15/15

TestAmerica 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

Client Information	Sampler: Jeff Ingram	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No 680-66231-28384.1
Client Contact: ~~Lon Bindner~~ Emily White	Phone: 714-213-6546	E-Mail: michele.kersey@testamericainc.com		Page: Page 1 of 2
Company: Golder Associates Inc.				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASK Emily White			
State, Zip: MO, 63301				
Phone: 636-724-4191	PO #:			
Email: ~~lon_bindner@golder.com~~ Emily_white@golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

0815 NOT 0215

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (SW)	8260B - 8260 VOC (SW)	8270C - 8270 SVOC (SED)	8260B - 8260 VOC (SED)	Special Instructions/Note:
SW-R2007-1 ~~0215~~ 0815	8/19/15	1430	G	Water	N		2	3			
SW-R2007-2 ~~0215~~ 0815		1245	G	Water	N		2	3			
SW-R2007-3 ~~0215~~ 0815		1020	G	Water	N		2	3			
SW-R2007-3 ~~0215~~ 0815-MS		1020	G	Water	N	X	2	3			
SW-R2007-3 ~~0215~~ 0815-MSD		1020	G	Water	N	X	2	3			
SW-R2007-1 ~~0215~~ 0815-AD		1430	G	Water	N		2	3			
SED-R2007-1 ~~0215~~ 0815-EB		1450	G	Water	N		2	3			
~~SW-R2007- -0215~~			~~G~~	~~Water~~							
SED-R2007-1-~~0215~~ 0815		1450	G	Solid	N				1	4	
SED-R2007-2-~~0215~~ 0815		1315	G	Solid	N				1	4	
SED-R2007-3-~~0215~~ 0815		1100	G	Solid	N				1	4	

680-115876 Chain of Custody

Page 20 of 23

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: 2.8/3.2

Empty Kit Relinquished by:	Date: 8/19/15	Time: 1940	Method of Shipment: fedex

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Jeff Ingram	8/19/15 1900	golder		8/20/15 9:42	

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

TestAmerica 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

Client Information	Sampler: Scott Ingram	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No: 680-66231-28384.2
Client Contact: ~~Lori Bindner~~ Emily White	Phone: 919-213-8543	E-Mail: michele.kersey@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASAP Emily White			
State, Zip: MO, 63301				
Phone:	PO #:			
Email: ~~lori_bindner@golder.com~~ Emily_white@golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Oil, Tissue, Air)	Filtered Sample (Yes or No)	8270C - 8270 SVOC (SIM)	8260B - 8260 VOC (SIM)	8270C - 8270 SVOC (SIM)	8260B - 8260 VOC (SIM)	Special Instructions/Note:
SED-R2007- 3 -0215-MS	8/19/15	1100	G	Solid	N	X		1	4	
SED-R2007- 3 -0215-MSD		1100	G	Solid	N	X		1	4	
SED-R2007- 1 -0215-AD		1450	G	Solid	N			1	4	
~~SED-R2007- 0215~~			~~G~~	~~Solid~~						
TB1 -071415	8/18/15	—	/	Water	N		3			

680-115876

Page 21 of 23

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements: 2.8/3.2

Empty Kit Relinquished by:	Date: 8/18/15	Time: 1700	Method of Shipment: Fed Ex

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Scott Ingram	8/19/15 - 1700	GAW	[illegible]	8/20/15 9:42	TA

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115876-1
SDG Number: KRS013

Login Number: 115876
List Number: 1
Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

12

MWD 9/15/15

Certification Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Surface Water

TestAmerica Job ID: 680-115876-1
SDG: KRS013

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200022	11-30-15

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8270C	3520C	Water	1,4-Dioxane

13

AWD 9/15/15
TestAmerica Savannah

Level IV Data Validation Summary
Solutia Inc., W.G. Krummrich, Sauget, Illinois
3Q15 Long-Term Monitoring Program

Company Name: Golder Associates
Project Name: WGK-3Q15 River Sampling/Surface Water
Reviewer: A. Derhake
Laboratory: TestAmerica
SDG#: KRS014
Matrix: Sediment

Project Manager: A. Derhake
Project Number: 140-3345
Sample Date: August 2015

Analytical Method: VOC (8260B) and SVOC (8270D)

Sample Names: SED-R2007-1-0815, SED-R2007-2-0815, SED-R2007-3-0815, SED-R2007-1-0815-AD

Field Information	**YES**	**NO**	**NA**
a) Sampling dates noted?	☒	☐	☐
b) Does the laboratory narrative indicate deficiencies?	☒	☐	☐

Comments:

VOC: No deficiencies noted.

SVOC: No deficiencies noted.

Chain-of-Custody (COC)	**YES**	**NO**	**NA**
a) Was the COC signed by both field and laboratory personnel?	☒	☐	☐
b) Were samples received in good condition?	☒	☐	☐

Comments: Samples were received at 3.2°C, within the 4°C +/- 2°C criteria.

General	**YES**	**NO**	**NA**
a) Were hold times met for sample analysis?	☒	☐	☐
b) Were the correct preservatives used?	☒	☐	☐
c) Was the correct method used?	☒	☐	☐
d) Any sample dilutions noted?	☐	☒	☐

Comments: None

GC/MS Instrument Performance Check (IPC) and Internal Standards (IS)	**YES**	**NO**	**NA**
a) IPC analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Does BFB/DFTPP meet the ion abundance criteria?	☒	☐	☐
c) Internal Standard retention times and areas met appropriate criteria?	☒	☐	☐

Comments: None

Calibrations	**YES**	**NO**	**NA**
a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
c) Initial calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐
d) Continuing calibration verifications and blanks analyzed at the appropriate frequency and met the appropriate standards?	☒	☐	☐

Comments: Analytes of interest met calibration standards.

Blanks	**YES**	**NO**	**NA**
a) Were blanks (trip, equipment, method) performed at required frequency?	☒	☐	☐
b) Were analytes detected in any blanks?	☐	☒	☐

Comments: Equipment blanks were not submitted with SDG KRS014.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	**YES**	**NO**	**NA**
a) Was MS/MSD accuracy criteria met?	☒	☐	☐
b) Was MS/MSD precision criteria met?	☒	☐	☐

Comments: None

Laboratory Control Sample (LCS)	**YES**	**NO**	**NA**
a) LCS analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Surrogate (System Monitoring) Compounds	**YES**	**NO**	**NA**
a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?	☒	☐	☐

Comments: None

Duplicates	**YES**	**NO**	**NA**
a) Were field duplicates collected?	☒	☐	☐
b) Was field duplicate precision criteria met?	☒	☐	☐

Comments: Duplicate sample SED-R2007-1-0815-AD was submitted with SDG KRS014.

Additional Comments: None

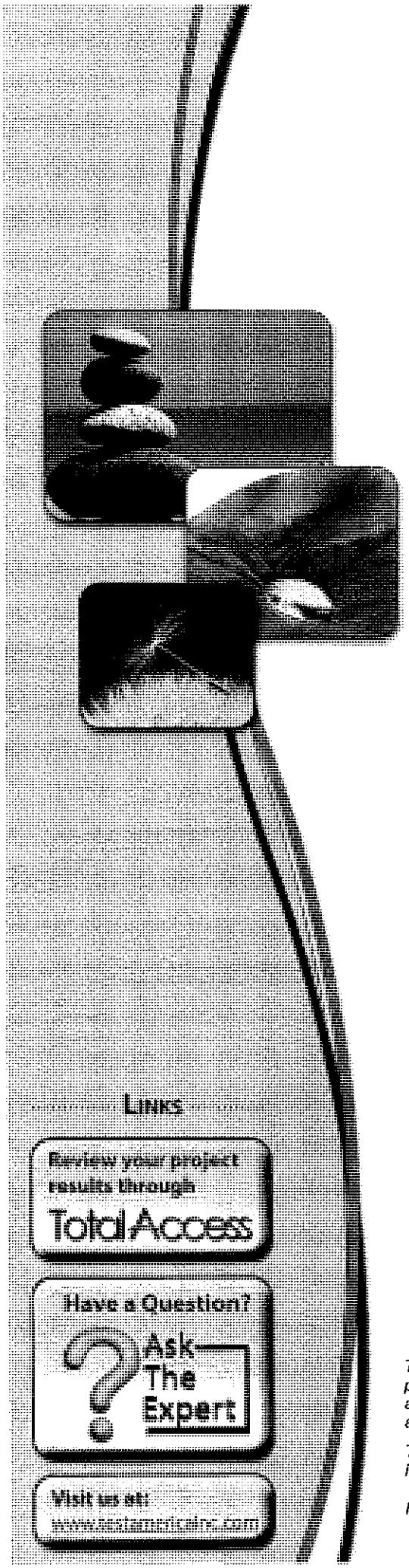
Qualifications:

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
None	None	None	None

SDG KRS014

Sample Results from:

SED-R2007-1
SED-R2007-2
SED-R2007-3



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-115876-2
TestAmerica Sample Delivery Group: KRS014
Client Project/Site: WGK River Sampling / Sediment

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

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
9/4/2015 2:25:58 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

AWD 9/15/15

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Sample Summary 4
Method Summary 5
Definitions/Glossary 6
Detection Summary 7
Client Sample Results 8
QC Sample Results 12
QC Association Summary 17
Lab Chronicle 19
Chain of Custody 21
Receipt Checklists 23
Certification Summary 24

AWD
9/15/15

Job ID: 680-115876-2

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK River Sampling / Sediment

Report Number: 680-115876-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 8/20/2015 9:42 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples SED-R2007-1-0815 (680-115876-20), SED-R2007-2-0815 (680-115876-21), SED-R2007-3-0815 (680-115876-22) and SED-R2007-1-0815-AD (680-115876-23) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were prepared on 08/21/2015 and analyzed on 08/31/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples SED-R2007-1-0815 (680-115876-20), SED-R2007-2-0815 (680-115876-21), SED-R2007-3-0815 (680-115876-22) and SED-R2007-1-0815-AD (680-115876-23) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 08/21/2015 and analyzed on 08/24/2015.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AMD
9/15/15

Sample Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115876-20	SED-R2007-1-0815	Solid	08/19/15 14:50	08/20/15 09:42
680-115876-21	SED-R2007-2-0815	Solid	08/19/15 13:15	08/20/15 09:42
680-115876-22	SED-R2007-3-0815	Solid	08/19/15 11:00	08/20/15 09:42
680-115876-23	SED-R2007-1-0815-AD	Solid	08/19/15 14:50	08/20/15 09:42

MWD
9/15/15
TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
Moisture	Percent Moisture	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

AWD
9/15/15

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

AWP
9/15/15

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-1-0815 — Lab Sample ID: 680-115876-20

No Detections.

Client Sample ID: SED-R2007-2-0815 — Lab Sample ID: 680-115876-21

No Detections.

Client Sample ID: SED-R2007-3-0815 — Lab Sample ID: 680-115876-22

No Detections.

Client Sample ID: SED-R2007-1-0815-AD — Lab Sample ID: 680-115876-23

No Detections.

This Detection Summary does not include radiochemical test results.

MWD
9/15/15
TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-1-0815

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-20

Matrix: Solid
Percent Solids: 79.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6.8	U	6.8	0.99	ug/Kg	☼	08/21/15 17:12	08/31/15 16:14	1
Chlorobenzene	6.8	U	6.8	1.3	ug/Kg	☼	08/21/15 17:12	08/31/15 16:14	1
1,2-Dichlorobenzene	6.8	U	6.8	1.8	ug/Kg	☼	08/21/15 17:12	08/31/15 16:14	1
1,3-Dichlorobenzene	6.8	U	6.8	2.2	ug/Kg	☼	08/21/15 17:12	08/31/15 16:14	1
1,4-Dichlorobenzene	6.8	U	6.8	1.0	ug/Kg	☼	08/21/15 17:12	08/31/15 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:14*	*1*
Dibromofluoromethane (Surr)	*94*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:14*	*1*
4-Bromofluorobenzene (Surr)	*84*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:14*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	830	U	830	65	ug/Kg	☼	08/21/15 10:56	08/24/15 18:06	1
2-Chlorophenol	410	U	410	50	ug/Kg	☼	08/21/15 10:56	08/24/15 18:06	1
1,4-Dioxane	410	U	410	150	ug/Kg	☼	08/21/15 10:56	08/24/15 18:06	1
1,2,4-Trichlorobenzene	410	U	410	39	ug/Kg	☼	08/21/15 10:56	08/24/15 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*57*		*41 - 116*	*08/21/15 10:56*	*08/24/15 18:06*	*1*
2-Fluorophenol	*57*		*39 - 114*	*08/21/15 10:56*	*08/24/15 18:06*	*1*
Nitrobenzene-d5	*48*		*37 - 115*	*08/21/15 10:56*	*08/24/15 18:06*	*1*
Phenol-d5	*58*		*38 - 122*	*08/21/15 10:56*	*08/24/15 18:06*	*1*
Terphenyl-d14	*61*		*46 - 126*	*08/21/15 10:56*	*08/24/15 18:06*	*1*
2,4,6-Tribromophenol	*54*		*45 - 129*	*08/21/15 10:56*	*08/24/15 18:06*	*1*

MWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-2-0815

Date Collected: 08/19/15 13:15
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-21

Matrix: Solid
Percent Solids: 81.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.0	U	4.0	0.58	ug/Kg	☼	08/21/15 17:12	08/31/15 16:35	1
Chlorobenzene	4.0	U	4.0	0.76	ug/Kg	☼	08/21/15 17:12	08/31/15 16:35	1
1,2-Dichlorobenzene	4.0	U	4.0	1.0	ug/Kg	☼	08/21/15 17:12	08/31/15 16:35	1
1,3-Dichlorobenzene	4.0	U	4.0	1.3	ug/Kg	☼	08/21/15 17:12	08/31/15 16:35	1
1,4-Dichlorobenzene	4.0	U	4.0	0.59	ug/Kg	☼	08/21/15 17:12	08/31/15 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:35*	*1*
Dibromofluoromethane (Surr)	*93*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:35*	*1*
4-Bromofluorobenzene (Surr)	*83*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:35*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	810	U	810	64	ug/Kg	☼	08/21/15 10:56	08/24/15 18:31	1
2-Chlorophenol	400	U	400	49	ug/Kg	☼	08/21/15 10:56	08/24/15 18:31	1
1,4-Dioxane	400	U	400	150	ug/Kg	☼	08/21/15 10:56	08/24/15 18:31	1
1,2,4-Trichlorobenzene	400	U	400	38	ug/Kg	☼	08/21/15 10:56	08/24/15 18:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*41 - 116*	*08/21/15 10:56*	*08/24/15 18:31*	*1*
2-Fluorophenol	*63*		*39 - 114*	*08/21/15 10:56*	*08/24/15 18:31*	*1*
Nitrobenzene-d5	*56*		*37 - 115*	*08/21/15 10:56*	*08/24/15 18:31*	*1*
Phenol-d5	*66*		*38 - 122*	*08/21/15 10:56*	*08/24/15 18:31*	*1*
Terphenyl-d14	*87*		*46 - 126*	*08/21/15 10:56*	*08/24/15 18:31*	*1*
2,4,6-Tribromophenol	*69*		*45 - 129*	*08/21/15 10:56*	*08/24/15 18:31*	*1*

MWD 9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-3-0815

Date Collected: 08/19/15 11:00
Date Received: 08/20/15 09:42

Lab Sample ID: 680-115876-22

Matrix: Solid
Percent Solids: 87.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.8	U	3.8	0.56	ug/Kg	☼	08/21/15 17:12	08/31/15 16:56	1
Chlorobenzene	3.8	U	3.8	0.74	ug/Kg	☼	08/21/15 17:12	08/31/15 16:56	1
1,2-Dichlorobenzene	3.8	U	3.8	1.0	ug/Kg	☼	08/21/15 17:12	08/31/15 16:56	1
1,3-Dichlorobenzene	3.8	U	3.8	1.2	ug/Kg	☼	08/21/15 17:12	08/31/15 16:56	1
1,4-Dichlorobenzene	3.8	U	3.8	0.57	ug/Kg	☼	08/21/15 17:12	08/31/15 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:56*	*1*
Dibromofluoromethane (Surr)	*93*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:56*	*1*
4-Bromofluorobenzene (Surr)	*85*		*65 - 130*	*08/21/15 17:12*	*08/31/15 16:56*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	750	U	750	59	ug/Kg	☼	08/21/15 10:56	08/24/15 18:57	1
2-Chlorophenol	380	U	380	46	ug/Kg	☼	08/21/15 10:56	08/24/15 18:57	1
1,4-Dioxane	380	U	380	140	ug/Kg	☼	08/21/15 10:56	08/24/15 18:57	1
1,2,4-Trichlorobenzene	380	U	380	35	ug/Kg	☼	08/21/15 10:56	08/24/15 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*41 - 116*	*08/21/15 10:56*	*08/24/15 18:57*	*1*
2-Fluorophenol	*68*		*39 - 114*	*08/21/15 10:56*	*08/24/15 18:57*	*1*
Nitrobenzene-d5	*58*		*37 - 115*	*08/21/15 10:56*	*08/24/15 18:57*	*1*
Phenol-d5	*68*		*38 - 122*	*08/21/15 10:56*	*08/24/15 18:57*	*1*
Terphenyl-d14	*79*		*46 - 126*	*08/21/15 10:56*	*08/24/15 18:57*	*1*
2,4,6-Tribromophenol	*71*		*45 - 129*	*08/21/15 10:56*	*08/24/15 18:57*	*1*

AWD
9/15/15

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-1-0815-AD

Lab Sample ID: 680-115876-23

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42

Matrix: Solid
Percent Solids: 79.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.2	U	4.2	0.61	ug/Kg	☼	08/21/15 17:12	08/31/15 17:17	1
Chlorobenzene	4.2	U	4.2	0.81	ug/Kg	☼	08/21/15 17:12	08/31/15 17:17	1
1,2-Dichlorobenzene	4.2	U	4.2	1.1	ug/Kg	☼	08/21/15 17:12	08/31/15 17:17	1
1,3-Dichlorobenzene	4.2	U	4.2	1.3	ug/Kg	☼	08/21/15 17:12	08/31/15 17:17	1
1,4-Dichlorobenzene	4.2	U	4.2	0.62	ug/Kg	☼	08/21/15 17:12	08/31/15 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*65 - 130*	*08/21/15 17:12*	*08/31/15 17:17*	*1*
Dibromofluoromethane (Surr)	*90*		*65 - 130*	*08/21/15 17:12*	*08/31/15 17:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*65 - 130*	*08/21/15 17:12*	*08/31/15 17:17*	*1*
4-Bromofluorobenzene (Surr)	*85*		*65 - 130*	*08/21/15 17:12*	*08/31/15 17:17*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	830	U	830	66	ug/Kg	☼	08/21/15 10:56	08/24/15 19:22	1
2-Chlorophenol	420	U	420	50	ug/Kg	☼	08/21/15 10:56	08/24/15 19:22	1
1,4-Dioxane	420	U	420	150	ug/Kg	☼	08/21/15 10:56	08/24/15 19:22	1
1,2,4-Trichlorobenzene	420	U	420	39	ug/Kg	☼	08/21/15 10:56	08/24/15 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*65*		*41 - 116*	*08/21/15 10:56*	*08/24/15 19:22*	*1*
2-Fluorophenol	*61*		*39 - 114*	*08/21/15 10:56*	*08/24/15 19:22*	*1*
Nitrobenzene-d5	*55*		*37 - 115*	*08/21/15 10:56*	*08/24/15 19:22*	*1*
Phenol-d5	*61*		*38 - 122*	*08/21/15 10:56*	*08/24/15 19:22*	*1*
Terphenyl-d14	*71*		*46 - 126*	*08/21/15 10:56*	*08/24/15 19:22*	*1*
2,4,6-Tribromophenol	*59*		*45 - 129*	*08/21/15 10:56*	*08/24/15 19:22*	*1*

MMD
9/15/15
TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: 680-115876-22 MS
Matrix: Solid
Analysis Batch: 398998

Client Sample ID: SED-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397513

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	3.8	U	36.7	42.4		ug/Kg	☼	115	76 - 120
Chlorobenzene	3.8	U	36.7	39.1		ug/Kg	☼	106	80 - 120
1,2-Dichlorobenzene	3.8	U	36.7	33.0		ug/Kg	☼	90	75 - 128
1,3-Dichlorobenzene	3.8	U	36.7	33.7		ug/Kg	☼	92	76 - 128
1,4-Dichlorobenzene	3.8	U	36.7	33.8		ug/Kg	☼	92	76 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*65 - 130*
Dibromofluoromethane (Surr)	*109*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*97*		*65 - 130*
4-Bromofluorobenzene (Surr)	*88*		*65 - 130*

Lab Sample ID: 680-115876-22 MSD
Matrix: Solid
Analysis Batch: 398828

Client Sample ID: SED-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397513

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	3.8	U	40.2	43.2		ug/Kg	☼	107	76 - 120	2	50
Chlorobenzene	3.8	U	40.2	40.2		ug/Kg	☼	100	80 - 120	3	50
1,2-Dichlorobenzene	3.8	U	40.2	38.4		ug/Kg	☼	96	75 - 128	15	50
1,3-Dichlorobenzene	3.8	U	40.2	36.2		ug/Kg	☼	90	76 - 128	7	50
1,4-Dichlorobenzene	3.8	U	40.2	36.5		ug/Kg	☼	91	76 - 128	8	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*65 - 130*
Dibromofluoromethane (Surr)	*109*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*115*		*65 - 130*
4-Bromofluorobenzene (Surr)	*91*		*65 - 130*

Lab Sample ID: MB 680-398828/8
Matrix: Solid
Analysis Batch: 398828

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.9	U	4.9	0.72	ug/Kg			08/31/15 13:53	1
Chlorobenzene	4.9	U	4.9	0.95	ug/Kg			08/31/15 13:53	1
1,2-Dichlorobenzene	4.9	U	4.9	1.3	ug/Kg			08/31/15 13:53	1
1,3-Dichlorobenzene	4.9	U	4.9	1.6	ug/Kg			08/31/15 13:53	1
1,4-Dichlorobenzene	4.9	U	4.9	0.73	ug/Kg			08/31/15 13:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*65 - 130*		*08/31/15 13:53*	*1*
Dibromofluoromethane (Surr)	*89*		*65 - 130*		*08/31/15 13:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*75*		*65 - 130*		*08/31/15 13:53*	*1*
4-Bromofluorobenzene (Surr)	*86*		*65 - 130*		*08/31/15 13:53*	*1*

AWP 9/15/15

TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-398828/4
Matrix: Solid
Analysis Batch: 398828

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	49.9	51.2		ug/Kg		103	76 - 120
Chlorobenzene	49.9	51.1		ug/Kg		102	80 - 120
1,2-Dichlorobenzene	49.9	44.4		ug/Kg		89	75 - 128
1,3-Dichlorobenzene	49.9	45.2		ug/Kg		91	76 - 128
1,4-Dichlorobenzene	49.9	44.9		ug/Kg		90	76 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*65 - 130*
Dibromofluoromethane (Surr)	*103*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*65 - 130*
4-Bromofluorobenzene (Surr)	*86*		*65 - 130*

Lab Sample ID: LCSD 680-398828/29
Matrix: Solid
Analysis Batch: 398828

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.2		ug/Kg		102	76 - 120	0	30
Chlorobenzene	50.0	48.8		ug/Kg		98	80 - 120	5	30
1,2-Dichlorobenzene	50.0	44.3		ug/Kg		89	75 - 128	0	30
1,3-Dichlorobenzene	50.0	44.2		ug/Kg		88	76 - 128	2	30
1,4-Dichlorobenzene	50.0	43.8		ug/Kg		88	76 - 128	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*65 - 130*
Dibromofluoromethane (Surr)	*102*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*65 - 130*
4-Bromofluorobenzene (Surr)	*86*		*65 - 130*

Lab Sample ID: MB 680-398998/9
Matrix: Solid
Analysis Batch: 398998

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.0	U	5.0	0.73	ug/Kg			09/01/15 14:56	1
Chlorobenzene	5.0	U	5.0	0.96	ug/Kg			09/01/15 14:56	1
1,2-Dichlorobenzene	5.0	U	5.0	1.3	ug/Kg			09/01/15 14:56	1
1,3-Dichlorobenzene	5.0	U	5.0	1.6	ug/Kg			09/01/15 14:56	1
1,4-Dichlorobenzene	5.0	U	5.0	0.74	ug/Kg			09/01/15 14:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*65 - 130*		*09/01/15 14:56*	*1*
Dibromofluoromethane (Surr)	*90*		*65 - 130*		*09/01/15 14:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*78*		*65 - 130*		*09/01/15 14:56*	*1*
4-Bromofluorobenzene (Surr)	*85*		*65 - 130*		*09/01/15 14:56*	*1*

AWP 9/15/15

TestAmerica Savannah

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-398998/4
Matrix: Solid
Analysis Batch: 398998

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	54.5		ug/Kg		109	76 - 120
Chlorobenzene	50.0	51.2		ug/Kg		102	80 - 120
1,2-Dichlorobenzene	50.0	46.3		ug/Kg		93	75 - 128
1,3-Dichlorobenzene	50.0	45.4		ug/Kg		91	76 - 128
1,4-Dichlorobenzene	50.0	46.1		ug/Kg		92	76 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*65 - 130*
Dibromofluoromethane (Surr)	*109*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*65 - 130*
4-Bromofluorobenzene (Surr)	*89*		*65 - 130*

Lab Sample ID: LCSD 680-398998/5
Matrix: Solid
Analysis Batch: 398998

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	55.9		ug/Kg		112	76 - 120	3	30
Chlorobenzene	50.0	52.1		ug/Kg		104	80 - 120	2	30
1,2-Dichlorobenzene	50.0	46.0		ug/Kg		92	75 - 128	1	30
1,3-Dichlorobenzene	50.0	46.5		ug/Kg		93	76 - 128	2	30
1,4-Dichlorobenzene	50.0	46.4		ug/Kg		93	76 - 128	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*65 - 130*
Dibromofluoromethane (Surr)	*111*		*65 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*65 - 130*
4-Bromofluorobenzene (Surr)	*88*		*65 - 130*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-397377/8-A
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397377

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	660	U	660	52	ug/Kg		08/21/15 10:56	08/24/15 16:24	1
2-Chlorophenol	330	U	330	40	ug/Kg		08/21/15 10:56	08/24/15 16:24	1
1,4-Dioxane	330	U	330	120	ug/Kg		08/21/15 10:56	08/24/15 16:24	1
1,2,4-Trichlorobenzene	330	U	330	31	ug/Kg		08/21/15 10:56	08/24/15 16:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*41 - 116*	*08/21/15 10:56*	*08/24/15 16:24*	*1*
2-Fluorophenol	*88*		*39 - 114*	*08/21/15 10:56*	*08/24/15 16:24*	*1*
Nitrobenzene-d5	*68*		*37 - 115*	*08/21/15 10:56*	*08/24/15 16:24*	*1*
Phenol-d5	*82*		*38 - 122*	*08/21/15 10:56*	*08/24/15 16:24*	*1*
Terphenyl-d14	*94*		*46 - 126*	*08/21/15 10:56*	*08/24/15 16:24*	*1*

MWD 9/15/15

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-397377/8-A
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 397377

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*81*		*45 - 129*	*08/21/15 10:56*	*08/24/15 16:24*	*1*

Lab Sample ID: LCS 680-397377/9-A
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 397377

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	3340	1430		ug/Kg		43	10 - 130
2-Chlorophenol	3340	2750		ug/Kg		82	47 - 130
1,4-Dioxane	3340	1380		ug/Kg		41	14 - 130
1,2,4-Trichlorobenzene	3340	2410		ug/Kg		72	47 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*91*		*41 - 116*
2-Fluorophenol	*79*		*39 - 114*
Nitrobenzene-d5	*67*		*37 - 115*
Phenol-d5	*82*		*38 - 122*
Terphenyl-d14	*93*		*46 - 126*
2,4,6-Tribromophenol	*85*		*45 - 129*

Lab Sample ID: 680-115876-22 MS
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: SED-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397377

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Chloroaniline	750	U	3850	1980		ug/Kg	☼	52	36 - 130
2-Chlorophenol	380	U	3850	2600		ug/Kg	☼	68	51 - 130
1,4-Dioxane	380	U	3850	1580		ug/Kg	☼	41	10 - 130
1,2,4-Trichlorobenzene	380	U	3850	2290		ug/Kg	☼	60	51 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl	*61*		*41 - 116*
2-Fluorophenol	*70*		*39 - 114*
Nitrobenzene-d5	*53*		*37 - 115*
Phenol-d5	*61*		*38 - 122*
Terphenyl-d14	*72*		*46 - 126*
2,4,6-Tribromophenol	*60*		*45 - 129*

Lab Sample ID: 680-115876-22 MSD
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: SED-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397377

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chloroaniline	750	U	3630	1880		ug/Kg	☼	52	36 - 130	5	50
2-Chlorophenol	380	U	3630	2470		ug/Kg	☼	68	51 - 130	5	50
1,4-Dioxane	380	U	3630	1370		ug/Kg	☼	38	10 - 130	15	50
1,2,4-Trichlorobenzene	380	U	3630	2220		ug/Kg	☼	61	51 - 130	3	50

MWD 9/15/15

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-115876-22 MSD
Matrix: Solid
Analysis Batch: 397707

Client Sample ID: SED-R2007-3-0815
Prep Type: Total/NA
Prep Batch: 397377

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*65*		*41 - 116*
2-Fluorophenol	*67*		*39 - 114*
Nitrobenzene-d5	*53*		*37 - 115*
Phenol-d5	*62*		*38 - 122*
Terphenyl-d14	*75*		*46 - 126*
2,4,6-Tribromophenol	*61*		*45 - 129*

9/15/15
TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

GC/MS VOA

Prep Batch: 397513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-20	SED-R2007-1-0815	Total/NA	Solid	5035	
680-115876-21	SED-R2007-2-0815	Total/NA	Solid	5035	
680-115876-22	SED-R2007-3-0815	Total/NA	Solid	5035	
680-115876-22 MS	SED-R2007-3-0815	Total/NA	Solid	5035	
680-115876-22 MSD	SED-R2007-3-0815	Total/NA	Solid	5035	
680-115876-23	SED-R2007-1-0815-AD	Total/NA	Solid	5035	

Analysis Batch: 398828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-20	SED-R2007-1-0815	Total/NA	Solid	8260B	397513
680-115876-21	SED-R2007-2-0815	Total/NA	Solid	8260B	397513
680-115876-22	SED-R2007-3-0815	Total/NA	Solid	8260B	397513
680-115876-22 MSD	SED-R2007-3-0815	Total/NA	Solid	8260B	397513
680-115876-23	SED-R2007-1-0815-AD	Total/NA	Solid	8260B	397513
LCS 680-398828/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 680-398828/29	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 680-398828/8	Method Blank	Total/NA	Solid	8260B	

Analysis Batch: 398998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-22 MS	SED-R2007-3-0815	Total/NA	Solid	8260B	397513
LCS 680-398998/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 680-398998/5	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 680-398998/9	Method Blank	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 397377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-20	SED-R2007-1-0815	Total/NA	Solid	3546	
680-115876-21	SED-R2007-2-0815	Total/NA	Solid	3546	
680-115876-22	SED-R2007-3-0815	Total/NA	Solid	3546	
680-115876-22 MS	SED-R2007-3-0815	Total/NA	Solid	3546	
680-115876-22 MSD	SED-R2007-3-0815	Total/NA	Solid	3546	
680-115876-23	SED-R2007-1-0815-AD	Total/NA	Solid	3546	
LCS 680-397377/9-A	Lab Control Sample	Total/NA	Solid	3546	
MB 680-397377/8-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 397707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-20	SED-R2007-1-0815	Total/NA	Solid	8270C	397377
680-115876-21	SED-R2007-2-0815	Total/NA	Solid	8270C	397377
680-115876-22	SED-R2007-3-0815	Total/NA	Solid	8270C	397377
680-115876-22 MS	SED-R2007-3-0815	Total/NA	Solid	8270C	397377
680-115876-22 MSD	SED-R2007-3-0815	Total/NA	Solid	8270C	397377
680-115876-23	SED-R2007-1-0815-AD	Total/NA	Solid	8270C	397377
LCS 680-397377/9-A	Lab Control Sample	Total/NA	Solid	8270C	397377
MB 680-397377/8-A	Method Blank	Total/NA	Solid	8270C	397377

MWP 9/15/15

TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

General Chemistry

Analysis Batch: 397365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115876-20	SED-R2007-1-0815	Total/NA	Solid	Moisture	
680-115876-21	SED-R2007-2-0815	Total/NA	Solid	Moisture	
680-115876-22	SED-R2007-3-0815	Total/NA	Solid	Moisture	
680-115876-22 MS	SED-R2007-3-0815	Total/NA	Solid	Moisture	
680-115876-22 MSD	SED-R2007-3-0815	Total/NA	Solid	Moisture	
680-115876-23	SED-R2007-1-0815-AD	Total/NA	Solid	Moisture	

RWP 9/15/15
TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-1-0815 — Lab Sample ID: 680-115876-20

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			397365	08/21/15 09:44	FES	TAL SAV

Client Sample ID: SED-R2007-1-0815 — Lab Sample ID: 680-115876-20

Date Collected: 08/19/15 14:50
Date Received: 08/20/15 09:42
Matrix: Solid
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.624 g	5 mL	397513	08/21/15 17:12	FES	TAL SAV
Total/NA	Analysis	8260B		1	4.624 g	5 mL	398828	08/31/15 16:14	DJK	TAL SAV
Total/NA	Prep	3546			30.02 g	1 mL	397377	08/21/15 10:56	KAC	TAL SAV
Total/NA	Analysis	8270C		1	30.02 g	1 mL	397707	08/24/15 18:06	RAM	TAL SAV

Client Sample ID: SED-R2007-2-0815 — Lab Sample ID: 680-115876-21

Date Collected: 08/19/15 13:15
Date Received: 08/20/15 09:42
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			397365	08/21/15 09:44	FES	TAL SAV

Client Sample ID: SED-R2007-2-0815 — Lab Sample ID: 680-115876-21

Date Collected: 08/19/15 13:15
Date Received: 08/20/15 09:42
Matrix: Solid
Percent Solids: 81.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.729 g	5 mL	397513	08/21/15 17:12	FES	TAL SAV
Total/NA	Analysis	8260B		1	7.729 g	5 mL	398828	08/31/15 16:35	DJK	TAL SAV
Total/NA	Prep	3546			30.11 g	1 mL	397377	08/21/15 10:56	KAC	TAL SAV
Total/NA	Analysis	8270C		1	30.11 g	1 mL	397707	08/24/15 18:31	RAM	TAL SAV

Client Sample ID: SED-R2007-3-0815 — Lab Sample ID: 680-115876-22

Date Collected: 08/19/15 11:00
Date Received: 08/20/15 09:42
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			397365	08/21/15 09:44	FES	TAL SAV

Client Sample ID: SED-R2007-3-0815 — Lab Sample ID: 680-115876-22

Date Collected: 08/19/15 11:00
Date Received: 08/20/15 09:42
Matrix: Solid
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.495 g	5 mL	397513	08/21/15 17:12	FES	TAL SAV

MWD 9/15/15

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Client Sample ID: SED-R2007-3-0815

Lab Sample ID: 680-115876-22
Date Collected: 08/19/15 11:00
Matrix: Solid
Date Received: 08/20/15 09:42
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	7.495 g	5 mL	398828	08/31/15 16:56	DJK	TAL SAV
Total/NA	Prep	3546			30.16 g	1 mL	397377	08/21/15 10:56	KAC	TAL SAV
Total/NA	Analysis	8270C		1	30.16 g	1 mL	397707	08/24/15 18:57	RAM	TAL SAV

Client Sample ID: SED-R2007-1-0815-AD

Lab Sample ID: 680-115876-23
Date Collected: 08/19/15 14:50
Matrix: Solid
Date Received: 08/20/15 09:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			397365	08/21/15 09:44	FES	TAL SAV

Client Sample ID: SED-R2007-1-0815-AD

Lab Sample ID: 680-115876-23
Date Collected: 08/19/15 14:50
Matrix: Solid
Date Received: 08/20/15 09:42
Percent Solids: 79.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.504 g	5 mL	397513	08/21/15 17:12	FES	TAL SAV
Total/NA	Analysis	8260B		1	7.504 g	5 mL	398828	08/31/15 17:17	DJK	TAL SAV
Total/NA	Prep	3546			29.99 g	1 mL	397377	08/21/15 10:56	KAC	TAL SAV
Total/NA	Analysis	8270C		1	29.99 g	1 mL	397707	08/24/15 19:22	RAM	TAL SAV

Laboratory References:
TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MW 9/15/15
TestAmerica Savannah

TestAmerica 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

Client Information	Sampler: Jeff Ingram	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No: 680-66231-28384.1
Client Contact: ~~Lon Bindner~~ Emily White	Phone: 714-213-6546	E-Mail: michele.kersey@testamericainc.com		Page: Page 1 of 2
Company: Golder Associates Inc.				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASK Emily White			
State, Zip: MO, 63301				
Phone: 636-724-4191	PO #:			
Email: ~~lon_bindner@golder.com~~ Emily_White@Golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Special Instructions/Note: 0815 MVT 0215

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (SW)	8260B - 8260 VOC (SW)	8270C - 8270 SVOC (SED)	8260B - 8260 VOC (SED)	Total Number of containers	Special Instructions/Note
SW-R2007-1 ~~0215~~ 0815	8/19/15	1430	G	Water	N		2	3			5	
SW-R2007-2 ~~0215~~ 0815		1245	G	Water	N		2	3				
SW-R2007-3 ~~0215~~ 0815		1020	G	Water	N		2	3				
SW-R2007-3 ~~0215~~ 0815 MS		1020	G	Water	N	X	2	3				
SW-R2007-3 ~~0215~~ 0815 MSD		1020	G	Water	N	X	2	3				
SW-R2007-1 ~~0215~~ 0815 AD		1430	G	Water	N		2	3				
SED-R2007-1 ~~0215~~ 0815 EB		1450	G	Water	N		2	3				
~~SW-R2007- 0215~~			~~G~~	~~Water~~								
SED-R2007-1-~~0215~~ 0815		1450	G	Solid	N				1	4		
SED-R2007-2-~~0215~~ 0815		1315	G	Solid	N				1	4		
SED-R2007-3-~~0215~~ 0815		1100	G	Solid	N				1	4		

680-115876 Chain of Custody

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: 2.8/3.2

Empty Kit Relinquished by:	Date: 8/19/15	Time: 1940	Method of Shipment: fedex		
Relinquished by: Jeff Ingram	Date/Time: 8/19/15 1600	Company: Golder	Received by:	Date/Time: 8/20/15 9:42	Company:
Relinquished by:	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica 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

Client Information	Sampler:	Lab PM: Kersey, Michele R	Carrier Tracking No(s):	COC No: 680-66231-28384.2
Client Contact: ~~Lori Bindner~~ Emily White	Phone: 919-243-3543	E-Mail: michele.kersey@testamericainc.com		Page: Page 2 of 2
Company: Golder Associates Inc				Job #:
Address: 820 South Main Street Suite 100	Due Date Requested:			
City: St. Charles	TAT Requested (days): ASAP Emily White			
State, Zip: MO, 63301				
Phone:	PO #:			
Email: ~~lori_bindner@golder.com~~ Emily_white@golder.com	WO #:			
Project Name: WGK River Sampling 3Q15	Project #: 68004114			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270C - 8270 SVOC (Sw)	8260B - 8260 VOC (Sw)	8270C - 8270 SVOC (Sw)	8260B - 8260 VOC (Sw)	Special Instructions/Note:
SED-R2007- 3 -0215-MS	8/19/15	1100	G	Solid	N	X			1	4	
SED-R2007- 3 -0215-MSD		1100	G	Solid	N	X			1	4	
SED-R2007- 1 -0215-AD		1450	G	Solid	N				1	4	
~~SED-R2007- 0215~~			~~G~~	~~Solid~~							
TB1 -071415	8/18/15	—	—	Water	N			3			

680-115876

Page 22 of 24

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

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

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: 2.8/3.7

Empty Kit Relinquished by: Date: 8/18/15 Time: 1700 Method of Shipment: Fed

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	8/19/15 - 1900	GAW	[signature]	8/20/15 9:40	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115876-2
SDG Number: KRS014

Login Number: 115876
List Number: 1
Creator: White, Menica R

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received 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	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

mwD
9/15/15

Certification Summary

Client: Solutia Inc.
Project/Site: WGK River Sampling / Sediment

TestAmerica Job ID: 680-115876-2
SDG: KRS014

Laboratory: TestAmerica Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200022	11-30-15

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8270C	3546	Solid	1,4-Dioxane

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

AWD
9/15/15
TestAmerica Savannah

APPENDIX E
MICROBIAL INSIGHTS DATA PACKAGE

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Lori Bindner
Golder Associates Inc.
820 S. Main Street
Suite 100
St. Charles, MO 63301

Phone:

Fax:

Identifier: 107MG **Date Rec:** 07/31/2015 **Report Date:** 09/11/2015

Client Project #: 1403345 **Client Project Name:** WG Krummrich - LTM

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

Reviewed By:

NOTICE: This report is intended only for the addressee shown above and may contain confidential or privileged information. If the recipient of this material is not the intended recipient or if you have received this in error, please notify Microbial Insights, Inc. immediately. The data and other information in this report represent only the sample(s) analyzed and are rendered upon condition that it is not to be reproduced without approval from Microbial Insights, Inc. Thank you for your cooperation.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Golder Associates Inc.**
Project: WG Krummrich - LTM

MI Project Number: **107MG**
Date Received: 07/31/2015

Sample Information

Sample Name:	**BSA-MW-1S-0815**	**BSA-MW-2D-0815**	**BSA-MW-3D-0815**	**BSA-MW-4D-0815**	**BSA-MW-5D-0815**
Sample Date:	07/30/2015	07/30/2015	07/30/2015	07/30/2015	07/30/2015
Sample Matrix:	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	JS	JS	JS	JS	JS

Biomass Concentrations

Total Biomass (cells/bead)	**1.91E+05**	**2.56E+05**	**5.24E+05**	**2.03E+04**	**1.69E+05**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**42.58**	**27.38**	**55.00**	**35.76**	**40.78**
Proteobacteria (Monos)	**32.97**	**48.46**	**20.64**	**23.55**	**35.01**
Anaerobic metal reducers (BrMonos)	**0.00**	**1.13**	**0.00**	**0.00**	**1.17**
SRB/Actinomycetes (MidBrSats)	**5.46**	**7.16**	**2.37**	**0.00**	**0.00**
General (Nsats)	**15.87**	**13.16**	**17.78**	**40.70**	**12.89**
Eukaryotes (polyenoics)	**3.12**	**2.72**	**4.20**	**0.00**	**10.14**

Physiological Status (Proteobacteria only)

Slowed Growth	**1.34**	**0.13**	**1.17**	**0.00**	**0.43**
Decreased Permeability	**0.96**	**0.00**	**0.00**	**0.00**	**0.00**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

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PLFA

Client: **Golder Associates Inc.**
Project: WG Krummrich - LTM

MI Project Number: **107MG**
Date Received: 07/31/2015

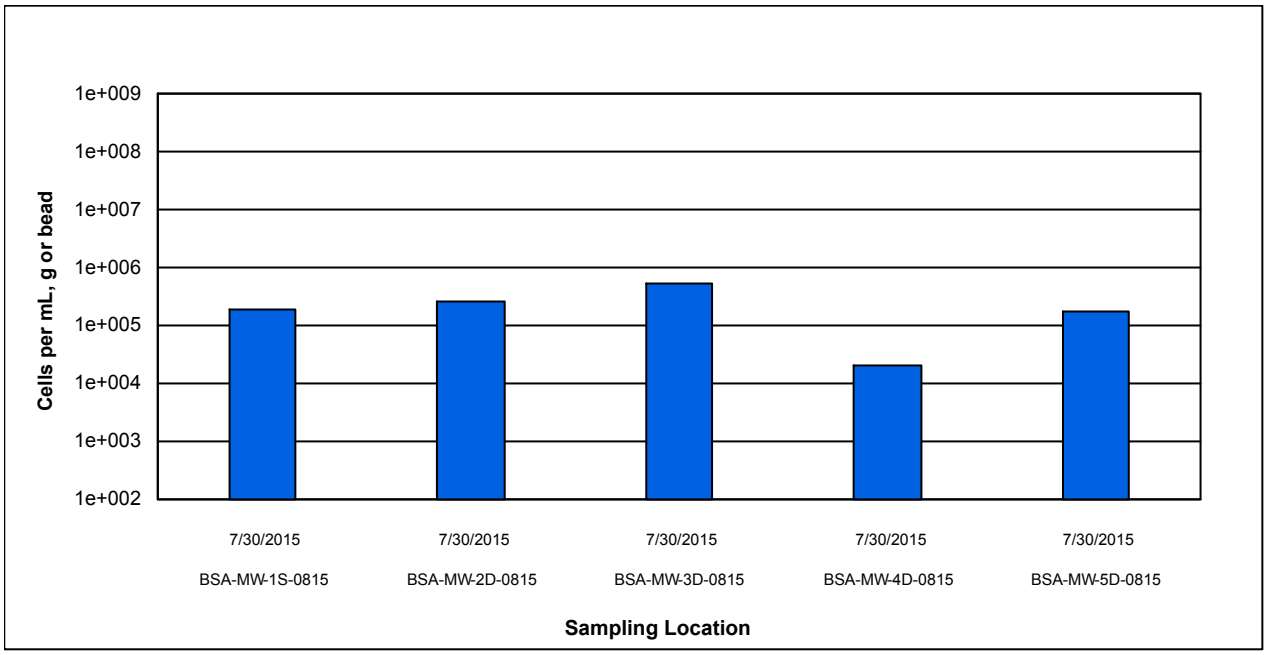

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

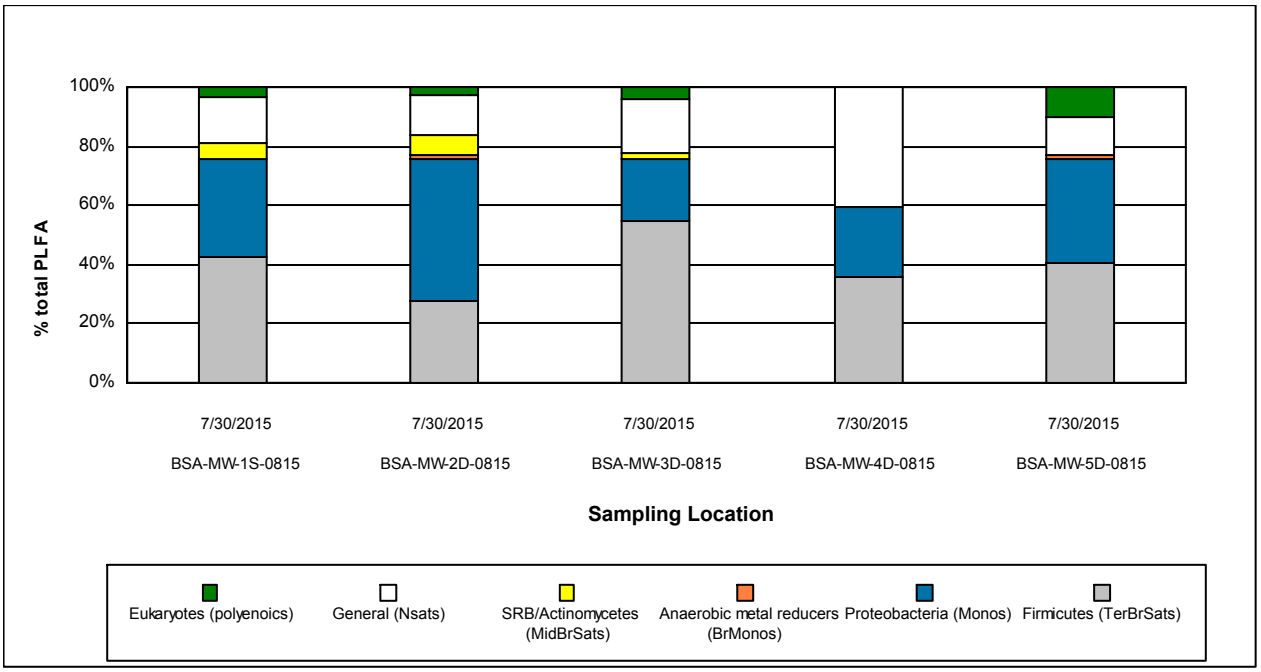

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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Sample Information

Sample Name:	**CPA-MW-1D-0815**	**CPA-MW-2D-0815**	**CPA-MW-3D-0815**	**CPA-MW-4D-0815**
Sample Date:	07/30/2015	07/30/2015	07/30/2015	07/30/2015
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap
Analyst:	JS	JS	JS	JS

Biomass Concentrations

Total Biomass (cells/bead)	**2.42E+05**	**6.53E+04**	**5.11E+04**	**3.73E+04**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**11.57**	**48.51**	**4.87**	**39.21**
Proteobacteria (Monos)	**52.25**	**32.75**	**55.01**	**41.16**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**1.46**	**0.00**	**0.00**	**0.00**
General (Nsats)	**14.33**	**18.75**	**27.71**	**19.63**
Eukaryotes (polyenoics)	**20.42**	**0.00**	**12.41**	**0.00**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.07**	**0.41**	**0.00**	**0.00**
Decreased Permeability	**0.14**	**0.00**	**0.00**	**0.00**

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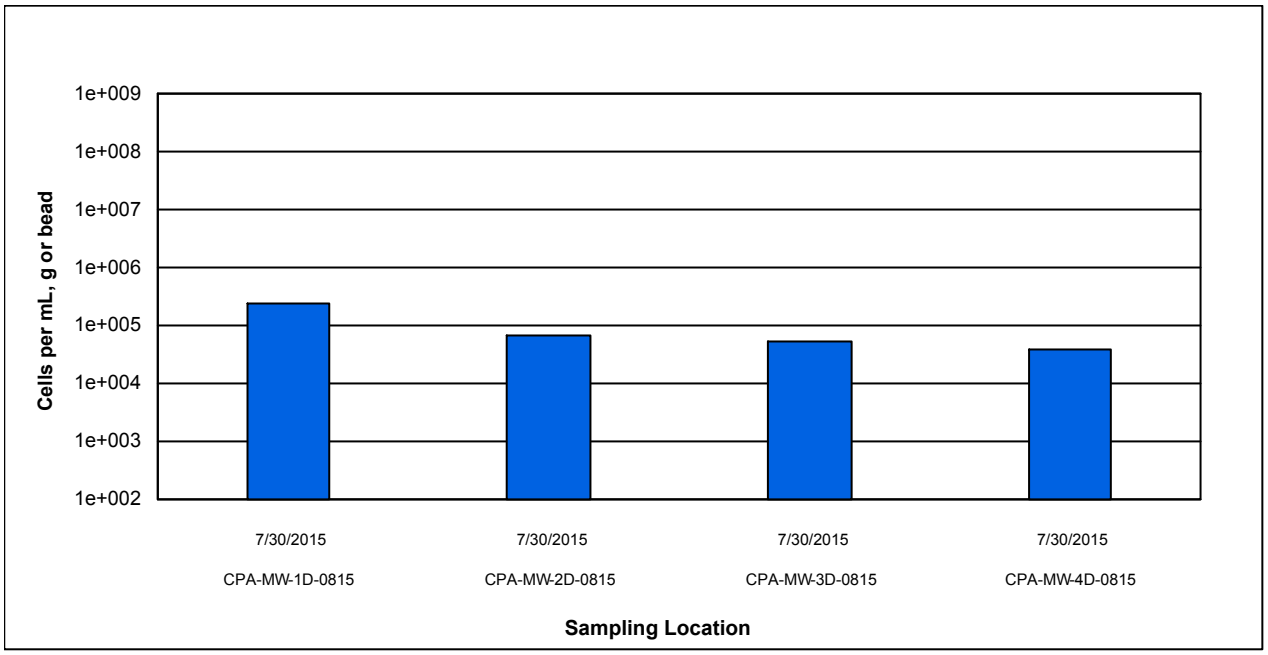

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

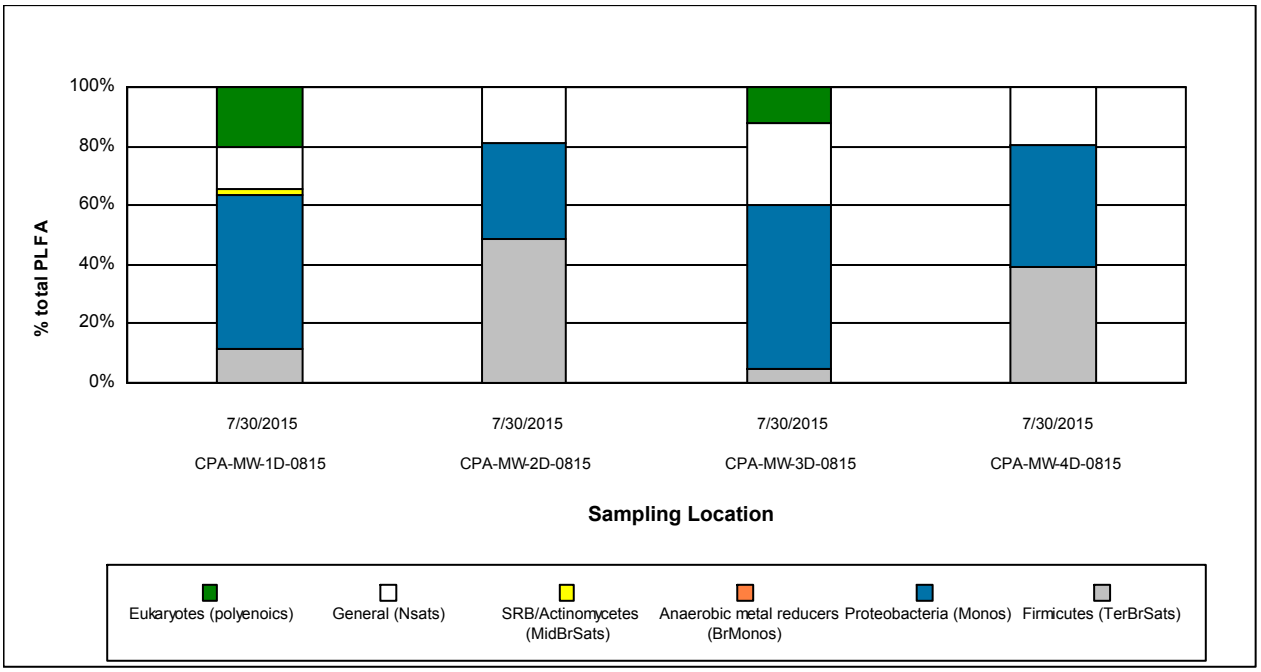

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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Identifier: 107MG **Date Rec:** 07/31/2015 **Report Date:** 09/11/2015

Client Project #: 1403345 **Client Project Name:** WG Krummrich - LTM

Purchase Order #:

Comments: Please note that results for samples BSA-MW-4D-0815, CPA-MW-3D-0815, and CPA-MW-4D-0815 fell between reporting and detection limits for PLFA analysis.

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Phospholipid Fatty Acid Analysis

Interpretation Guidelines

Phospholipids fatty acids (PLFA) are a main component of the membrane (essentially the "skin") of microbes and provide a powerful tool for assessing microbial responses to changes in their environment. This type of analysis provides direct information for assessing and monitoring sites where bioremediation processes, including natural attenuation, are of interest. Analysis of the types and amount of PLFA provides a broad based understanding of the entire microbial community with information obtained in three key areas viable biomass, community structure and metabolic activity.

What is the detection limit for PLFA?

Our limit of detection for PLFA analysis is ~150 picomoles of total PLFA and our limit of quantification is ~500 picomoles of total PLFA. Samples which contain PLFA amounts at or below 150 pmol cannot be used to determine biomass, likewise samples with PLFA content below ~500 pmol are generally considered to contain too few fatty acids to discuss community composition.

How should I interpret the PLFA results?

Interpreting the results obtained from PLFA analysis can be somewhat difficult, so this document was designed to provide a technical guideline. For convenience, this guideline has been divided into the three key areas.

Viable Biomass

PLFA analysis is one of the most reliable and accurate methods available for the determination of viable microbial biomass. Phospholipids break down rapidly upon cell death (21, 23), so biomass calculations based on PLFA content do not contain 'fossil' lipids of dead cells.

How is biomass measured?

Viable biomass is determined from the total amount of PLFA detected in a given sample. Since, phospholipids are an essential part of intact cell membranes they provide an accurate measure of viable cells.

How is biomass calculated?

Biomass levels are reported as cells per gram, mL or bead, and are calculated using a conversion factor of 20,000 cells/pmole of PLFA. This conversation factor is based upon cells grown in laboratory media, and varies somewhat with the type of organism and environmental conditions.

What does the concentration of biomass mean?

The overall abundance of microbes within a given sample is often used as an indicator of the potential for bioremediation to occur, but understanding the levels of biomass within each sample can be cumbersome. The following are benchmarks that can be used to understand whether the biomass levels are low, moderate or high.

Low	Moderate	High
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

How do I know if a change in biomass is significant?

One of the primary functions of using PLFA analysis at contaminated sites is to evaluate how a community responds following a given treatment, but how does one know if the changes observed between two events are significant? As a general rule, biomass levels which increase or decrease by at least an order of magnitude are considered to be significant. However, changes in biomass levels of less than an order of magnitude may still show a trend. It is important to remember that many factors can affect microbial growth, so factors other than the treatment could be influencing the changes observed between sampling events. Some of the factors to consider are: temperature, moisture, pH, etc. The following illustration depicts three types of changes that occurred over time and the conclusions that could be drawn.

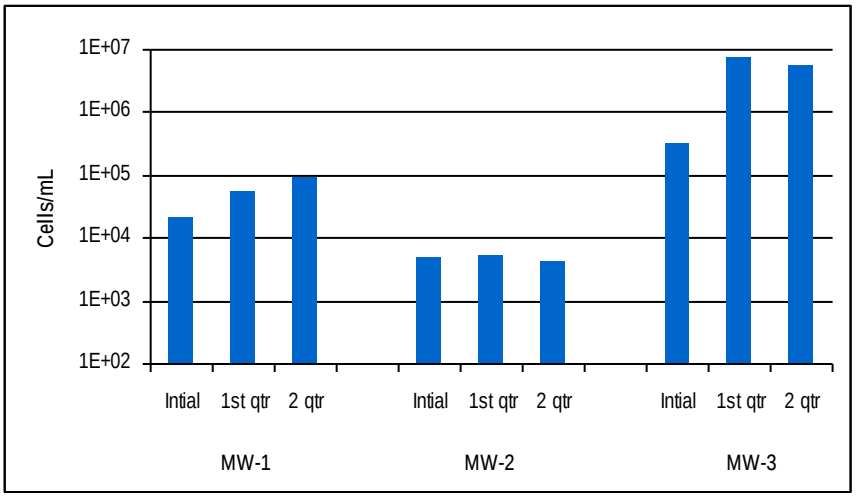

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

Conclusions from graph above:

- MW-1 showed a trend of biomass levels increasing steadily over time, although cell concentrations were ~10^4 cells/mL at each sampling event.
- MW-2 showed no notable trends or significant changes in biomass concentrations.
- MW-3 showed a significant increase in biomass levels between the initial and 1st quarter sampling events (from ~10^5 to ~10^6 cells/mL).

Community Structure:

The PLFA in a sample can be separated into particular types, and the resulting PLFA "profile" reflects the proportions of the categories of organisms present in the sample. Because groups of bacteria differ in their metabolic capabilities, determining which bacterial groups are present and their relative distributions within the community can provide information on what metabolic processes are occurring at that location. This in turn can also provide information on the subsurface conditions (i.e oxidation/reduction status, etc.). Table 1 describes the six major structural groups used and their potential relevance to site specific projects.

Table 1. 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

Following are answers to some of the common questions about community composition and some detailed descriptions of some typical shifts which can be observed between sampling events.

How is the community structure data presented?

Community structure data is presented as percentage (%) of the total amount of PLFA. In order to relate the complex mixture of PLFA to the organisms present, the ratio of a specific PLFA group is determined (detailed in Table 1 above), and this corresponds to the proportion of the related bacterial classification within the overall community structure. Because normal saturated PLFA are found in both prokaryotes (bacteria) and eukaryotes (fungi, protozoa, diatoms etc), their distribution provides little insight into the types of microbes that are present at a sampling location. However, high proportions of normal saturates are often associated with less diverse microbial populations.

How can community structure data be used to manage my site?

It is important to understand that microbial communities are often a mixture of different types of bacteria (e.g. aerobes, sulfate reducers, methanogens, etc) with the abundance of each group behaving like a seesaw, i.e. as the population of one group increases, another is likely decreasing, mostly due to competition for available resources. The PLFA profile of a sample provides a "fingerprint" of the microbial community, showing relative proportions of the specific bacterial types at the time of sampling. This is a great tool for detecting shifts within the community over time and also to evaluate similarities/differences between sampling locations. It is important to note that PLFA analysis of community structure is analyzing the microbes directly, not just secondary breakdown products. So this provides evidence of how the entire microbial community is responding to the treatment.

How do I recognize community shifts and what they mean?

Shifts in the community structure are indications of changing conditions and their effect on the microbial community, and, by extension on the metabolic processes occurring at the sampling location. Some of the more commonly seen shifts within the community are illustrated and discussed below:

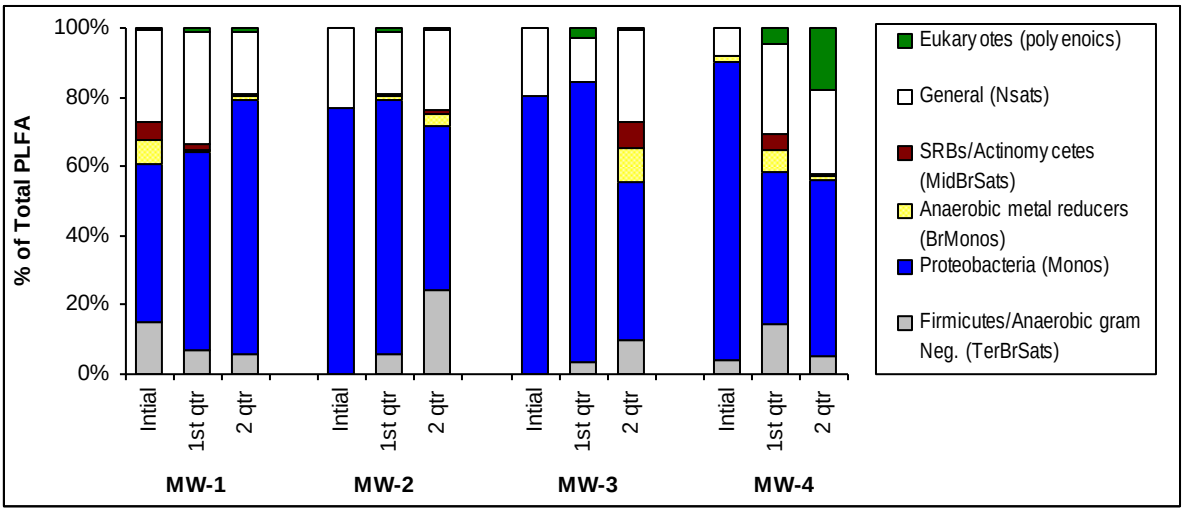

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See Table 1 for detailed descriptions of structural groups.

- **Increased Proteobacteria**

Proportions of Proteobacteria are of interest because it is one of the largest groups of bacteria and represents a wide variety of both aerobe and anaerobes. The majority of hydrocarbons (including benzene and naphthalene) are metabolized by some member of Proteobacteria, mainly due to their ability to grow opportunistically, quickly taking advantage of available food (i.e. hydrocarbons), and adapting quickly to changes in the environment. The detection of increased proportions of Proteobacteria coupled with increased biomass suggests that the Proteobacteria are consuming something. In situations where it is important to determine the extent to which the Proteobacteria are utilizing anaerobic or aerobic pathways, it is possible to measure relative proportions of specific biomarkers that are associated with anaerobic or aerobic pathways thus separating the Proteobacteria into different groups, based on pathways used. Sample MW-1 from Figure 2 depicts a shift in community structure where the proportion of Proteobacteria has increased over time.

- **Increased Firmicutes/Anaerobic Gram negative bacteria**

Increased proportions of Firmicutes/Anaerobic Gram negative bacteria generally indicate that conditions are becoming more reductive (i.e. more anaerobic). Proportions of Firmicutes are of particular interest in sites contaminated with chlorinated hydrocarbons because Firmicutes include anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination.

Enhanced bioremediation of chlorinated solvents often employs the injection of fermentable substrates which, when utilized by fermenting bacteria, results in the release of H_2. Engineered shifts in the microbial community can be shown by observing increased proportions Firmicutes following an injection of fermentable substrate. Through long-term monitoring of the community structure it is possible to know when re-injection may be necessary or desirable. Sample MW-2 from Figure 2 depicts a shift in community structure where the proportion of Firmicutes has increased over time.

- **Increased anaerobic metal reducing bacteria (BrMonos) and SRB/Actinomycetes (MidBrSats)**

An increase in the proportions of metal and sulfate reducing bacterial groups, especially when combined with shifts in the other bacterial groups, can provide information helpful to monitoring bioremediation. Generally, an increase in metal and sulfate reducers points to more reduced (anaerobic) conditions at the sampled location. This is especially true if there is an increase in Firmicutes at the same time. Large increases in either metal and sulfate reducers, particularly if accompanied by a decrease in Firmicutes, may suggest that conditions are becoming increasingly reduced. In this situation the metal and sulfate reducers may be out-competing dechlorinators for available H_2, thereby limiting the potential for reductive dechlorination at that location. Sample MW-3 from Figure 2 depicts a shift in community structure where the proportion of metal reducing bacteria has increased over time.

- **Increased Eukaryotes**

Eukaryotes include organisms such as fungi, protozoa, and diatoms. At a contaminated location, an increase in eukaryotes, particularly if seen with a decrease in the contaminant utilizing bacteria, suggests that eukaryotic scavengers are preying upon what had been an abundance of bacteria which were consuming the contaminant. Sample MW-4 from Figure 2 depicts a shift in community structure where the proportion of eukaryotes has increased over time.

Physiological status of Proteobacteria

The membrane of a microbe adapts to the changing conditions of its environment, and these changes are reflected in the PLFA. Toxic compounds or environmental conditions may disrupt the membrane and some bacteria respond by making *trans* fatty acids instead of the usual *cis* fatty acids (7) in order to strengthen the cell membrane, making it less permeable. Many Proteobacteria respond to lack of available substrate or to highly toxic conditions by making cyclopropyl (7) or mid-chain branched fatty acids (20) which point to less energy expenditure and a slowed growth rate. The physiological status ratios for Decreased Permeability (trans/cis ratio) and for Slowed Growth (cy/cis ratio) are based on dividing the amount of the fatty acid induced by environmental conditions by the amount of its biosynthetic precursor.

What does slowed growth or decreased permeability mean?

Ratios for slowed growth and for decreased permeability of the cell membrane provide information on the “health” of the Gram negative community, that is, how this population is responding to the conditions present in the environment. It should be noted that one must be cautious when interpreting these measures from only one sampling event. The most effective way to use the physiological status indicators is in long term monitoring and comparing how these ratios increase/decrease over time.

A marked increase in either of these ratios suggests a change in environment which is less favorable to the Gram negative Proteobacteria population. The ratio for slowed growth is a relative measure, and does not directly correspond to log or stationary phases of growth, but is useful as a comparison of growth rates among sampling locations and also over time. An increase in this ratio (i.e. slower growth rate) suggests a change in conditions which is not as supportive of rapid, “healthy” growth of the Gram negative population, often due to reduced available substrate (food). A larger ratio for decreased permeability suggests that the environment has become more toxic to the Gram negative population, requiring energy expenditure to produce *trans* fatty acids in order to make the membrane more rigid.

References

1. Amann, R. I., W. Ludwig, and K.-H. Schleifer. 1995. Phylogenetic identification and in situ detection of individual microbial cells without cultivation. Microbiological Reviews 59:143-169.
2. Cottrell, MT and David L. Kirchman. Appl Environ Microbiol. 2000 April; 66 (4): 16921697.
3. Gillis, M., V. Tran Van, R. Bardin, M. Goor, P. Hebbar, A. Willems, P. Segers, K. Kerstens, T. Heulin, and M. P. Fernadez. 1995. Polyphasic taxonomy in the genus Burkholderia leading to an amended description of the genus and proposition of Burkholderia vietnamiensis sp. nov. for N2-fixing isolates from rice in Vietnam. Int. J. Syst. Bacteriol. 45:274-289.
4. Dowling, N. J. E., F. Widdel, and D. C. White. 1986. Phospholipid ester-linked fatty acid biomarkers of acetate-oxidizing sulfate reducers and other sulfide forming bacteria. Journal of General Microbiology 132:1815-1825.
5. Edlund, A., P. D. Nichols, R. Roffey, and D. C. White. 1985. Extractable and lipopolysaccharide fatty acid and hydroxy acid profiles from Desulfovibrio species. Journal of Lipid Research 26:982-988.
6. Guckert, J. B., C. P. Antworth, P. D. Nichols, and D. C. White. 1985. Phospholipid ester-linked fatty acid profiles as reproducible assays for changes in prokaryotic community structure of estuarine sediments. FEMS Microbiol. Ecol. 31:147-158.
7. Guckert, J. B., M. A. Hood, and D. C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of Vibrio cholerae: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Appl. Environ. Microbiol. 52:794–801.
8. Hedrick, D.B., A Peacock, J.R. Stephen, S.J. Macnaughton, Julia Brüggemann, and David C. White. 2000. Measuring soil microbial community diversity using polar lipid fatty acid and denatured gradient gel electrophoresis data. J. Microbiol. Methods, 41, 235-248.
9. ITRC Internet Training on Natural Attenuation of Chlorinated Solvents in Groundwater: Principles and Practices, Apr 00.
10. Löffler, F. E., Q. Sun, et al. (2000). “16S rRNA gene-based detection of tetrachloroethene-dechlorinating Desulfuromonas and Dehalococcoides species.” Appl Environ Microbiol 66(4): 1369-1374.
11. Maymo-Gatell X, Chien Y, Gossett JM, Zinder SH. 1997. Isolation of a bacterium that reductively dechlorinates tetrachloroethene to ethene. Science 276(5318):1568-71.
12. Muyzer, G., E. C. De Waal, and A. G. Uitterlinden. 1993. Profiling of complex microbial populations by denaturing gradient gel electrophoresis analysis of polymerase chain reaction-amplified genes coding for 16S rRNA. Applied and Environmental Microbiology 59:695-700.
13. Ribosomal Database Project (http://rdp.cme.msu.edu. National Center for Biotechnology Information. (http://www.ncbi.nlm.nih.gov/)
14. Overman, J., "Family Chlorobiaceae," in M. Dworkin et al., eds., The Prokaryotes: An Evolving Electronic Resource for the Microbiological Community, 3rd edition, release 3.7, November 2, 2001, Springer-Verlag, New York, www.prokaryotes.com.
15. Ringelberg, D. B., G. T. Townsend, K. A. DeWeerd, J. M. Sulita, and D. C. White. 1994. Detection of the anaerobic dechlorinating microorganism Desulfomonile tiedjei in environmental matrices by its signature lipopolysaccharide branch-long-chain hydroxy fatty acids. FEMS Microbiol. Ecol. 14:9-18.
16. Schlötelburg, C. 2001. Mikrobielle Diversität und Dynamik einer 1,2-Dichlorpropan dechlorierenden Mischkultur (Microbial Diversity and Dynamics in a 1,2-Dichloropropane Dechlorinating Mixed Culture). Dissertation, Humbolt University, Berlin, Germany. In German: http://edoc.hu-berlin.de/dissertationen/schloetelburg-cord-2001-12-07/PDF/Schloetelburg.pdf
17. Sharp, R., D. Cossar, and R. Williams. 1995. Physiology and metabolism of Thermus. Biotechnol. Handb. 9:67-91.
18. Stephen, J. R., Y.-J. Chang, Y. D. Gan, A. Peacock, S. Pfiffner, M. Barcelona, D. C. White, and S. J. Macnaughton. 1999. Microbial characterization of a JP-4 fuel-contaminated site using a combined lipid biomarker/polymerase chain reaction-denaturing gradient gel electrophoresis (PCR-DGGE) based approach. Environmental Microbiology 1:231-241.
19. Tighe, S.W., de Lajudie, P., Dipietro, K., Lindström, K., Nick, G. & Jarvis, B.D.W. (2000). Analysis of cellular fatty acids and phenotypic relationships of Agrobacterium, Bradyrhizobium, Mesorhizobium, Rhizobium and Sinorhizobium species using the Sherlock Microbial Identification System. Int J Syst Evol Microbiol 50, 787-801.
20. Tsitko, I.V. Gennadi M. Zaitsev, Anatoli G. Lobanok, and Mirja S. Salkinoja-Salonen. 1999. Applied and Environmental Microbiology 65(2) 853-855.
21. White, D. C., W. M. Davis, J. S. Nickels, J. D. King, and R. J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
22. White, D. C., H. C. Pinkart, and D. B. Ringelberg. 1997. Biomass measurements: Biochemical approaches, p. 91-101. In C. J. Hurst, G. R. Knudsen, M. J. McInerney, L. D. Stetzenbach, and M. V. Walter (ed.), Manual of Environmental Microbiology. ASM Press, Washington.
23. White, D. C., and D. B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass, community structure, and nutritional / physiological status of the deep subsurface microbiota. In P. S. Amy and D. L. Halderman (ed.), The microbiology of the terrestrial subsurface. CRC Press, Boca Raton.
24. White, D. C., J. O. Stair, and D. B. Ringelberg. 1996. Quantitative comparisons of in situ microbial biodiversity by signature biomarker analysis. Journal of Industrial Microbiology 17:185-196.
25. Vandamme P, Pot B, Gillis M, de Vos P, Kersters K, Swings J. Polyphasic taxonomy, a consensus approach to bacterial systematics. Microbiol Rev 1996 Jun;60(2):407-38.

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SITE LOGIC Report

Stable Isotope Probing (SIP) Study

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Report Date: September 11, 2015

Project: WG Krummrich – LTM, 1403345

Comments:

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Executive Summary

A Stable Isotope Probing (SIP) study was performed to determine whether biodegradation of benzene and chlorobenzene is occurring under existing site conditions. Bio-Trap® samplers baited with ^{13}C labeled benzene and ^{13}C labeled chlorobenzene were deployed in monitoring wells BSA-MW-2D-0815 and CPA-MW-3D-0815, respectively. Following a 30-day deployment period, the Bio-Traps were recovered to quantify ^{13}C incorporation into biomass and dissolved inorganic carbon (DIC). A complete summary of the SIP results is provided in Table 1 and Figures 1 through 5. Tables 2 and 3 and Figures 6 through 9 contain summaries of PLFA analysis performed on standard Bio-Trap samplers deployed in BSA and CPA monitoring wells.

Stable Isotope Probing (SIP)

- The detection of ^{13}C-enriched biomass and DIC confirmed that benzene biodegradation had occurred at BSA-MW-2D-0815 during the deployment period.
    - Total PLFA biomass for well BSA-MW-2D-0815 (2.56E+05 cells/bead) was in the moderate range.
    - The average PLFA $\delta^{13}C$ value was 102‰, indicating a moderate incorporation of ^{13}C-labeled benzene into microbial biomass.
    - The average DIC $\delta^{13}C$ value was 3,585‰, showing substantial benzene mineralization.
    - The PLFA community structure was primarily composed of monoenoics (48.46%) in addition to firmicutes (27.38%) and normal saturates (13.16%). Indicators of actinomycetes, eukaryotes, and anaerobic metal reducers were also detected.

- Incorporation of ^{13}C into the biomass in CPA-MW-3D-0815 demonstrated that some chlorobenzene was biodegraded under existing site conditions.
    - The total PLFA biomass concentration was within the low range at 5.11E+04 cells/bead.
    - The average PLFA $\delta^{13}C$ value was 7‰, indicating a low incorporation of ^{13}C-labeled benzene into microbial biomass.
    - The average DIC $\delta^{13}C$ value, -5‰, was near background levels and indicated little to no chlorobenzene was mineralized during the deployment period.
    - The PLFA community structure in CPA-MW-3D-0815 was composed of a large portion of monoenoics (55.01%), followed by normal saturates (27.71%), eukaryotes (12.41%), and firmicutes (4.87%).

PLFA Analysis - Standard Bio-Traps

- Total biomass concentrations in the BSA wells primarily fell within moderate range (10^5 cells/bead).
    - The total biomass for sample BSA-MW-4D-0815 fell between the detection limit and reporting limit for PLFA analysis.
    - The community structure in the BSA wells indicated monoenoics, firmicutes, and normal saturates were the most abundant groups.
- In the CPA wells, total PLFA biomass concentrations primarily fell within the low range (10^4 cells/bead).
    - The total biomass for samples CPA-MW-3D-0815 and CPA-MW-4D-0815 fell between the detection limit and reporting limit for PLFA analysis.
    - The microbial community structures of the CPA wells indicated monoenoics, normal saturates, and firmicutes were the major contributors to biomass. Eukaryotes were also detected in CPA-MW-1D-0815 and CPA-MW-3D-0815.

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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	BSA-MW-2D-0815	CPA-MW-3D-0815
^{13}C Contaminant Loss		
^{13}C Benzene Pre-deployment (µg/bead)	157 ± 18	---
^{13}C Benzene Post-deployment (µg/bead)	137 ± 10	---
^{13}C Chlorobenzene Pre-deployment (µg/bead)	---	126 ± 7
^{13}C Chlorobenzene Post-deployment (µg/bead)	---	115 ± 12
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bead)	2.56E+05	5.11E+04 (J)
^{13}C Enriched Biomass (Cells/bead)	6.10E+02	2.45E+02
Average PLFA Del (‰)	102	7
Maximum PLFA Del (‰)	155	7
^{13}C Mineralization		
DIC Del (‰)	3,585	-5
% 13C	4.87	1.10
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	27.38	4.87
Proteobacteria (Monos)	48.46	55.01
Anaerobic metal reducers (BrMonos)	1.13	0.00
Actinomycetes (MidBrSats)	7.16	0.00
General (Nsats)	13.16	27.71
Eukaryotes (Polyenoics)	2.72	12.41
Physiological Status (Proteobacteria only)		
Slowed Growth	0.13	0.00
Decreased Permeability	0.00	0.00

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

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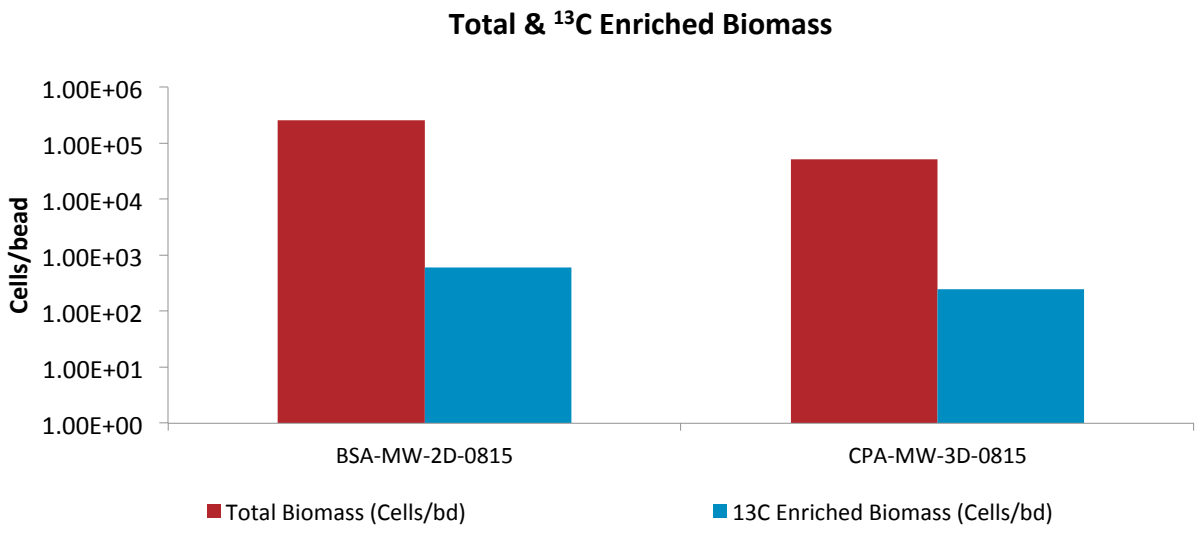

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

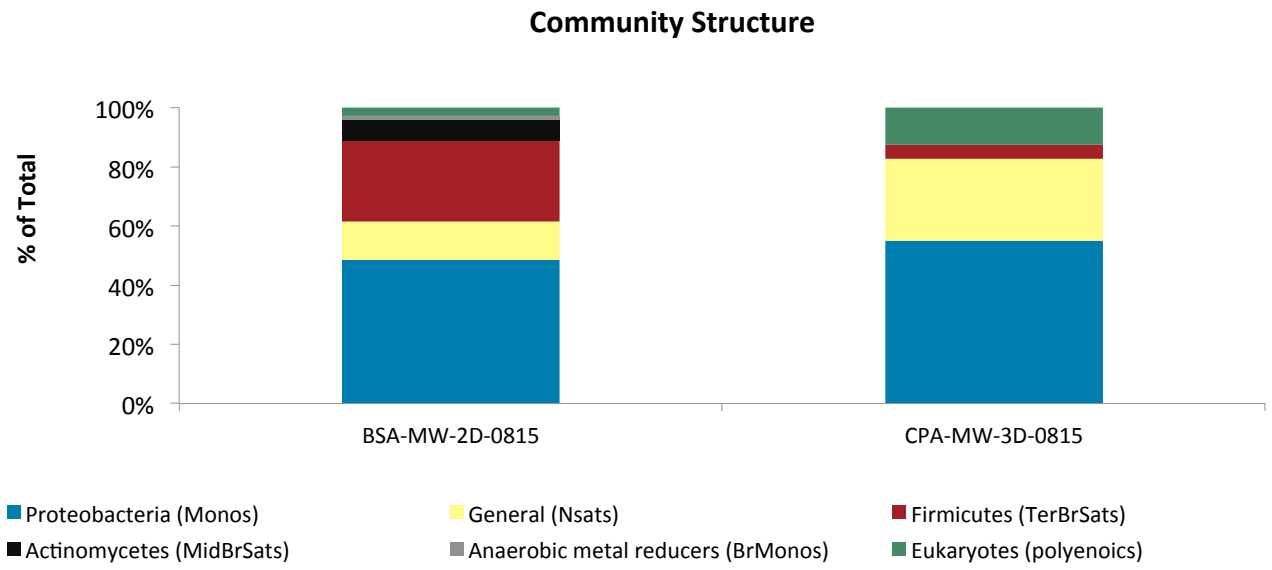

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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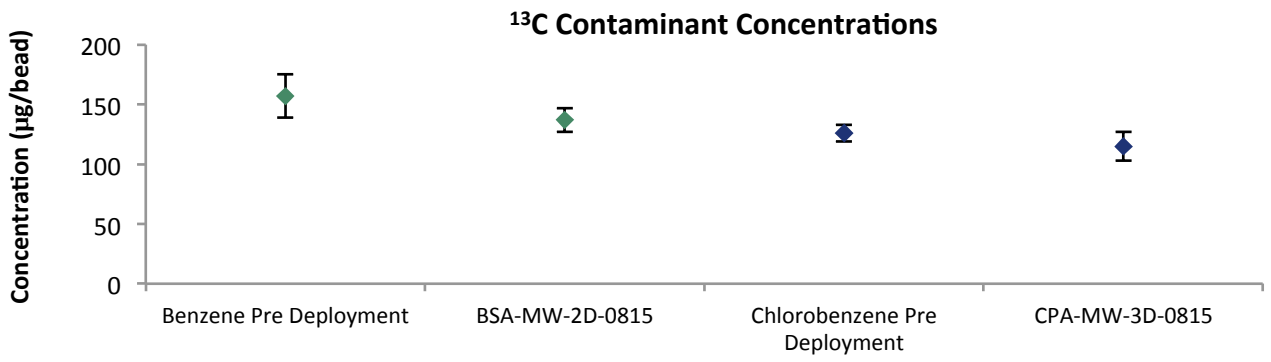

Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

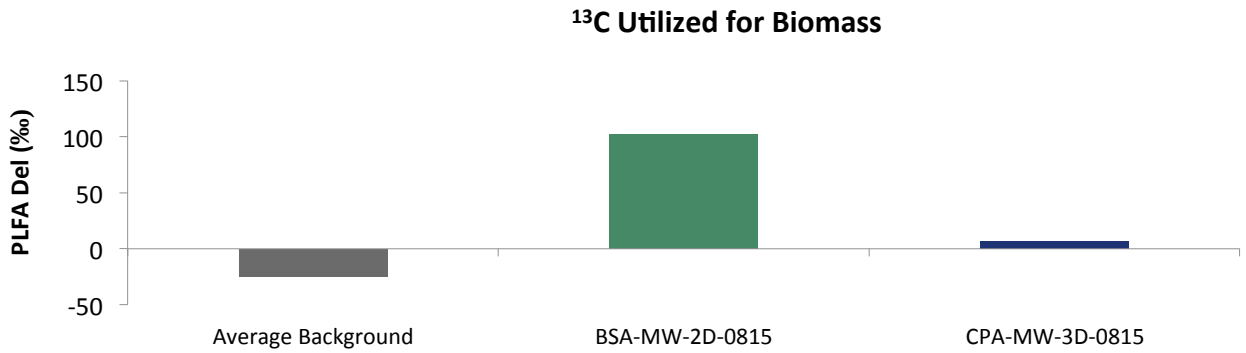

Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

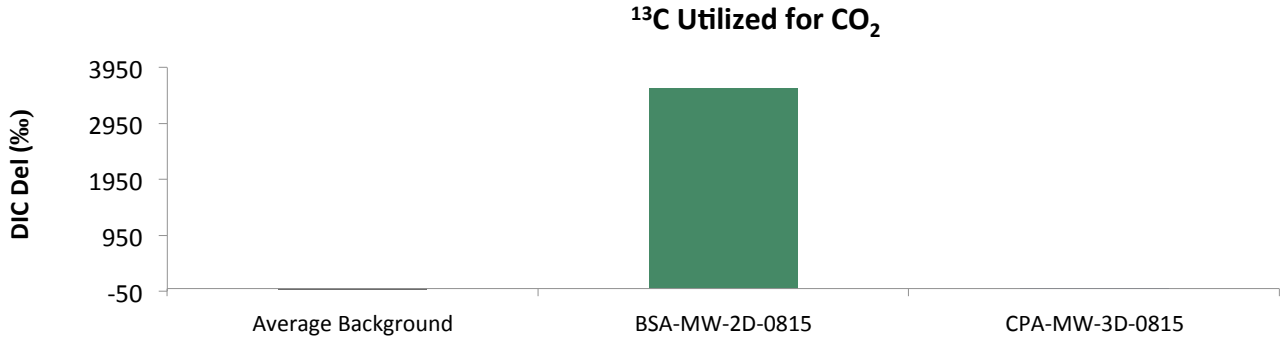

Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

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Table 2. Summary of the PLFA results for the benzene wells obtained from the Bio-Trap® Units.

Sample Name	BSA-MW-1S	BSA-MW-2D	BSA-MW-3D	BSA-MW-4D	BSA-MW-5D
Biomass Concentration					
Total Biomass (Cells/bead)	1.91E+05	2.56E+05	5.24E+05	2.03E+04 (J)	1.69E+05
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	42.58	27.38	55.00	35.76	40.78
Proteobacteria (Monos)	32.97	48.46	20.64	23.55	35.01
Anaerobic metal reducers (BrMonos)	0.00	1.13	0.00	0.00	1.17
Actinomycetes (MidBrSats)	5.46	7.16	2.37	0.00	0.00
General (Nsats)	15.87	13.16	17.78	40.70	12.89
Eukaryotes (Polyenoics)	3.12	2.72	4.20	0.00	10.14
Physiological Status (Proteobacteria only)					
Slowed Growth	1.34	0.13	1.17	0.00	0.43
Decreased Permeability	0.96	0.00	0.00	0.00	0.00

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

Table 3. Summary of the PLFA results for the chlorobenzene wells obtained from the Bio-Trap® Units.

Sample Name	CPA-MW-1D	CPA-MW-2D	CPA-MW-3D	CPA-MW-4D
Biomass Concentration				
Total Biomass (Cells/bead)	2.42E+05	6.53E+04	5.11E+04 (J)	3.73E+04 (J)
Community Structure (% total PLFA)				
Firmicutes (TerBrSats)	11.57	48.51	4.87	39.21
Proteobacteria (Monos)	52.25	32.75	55.01	41.16
Anaerobic metal reducers (BrMonos)	0.00	0.00	0.00	0.00
Actinomycetes (MidBrSats)	1.46	0.00	0.00	0.00
General (Nsats)	14.33	18.75	27.71	19.63
Eukaryotes (Polyenoics)	20.42	0.00	12.41	0.00
Physiological Status (Proteobacteria only)				
Slowed Growth	0.07	0.41	0.00	0.00
Decreased Permeability	0.14	0.00	0.00	0.00

Legend: ND= Non Detect J = Estimated value between detection limit and reporting limit

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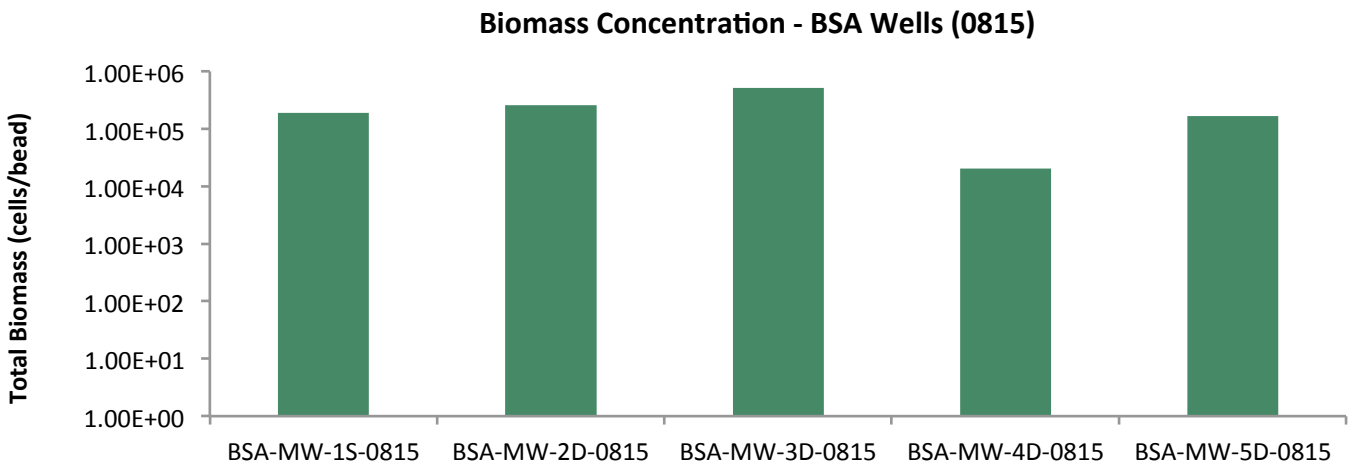

Figure 6. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

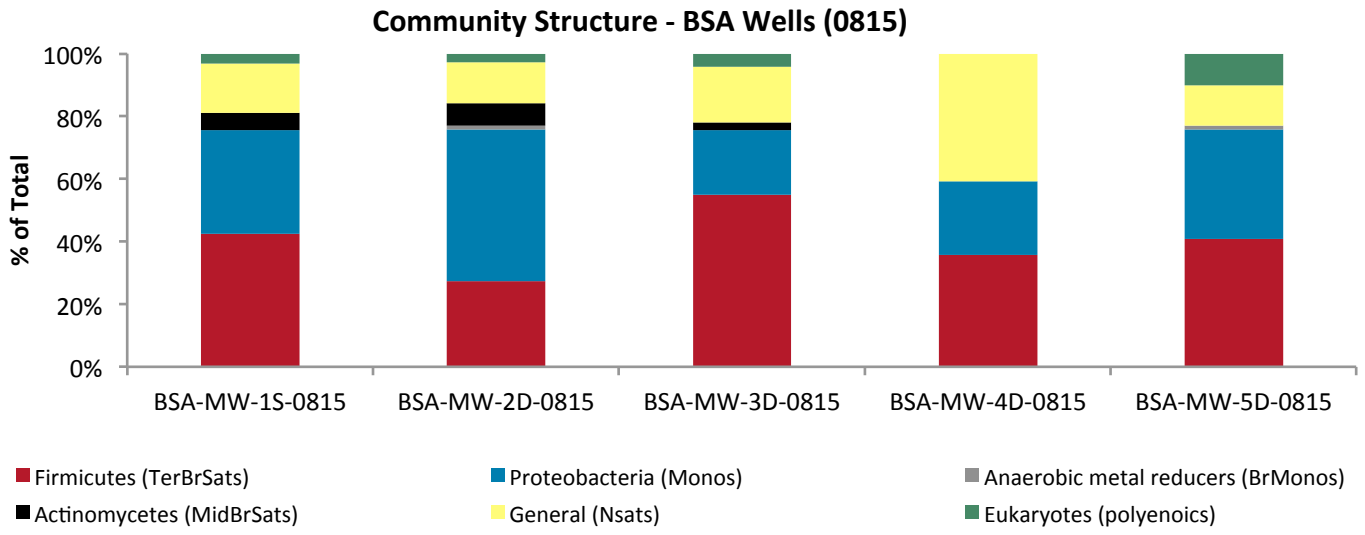

Figure 7. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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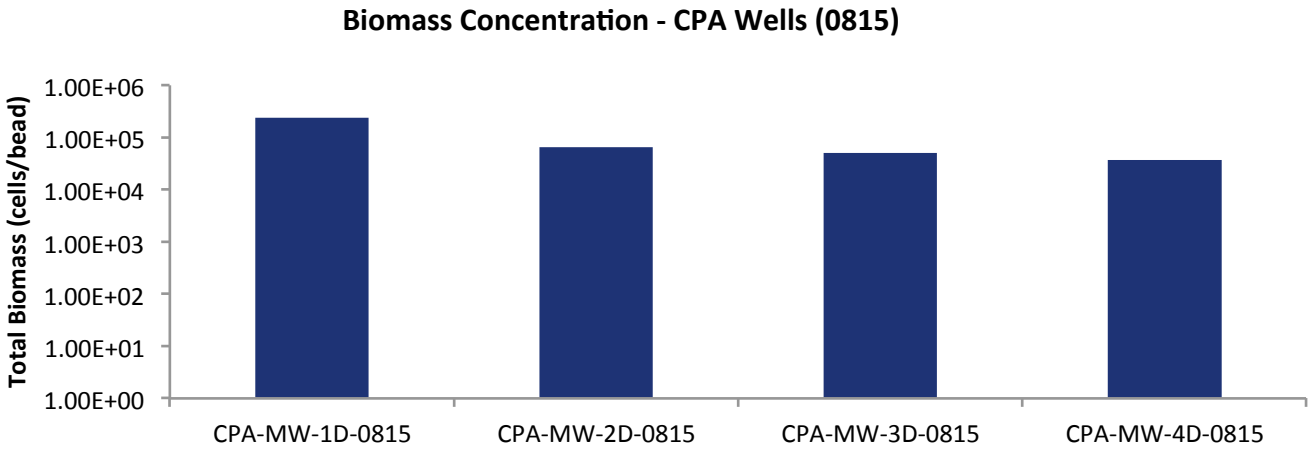

Figure 8. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

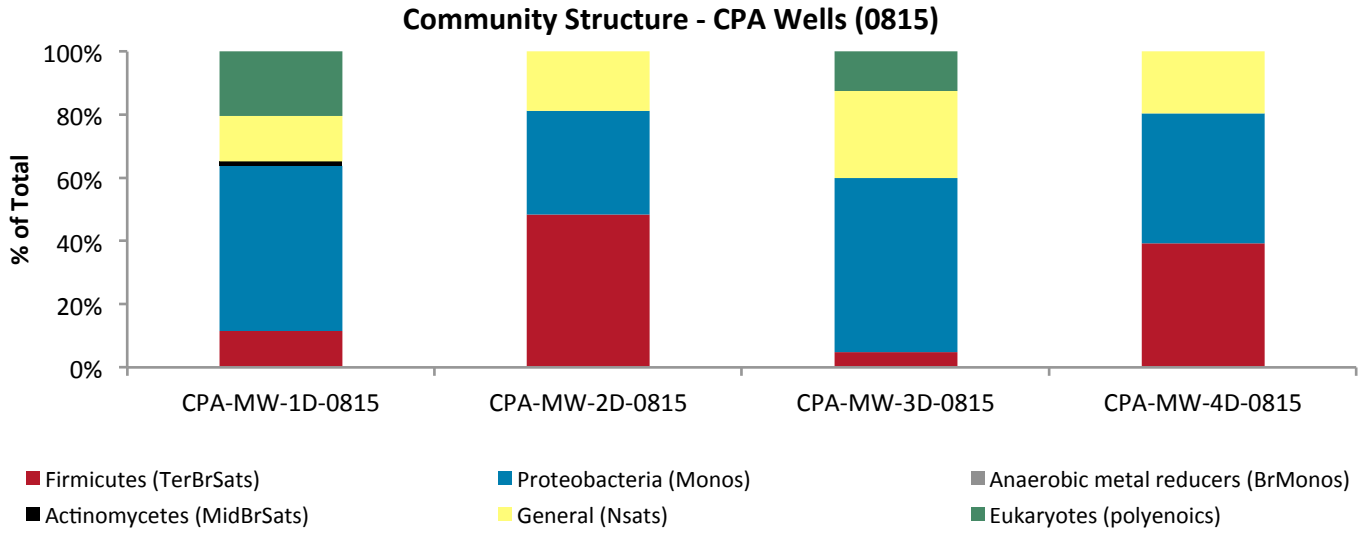

Figure 9. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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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.

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 ‰).

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

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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.

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 higher plants, and animals.	Eukaryotic scavengers will often prey on contaminant utilizing bacteria.

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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.

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 ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

References

1. White, D.C., W.M. Davis, J.S. Nickels, J.D. King, and R.J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
2. White, D.C. and D.B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass. In P.S. Amy and D.L. Halderman (eds.) The microbiology of the terrestrial surface. CRC Press, Boca Raton.
3. Guckert, J.B., M.A. Hood, and D.C. White. 1986. Phospholipid ester-linked fatty acid profile changes during nutrient deprivation of *Vibrio chloerae*: increases in the trans/cis ratio and proportions of cyclopropyl fatty acids. Applied and Environmental Microbiology. 52:794-801.
4. Tsitko, I.V., G. M. Zaitsev, A. G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

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