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December 20, 2010

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

VIA FEDEX

Re: Long-Term Monitoring Program
3rd Quarter 2010 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Long-Term Monitoring Program 3rd Quarter 2010 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL.

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

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Long-Term Monitoring Program
3rd Quarter 2010 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

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THIRD QUARTER 2010
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.02

December 17, 2010

J017210.02

THIRD QUARTER 2010
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

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THIRD QUARTER 2010
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

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THIRD QUARTER 2010
DATA REPORT
LONG-TERM MONITORING PROGRAM
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This report presents the results of the 3rd Quarter 2010 (3Q10) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009). The Site location is presented in Figure 1.

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

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

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

Quarterly sampling under the Long-Term Monitoring Program commenced 3Q08 and a total of nine quarters have been completed as of 3Q10.

Groundwater Sampling Parameters. During the 3Q10 groundwater sampling event, groundwater samples were analyzed for benzene, monochlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene using USEPA Method 8260B.

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

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

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

2.0 FIELD PROCEDURES

Geotechnology, Inc. (Geotechnology) conducted 3Q10 field activities from September 15 through September 23, 2010. Activities were completed in accordance with procedures outlined in the Revised LTMP Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes field investigative procedures:

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

Well gauging information for the 3Q10 event is presented in Table 1. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU) is presented as Figure 3.

The Mississippi River elevation was approximately 11 feet lower than it was during the 2Q10 event. Groundwater levels in monitoring wells near the river were as much as 12 feet lower during this event than in the 2Q10 event.

Groundwater Sampling**.** Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 150 to 450 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

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

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

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

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

Samples collected for dissolved iron, dissolved organic carbon and dissolved manganese analysis were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F (0.2)” in the sample nomenclature. Samples were inadvertently not collected for ferrous iron in the field. Dissolved organic carbon was detected at concentrations exceeding total organic carbon for each of the 10 groundwater samples. After consultation with the personnel at the analytical testing laboratory, a controlled test was conducted on the 0.2 micron filters used during the 3Q10 sampling. Based on the results of the controlled filter test, it appears that the filters were contributing organic carbon to the filtered sample analytical test results. Therefore, for sampling in 4Q10 and after, the same filters as had been used in 2Q10 and before will be used.

Quality assurance/quality control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. In addition, trip blanks accompanied each shipment containing samples for VOC analysis.

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

- “AAA” denotes "Chlorobenzene Process Area (CPA)" or "Benzene Storage Area (BSA)"and "MW-#” denotes "Monitoring Well Number":
- MMYY – Month and year of sampling quarter, e.g.: Third quarter (September) 2010, 0910
- “QAC” denotes QA/QC sample
  - AD – analytical duplicate
  - EB – equipment blank
  - MS or MSD – Matrix Spike or Matrix Spike Duplicate

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

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

Biodegradation Evaluation Sampling**.** Bio-Trap® samplers and Stable Isotope Probes (SIPs), provided by Microbial Insights, Inc. (Rockford, TN), were utilized in the LTMP to provide information regarding biodegradation potential of the Shallow Hydrogeologic Unit (SHU), the MHU and the DHU. Bio-Trap® samplers are passive sampling tools which, over time, collect microbes across a membrane that serves as the sampling matrix. SIPs are similar passive sampling tools that are analyzed to measure the degradation of a specific contaminant (i.e., benzene and chlorobenzene).

On September 24, 2010, Geotechnology field personnel deployed Bio-Trap® samplers in each of the ten LTMP wells for PLFA analysis. A benzene SIP and a chlorobenzene SIP were placed in monitoring wells BSA-MW-2D and CPA-MW-3D, respectively. Bio-Trap® samplers and SIPs were tied to nylon line attached to the well cap and lowered to the middle of the well screen.

On October 25, 2010, the Bio-Trap® samplers and SIPs were retrieved from the wells, sealed in Ziploc® bags, labeled with the proper well identification and placed in an iced sample cooler with a signed COC. Sealed sample coolers were sent to Microbial Insights, Inc. for analysis.

3.0 LABORATORY PROCEDURES

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

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

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

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised Long Term Monitoring Work Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as Appendix C. The laboratory report and data review sheets are included in Appendix D.

A total of 14 groundwater samples (10 investigative samples, 1 field duplicate, 1 MS/MSD pair and 1 equipment blank) were prepared and analyzed by TestAmerica for combinations of VOCs, dissolved gases, metals, and general chemistry. In addition, three trip blank sets were included in the coolers that contained samples for VOC analysis and were analyzed for VOCs. The results for the various analyses were submitted as sample delivery group (SDG) KPS060.

The samples contained in SDG KPS060 are listed below:

CPA-MW5D-0910	CPA-MW3D-0910
CPA-MW5D-F(0.2)-0910	CPA-MW3D-F(0.2)-0910
BSA-MW5D-0910	BSA-MW2D-0910
BSA-MW5D-F(0.2)-0910	BSA-MW2D-F(0.2)-0910
BSA-MW5D-0910-MS	BSA-MW1S-0910
BSA-MW5D-0910-MSD	BSA-MW1S-F(0.2)-0910
Trip Blank #1	Trip Blank #2
BSA-MW4D-0910	CPA-MW2D-0910
BSA-MW4D-F(0.2)-0910	CPA-MW2D-F(0.2)-0910
CPA-MW4D-0910	CPA-MW2D-0910-AD
CPA-MW4D-F(0.2)-0910	CPA-MW1D-0910
BSA-MW3D-0910	CPA-MW1D-F(0.2)-0910
BSA-MW3D-F(9.2)-0910	Trip Blank #3
BSA-MW3D-0910-EB	BSA-MW1S

Evaluation of the groundwater analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA 2004), and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

Based on the above mentioned criteria, groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on matrix spike/matrix spike duplicate (MS/MSD), laboratory control sample (LCS), surrogate and field duplicate data were achieved for these SDGs to meet the project objectives. Completeness which is defined to be the percentage of analytical results which are judged to be valid with the exception of rejected (**R**) flagged data, including estimated detect/nondetect data was 96.2 percent.

5.0 OBSERVATIONS

Groundwater analytical detections and MNA results for the 3Q10 LTMP sampling event are presented in Tables 2 and 3, respectively. Five constituents - benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene - were reported in samples collected from the ten LTMP wells during this sampling event. Each of these constituents is discussed below:

Benzene - Benzene was detected in collected samples at levels above the laboratory reporting limit in seven of the ten wells sampled in 3Q10, ranging from 26 µg/L (CPA-MW-4D) to 620,000 µg/L (BSA-MW-1S).

Downgradient of the Former Benzene Storage Area, benzene was detected in the DHU at concentrations of 140,000 µg/L (BSA-MW-2D) and 57 µg/L (BSA-MW-3D). Near the river north of the Sauget Area 2 Groundwater Migration Control System (SA2 GMCS), benzene was not detected in the DHU at monitoring well BSA-MW-4D.

Benzene was detected at the Former Chlorobenzene Process Area at a concentration of 5,800 µg/L (CPA-MW-1D). Downgradient of the Former Chlorobenzene Storage Area, benzene was detected in the DHU at concentrations of 100 µg/L (CPA-MW-3D) and 26 µg/L (CPA-MW-4D). Benzene was not detected in the DHU near the river north of SA2 GMCS at monitoring well CPA-MW-5D.

Chlorobenzenes (Total) - Total chlorobenzenes (e.g., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4, dichlorobenzene) were detected at levels above the laboratory reporting limit in nine of the ten wells sampled in 3Q10, ranging from 290 µg/L (CPA-MW-3D) to 46,200 µg/L (CPA-MW-1D).

Downgradient of the Former Chlorobenzene Storage Area, total chlorobenzenes were detected in the DHU at concentrations of 22,000/23,300 µg/L at the North Tank Farm (CPA-MW-2D and duplicate), along with concentrations of 290 µg/L (CPA-MW-3D) and 570 µg/L (CPA-MW-4D). Total chlorobenzenes were detected in the DHU near the river north of SA2 GMCS at a concentration of 1,100 µg/L (CPA-MW-5D).

Downgradient of the Former Benzene Storage Area, total chlorobenzenes were detected at concentrations of 1,600 µg/L (BSA-MW-2D) and 1,518 µg/L (BSA-MW-3D). North of the SA2 GMCS, near the river, total chlorobenzenes were detected in the DHU at concentrations of 2,357 µg/L (BSA-MW-4D) and 350 µg/L (BSA-MW-5D).

Figure 4 displays benzene and total chlorobenzenes results from the 3Q10 sampling event.

Monitored Natural Attenuation - The MNA results for this quarter are presented in Table 3. PLFA and SIP laboratory results are included in Appendix E.

6.0 REFERENCES

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

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

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

See last page of table for notes.

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Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						September 2010		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)									
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	11.38	NG	400.93
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)									
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	9.14	NG	400.94
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	10.95	NG	400.98
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	11.20	NG	400.90
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	9.10	NG	401.87
PS-MW-1	409.37	412.59	37.78	42.78	371.59	366.59	11.26	NG	401.33
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)									
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	14.24	NG	400.89
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	17.30	NG	398.44
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	27.24	NG	397.45
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	23.50	NG	396.99
CPA-MW-1D	408.62	408.32	66.12	71.12	342.50	337.50	6.98	NG	401.34
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	7.61	NG	400.59
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	9.40	NG	401.27
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	22.50	NG	398.70
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	18.15	NG	395.00
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	14.30	NG	401.26
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	6.54	NG	401.18
DNAPL-K-3	412.13	411.91	104.80	119.80	307.33	292.33	10.54	NG	401.37
DNAPL-K-4	409.48	409.15	102.55	117.55	306.93	291.93	8.28	NG	400.87
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	10.50	NG	401.41
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	9.00	NG	401.09
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	6.58	NG	401.14
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	10.49	NG	400.89
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	4.12	NG	401.85
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	12.05	NG	401.20
DNAPL-K-11	412.00	411.78	105.46	120.46	306.74	291.74	10.50	NG	401.28
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	9.52	NG	401.69

See last page of table for notes.

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Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						September 2010		
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD - Bedrock)									
GWE-1D (PIEZ-1D)	412.80	415.60	117.00	127.00	295.80	285.80	16.40	NG	399.20
GWE-2D (PIEZ-2D)	417.45	417.14	127.00	137.00	290.45	280.45	21.08	NG	396.06
GWE-4D (TRA3-PZADHU)	406.05	405.74	74.00	80.00	332.05	326.05	6.58	NG	399.17
GWE-10D (PIEZ 6D)	410.15	412.87	102.50	112.50	307.65	297.65	12.18	NG	400.69
GWE-14D (TRA5-PZCDHU)	420.47	422.90	90.00	96.00	330.47	324.47	25.14	NG	397.76
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	9.92	NG	400.96
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	5.65	NG	401.67
PSMW-6	404.11	406.63	99.80	104.80	304.31	299.31	7.96	NG	398.67
PSMW-9	403.92	403.52	100.40	105.40	303.52	298.52	1.80	NG	401.72
PSMW-10	409.63	412.18	101.23	106.23	308.40	303.40	15.15	NG	397.03
PSMW-13	405.80	405.53	106.08	111.08	299.72	294.72	6.18	NG	399.35
PSMW-17	420.22	423.26	121.25	126.25	298.97	293.97	28.50	NG	394.76

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
bgs - Below ground surface
btoc - Below top of casing
NG - Not gauged

Table 2
Groundwater Analytical Results

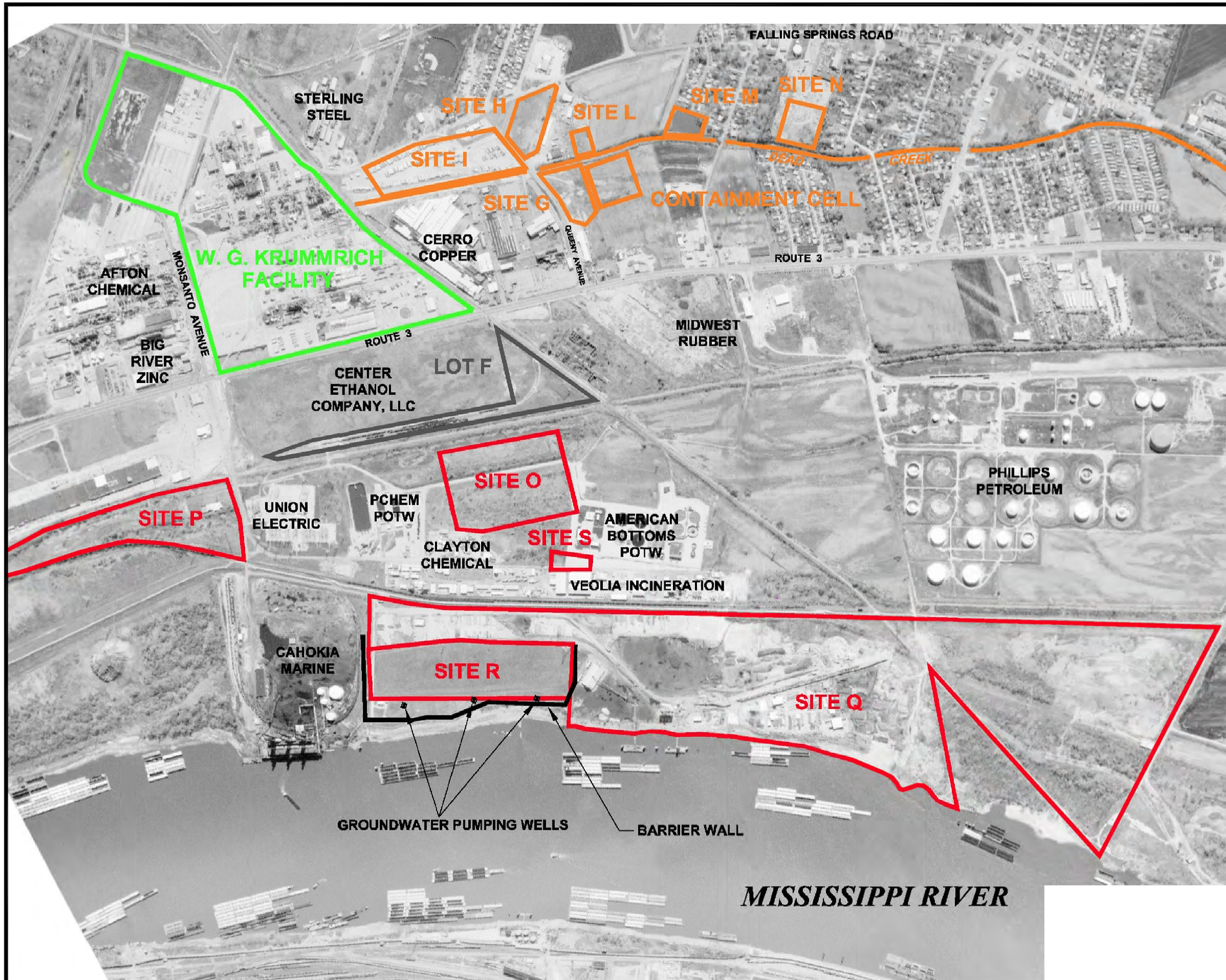
Sample ID	Sample Date	VOC (µg/L)					SVOC (µg/L)			
		Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chloroaniline	2-Chlorophenol	1,4-Dioxane	1,2,4-Trichlorobenzene
BENZENE STORAGE AREA										
BSA-MW-1S-0910	9/22/10	**590,000**	<5000	<5000	<5000	<5000	NA	<9.7	NA	<9.7
BSA-MW-2D-0910	9/22/10	**140,000**	**1,600**	<1000	<1000	<1000	NA	<9.7	**27**	<9.7
BSA-MW-3D-0910	9/22/10	**57**	**1,200**	**16**	**12**	**290**	NA	**13**	<9.7	<9.7
BSA-MW-4D-0910	9/22/10	<20	**2,320**	<20	<20	**37**	NA	**24**	**33**	<9.5
BSA-MW-5D-0910	9/21/10	<5	**350**	<5	<5	<5	NA	<9.7	<9.7	<9.7
CHLOROBENZENE PROCESS AREA										
CPA-MW-1D-0910	9/23/10	**5,800**	**17,000**	**18,000**	**1,200**	**10,000**	NA	<94	NA	**780**
CPA-MW-2D-0910	9/23/10	**300**	**20,000**	<200	<200	**2,000**	NA	**18**	NA	<10
CPA-MW-2D-0910-AD	9/23/10	**290**	**21,000**	<200	<200	**2,300**	NA	**22**	NA	<10
CPA-MW-3D-0910	9/22/10	**100**	**290**	<5	<5	<5	**40**	<9.8	NA	<9.8
CPA-MW-4D-0910	9/22/10	**26**	**570**	<10	<10	<10	**85**	<9.5	NA	<9.5
CPA-MW-5D-0910	9/21/10	<20	**1,100**	<20	<20	<20	<19	<9.5	NA	<9.5

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

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/l)	Chloride (mg/L)	Ethane (ug/L)	Ethylene (ug/l)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/l)	Methane (ug/l)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)	ORP (mV)	DO (mg/L)
BENZENE STORAGE AREA																	
BSA-MW-1S-0910		830	32	150	<0.35	<0.33	3.7		0.43		9,100	<0.05	<5		7.6	-137	0
BSA-MW-1S-F(0.2)-0910								0.79		0.33				14 R			
BSA-MW-2D-0910		660	35	94	13	<0.33	4		0.57		17,000	<0.05	<5		5.9	-93	4.67
BSA-MW-2D-F(0.2)-0910								3		0.53				9.4 R			
BSA-MW-3D-0910		480	32	76	1.2	1.3	12		0.57		240	<0.05	270		4.4	-112	1.96
BSA-MW-3D-F(0.2)-0910								11		0.56				8.4 R			
BSA-MW-4D-0910		610	34	160	3	<0.33	10		0.71		44	0.9	53		5.4	-111	0.29
BSA-MW-4D-F(0.2)-0910								8.3		0.68				9.8 R			
BSA-MW-5D-0910		730	50	260	13	<0.33	6.4		0.41		5,100	<0.05	69		6.1	-112	0.16
BSA-MW-5D-F(0.2)-0910								8.3		0.43				81 R			
CHLOROBENZENE PROCESS AREA																	
CPA-MW-1D-0910		990	<5	140	40	<0.33	3.5		0.28		18,000	<1	<100		15	-64	0
CPA-MW-1D-F(0.2)-0910								1.8		0.14				85 R			
CPA-MW-2D-0910		550	27	70	5.8	<0.33	5.7		0.37		5,900	<0.05	<5		11	-91	0.21
CPA-MW-2D-F(0.2)-0910								4.7		0.34				86 R			
CPA-MW-3D-0910		610	51	200	16	<0.33	15		0.72		15,000	<0.05	<5		11	-115	0.07
CPA-MW-3D-F(0.2)-0910								13		0.72				15 R			
CPA-MW-4D-0910		770	58	280	13	<0.33	11		0.24		9,900	<0.05	<5		6.5	-118	0.02
CPA-MW-4D-F(0.2)-0910								9.9		0.24				10 R			
CPA-MW-5D-0910		340	94	280	2.6	<0.33	96		3.5		13	<0.05	1,700		4.4	-93	0.79
CPA-MW-5D-F(0.2)-0910								94		3.5				8.4 R			

Notes:
DO and ORP were measured in the field using YSI 6920 equipped with a flow-thru cell. Values presented represent final measurements before sampling
Ferrous iron was inadvertently not sampled in the field
R = Data were rejected because field filters were suspected of contributing to dissolved organic carbon in the samples
F(0.2) = Sample was filtered utilizing a 0.2 µm filter during sample collection
mg/L - milligrams per liter
mV = millivolts
ug/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given
A blank space indicated sample not analyzed for select analyte



NOTES:

1. Plan adapted from a drawing titled "Site Location Map" provided by URS.

LEGEND:

- W.G. Krummrich Facility
- Sauget Area #1
- Sauget Area #2

N

0 1,000 2,000

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

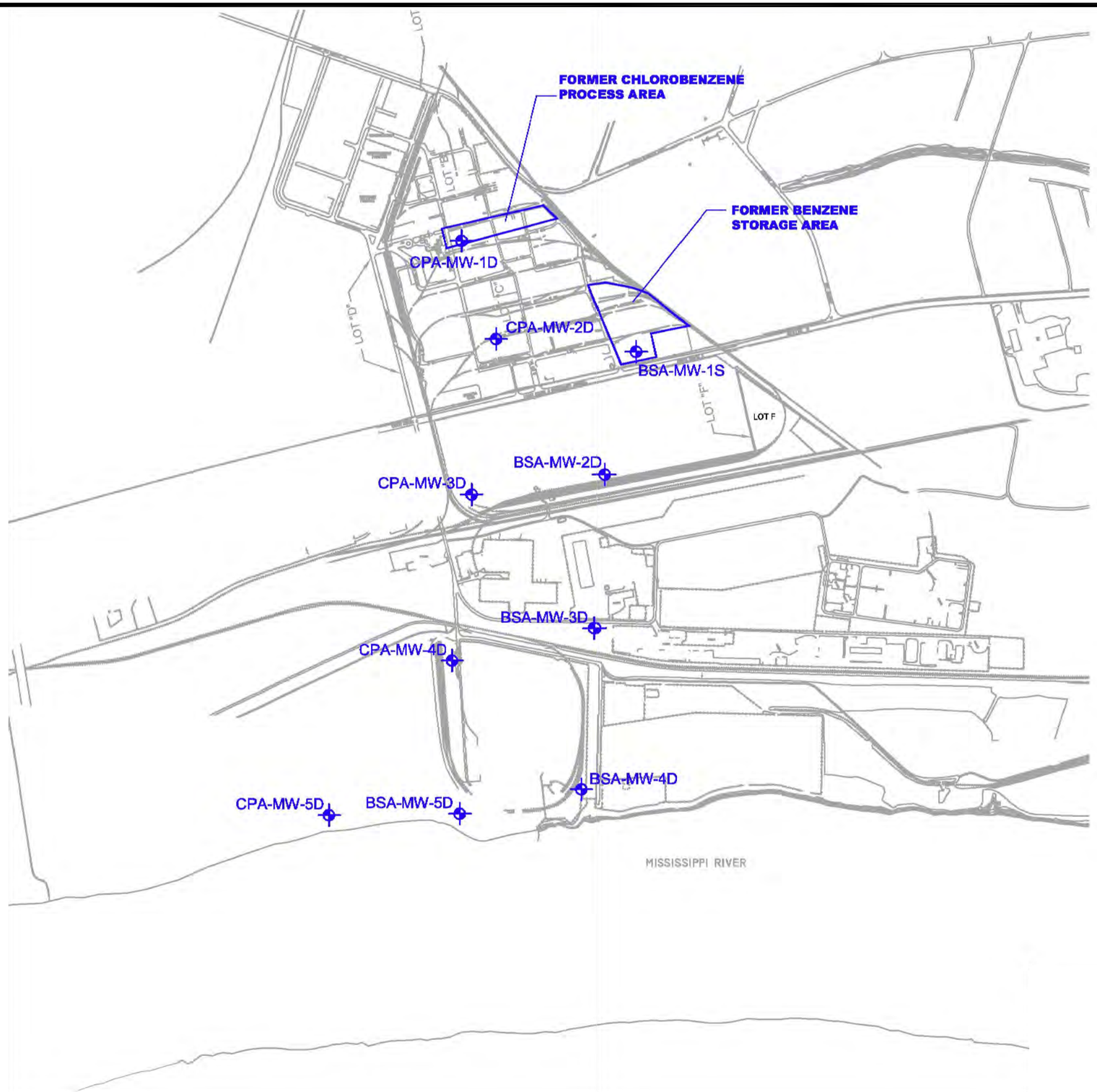
GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
Long-Term Monitoring Program
Sauget, Illinois

SITE LOCATION MAP

Project Number
J017210.02

PLATE 1



NOTES:

1. Plan adapted from a drawing titled "Long-Term Monitoring Program Well Locations" provided by URS.

2. Refer to Table 1 for Monitoring Well Construction Information.

LEGEND:

Long Term Monitoring Well Location

N

0 1,000 2,000

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

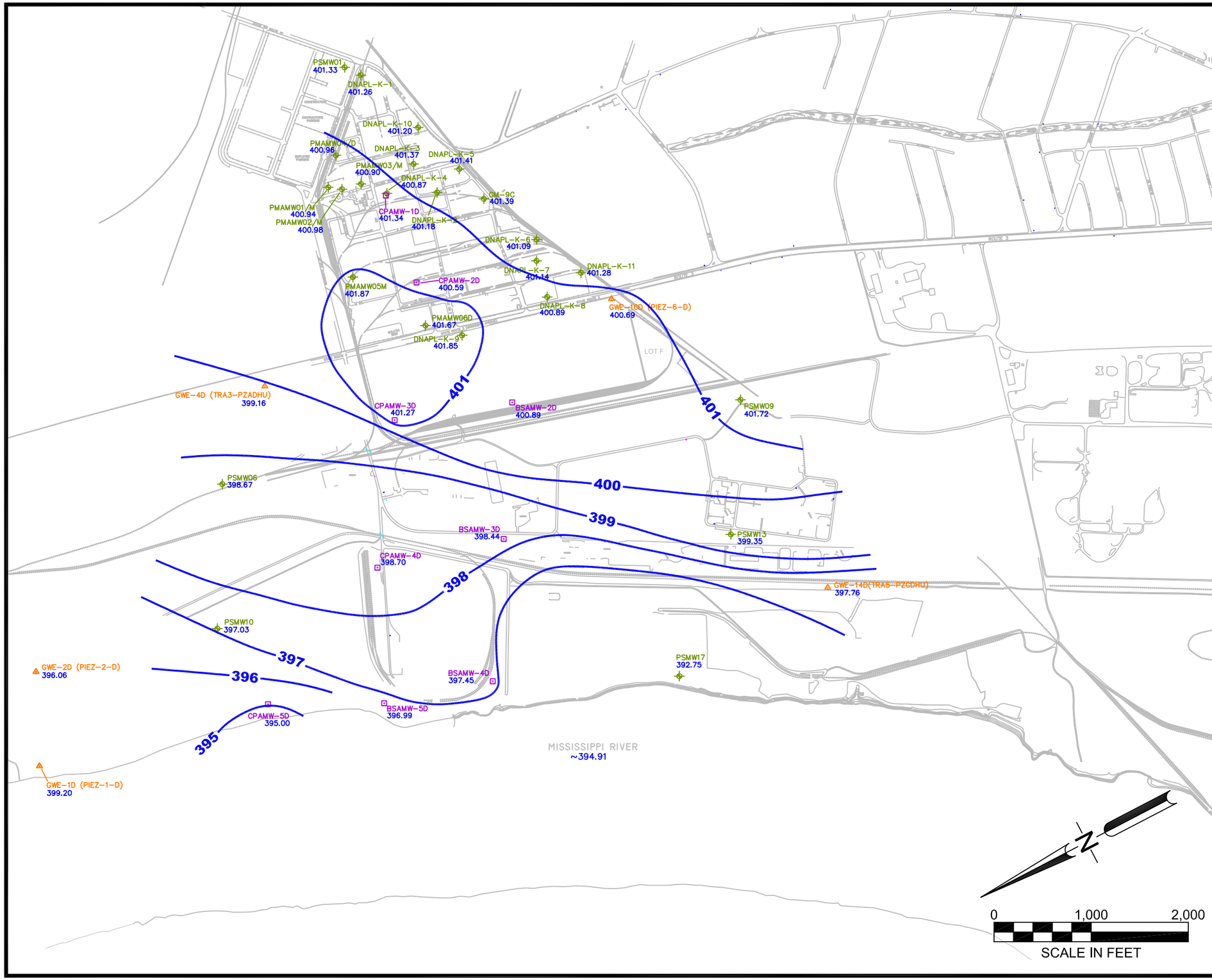
GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
Long-Term Monitoring Program
Sauget, Illinois

LONG-TERM MONITORING PROGRAM WELL LOCATIONS

Project Number J017210.02

PLATE 2



NOTES:

1. Plan adapted from a drawing titled "Potentiometric Surface Map Middle/Deep Hydrogeologic Unit" provide by URS.

2. Groundwater levels were measured September 23 & 24, 2010.

3. Contours genterated primarily using surfer software version 8. Some interpretation was done using professional judgement and contours lines were modiffied by hand.

4. The Mississippi River stage elevation presented on the figure is an average elevation for the time of the gauging event. The information was obtained from the site R Bubbler.

5. Locations with wells screened in both the MHU and DHU utilized the DHU well for development of the potentiometric surface map.

LEGEND:

- Long Term Monitoring Well used for Groundwater Contouring
- Other Monitoring Well used for Goundwater Contouring
- Piezometer Cluster used for Groundwater Contouring
- —402— Groundwater Elevation Contour (ft NAVD)

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

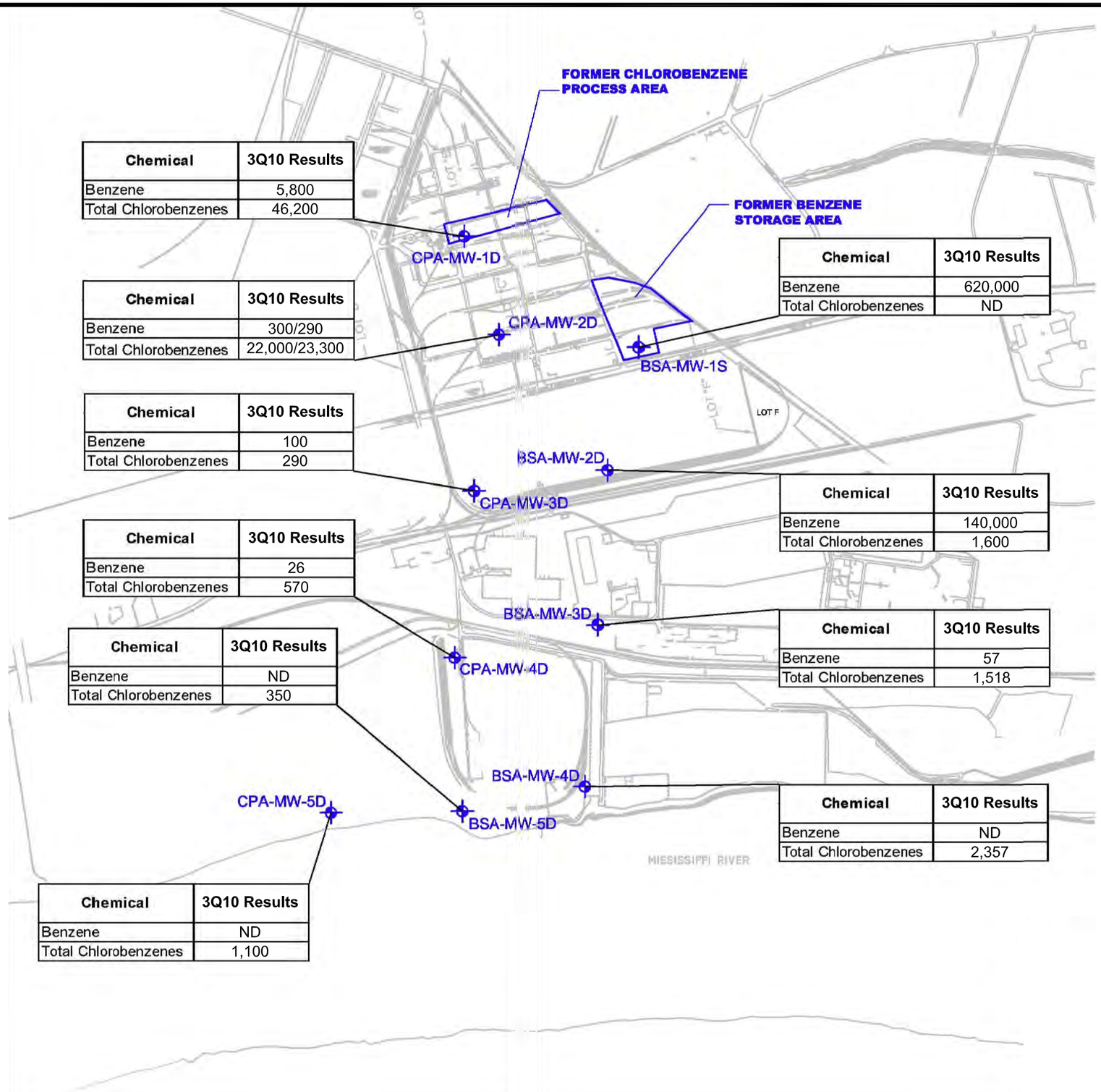
GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
Long-Term Monitoring Program
Sauget, Illinois

POTENTIOMETRIC SURFACE MAP MIDDLE/DEEP HYDROGEOLOGIC UNIT

Project Number J017210.02

PLATE 3



Chemical	3Q10 Results
Benzene	5,800
Total Chlorobenzenes	46,200

Chemical	3Q10 Results
Benzene	300/290
Total Chlorobenzenes	22,000/23,300

Chemical	3Q10 Results
Benzene	100
Total Chlorobenzenes	290

Chemical	3Q10 Results
Benzene	26
Total Chlorobenzenes	570

Chemical	3Q10 Results
Benzene	ND
Total Chlorobenzenes	350

Chemical	3Q10 Results
Benzene	ND
Total Chlorobenzenes	1,100

Chemical	3Q10 Results
Benzene	620,000
Total Chlorobenzenes	ND

Chemical	3Q10 Results
Benzene	140,000
Total Chlorobenzenes	1,600

Chemical	3Q10 Results
Benzene	57
Total Chlorobenzenes	1,518

Chemical	3Q10 Results
Benzene	ND
Total Chlorobenzenes	2,357

NOTES:

1. Plan adapted from a drawing titled "Benzene and Total Chlorobenzenes Results" provided by URS.

2. Total Chlorobenzenes results include the sum of Monochlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, and 1,4-Dichlorobenzene.

3. Results shown are in ug/L.

4. ND denotes analyte or analytes not detected.

5. Multiple sample results indicate a duplicate sample.

LEGEND:

BSA-MW-1D — Long-Term Monitoring Well Location

N

0 1,000 2,000

SCALE IN FEET

Drawn By: SLC	Ck'd By: AMS	App'vd By: DTK
Date: 11-22-10	Date: 12-17-10	Date: 12-17-10

GEOTECHNOLOGY INC
FROM THE GROUND UP

3Q 2010
Long-Term Monitoring Program
Sauget, Illinois

BENZENE AND TOTAL CHLOROBENZENES RESULTS

Project Number J017210.02

PLATE 4

APPENDIX A

GROUNDWATER PURGING AND SAMPLING FORMS

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: W6K LTM 3Q10
DATE: 9-21-10
MONITORING WELL ID: BSA - MW - 5D

PROJECT NUMBER: J017210.02
WEATHER: 80° Clear
SAMPLE ID: BSA - MW - 5D - 0910

FIELD PERSONNEL: Steve Graham

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 120.54 ft
Depth to Water (btock): 19.0 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 115.54 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 101.54 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 118.04 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
600	1535	19.0	Slightly silty	NO	7.72	22.81	2.08	6.7	1.60	-95
1000	1537	19.0	↓	↓	7.55	20.95	2.24	4.5	0.70	-107
1500	1541	19.0			7.17	20.75	2.31	4.4	0.39	-108
2000	1548	19.0			6.69	20.61	2.31	3.1	0.25	-112
2500	1552	19.0			6.63	20.57	2.30	3.0	0.22	-113
3000	1557	19.0			6.57	20.72	2.30	2.4	0.16	-112

Start Time: 1535
Stop Time: 1557

Elapsed Time: 22 min
Average Purge Rate (mL/min): 150

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-21-10

SAMPLING DATA

Sample Date: 9-21-10
Sample Method: Low Flow bladder

Sample Time: 1558
Sample Flow Rate: 150 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: MS, MSD

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK - LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: BSA-MW-4D

PROJECT NUMBER: J017210.02
WEATHER: 80° Cloudy
SAMPLE ID: BSA-MW-4D-0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 123.23 ft
Depth to Water (btock): 24.85 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 118.23 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 98.38 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 120.73 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %.

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
750	0752	24.85	Clear	Slightly Sweet						
1500	0754	24.83			6.89	16.32	1.82	0.0	1.26	-59
2500	0800	24.85			6.04	16.53	1.81	0.0	0.26	-98
3500	0805	24.85			5.76	16.74	1.80	0.0	0.29	-108
4500	0810	24.85			5.71	16.50	1.81	0.0	0.25	-110
5500	0815	24.85			5.67	16.72	1.79	0.0	0.29	-111

Start Time: 0752
Stop Time: 0815

Elapsed Time: 23 min
Average Purge Rate (mL/min): 200

Water Quality Meter ID: Horiba U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: Low Flow Bladder

Sample Time: 0815
Sample Flow Rate: 200 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: BSA - MW - 3D

PROJECT NUMBER: J017210.02
WEATHER: 85° Rain
SAMPLE ID: BSA - MW - 3D - 0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 114.85 ft
Depth to Water (btock): 15.95 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 109.85 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 98.9 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 112.35 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type:

					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %.					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
–	1108	15.95	Clear	Slight						
1000	1110	16.00	↓	↓	6.46	18.85	1.44	0.0	3.73	-85
2000	1112	15.98			6.41	18.46	1.53	0.0	3.31	-101
3000	1115	15.98			6.15	18.10	1.55	0.0	3.19	-108
5000	1120	16.0			6.06	18.17	1.57	0.0	2.78	-111
6250	1125	16.0			5.8	18.19	1.57	0.0	2.07	-112
8000	1130	16.0			5.71	18.02	1.57	0.5	1.96	-112

Start Time: 1108
Stop Time: 1130

Elapsed Time: 22 min
Average Purge Rate (mL/min): 400

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: Low Flow Bladder

Sample Time: 1130
Sample Flow Rate: 400 mL/min

Analysis: VOC, SVOC, Metals, MNA
QA/QC Samples: Equipment Blank

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: BSA - MW - 2D

PROJECT NUMBER: J017210.02
WEATHER: 80° clear
SAMPLE ID: BSA- MW-2D-0910

FIELD PERSONNEL: Steve Graham
Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 77.05 ft
Depth to Water (btock): 14.75 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 72.05 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 62.3 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 74.55 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 34 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH ± 0.2	Temp (°C) ± 0.2	Cond. Ms/cm ± 3%	Turbidity (NTUs) ± 10%	DO (mg/l) ± 10% or ± 0.2	ORP (mv) ± 20
–	1447	14.75								
500	1449	14.75	Clear	Slightly Sweet	5.79	17.96	0.006	57.2	9.78	-65
1000	1451	14.75				17.02	0.007	42.2	9.52	-93
3000	1455	14.75			5.48	16.63	0.008	46.0	8.85	-92
6000	1500	14.75			5.51	16.57	0.008	43.3	7.41	-88
7000	1505	14.75			5.49	16.64	0.008	42.5	6.35	-87
8000	1510	14.75			5.53	16.63	0.008	43.3	5.81	-87
9000	1515	14.75			5.55	16.58	0.008	47.5	5.14	-90
10000	1520	14.75			5.54	16.48	0.006	49.6	4.56	-91
					5.58	16.44	0.006	45.8	4.67	-93

Start Time: 1447
Stop Time: 1520

Elapsed Time: 33 min
Average Purge Rate (mL/min): 300 mL/min

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: Low Flow Bladder

Sample Time: 1520
Sample Flow Rate: 300 mL/min

Analysis: VOC, SVOC, Metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: CPA-MW-4D

PROJECT NUMBER: J017210.02
WEATHER: 80° Overcast
SAMPLE ID: CPA-MW-4D-0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 121.07 ft
Depth to Water (btock): 21.55 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 116.07 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 99.52 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 118.57 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH ± 0.2	Temp (°C) ± 0.2	Cond. Ms/cm ± 3%	Turbidity (NTUs) ± 10%	DO (mg/l) ± 10% or ± 0.2	ORP (mv) ± 20
–	0955	21.55								
0750	0957	21.59	(Clear with black Particulates)	Slightly Sweet	6.12	17.86	2.26	0.0	0.62	-105
1000	0959	21.61	↓	↓	6.0	17.36	2.30	0.0	0.33	-110
2250	1005	21.61			5.73	16.79	2.34	0.0	0.08	-116
4000	1010	21.62			5.70	16.67	2.35	0.0	0.02	-118

Start Time: 0955
Stop Time: 1010

Elapsed Time: 15 min
Average Purge Rate (mL/min): 250

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: Low Flow Bladder

Sample Time: 1010
Sample Flow Rate: 250 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: CPA - MW - 3D

PROJECT NUMBER: J017210.02
WEATHER: 85° Overcast
SAMPLE ID: CPA - MW - 3D - 0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 113.00 ft
Depth to Water (btock): 9.43 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 108.00 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 103.57 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 110.5 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH ± 0.2	Temp (°C) ± 0.2	Cond. Ms/cm ± 3%	Turbidity (NTUs) ± 10%	DO (mg/l) ± 10% or ± 0.2	ORP (mv) ± 20
-	1342	9.43								
1000	1345	9.42	Clear	Sweet	6.14	21.28	1.68	0.0	0.97	-71
2000	1350	9.42	↓	↓	5.97	19.49	1.77	0.0	0.30	-102
3000	1355	9.42			5.85	19.20	1.76	0.0	0.17	-107
4500	1400	9.42			5.70	19.03	1.77	1.6	0.12	-111
5500	1405	9.42			5.64	19.06	1.78	3.3	0.09	-112
7000	1410	9.42	↓	↓	5.56	19.39	1.79	3.9	0.07	-115

Start Time: 1342
Stop Time: 1410

Elapsed Time: 28 min
Average Purge Rate (mL/min): 250

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: low flow bladder

Sample Time: 1410
Sample Flow Rate: 250 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-23-10
MONITORING WELL ID: CPA-MW-2D

PROJECT NUMBER: J017210.02
WEATHER: 85° Clear
SAMPLE ID: CPA-MW-2D-0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 104.65 ft
Depth to Water (btock): 7.61 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 99.65 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 97.04 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 102.15 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
–	0740	–	clear	Slight (sweet)						
1000	0743	7.5	↓	↓	5.23	19.09	1.04	82.9	1.26	27
2000	0745	7.5			5.55	18.79	1.21	49.3	0.83	-6
4500	0750	7.5			5.54	18.59	1.33	13.2	0.33	-65
6500	0755	7.5			5.50	18.57	1.36	7.0	0.24	-87
8500	0800	7.5	✓	✓	5.32	18.64	1.37	4.9	0.21	-91

Start Time: 0740
Stop Time: 0800

Elapsed Time: 20 min
Average Purge Rate (mL/min): 400

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-23-10

SAMPLING DATA

Sample Date: 9-23-10
Sample Method: Low Flow Bladder

Sample Time: 0800
Sample Flow Rate: 400 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: Analytical Duplicate

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-23-10
MONITORING WELL ID: CPA - MW - 1D

PROJECT NUMBER: J017210.02
WEATHER: 85° Clear
SAMPLE ID: CPA- MW- 1D- 0910

FIELD PERSONNEL: Steve Graham
Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 70.82 ft
Depth to Water (btock): 7.20 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 65.82 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 63.62 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 68.32 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 137 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH ± 0.2	Temp (°C) ± 0.2	Cond. Ms/cm ± 3%	Turbidity (NTUs) ± 10%	DO (mg/l) ± 10% or ± 0.2	ORP (mv) ± 20
-	08:50	7.20								
500	0855	7.25	Silty - d. Brown	yes	6.11	23.09	1.85	741	1.98	-133
1000	0900	7.25			7.83	18.85	2.66	682	0.04	-85
2000	0905	7.25			7.95	18.77	2.48	158	0.00	-75
3500	0910	7.25			8.01	18.57	2.44	74.8	0.00	-71
5000	0913	7.25			8.01	18.61	2.38	35.5	0.00	-68
5500	0915	7.25			8.02	18.65	2.37	22.1	0.00	-66
6000	0920	7.25			8.00	18.44	2.39	17.1	0.00	-64

Start Time: 0850
Stop Time: 0920

Elapsed Time: 30 min
Average Purge Rate (mL/min): 200

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-23-10

SAMPLING DATA

Sample Date: 9-23-10
Sample Method: Low flow bladder

Sample Time: 0920
Sample Flow Rate: 200 ml/min

Analysis: VOC, SVOC, metal, MNA
QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-22-10
MONITORING WELL ID: BSA - MW - 15

PROJECT NUMBER: J017210.02
WEATHER: 80° overcast
SAMPLE ID: BSA - MW - 15 - 0910

FIELD PERSONNEL: Steve Graham
Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): - ft
Constructed Well Depth (btoc): 27.5 ft
Depth to Water (btock): 11.62 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 22.5 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 15.88 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 25.0 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 102 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
-	1612	11.6	Clear	Slight						
1000	1615	11.6	↓	↓	6.27	20.49	1.88	15.8	0.27	-87
2000	1620	11.6			6.17	19.74	1.92	14.7	0.08	-129
3000	1625	11.6			6.04	19.01	1.91	13.2	0.06	-142
5000	1630	11.6			5.99	18.55	1.91	22.6	0.04	-149

Start Time: 1612
Stop Time: 1630

Elapsed Time: 18 min
Average Purge Rate (mL/min): 300

Water Quality Meter ID: Horiba - U-52
Date Calibrated: 9-22-10

SAMPLING DATA

Sample Date: 9-22-10
Sample Method: Low flow Peristaltic

Sample Time: 1630
Sample Flow Rate: 300 ml/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TOC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-23-10
MONITORING WELL ID: BSA-MW-15

PROJECT NUMBER: J017210.02
WEATHER: 85° Clear
SAMPLE ID: BSA-MW-15-0910

FIELD PERSONNEL: Steve Graham, Kevin Roberts

INITIAL DATA

Well Diameter: 2" in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 27.5 ft
Depth to Water (btock): 11.6 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 22.5 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 15.9 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 25.0 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0 ppm
Wellbore PID/FID Reading: 68 ppm

PURGE DATA

Pump Type: Pegasus Peristaltic Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
					HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %					
					± 0.2	± 0.2	± 3%	± 10%	± 10% or ± 0.2	± 20
–	1022	11.6	Clear	Slight						
500	1028	11.6								
1000	1024	11.6								
1800	1027	11.6			7.28	19.82	1.82	1.6	0.51	4
3500	1030	11.6			7.04	18.55	1.93	1.2	0.09	-88
5500	1035	11.6			6.55	18.43	2.01	0.0	0.00	-122
7000	1040	11.6			6.30	18.58	2.00	0.0	0.00	-131
9000	1045	11.6			6.13	18.43	2.01	0.0	0.00	-137

Start Time: 1022
Stop Time: 1045

Elapsed Time: 23 ~~25~~ min
Average Purge Rate (mL/min): 400

Water Quality Meter ID: Horiba U-52
Date Calibrated: 9-23-10

SAMPLING DATA

Sample Date: 9-23-10
Sample Method: Low Flow Peristaltic

Sample Time: 1045
Sample Flow Rate: 400 mL/min

Analysis: VOC
QA/QC Samples: None

VOA Vials, No Headspace ☒ Initials: SWG

COMMENTS: ~~MRUN: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TDS, Total & Dissolved Iron, Total & Dissolved Manganese~~

Ferrous Iron (Filtered 0.2 micron) =

Re-Sampled for VOC only

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

J017210.02

PROJECT NAME: WGK LTM 3Q10
DATE: 9-21-10
MONITORING WELL ID: CPA-MW-5D

PROJECT NUMBER: J017210.02
WEATHER: 80° Clear
SAMPLE ID: CPA-MW-5D-0910

FIELD PERSONNEL: Steve Graham

INITIAL DATA

Well Diameter: 2 in
Measured Well Depth (btoc): – ft
Constructed Well Depth (btoc): 114.75 ft
Depth to Water (btock): 18.5 ft
Depth to LNAPL/DNAPL (btoc): – ft
Depth to Top of Screen (btoc): 109.75 ft
Screen Length: 5.0 ft

Water Column Height (do not include LNAPL or DNAPL): 96.25 ft
If Depth to Top of Screen is > Depth to Water AND Screen Length is <4 feet
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 112.25 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are <4 ft,
Place Pump at: Total Well Depth -)9.5 X Water Column Height + DNAPL Column Height) = – ft btoc
If Screen Length and/or water column height is <4 ft, Place Pump at: Total Well Depth - 2 ft = – ft btoc
DNPL Present NO If Present, Do Not Sample

Volume of Flow Through Cell): 1000 mL
Minimum Purge Volume =
(3 x Flow Through Cell Volume) 3000 mL
Ambient PID/FID Reading: 0.0 ppm
Wellbore PID/FID Reading: 0.0 ppm

PURGE DATA

Pump Type: QED Sample Pro Bladder Pump

HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless %

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH ± 0.2	Temp (°C) ± 0.2	Cond. Ms/cm ± 3%	Turbidity (NTUs) ± 10%	DO (mg/l) ± 10% or ± 0.2	ORP (mv) ± 20
–	1147	13.05	Clear	None	7.07	17.3	3.84	9.7	6.14	-85
1500	1150	13.05	↓	↓	6.69	16.61	3.84	5.8	5.36	-86
2500	1152	13.05			6.49	16.47	3.82	3.9	4.72	-88
3000	1157	13.05			6.23	16.51	3.79	1.5	3.27	-90
3500	1200	13.05			6.15	16.71	3.78	0.8	2.92	-91
4000	1210	13.05			6.04	16.56	3.79	0.0	1.52	-92
5000	1215	13.05			6.01	16.55	3.79	0.0	1.25	-92
6000	1220	13.05			6.02	16.70	3.79	0.0	0.99	-93
7000	1225	13.05	✓	✓	5.98	16.71	3.80	0.0	0.79	-92

Start Time: 1147
Stop Time: 1225

Elapsed Time: 38 min
Average Purge Rate (mL/min): 200

Water Quality Meter ID: Horiba U-52
Date Calibrated: 9-21-10

SAMPLING DATA

Sample Date: 9-21-10
Sample Method: low flow Bladder

Sample Time: 1225
Sample Flow Rate: 200 mL/min

Analysis: VOC, SVOC, metals, MNA
QA/QC Samples: None

VOA Vials, No Headspace [X] Initials: SWG

COMMENTS: MNA: Alkalinity, CO_2, Chloride, Methane, Nitrate, Sulfate, DOC, TDC, Total & Dissolved Iron, Total & Dissolved Manganese

Ferrous Iron (Filtered 0.2 micron) =

APPENDIX B

CHAINS-OF-CUSTODY

Serial Number 032418

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

3Q10 LTM GW Samples.

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: W.G. Krummrich	PROJECT NO.: LTM 3Q10 Long Term Monitoring	PROJECT LOCATION (STATE): IL
TAL (LAB) PROJECT MANAGER: G.M. Rinaldi	P.O. NUMBER: 4503869001	CONTRACT NO.:
CLIENT (SITE) PM: GM Rinaldi	CLIENT PHONE: 314-624-3312	CLIENT FAX: 314-624-8868
CLIENT NAME: Solutia, Inc.	CLIENT E-MAIL:	
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ✓

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alk/Ca 310.1	Chloride 325.2 Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss. Fe/Mn 6010B	DOC 415.1
		PRESERVATIVE						HCl	None	HNO_3	none	none	none	none H_2SO_4	HCl	HNO_3	HCl
		NUMBER OF CONTAINERS SUBMITTED															
09/21/10	1225	CPA - MW5D - 0910	G	X				3	2	1	1	1	3	2	1		
09/21/10	1225	CPA - MW5D - F(0.2) - 0910	G	X												1	1
09/21/10	1558	BSA - MW5D - 0910	G	X				3	2	1	1	1	3	2	1		
09/21/10	1558	BSA - MW5D - F(0.2) - 0910	G	X												1	1
09/21/10	1558	BSA - MW5D - 0910 - MS	G	X				3	2								
09/21/10	1558	BSA - MW5D - 0910 - MSD	G	X				3	2								
0		TRIP BLANK #1		X				2									

REMARKS: field filtered; field filtered.

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen [illegible]	9/21/10	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Ruth A Daughtry	9/22/10	0937	YES ○ NO ○		680-61455	Temp 1.8/1.5

TAL8240-680 (1207)

Serial Number 032422

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK-LTM-3Q10		IL

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM Rinaldi	4503869001	

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM Rinaldi	314-674-3312	314-674-8808

CLIENT NAME	CLIENT E-MAIL
Solutia, INC	gmrind@solutia.com

CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 2

STANDARD REPORT DELIVERY ☒

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alk/CO_2 310.1	Chloride 325.2 / Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss Fe/Mn 6010B	DOC 415.1	REMARKS
PRESERVATIVE								HCl	None	HNO_3	None	None	None	None	None	HNO_3	HCl	
9/22/10	0815	BSA-MW-4D-0910	G	A				3	2	1	1	1	3	2	1			
9/22/10	0815	BSA-MW-4D-F(0.2) 0910	G	A											1	1		
9/22/10	1010	CPA-MW-4D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1010	CPA-MW-4D-F(0.2) 0910	G	A											1	1		
9/22/10	1130	BSA-MW-3D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1130	BSA-MW-3D-F(0.2) 0910	G	A											1	1		
9/22/10	1200	BSA-MW-3D-0910 EB	G	A				3	2									
9/22/10	1410	CPA-MW-3D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1410	CPA-MW-3D-F(0.2) 0910	G	A											1	1		
9/22/10	1520	BSA-MW-2D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1520	BSA-MW-2D-F(0.2) 0910	G	A											1	1		
9/22/10	1630	BSA-MW-1S-0910	G	A				3	2	1	1	1	3	2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen Graham	9/22/10	1800						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible signature]	9/23/10	0917	YES ● NO ○		680-61495	Temps (°C): 0.4, 2.0, 1.6, 0.8

TAL8240-680 (1207)

Serial Number 032423

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

(X) TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
UGK-LTM-3Q10		IL

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM Rinaldi	4503869001	

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM Rinaldi	314-674-3312	314-674-8868

CLIENT NAME	CLIENT E-MAIL
Solutia, INC.	gmrina@solutia.com

CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63146

COMPANY CONTRACTING THIS WORK (if applicable):

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE

REQUIRED ANALYSIS: VOC 8260; SVOC 8270C; D.S. Fe/Mn 6010B; DOC LMT. 1

PAGE 2 OF 2

STANDARD REPORT DELIVERY (X)

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

PRESERVATIVE: HCl; non; HNO3; HCl

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	D.S. Fe/Mn 6010B	DOC LMT. 1	REMARKS
9/22/10	1630	BSA-MW15-F(0.2) 0910	G	A						1	1	
9/22/10	—	Trip Blank 2		A				2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen [illegible]	9/22/10	1800						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	9/23/10	0917	YES (X) NO ( )		680-61495	

TAL8240-680 (1207)

Serial Number 032424

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK LTM 3Q10		

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM Rinaldi	4503869001	

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM Rinaldi	314 674-3312	314-674-8868

CLIENT NAME	CLIENT E-MAIL
Solutia, Inc	gmrina@solutia.com

CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141

COMPANY CONTRACTING THIS WORK (if applicable)

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alka CO_3 310.1	Chloride 325.2 Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	DISS. Fe/Mn 6010B	DOC 415.1	REMARKS
		PRESERVATIVE						HCl	None	HNO_3	none	none	none	none	HCL	HNO_3	HCl	
		NUMBER OF CONTAINERS SUBMITTED																
9/23/10	0800	CPA - MW - 2D - 0910						3	2	1	1	1	3	2	1			
9/23/10	0800	CPA - MW - 2D - F(0.2) - 0910														1	1	
9/23/10	0800	CPA - MW - 2D - 0910 - AD						3	2									
9/23/10	0920	CPA - MW - 1D - 0910						3	2	1	1	1	3	2	1			
9/23/10	0920	CPA - MW - 1D - F(0.2) - 0910														1	1	
9/23/10		Trip Blank #3						X										
9/23/10	1045	BSA - MW - 15						X										Resample (NO HCl)

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/23/10	1900						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	9/24/10	0915	YES ● NO ○		680-61543	Temp(C): 4.8 and 4.2 C

TAL8240-680 (1207)

APPENDIX C

QUALITY ASSURANCE REPORT

THIRD QUARTER 2010
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for:

SOLUTIA INC.
St. Louis, Missouri

Prepared by:

GEOTECHNOLOGY, INC.
St. Louis, Missouri

Geotechnology, Inc. Report No. J017210.02

December 17, 2010

J017210.02

THIRD QUARTER 2010
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

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J017210.02

THIRD QUARTER 2010
LONG-TERM MONITORING PROGRAM
QUALITY ASSURANCE REPORT
SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in September of 2010 at the Solutia W.G. Krummrich plant as part of the 3rd Quarter 2010 Long-Term Monitoring Program. The samples were collected by Geotechnology, Inc. (Geotechnology) personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, dissolved gases, and general chemistry parameters.

Geotechnology subcontracted with the M.J.W. Corporation to conduct third party Level III and Level IV data validation. One hundred percent of the data was subjected to a data quality review (Level III validation.) M.J.W. Corporation selected four random groundwater samples for Level IV data validation (CPA-MW-5D-0910, CPA-MW-4D-0910, BSA-MW-5D-0910 and BSA-MW-4D-0910.) The Level III and Level IV reviews were performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use.

A total of 14 samples (ten investigative groundwater samples, one field duplicate, one matrix spike and matrix spike duplicate (MS/MSD) pair, and one equipment blank) were analyzed by TestAmerica. In addition, three trip blank samples were included in the cooler shipments that contained groundwater samples for VOC analyses and were analyzed for VOCs. These samples were analyzed as part of Sample Delivery Group (SDG) KPS060 utilizing the following USEPA SW-846 Methods:

- Method 8260B for VOCs (Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene)
- Method 6010 for total and dissolved iron and manganese

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

- Method RSK-175 for dissolved gases (Ethane, Ethylene and Methane)
- Method 325.2 for Chloride
- Method 353.2 for Nitrogen, Nitrate

- Method 375.4 for Sulfate
- Method 415.1 for Total and Dissolved Organic Carbon
- Method 310.1 for Alkalinity and Carbon Dioxide

Samples were reviewed following procedures outlined in the USEPA National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004, and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Data was qualified based on the data quality review. Qualifiers assigned indicate data that did not meet acceptance criteria and for which corrective actions were not successful or not performed. The various qualifiers are explained in Tables 1 and 2 below:

Table 1 – Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
F	MS or MSD exceeds the control limits
F	RPD of the MS exceeds the control limits
X	Surrogate is outside control limits
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration: therefore, control limits are not applicable.

Table 2 – Geotechnology (MJW Corporation) Data Qualifiers

MJW Corp. Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined to be the percentage of analytical results which are judged to be valid with the exception of rejected **(R)** flagged data, including estimated detect/nondetect **(J/UJ)** values was 96.2 percent, which does meet the completeness of goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks, and field equipment blank samples
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and relative percent difference (RPD)
- Field duplicate results
- Results reported from dilutions

- Internal standard responses
- Mass spectrometer tuning
- Calibration
- Compound identification
- Other problems/documentation

Inorganics

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

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

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

Extractions and/or analyses were completed within the recommended holding time requirements.

The cooler receipt form indicated that the two of the eight coolers were received by the laboratory at temperatures within the 4°C ± 2°C criteria. Six of the eight coolers were received by the laboratory at temperatures outside the 4°C ± 2°C criteria. Samples received were in good condition; therefore, no qualification of data was required.

3.0 LABORATORY METHOD AND EQUIPMENT BLANK SAMPLES

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blank samples were analyzed at the method prescribed frequencies. No analytes were detected in the method blank; therefore, no qualification of date was required.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. No analytes were detected in the equipment blank sample.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. All samples analyzed for VOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria. Surrogate recoveries were within evaluation criteria. No qualifications of data were required due to surrogate recoveries.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

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

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

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were required to be collected at a frequency of one per 20 investigative samples in accordance with the work plan (one per 20 investigative samples or 5%). Geotechnology submitted one MS/MSD sample set for ten investigative samples and, therefore, met the work plan frequency requirement.

No qualifications were made to the data if the MS/MSD percent recoveries were zero due to dilutions or if the Relative Percent Difference (RPD) was the only factor outside of criteria. Also, USEPA National Functional Guidelines for Superfund Organic Methods Data Review (2008) states that organic data does not need qualification based on MS/MSD criteria alone. Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria.

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory

precision is indicated if the field duplicate results agree within 2 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One field duplicate sample was collected for the ten investigative samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Field duplicate results were within evaluation criteria. No qualifications of data were required.

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. For the VOCs, the IS areas must be within -50 percent to +100 percent of the preceding calibration verification (CV) IS value. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time.

The internal standards area responses for VOCs were verified for the data reviews. IS responses met the criteria as described above. No qualifications of data were required.

9.0 RESULTS REPORTED FROM DILUTIONS

Samples were diluted due to abundance of target analytes. The diluted sample results for VOCs were reported at the lowest possible reporting limit.

10. MASS SPECTROMETER TUNING

Instrument performance was determined to be satisfactory. No qualifications of data were required.

11.0 CALIBRATION

Percent Relative Standard Deviation (%RSD) is used to indicate the stability of a specific compound response factor over increasing concentration. Percent D (%D) is a measure of the instrument's daily performance. Percent RSD must be <30% and Percent D must be <25%. No qualifications of data were required.

12.0 COMPOUND IDENTIFICATION

Compound identification was determined to be satisfactory. No qualifications of data were required.

13.0 OTHER PROBLEMS/DOCUMENTATION

The analytical testing results for Total Organic Carbon (TOC) and Dissolved Organic Carbon (DOC) were initially rejected because DOC results are greater than the TOC results for the samples, which is not possible. The validator could not establish whether the error occurred in the field filtering or in the laboratory analyses. However, after discussion with Geotechnology regarding the identified issues with the field filters, the MJW Corporation revised their data validation findings with respect to the TOC results. The TOC results are no longer considered as rejected. The sample results qualified as rejected are summarized in the table below.

Sample ID	Parameter	Analyte	Qualification
CPA-MW5D-0910	Inorganics	DOC	R
BSA-MW5D-0910	Inorganics	DOC	R
BSA-MW4D-0910	Inorganics	DOC	R
CPA-MW4D-0910	Inorganics	DOC	R
BSA-MW3D-0910	Inorganics	DOC	R
CPA-MW3D-0910	Inorganics	DOC	R
BSA-MW2D-0910	Inorganics	DOC	R
BSA-MW1S-0910	Inorganics	DOC	R
CPA-MW2D-0910	Inorganics	DOC	R
CPA-MW1D-0910	Inorganics	DOC	R

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS
(WITH DATA REVIEW SHEETS)

SDG KPS060

Results of Samples from Monitoring Wells:

BSA-MW-1S
BSA-MW-2D
BSA-MW-3D
BSA-MW-4D
BSA-MW-5D
CPA-MW-1D
CPA-MW-2D
CPA-MW-3D
CPA-MW-4D
CPA-MW-5D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-61455-1

SDG Number: KPS060

Job Description: WGK LTM GW 3Q10 - SEP 2010

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

Attention: Mr. Jerry Rinaldi

Approved for release.
Lidya Gulizia
Project Manager I
11/1/2010 1:56 PM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com

11/01/2010
Revision: 1

cc: Mr. Duane Kreuger

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

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

12/2/10

Receipt
Method(s) 8260B: The following sample(s) was received with headspace in the sample vial: BSA-MW1S-0910 (680-61495-12), BSA-MW2D-0910 (680-61495-10), BSA-MW3D-0910 (680-61495-5), CPA-MW3D-0910 (680-61495-8), CPA-MW4D-0910 (680-61495-3). All of the sample vials have headspace in them.

Method(s) 8260B: The following sample(s) was received with headspace in the sample vial: CPA-MW2D-0910 (680-61543-1), CPA-MW2D-0910-AD (680-61543-3). Two sample vials from each of the samples have headspace in them.

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

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

GC/MS Semi VOA
Method(s) 8270C: The following sample(s) contained one acid and/or one base surrogate outside acceptance limits: CPA-MW4D-0910 (680-61495-3) and the matrix spike sample lab ID 680-61543-1 MS. The laboratory's SOP allows one acid surrogate and/or one base surrogate to be outside acceptance limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270C: The matrix spike duplicate (MSD) precision for batch 180934 was outside control limits. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision met acceptance ciriteria.

Method(s) 8270C: A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 4 analytes to recover outside criteria for this method when a full list spike is utilized. The MS associated with batch 181388 had 1 analytes outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method(s) 8270C: The following sample(s) was diluted due to the nature of the sample matrix and abundance of target analytes: CPA-MW1D-0910 (680-61543-4). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

Metals
Method(s) 6010B: Due to the high concentration of iron and manganese, the matrix spike / matrix spike duplicate (MS/MSD) for batch 680-182835 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 6010B: Due to the high concentration of iron, the matrix spike / matrix spike duplicate (MS/MSD) for batch 680-182836 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

General Chemistry
Method(s) 415.1, 9060: Samples received for TOC analysis were insufficiently preserved. Additional acid was added and samples were properly preserved in the lab.

Method(s) 415.1: The Dissolved Organic Carbon (DOC) results were greater than the associated Total Organic Carbon (TOC) results in the project samples.

Method(s) 325.2, SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries associated with batch 182871 were outside control limits: (680-62053-21 MS), (680-62053-21 MSD). Matrix interference is suspected.

Method(s) 353.2: The following sample(s) was diluted due to appearance or color: CPA-MW1D-0910 (680-61543-4) Elevated reporting limits (RL) are provided.

No other analytical or quality issues were noted.

Comments
The report was revised on November 1, 2010 to include the chain-of-custody (COC) record for samples collected on 9/23/10 and received on 9/24/10 under laboratory job ID 680-61543.

No additional comments.

AB 12/2/10

12/12/10

METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

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

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

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

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

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

METHOD / ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method	Analyst	Analyst ID
SW846 8260B	Lanier, Carolyn	CL
SW846 8270C	Haynes, Carion	CRH
RSK RSK-175	Moncrief, Amy J	AJM
SW846 6010B	Bland, Brian	BCB
MCAWW 310.1	Robinson, Tiffany	TR
MCAWW 325.2	Ross, Jon	JR
MCAWW 353.2	Ross, Jon	JR
MCAWW 375.4	Ross, Jon	JR
MCAWW 415.1	Holmes, Tinita	TH

AG 12/2/10

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-61455-1	CPA-MW5D-0910	Water	09/21/2010 1225	09/22/2010 0937
680-61455-2	CPA-MW5D-F(0.2)-0910	Water	09/21/2010 1225	09/22/2010 0937
680-61455-3	BSA-MW5D-0910	Water	09/21/2010 1558	09/22/2010 0937
680-61455-3MS	BSA-MW5D-0910	Water	09/21/2010 1558	09/22/2010 0937
680-61455-3MSD	BSA-MW5D-0910	Water	09/21/2010 1558	09/22/2010 0937
680-61455-4	BSA-MW5D-F(0.2)-0910	Water	09/21/2010 1558	09/22/2010 0937
680-61455-5	Trip Blank #1	Water	09/21/2010 0000	09/22/2010 0937
680-61495-1	BSA-MW4D-0910	Water	09/22/2010 0815	09/23/2010 0917
680-61495-2	BSA-MW4D-F(0.2)-0910	Water	09/22/2010 0815	09/23/2010 0917
680-61495-3	CPA-MW4D-0910	Water	09/22/2010 1010	09/23/2010 0917
680-61495-4	CPA-MW4D-F(0.2)-0910	Water	09/22/2010 1010	09/23/2010 0917
680-61495-5	BSA-MW3D-0910	Water	09/22/2010 1130	09/23/2010 0917
680-61495-6	BSA-MW3D-F(0.2)-0910	Water	09/22/2010 1130	09/23/2010 0917
680-61495-7EB	BSA-MW3D-0910-EB	Water	09/22/2010 1200	09/23/2010 0917
680-61495-8	CPA-MW3D-0910	Water	09/22/2010 1410	09/23/2010 0917
680-61495-9	CPA-MW3D-F(0.2)-0910	Water	09/22/2010 1410	09/23/2010 0917
680-61495-10	BSA-MW2D-0910	Water	09/22/2010 1520	09/23/2010 0917
680-61495-11	BSA-MW2D-F(0.2)-0910	Water	09/22/2010 1520	09/23/2010 0917
680-61495-12	BSA-MW1S-0910	Water	09/22/2010 1630	09/23/2010 0917
680-61495-13	BSA-MW1S-F(0.2)-0910	Water	09/22/2010 1630	09/23/2010 0917
680-61495-14TB	Trip Blank 2	Water	09/22/2010 0000	09/23/2010 0917
680-61543-1	CPA-MW2D-0910	Water	09/23/2010 0800	09/24/2010 0915
680-61543-2	CPA-MW2D-F(0.2)-0910	Water	09/23/2010 0800	09/24/2010 0915
680-61543-3FD	CPA-MW2D-0910-AD	Water	09/23/2010 0800	09/24/2010 0915
680-61543-4	CPA-MW1D-0910	Water	09/23/2010 0920	09/24/2010 0915
680-61543-5	CPA-MW1D-F(0.2)-0910	Water	09/23/2010 0920	09/24/2010 0915
680-61543-6TB	Trip Blank #3	Water	09/23/2010 0000	09/24/2010 0915
680-61543-7	BSA-MW1S-0910	Water	09/23/2010 1045	09/24/2010 0915

12/3/10

SAMPLE RESULTS

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW5D-0910**

Lab Sample ID: 680-61455-1
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0582.d
Dilution:	20		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1559		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1559			

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

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	94		75 - 121
Toluene-d8 (Surr)	103		75 - 120

12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0584.d
Dilution:	5.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1629		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1629			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	5.0	U	5.0
Chlorobenzene	350		5.0
1,2-Dichlorobenzene	5.0	U	5.0
1,3-Dichlorobenzene	5.0	U	5.0
1,4-Dichlorobenzene	5.0	U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	98		75 - 121
Toluene-d8 (Surr)	102		75 - 120

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **Trip Blank #1**

Lab Sample ID: 680-61455-5
Client Matrix: Water

Date Sampled: 09/21/2010 0000
Date Received: 09/22/2010 0937

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0580.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1530		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1530			

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

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	101		75 - 121
Toluene-d8 (Surr)	102		75 - 120

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW4D-0910**

Lab Sample ID: 680-61495-1
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0586.d
Dilution:	20		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1659		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1659			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	20		20
Chlorobenzene	2300		20
1,2-Dichlorobenzene	20	U	20
1,3-Dichlorobenzene	20	U	20
1,4-Dichlorobenzene	37		20

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	96		75 - 121
Toluene-d8 (Surr)	103		75 - 120

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0588.d
Dilution:	10		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1728		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1728			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	26		10
Chlorobenzene	570		10
1,2-Dichlorobenzene	10	U	10
1,3-Dichlorobenzene	10	U	10
1,4-Dichlorobenzene	10	U	10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	91		75 - 121
Toluene-d8 (Surr)	103		75 - 120

AL 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910**

Lab Sample ID: 680-61495-5
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0590.d
Dilution:	10		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1758		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1758			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	57		10
Chlorobenzene	1200		10
1,2-Dichlorobenzene	16		10
1,3-Dichlorobenzene	12		10
1,4-Dichlorobenzene	290		10

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		75 - 120
Dibromofluoromethane	94		75 - 121
Toluene-d8 (Surr)	102		75 - 120

AL 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910-EB**

Lab Sample ID: 680-61495-7EB
Client Matrix: Water

Date Sampled: 09/22/2010 1200
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 09/30/2010 1431
Date Prepared: 09/30/2010 1431

Analysis Batch: 680-181578

Instrument ID: MSP2
Lab File ID: p0576.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	99		75 - 121
Toluene-d8 (Surr)	101		75 - 120

12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0592.d
Dilution:	5.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1827		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1827			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	100		5.0
Chlorobenzene	290		5.0
1,2-Dichlorobenzene	5.0	U	5.0
1,3-Dichlorobenzene	5.0	U	5.0
1,4-Dichlorobenzene	5.0	U	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	92		75 - 121
Toluene-d8 (Surr)	104		75 - 120

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0594.d
Dilution:	1000		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1857		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1857			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	140000		1000
Chlorobenzene	1600		1000
1,2-Dichlorobenzene	1000	U	1000
1,3-Dichlorobenzene	1000	U	1000
1,4-Dichlorobenzene	1000	U	1000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	101		75 - 121
Toluene-d8 (Surr)	105		75 - 120

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0596.d
Dilution:	5000		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1926		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1926			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	590000		5000
Chlorobenzene	5000	U	5000
1,2-Dichlorobenzene	5000	U	5000
1,3-Dichlorobenzene	5000	U	5000
1,4-Dichlorobenzene	5000	U	5000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	103		75 - 121
Toluene-d8 (Surr)	102		75 - 120

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **Trip Blank 2**

Lab Sample ID: 680-61495-14TB
Client Matrix: Water

Date Sampled: 09/22/2010 0000
Date Received: 09/23/2010 0917

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181578	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0578.d
Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1501		Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1501			

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

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		75 - 120
Dibromofluoromethane	98		75 - 121
Toluene-d8 (Surr)	102		75 - 120

RG 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181438	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0520.d
Dilution:	200		Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2010 1731		Final Weight/Volume:	5 mL
Date Prepared:	09/28/2010 1731			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	290		200
Chlorobenzene	21000		200
1,2-Dichlorobenzene	200	U	200
1,3-Dichlorobenzene	200	U	200
1,4-Dichlorobenzene	2300		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	97		75 - 120
Dibromofluoromethane	94		75 - 121
Toluene-d8 (Surr)	103		75 - 120

12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910-AD**

Lab Sample ID: 680-61543-3FD
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 200
Date Analyzed: 09/28/2010 1800
Date Prepared: 09/28/2010 1800

Analysis Batch: 680-181438

Instrument ID: MSP2
Lab File ID: p0522.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result (ug/L)	Qualifier	RL
Benzene	300		200
Chlorobenzene	20000		200
1,2-Dichlorobenzene	200	U	200
1,3-Dichlorobenzene	200	U	200
1,4-Dichlorobenzene	2000		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		75 - 120
Dibromofluoromethane	94		75 - 121
Toluene-d8 (Surr)	103		75 - 120

PG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181438	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0524.d
Dilution:	200		Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2010 1830		Final Weight/Volume:	5 mL
Date Prepared:	09/28/2010 1830			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	5800		200
Chlorobenzene	17000		200
1,2-Dichlorobenzene	18000		200
1,3-Dichlorobenzene	1200		200
1,4-Dichlorobenzene	10000		200

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	98		75 - 120
Dibromofluoromethane	97		75 - 121
Toluene-d8 (Surr)	104		75 - 120

RLo 12/8/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **Trip Blank #3**

Lab Sample ID: 680-61543-6TB
Client Matrix: Water

Date Sampled: 09/23/2010 0000
Date Received: 09/24/2010 0915

8260B Volatile Organic Compounds (GC/MS)

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 09/28/2010 1434
Date Prepared: 09/28/2010 1434

Analysis Batch: 680-181438

Instrument ID: MSP2
Lab File ID: p0508.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	93		75 - 120
Dibromofluoromethane	97		75 - 121
Toluene-d8 (Surr)	100		75 - 120

AJS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61543-7
Client Matrix: Water

Date Sampled: 09/23/2010 1045
Date Received: 09/24/2010 0915

8260B Volatile Organic Compounds (GC/MS)

Method:	8260B	Analysis Batch: 680-181438	Instrument ID:	MSP2
Preparation:	5030B		Lab File ID:	p0526.d
Dilution:	5000		Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2010 1859		Final Weight/Volume:	5 mL
Date Prepared:	09/28/2010 1859			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	620000		5000
Chlorobenzene	5000	U	5000
1,2-Dichlorobenzene	5000	U	5000
1,3-Dichlorobenzene	5000	U	5000
1,4-Dichlorobenzene	5000	U	5000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	95		75 - 120
Dibromofluoromethane	100		75 - 121
Toluene-d8 (Surr)	104		75 - 120

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW5D-0910**

Lab Sample ID: 680-61455-1
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3576.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/29/2010 1035			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	19	U	19
2-Chlorophenol	9.5	U	9.5
1,2,4-Trichlorobenzene	9.5	U	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	72		38 - 116
2-Fluorophenol	60		36 - 110
2,4,6-Tribromophenol	91		40 - 139
Nitrobenzene-d5	72		45 - 112
2-Fluorobiphenyl	70		50 - 113
Terphenyl-d14	79		10 - 121

AO 12/20/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

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

Method:	8270C	Analysis Batch: 680-181416	Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934	Lab File ID:	g3577.d
Dilution:	1.0		Initial Weight/Volume:	1030 mL
Date Analyzed:	09/29/2010 1101		Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438		Injection Volume:	1 uL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	76		38 - 116
2,4,6-Tribromophenol	93		40 - 139
2-Fluorobiphenyl	74		50 - 113
2-Fluorophenol	63		36 - 110
Nitrobenzene-d5	77		45 - 112
Terphenyl-d14	67		10 - 121

RB 12/2/10.

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW4D-0910**

Lab Sample ID: 680-61495-1
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3579.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/29/2010 1155			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.5	U	9.5
1,4-Dioxane	33		9.5
2-Chlorophenol	24		9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	79		38 - 116
2,4,6-Tribromophenol	98		40 - 139
2-Fluorobiphenyl	79		50 - 113
2-Fluorophenol	70		36 - 110
Nitrobenzene-d5	82		45 - 112
Terphenyl-d14	57		10 - 121

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3580.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/29/2010 1222			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	85		19
2-Chlorophenol	9.5	U	9.5
1,2,4-Trichlorobenzene	9.5	U	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	42		38 - 116
2-Fluorophenol	38		36 - 110
2,4,6-Tribromophenol	56		40 - 139
Nitrobenzene-d5	46		45 - 112
2-Fluorobiphenyl	43	X	50 - 113
Terphenyl-d14	40		10 - 121

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910**

Lab Sample ID: 680-61495-5
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3581.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	09/29/2010 1249			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.7	U	9.7
1,4-Dioxane	9.7	U	9.7
2-Chlorophenol	13		9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	70		38 - 116
2,4,6-Tribromophenol	85		40 - 139
2-Fluorobiphenyl	69		50 - 113
2-Fluorophenol	59		36 - 110
Nitrobenzene-d5	67		45 - 112
Terphenyl-d14	82		10 - 121

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910-EB**

Lab Sample ID: 680-61495-7EB
Client Matrix: Water

Date Sampled: 09/22/2010 1200
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3582.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	09/29/2010 1316			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	76		38 - 116
2,4,6-Tribromophenol	86		40 - 139
2-Fluorobiphenyl	72		50 - 113
2-Fluorophenol	66		36 - 110
Nitrobenzene-d5	76		45 - 112
Terphenyl-d14	93		10 - 121

AJG 12/10/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3583.d
Dilution:	1.0			Initial Weight/Volume:	1020 mL
Date Analyzed:	09/29/2010 1343			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
4-Chloroaniline	40		20
2-Chlorophenol	9.8	U	9.8
1,2,4-Trichlorobenzene	9.8	U	9.8

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	74		38 - 116
2-Fluorophenol	63		36 - 110
2,4,6-Tribromophenol	92		40 - 139
Nitrobenzene-d5	75		45 - 112
2-Fluorobiphenyl	72		50 - 113
Terphenyl-d14	36		10 - 121

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3584.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	09/29/2010 1410			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
1,2,4-Trichlorobenzene	9.7	U	9.7
1,4-Dioxane	27		9.7
2-Chlorophenol	9.7	U	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	72		38 - 116
2,4,6-Tribromophenol	85		40 - 139
2-Fluorobiphenyl	66		50 - 113
2-Fluorophenol	60		36 - 110
Nitrobenzene-d5	70		45 - 112
Terphenyl-d14	40		10 - 121

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

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

Method:	8270C	Analysis Batch: 680-181416		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-180934		Lab File ID:	g3585.d
Dilution:	1.0			Initial Weight/Volume:	1030 mL
Date Analyzed:	09/29/2010 1437			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

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

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	68		38 - 116
2-Fluorophenol	58		36 - 110
2,4,6-Tribromophenol	92		40 - 139
Nitrobenzene-d5	68		45 - 112
2-Fluorobiphenyl	65		50 - 113
Terphenyl-d14	36		10 - 121

PLS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

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

Method:	8270C	Analysis Batch: 680-181687		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-181388		Lab File ID:	n9500.d
Dilution:	1.0			Initial Weight/Volume:	500 mL
Date Analyzed:	10/01/2010 1541			Final Weight/Volume:	0.5 mL
Date Prepared:	09/29/2010 1451			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	18		10
1,2,4-Trichlorobenzene	10	U	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	49		38 - 116
2-Fluorophenol	49		36 - 110
2,4,6-Tribromophenol	78		40 - 139
Nitrobenzene-d5	57		45 - 112
2-Fluorobiphenyl	61		50 - 113
Terphenyl-d14	66		10 - 121

AJS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910-AD**

Lab Sample ID: 680-61543-3FD
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

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

Method:	8270C	Analysis Batch: 680-181687		Instrument ID:	MSN
Preparation:	3520C	Prep Batch: 680-181388		Lab File ID:	n9501.d
Dilution:	1.0			Initial Weight/Volume:	980 mL
Date Analyzed:	10/01/2010 1607			Final Weight/Volume:	1 mL
Date Prepared:	09/29/2010 1451			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	22		10
1,2,4-Trichlorobenzene	10	U	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	65		38 - 116
2-Fluorophenol	68		36 - 110
2,4,6-Tribromophenol	88		40 - 139
Nitrobenzene-d5	73		45 - 112
2-Fluorobiphenyl	72		50 - 113
Terphenyl-d14	49		10 - 121

AJS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

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

Method:	8270C	Analysis Batch: 680-181862		Instrument ID:	MSG
Preparation:	3520C	Prep Batch: 680-181388		Lab File ID:	g3636.d
Dilution:	10			Initial Weight/Volume:	1060 mL
Date Analyzed:	10/04/2010 1400			Final Weight/Volume:	1 mL
Date Prepared:	09/29/2010 1451			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
2-Chlorophenol	94	U	94
1,2,4-Trichlorobenzene	780		94

Surrogate	%Rec	Qualifier	Acceptance Limits
Phenol-d5	0	D	38 - 116
2-Fluorophenol	0	D	36 - 110
2,4,6-Tribromophenol	0	D	40 - 139
Nitrobenzene-d5	0	D	45 - 112
2-Fluorobiphenyl	0	D	50 - 113
Terphenyl-d14	0	D	10 - 121

AB
12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW5D-0910**

Lab Sample ID: 680-61455-1
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-181917	Instrument ID:	VGUFID2
Preparation:	N/A		Initial Weight/Volume:	17000 uL
Dilution:	1.0		Final Weight/Volume:	17 mL
Date Analyzed:	10/04/2010 1736		Injection Volume:	1 uL
Date Prepared:			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	2.6		0.35
Ethylene	0.33	U	0.33
Methane	13		0.19

AS 12/2/10

Analytical Data

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/04/2010 1748
Date Prepared:

Analysis Batch: 680-181917

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	13		0.35
Ethylene	0.33	U	0.33

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-181925	Instrument ID:	VGUTCD1
Preparation:	N/A		Initial Weight/Volume:	17000 uL
Dilution:	1.0		Final Weight/Volume:	17 mL
Date Analyzed:	10/04/2010 1748		Injection Volume:	1 uL
Date Prepared:			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	5100		0.19

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW4D-0910**

Lab Sample ID: 680-61495-1
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1458
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	3.0		0.35
Ethylene	0.33	U	0.33
Methane	44		0.19

AS 12/2/10

Analytical Data

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1511
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	13		0.35
Ethylene	0.33	U	0.33

AO 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1511
Date Prepared:

Analysis Batch: 680-181773

Instrument ID: VGUTCD1
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	9900		0.19

AG
12/2/10

Analytical Data

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910**

Lab Sample ID: 680-61495-5
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1524
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	1.2		0.35
Ethylene	1.3		0.33
Methane	240		0.19

AB 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910-EB**

Lab Sample ID: 680-61495-7EB
Client Matrix: Water

Date Sampled: 09/22/2010 1200
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1537
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	0.35	U	0.35
Ethylene	0.33	U	0.33
Methane	0.30		0.19

RS 12/12/10

Analytical Data

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-181772	Instrument ID:	VGUFID2
Preparation:	N/A		Initial Weight/Volume:	17000 uL
Dilution:	1.0		Final Weight/Volume:	17 mL
Date Analyzed:	10/01/2010 1550		Injection Volume:	1 uL
Date Prepared:			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	16		0.35
Ethylene	0.33	U	0.33

12/2/10
AG

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method:	RSK-175	Analysis Batch: 680-181773	Instrument ID:	VGUTCD1
Preparation:	N/A		Initial Weight/Volume:	17000 uL
Dilution:	1.0		Final Weight/Volume:	17 mL
Date Analyzed:	10/01/2010 1550		Injection Volume:	1 uL
Date Prepared:			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	15000		0.19

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1602
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	13		0.35
Ethylene	0.33	U	0.33

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1602
Date Prepared:

Analysis Batch: 680-181773

Instrument ID: VGUTCD1
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	17000		0.19

pb 10/1/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1615
Date Prepared:

Analysis Batch: 680-181772

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

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

AJS 12-10-10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/01/2010 1615
Date Prepared:

Analysis Batch: 680-181773

Instrument ID: VGUTCD1
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	9100		0.19

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/04/2010 1801
Date Prepared:

Analysis Batch: 680-181917

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	5.8		0.35
Ethylene	0.33	U	0.33

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/04/2010 1801
Date Prepared:

Analysis Batch: 680-181925

Instrument ID: VGUTCD1
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	5900		0.19

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/04/2010 1814
Date Prepared:

Analysis Batch: 680-181917

Instrument ID: VGUFID2
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	40		0.35
Ethylene	0.33	U	0.33

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

RSK-175 Dissolved Gases (GC)

Method: RSK-175
Preparation: N/A
Dilution: 1.0
Date Analyzed: 10/04/2010 1814
Date Prepared:

Analysis Batch: 680-181925

Instrument ID: VGUTCD1
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Result Type: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Methane	18000		0.19

AG
12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW5D-0910**

Lab Sample ID: 680-61455-1
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1634			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron	96		0.050
Manganese	3.5		0.010

pb 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW5D-F(0.2)-0910**

Lab Sample ID: 680-61455-2
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1700			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	94		0.050
Manganese, Dissolved	3.5		0.010

RG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1705			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron	6.4		0.050
Manganese	0.41		0.010

AG
12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW5D-F(0.2)-0910**

Lab Sample ID: 680-61455-4
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1710
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	8.3		0.050
Manganese, Dissolved	0.43		0.010

AB 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW4D-0910**

Lab Sample ID: 680-61495-1
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1726
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron	10		0.050
Manganese	0.71		0.010

AG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW4D-F(0.2)-0910**

Lab Sample ID: 680-61495-2
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1731			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	8.3		0.050
Manganese, Dissolved	0.68		0.010

AEO 12/21/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1737			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron	11		0.050
Manganese	0.24		0.010

AB
12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW4D-F(0.2)-0910**

Lab Sample ID: 680-61495-4
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1742
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	9.9		0.050
Manganese, Dissolved	0.24		0.010

RJS 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910**

Lab Sample ID: 680-61495-5
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1747
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron	12		0.050
Manganese	0.57		0.010

AS
12/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-F(0.2)-0910**

Lab Sample ID: 680-61495-6
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1753
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	11		0.050
Manganese, Dissolved	0.56		0.010

AG
12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW3D-0910-EB**

Lab Sample ID: 680-61495-7EB
Client Matrix: Water

Date Sampled: 09/22/2010 1200
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1758			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

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

AB 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1803			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron	15		0.050
Manganese	0.72		0.010

AG
12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW3D-F(0.2)-0910**

Lab Sample ID: 680-61495-9
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1809			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	13		0.050
Manganese, Dissolved	0.72		0.010

AG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1825
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron	4.0		0.050
Manganese	0.57		0.010

AO 12/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW2D-F(0.2)-0910**

Lab Sample ID: 680-61495-11
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1830
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	3.0		0.050
Manganese, Dissolved	0.53		0.010

AO 12/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182835		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1835			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	Result (mg/L)	Qualifier	RL
Iron	3.7		0.050
Manganese	0.43		0.010

AG 10/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **BSA-MW1S-F(0.2)-0910**

Lab Sample ID: 680-61495-13
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1840
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	0.79		0.050
Manganese, Dissolved	0.33		0.010

BD 12/8/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

6010B Metals (ICP)-Total Recoverable

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182836		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1907			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1458				

Analyte	Result (mg/L)	Qualifier	RL
Iron	5.7		0.050
Manganese	0.37		0.010

PO 12.12.16

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW2D-F(0.2)-0910**

Lab Sample ID: 680-61543-2
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 680-183127		Instrument ID:	ICPD
Preparation:	3005A	Prep Batch: 680-182836		Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1944			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1458				

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	4.7		0.050
Manganese, Dissolved	0.34		0.010

AO 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

6010B Metals (ICP)-Total Recoverable

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1950
Date Prepared: 10/13/2010 1458

Analysis Batch: 680-183127
Prep Batch: 680-182836

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron	3.5		0.050
Manganese	0.28		0.010

AO 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

Client Sample ID: **CPA-MW1D-F(0.2)-0910**

Lab Sample ID: 680-61543-5
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

6010B Metals (ICP)-Dissolved

Method: 6010B
Preparation: 3005A
Dilution: 1.0
Date Analyzed: 10/15/2010 1955
Date Prepared: 10/13/2010 1458

Analysis Batch: 680-183127
Prep Batch: 680-182836

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	RL
Iron, Dissolved	1.8		0.050
Manganese, Dissolved	0.14		0.010

AG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW5D-0910**

Lab Sample ID: 680-61455-1
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	280		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1755					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-180829	Date Analyzed: 09/22/2010 1700					
Sulfate	1700		mg/L	500	100	375.4
Analysis Batch: 680-181295	Date Analyzed: 09/28/2010 1457					
Total Organic Carbon	4.4		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181510	Date Analyzed: 09/29/2010 1533					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	340		mg/L	5.0	1.0	310.1
Analysis Batch: 680-180753	Date Analyzed: 09/22/2010 2103					
Carbon Dioxide, Free	94		mg/L	5.0	1.0	310.1
Analysis Batch: 680-180753	Date Analyzed: 09/22/2010 2103					

AG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW5D-F(0.2)-0910**

Lab Sample ID: 680-61455-2
Client Matrix: Water

Date Sampled: 09/21/2010 1225
Date Received: 09/22/2010 0937

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	8.4	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181665 Date Analyzed: 09/30/2010 1253

AG 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW5D-0910**

Lab Sample ID: 680-61455-3
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	260		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1755					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-180829	Date Analyzed: 09/22/2010 1704					
Sulfate	69		mg/L	25	5.0	375.4
Analysis Batch: 680-181295	Date Analyzed: 09/28/2010 1454					
Total Organic Carbon	6.1		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181510	Date Analyzed: 09/29/2010 1559					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	730		mg/L	5.0	1.0	310.1
Analysis Batch: 680-180753	Date Analyzed: 09/22/2010 2126					
Carbon Dioxide, Free	50		mg/L	5.0	1.0	310.1
Analysis Batch: 680-180753	Date Analyzed: 09/22/2010 2126					

AG 12/12/10

TestAmerica Savannah

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW5D-F(0.2)-0910**

Lab Sample ID: 680-61455-4
Client Matrix: Water

Date Sampled: 09/21/2010 1558
Date Received: 09/22/2010 0937

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	81	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181665 Date Analyzed: 09/30/2010 1253

AO 10/10/10

General Chemistry

Client Sample ID: **BSA-MW4D-0910**

Lab Sample ID: 680-61495-1
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	160		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871		Date Analyzed: 10/13/2010 1747				
Nitrate as N	0.90		mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103		Date Analyzed: 09/23/2010 1536				
Sulfate	53		mg/L	25	5.0	375.4
Analysis Batch: 680-182273		Date Analyzed: 10/07/2010 1220				
Total Organic Carbon	5.4		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644		Date Analyzed: 09/30/2010 1536				

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	610		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350		Date Analyzed: 09/28/2010 1151				
Carbon Dioxide, Free	34		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350		Date Analyzed: 09/28/2010 1151				

AB 12/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW4D-F(0.2)-0910**

Lab Sample ID: 680-61495-2
Client Matrix: Water

Date Sampled: 09/22/2010 0815
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	9.8	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AS 12-12-10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW4D-0910**

Lab Sample ID: 680-61495-3
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	280		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1747					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103	Date Analyzed: 09/23/2010 1540					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1123					
Total Organic Carbon	6.5		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1552					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	770		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1203					
Carbon Dioxide, Free	58		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1203					

AB 12/13/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW4D-F(0.2)-0910**

Lab Sample ID: 680-61495-4
Client Matrix: Water

Date Sampled: 09/22/2010 1010
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	10	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AO 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW3D-0910**

Lab Sample ID: 680-61495-5
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	76		mg/L	1.0	1.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1724					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103	Date Analyzed: 09/23/2010 1541					
Sulfate	270		mg/L	100	20	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1222					
Total Organic Carbon	4.4		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1609					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	480		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1212					
Carbon Dioxide, Free	32		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1212					

AS 12/12/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW3D-F(0.2)-0910**

Lab Sample ID: 680-61495-6
Client Matrix: Water

Date Sampled: 09/22/2010 1130
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	8.4	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AB 12/2/10

Client: Solutia Inc.

Analytical Data

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW3D-0910**

Lab Sample ID: 680-61495-8
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	200		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1747					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103	Date Analyzed: 09/23/2010 1542					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1123					
Total Organic Carbon	11		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1654					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	610		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1223					
Carbon Dioxide, Free	51		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1223					

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW3D-F(0.2)-0910**

Lab Sample ID: 680-61495-9
Client Matrix: Water

Date Sampled: 09/22/2010 1410
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	15	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW2D-0910**

Lab Sample ID: 680-61495-10
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	94		mg/L	1.0	1.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1724					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103	Date Analyzed: 09/23/2010 1543					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1123					
Total Organic Carbon	5.9		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1719					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	660		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1233					
Carbon Dioxide, Free	35		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1233					

AB 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW2D-F(0.2)-0910**

Lab Sample ID: 680-61495-11
Client Matrix: Water

Date Sampled: 09/22/2010 1520
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	9.4	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AO 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW1S-0910**

Lab Sample ID: 680-61495-12
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	150		mg/L	5.0	5.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1747					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181103	Date Analyzed: 09/23/2010 1544					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1041					
Total Organic Carbon	7.6		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1736					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	830		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1245					
Carbon Dioxide, Free	32		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1245					

AG 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **BSA-MW1S-F(0.2)-0910**

Lab Sample ID: 680-61495-13
Client Matrix: Water

Date Sampled: 09/22/2010 1630
Date Received: 09/23/2010 0917

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	14	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

RS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW2D-0910**

Lab Sample ID: 680-61543-1
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	70		mg/L	1.0	1.0	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1724					
Nitrate as N	0.050	U	mg/L	0.050	1.0	353.2
Analysis Batch: 680-181164	Date Analyzed: 09/24/2010 1605					
Sulfate	5.0	U	mg/L	5.0	1.0	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1041					
Total Organic Carbon	11		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1752					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	550		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1330					
Carbon Dioxide, Free	27		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1330					

AO 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW2D-F(0.2)-0910**

Lab Sample ID: 680-61543-2
Client Matrix: Water

Date Sampled: 09/23/2010 0800
Date Received: 09/24/2010 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	86	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW1D-0910**

Lab Sample ID: 680-61543-4
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Chloride	140		mg/L	10	10	325.2
Analysis Batch: 680-182871	Date Analyzed: 10/13/2010 1729					
Nitrate as N	1.0	U	mg/L	1.0	20	353.2
Analysis Batch: 680-181164	Date Analyzed: 09/24/2010 1605					
Sulfate	100	U	mg/L	100	20	375.4
Analysis Batch: 680-182273	Date Analyzed: 10/07/2010 1041					
Total Organic Carbon	15		mg/L	1.0	1.0	415.1
Analysis Batch: 680-181644	Date Analyzed: 09/30/2010 1808					

Analyte	Result	Qual	Units	RL	Dil	Method
Alkalinity	990		mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1343					
Carbon Dioxide, Free	5.0	U	mg/L	5.0	1.0	310.1
Analysis Batch: 680-181350	Date Analyzed: 09/28/2010 1343					

AL 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

General Chemistry

Client Sample ID: **CPA-MW1D-F(0.2)-0910**

Lab Sample ID: 680-61543-5
Client Matrix: Water

Date Sampled: 09/23/2010 0920
Date Received: 09/24/2010 0915

Analyte	Result	Qual	Units	RL	Dil	Method
Dissolved Organic Carbon-Dissolved	85	"R"	mg/L	1.0	1.0	415.1

Analysis Batch: 680-181927 Date Analyzed: 10/04/2010 1137

AO 12/12/10

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

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

QUALITY CONTROL RESULTS

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:680-181438					
LCS 680-181438/21	Lab Control Sample	T	Water	8260B	
LCSD 680-181438/22	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-181438/24	Method Blank	T	Water	8260B	
680-61543-1	CPA-MW2D-0910	T	Water	8260B	
680-61543-3FD	CPA-MW2D-0910-AD	T	Water	8260B	
680-61543-4	CPA-MW1D-0910	T	Water	8260B	
680-61543-6TB	Trip Blank #3	T	Water	8260B	
680-61543-7	BSA-MW1S-0910	T	Water	8260B	
Analysis Batch:680-181578					
LCS 680-181578/5	Lab Control Sample	T	Water	8260B	
LCSD 680-181578/6	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-181578/8	Method Blank	T	Water	8260B	
680-61455-1	CPA-MW5D-0910	T	Water	8260B	
680-61455-3	BSA-MW5D-0910	T	Water	8260B	
680-61455-5	Trip Blank #1	T	Water	8260B	
680-61495-1	BSA-MW4D-0910	T	Water	8260B	
680-61495-3	CPA-MW4D-0910	T	Water	8260B	
680-61495-5	BSA-MW3D-0910	T	Water	8260B	
680-61495-7EB	BSA-MW3D-0910-EB	T	Water	8260B	
680-61495-8	CPA-MW3D-0910	T	Water	8260B	
680-61495-10	BSA-MW2D-0910	T	Water	8260B	
680-61495-12	BSA-MW1S-0910	T	Water	8260B	
680-61495-14TB	Trip Blank 2	T	Water	8260B	
Analysis Batch:680-181780					
LCS 680-181780/5	Lab Control Sample	T	Water	8260B	
LCSD 680-181780/6	Lab Control Sample Duplicate	T	Water	8260B	
MB 680-181780/8	Method Blank	T	Water	8260B	
680-61455-3MS	Matrix Spike	T	Water	8260B	
680-61455-3MSD	Matrix Spike Duplicate	T	Water	8260B	

Report Basis
T = Total

AS 12/12/16

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 680-180934					
LCS 680-180934/12-A	Lab Control Sample	T	Water	3520C	
MB 680-180934/11-A	Method Blank	T	Water	3520C	
680-61455-1	CPA-MW5D-0910	T	Water	3520C	
680-61455-3	BSA-MW5D-0910	T	Water	3520C	
680-61455-3MS	Matrix Spike	T	Water	3520C	
680-61455-3MSD	Matrix Spike Duplicate	T	Water	3520C	
680-61495-1	BSA-MW4D-0910	T	Water	3520C	
680-61495-3	CPA-MW4D-0910	T	Water	3520C	
680-61495-5	BSA-MW3D-0910	T	Water	3520C	
680-61495-7EB	BSA-MW3D-0910-EB	T	Water	3520C	
680-61495-8	CPA-MW3D-0910	T	Water	3520C	
680-61495-10	BSA-MW2D-0910	T	Water	3520C	
680-61495-12	BSA-MW1S-0910	T	Water	3520C	
Prep Batch: 680-181388					
LCS 680-181388/15-A	Lab Control Sample	T	Water	3520C	
MB 680-181388/14-A	Method Blank	T	Water	3520C	
680-61543-1	CPA-MW2D-0910	T	Water	3520C	
680-61543-1MS	Matrix Spike	T	Water	3520C	
680-61543-1MSD	Matrix Spike Duplicate	T	Water	3520C	
680-61543-3FD	CPA-MW2D-0910-AD	T	Water	3520C	
680-61543-4	CPA-MW1D-0910	T	Water	3520C	
Analysis Batch:680-181416					
LCS 680-180934/12-A	Lab Control Sample	T	Water	8270C	680-180934
MB 680-180934/11-A	Method Blank	T	Water	8270C	680-180934
680-61455-1	CPA-MW5D-0910	T	Water	8270C	680-180934
680-61455-3	BSA-MW5D-0910	T	Water	8270C	680-180934
680-61455-3MS	Matrix Spike	T	Water	8270C	680-180934
680-61455-3MSD	Matrix Spike Duplicate	T	Water	8270C	680-180934
680-61495-1	BSA-MW4D-0910	T	Water	8270C	680-180934
680-61495-3	CPA-MW4D-0910	T	Water	8270C	680-180934
680-61495-5	BSA-MW3D-0910	T	Water	8270C	680-180934
680-61495-7EB	BSA-MW3D-0910-EB	T	Water	8270C	680-180934
680-61495-8	CPA-MW3D-0910	T	Water	8270C	680-180934
680-61495-10	BSA-MW2D-0910	T	Water	8270C	680-180934
680-61495-12	BSA-MW1S-0910	T	Water	8270C	680-180934
Analysis Batch:680-181687					
LCS 680-181388/15-A	Lab Control Sample	T	Water	8270C	680-181388
MB 680-181388/14-A	Method Blank	T	Water	8270C	680-181388
680-61543-1	CPA-MW2D-0910	T	Water	8270C	680-181388
680-61543-1MS	Matrix Spike	T	Water	8270C	680-181388
680-61543-3FD	CPA-MW2D-0910-AD	T	Water	8270C	680-181388

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Analysis Batch:680-181862					
680-61543-1MSD	Matrix Spike Duplicate	T	Water	8270C	680-181388
680-61543-4	CPA-MW1D-0910	T	Water	8270C	680-181388

Report Basis
T = Total

AB 12-12-10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC VOA					
Analysis Batch:680-181772					
LCS 680-181772/23	Lab Control Sample	T	Water	RSK-175	
LCSD 680-181772/25	Lab Control Sample Duplicate	T	Water	RSK-175	
MB 680-181772/24	Method Blank	T	Water	RSK-175	
680-61495-1	BSA-MW4D-0910	T	Water	RSK-175	
680-61495-3	CPA-MW4D-0910	T	Water	RSK-175	
680-61495-5	BSA-MW3D-0910	T	Water	RSK-175	
680-61495-7EB	BSA-MW3D-0910-EB	T	Water	RSK-175	
680-61495-8	CPA-MW3D-0910	T	Water	RSK-175	
680-61495-10	BSA-MW2D-0910	T	Water	RSK-175	
680-61495-12	BSA-MW1S-0910	T	Water	RSK-175	
Analysis Batch:680-181773					
LCS 680-181773/9	Lab Control Sample	T	Water	RSK-175	
LCSD 680-181773/11	Lab Control Sample Duplicate	T	Water	RSK-175	
MB 680-181773/10	Method Blank	T	Water	RSK-175	
680-61495-3	CPA-MW4D-0910	T	Water	RSK-175	
680-61495-8	CPA-MW3D-0910	T	Water	RSK-175	
680-61495-10	BSA-MW2D-0910	T	Water	RSK-175	
680-61495-12	BSA-MW1S-0910	T	Water	RSK-175	
Analysis Batch:680-181917					
LCS 680-181917/22	Lab Control Sample	T	Water	RSK-175	
LCSD 680-181917/24	Lab Control Sample Duplicate	T	Water	RSK-175	
MB 680-181917/23	Method Blank	T	Water	RSK-175	
680-61455-1	CPA-MW5D-0910	T	Water	RSK-175	
680-61455-3	BSA-MW5D-0910	T	Water	RSK-175	
680-61543-1	CPA-MW2D-0910	T	Water	RSK-175	
680-61543-4	CPA-MW1D-0910	T	Water	RSK-175	
Analysis Batch:680-181925					
LCS 680-181925/7	Lab Control Sample	T	Water	RSK-175	
LCSD 680-181925/9	Lab Control Sample Duplicate	T	Water	RSK-175	
MB 680-181925/8	Method Blank	T	Water	RSK-175	
680-61455-3	BSA-MW5D-0910	T	Water	RSK-175	
680-61543-1	CPA-MW2D-0910	T	Water	RSK-175	
680-61543-4	CPA-MW1D-0910	T	Water	RSK-175	

Report Basis
T = Total

AO 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 680-182835					
LCS 680-182835/19-A	Lab Control Sample	R	Water	3005A	
MB 680-182835/18-A	Method Blank	R	Water	3005A	
680-61455-1	CPA-MW5D-0910	R	Water	3005A	
680-61455-1MS	Matrix Spike	R	Water	3005A	
680-61455-1MSD	Matrix Spike Duplicate	R	Water	3005A	
680-61455-2	CPA-MW5D-F(0.2)-0910	D	Water	3005A	
680-61455-3	BSA-MW5D-0910	R	Water	3005A	
680-61455-4	BSA-MW5D-F(0.2)-0910	D	Water	3005A	
680-61495-1	BSA-MW4D-0910	R	Water	3005A	
680-61495-2	BSA-MW4D-F(0.2)-0910	D	Water	3005A	
680-61495-3	CPA-MW4D-0910	R	Water	3005A	
680-61495-4	CPA-MW4D-F(0.2)-0910	D	Water	3005A	
680-61495-5	BSA-MW3D-0910	R	Water	3005A	
680-61495-6	BSA-MW3D-F(0.2)-0910	D	Water	3005A	
680-61495-7EB	BSA-MW3D-0910-EB	R	Water	3005A	
680-61495-8	CPA-MW3D-0910	R	Water	3005A	
680-61495-9	CPA-MW3D-F(0.2)-0910	D	Water	3005A	
680-61495-10	BSA-MW2D-0910	R	Water	3005A	
680-61495-11	BSA-MW2D-F(0.2)-0910	D	Water	3005A	
680-61495-12	BSA-MW1S-0910	R	Water	3005A	
680-61495-13	BSA-MW1S-F(0.2)-0910	D	Water	3005A	
Prep Batch: 680-182836					
LCS 680-182836/20-A	Lab Control Sample	R	Water	3005A	
MB 680-182836/19-A	Method Blank	R	Water	3005A	
680-61543-1	CPA-MW2D-0910	R	Water	3005A	
680-61543-1MS	Matrix Spike	R	Water	3005A	
680-61543-1MSD	Matrix Spike Duplicate	R	Water	3005A	
680-61543-2	CPA-MW2D-F(0.2)-0910	D	Water	3005A	
680-61543-4	CPA-MW1D-0910	R	Water	3005A	
680-61543-5	CPA-MW1D-F(0.2)-0910	D	Water	3005A	

AO 12/2/16

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:680-183127					
LCS 680-182835/19-A	Lab Control Sample	R	Water	6010B	680-182835
MB 680-182835/18-A	Method Blank	R	Water	6010B	680-182835
LCS 680-182836/20-A	Lab Control Sample	R	Water	6010B	680-182836
MB 680-182836/19-A	Method Blank	R	Water	6010B	680-182836
680-61455-1	CPA-MW5D-0910	R	Water	6010B	680-182835
680-61455-1MS	Matrix Spike	R	Water	6010B	680-182835
680-61455-1MSD	Matrix Spike Duplicate	R	Water	6010B	680-182835
680-61455-2	CPA-MW5D-F(0.2)-0910	D	Water	6010B	680-182835
680-61455-3	BSA-MW5D-0910	R	Water	6010B	680-182835
680-61455-4	BSA-MW5D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-1	BSA-MW4D-0910	R	Water	6010B	680-182835
680-61495-2	BSA-MW4D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-3	CPA-MW4D-0910	R	Water	6010B	680-182835
680-61495-4	CPA-MW4D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-5	BSA-MW3D-0910	R	Water	6010B	680-182835
680-61495-6	BSA-MW3D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-7EB	BSA-MW3D-0910-EB	R	Water	6010B	680-182835
680-61495-8	CPA-MW3D-0910	R	Water	6010B	680-182835
680-61495-9	CPA-MW3D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-10	BSA-MW2D-0910	R	Water	6010B	680-182835
680-61495-11	BSA-MW2D-F(0.2)-0910	D	Water	6010B	680-182835
680-61495-12	BSA-MW1S-0910	R	Water	6010B	680-182835
680-61495-13	BSA-MW1S-F(0.2)-0910	D	Water	6010B	680-182835
680-61543-1	CPA-MW2D-0910	R	Water	6010B	680-182836
680-61543-1MS	Matrix Spike	R	Water	6010B	680-182836
680-61543-1MSD	Matrix Spike Duplicate	R	Water	6010B	680-182836
680-61543-2	CPA-MW2D-F(0.2)-0910	D	Water	6010B	680-182836
680-61543-4	CPA-MW1D-0910	R	Water	6010B	680-182836
680-61543-5	CPA-MW1D-F(0.2)-0910	D	Water	6010B	680-182836

Report Basis
D = Dissolved
R = Total Recoverable

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Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-180753					
LCS 680-180753/3	Lab Control Sample	T	Water	310.1	
LCSD 680-180753/15	Lab Control Sample Duplicate	T	Water	310.1	
MB 680-180753/2	Method Blank	T	Water	310.1	
680-61455-1	CPA-MW5D-0910	T	Water	310.1	
680-61455-1DU	Duplicate	T	Water	310.1	
680-61455-3	BSA-MW5D-0910	T	Water	310.1	
Analysis Batch:680-180829					
LCS 680-180829/2	Lab Control Sample	T	Water	353.2	
MB 680-180829/1	Method Blank	T	Water	353.2	
680-61455-1	CPA-MW5D-0910	T	Water	353.2	
680-61455-1MS	Matrix Spike	T	Water	353.2	
680-61455-1MSD	Matrix Spike Duplicate	T	Water	353.2	
680-61455-3	BSA-MW5D-0910	T	Water	353.2	
Analysis Batch:680-181103					
LCS 680-181103/2	Lab Control Sample	T	Water	353.2	
MB 680-181103/1	Method Blank	T	Water	353.2	
680-61495-1	BSA-MW4D-0910	T	Water	353.2	
680-61495-1MS	Matrix Spike	T	Water	353.2	
680-61495-1MSD	Matrix Spike Duplicate	T	Water	353.2	
680-61495-3	CPA-MW4D-0910	T	Water	353.2	
680-61495-5	BSA-MW3D-0910	T	Water	353.2	
680-61495-8	CPA-MW3D-0910	T	Water	353.2	
680-61495-10	BSA-MW2D-0910	T	Water	353.2	
680-61495-12	BSA-MW1S-0910	T	Water	353.2	
Analysis Batch:680-181164					
LCS 680-181164/2	Lab Control Sample	T	Water	353.2	
MB 680-181164/1	Method Blank	T	Water	353.2	
680-61543-1	CPA-MW2D-0910	T	Water	353.2	
680-61543-1MS	Matrix Spike	T	Water	353.2	
680-61543-1MSD	Matrix Spike Duplicate	T	Water	353.2	
680-61543-4	CPA-MW1D-0910	T	Water	353.2	
Analysis Batch:680-181295					
LCS 680-181295/2	Lab Control Sample	T	Water	375.4	
MB 680-181295/1	Method Blank	T	Water	375.4	
680-61455-1	CPA-MW5D-0910	T	Water	375.4	
680-61455-3	BSA-MW5D-0910	T	Water	375.4	
680-61455-3DU	Duplicate	T	Water	375.4	

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-181350					
LCS 680-181350/6	Lab Control Sample	T	Water	310.1	
LCSD 680-181350/21	Lab Control Sample Duplicate	T	Water	310.1	
MB 680-181350/5	Method Blank	T	Water	310.1	
680-61495-1	BSA-MW4D-0910	T	Water	310.1	
680-61495-3	CPA-MW4D-0910	T	Water	310.1	
680-61495-5	BSA-MW3D-0910	T	Water	310.1	
680-61495-8	CPA-MW3D-0910	T	Water	310.1	
680-61495-10	BSA-MW2D-0910	T	Water	310.1	
680-61495-12	BSA-MW1S-0910	T	Water	310.1	
680-61543-1	CPA-MW2D-0910	T	Water	310.1	
680-61543-4	CPA-MW1D-0910	T	Water	310.1	
680-61543-4DU	Duplicate	T	Water	310.1	
Analysis Batch:680-181510					
LCS 680-181510/4	Lab Control Sample	T	Water	415.1	
MB 680-181510/2	Method Blank	T	Water	415.1	
680-61455-1	CPA-MW5D-0910	T	Water	415.1	
680-61455-3	BSA-MW5D-0910	T	Water	415.1	
Analysis Batch:680-181644					
LCS 680-181644/4	Lab Control Sample	T	Water	415.1	
MB 680-181644/2	Method Blank	T	Water	415.1	
680-61495-1	BSA-MW4D-0910	T	Water	415.1	
680-61495-3	CPA-MW4D-0910	T	Water	415.1	
680-61495-5	BSA-MW3D-0910	T	Water	415.1	
680-61495-8	CPA-MW3D-0910	T	Water	415.1	
680-61495-8DU	Duplicate	T	Water	415.1	
680-61495-10	BSA-MW2D-0910	T	Water	415.1	
680-61495-12	BSA-MW1S-0910	T	Water	415.1	
680-61543-1	CPA-MW2D-0910	T	Water	415.1	
680-61543-4	CPA-MW1D-0910	T	Water	415.1	
Analysis Batch:680-181665					
LCS 680-181663/2-A	Lab Control Sample	D	Water	415.1	
MB 680-181663/1-A	Method Blank	D	Water	415.1	
680-61455-2	CPA-MW5D-F(0.2)-0910	D	Water	415.1	
680-61455-4	BSA-MW5D-F(0.2)-0910	D	Water	415.1	

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Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:680-181927					
680-61495-2	BSA-MW4D-F(0.2)-0910	D	Water	415.1	
680-61495-2MS	Matrix Spike	D	Water	415.1	
680-61495-2MSD	Matrix Spike Duplicate	D	Water	415.1	
680-61495-4	CPA-MW4D-F(0.2)-0910	D	Water	415.1	
680-61495-6	BSA-MW3D-F(0.2)-0910	D	Water	415.1	
680-61495-9	CPA-MW3D-F(0.2)-0910	D	Water	415.1	
680-61495-11	BSA-MW2D-F(0.2)-0910	D	Water	415.1	
680-61495-13	BSA-MW1S-F(0.2)-0910	D	Water	415.1	
680-61543-2	CPA-MW2D-F(0.2)-0910	D	Water	415.1	
680-61543-5	CPA-MW1D-F(0.2)-0910	D	Water	415.1	
680-61543-5DU	Duplicate	D	Water	415.1	
Analysis Batch:680-182273					
LCS 680-182273/2	Lab Control Sample	T	Water	375.4	
MB 680-182273/1	Method Blank	T	Water	375.4	
680-61495-1	BSA-MW4D-0910	T	Water	375.4	
680-61495-1MS	Matrix Spike	T	Water	375.4	
680-61495-1MSD	Matrix Spike Duplicate	T	Water	375.4	
680-61495-3	CPA-MW4D-0910	T	Water	375.4	
680-61495-5	BSA-MW3D-0910	T	Water	375.4	
680-61495-8	CPA-MW3D-0910	T	Water	375.4	
680-61495-10	BSA-MW2D-0910	T	Water	375.4	
680-61495-12	BSA-MW1S-0910	T	Water	375.4	
680-61543-1	CPA-MW2D-0910	T	Water	375.4	
680-61543-4	CPA-MW1D-0910	T	Water	375.4	
Analysis Batch:680-182871					
LCS 680-182871/1	Lab Control Sample	T	Water	325.2	
MB 680-182871/17	Method Blank	T	Water	325.2	
680-61455-1	CPA-MW5D-0910	T	Water	325.2	
680-61455-3	BSA-MW5D-0910	T	Water	325.2	
680-61495-1	BSA-MW4D-0910	T	Water	325.2	
680-61495-3	CPA-MW4D-0910	T	Water	325.2	
680-61495-5	BSA-MW3D-0910	T	Water	325.2	
680-61495-5DU	Duplicate	T	Water	325.2	
680-61495-8	CPA-MW3D-0910	T	Water	325.2	
680-61495-10	BSA-MW2D-0910	T	Water	325.2	
680-61495-12	BSA-MW1S-0910	T	Water	325.2	
680-61543-1	CPA-MW2D-0910	T	Water	325.2	
680-61543-4	CPA-MW1D-0910	T	Water	325.2	

Report Basis
D = Dissolved
T = Total

AG 12/6/10

Client: Solutia Inc.

Quality Control Results

Job Number: 680-61455-1
Sdg Number: KPS060

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	BFB %Rec	DBFM %Rec	TOL %Rec
680-61455-1	CPA-MW5D-0910	95	94	103
680-61455-3	BSA-MW5D-0910	96	98	102
680-61455-5	Trip Blank #1	94	101	102
680-61495-1	BSA-MW4D-0910	94	96	103
680-61495-3	CPA-MW4D-0910	96	91	103
680-61495-5	BSA-MW3D-0910	97	94	102
680-61495-7	BSA-MW3D-0910-EB	94	99	101
680-61495-8	CPA-MW3D-0910	94	92	104
680-61495-10	BSA-MW2D-0910	94	101	105
680-61495-12	BSA-MW1S-0910	94	103	102
680-61495-14	Trip Blank 2	94	98	102
680-61543-1	CPA-MW2D-0910	97	94	103
680-61543-3	CPA-MW2D-0910-AD	96	94	103
680-61543-4	CPA-MW1D-0910	98	97	104
680-61543-6	Trip Blank #3	93	97	100
680-61543-7	BSA-MW1S-0910	95	100	104
MB 680-181438/24		93	99	101
MB 680-181578/8		96	103	105
MB 680-181780/8		92	101	102
LCS 680-181438/21		97	100	96
LCS 680-181578/5		96	97	93
LCS 680-181780/5		97	99	96
LCSD 680-181438/22		96	103	96
LCSD 680-181578/6		96	96	95
LCSD 680-181780/6		99	100	95
680-61455-3 MS	BSA-MW5D-0910 MS	100	102	94
680-61455-3 MSD	BSA-MW5D-0910 MSD	102	103	98

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

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Surrogate Recovery Report

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

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	2FP %Rec	TBP %Rec	NBZ %Rec	FBP %Rec	TPH %Rec
680-61455-1	CPA-MW5D-0910	72	60	91	72	70	79
680-61495-3	CPA-MW4D-0910	42	38	56	46	43X	40
680-61495-8	CPA-MW3D-0910	74	63	92	75	72	36
680-61495-12	BSA-MW1S-0910	68	58	92	68	65	36
680-61543-1	CPA-MW2D-0910	49	49	78	57	61	66
680-61543-3	CPA-MW2D-0910-AD	65	68	88	73	72	49
680-61543-4	CPA-MW1D-0910	0D	0D	0D	0D	0D	0D

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

AB 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Surrogate Recovery Report

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

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	2FP %Rec	FBP %Rec	NBZ %Rec	TPH %Rec
MB 680-180934/11-A		54	66	49	61	62	87
MB 680-181388/14-A		72	75	72	73	75	85
LCS 680-180934/12-A		62	71	50	62	62	72
LCS 680-181388/15-A		74	83	71	75	76	80
680-61543-1 MS	CPA-MW2D-0910 MS	41	67	40	48X	48	45
680-61543-1 MSD	CPA-MW2D-0910 MSD	60	82	53	63	64	52

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

12/20/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Surrogate Recovery Report

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

Client Matrix: Water

Lab Sample ID	Client Sample ID	PHL %Rec	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	TPH %Rec
680-61455-3	BSA-MW5D-0910	76	93	74	63	77	67
680-61495-1	BSA-MW4D-0910	79	98	79	70	82	57
680-61495-5	BSA-MW3D-0910	70	85	69	59	67	82
680-61495-7	BSA-MW3D-0910-EB	76	86	72	66	76	93
680-61495-10	BSA-MW2D-0910	72	85	66	60	70	40
680-61455-3 MS	BSA-MW5D-0910 MS	61	84	69	53	67	35
680-61455-3 MSD	BSA-MW5D-0910 MSD	65	83	69	53	65	34

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

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181438

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-181438/24
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1236
Date Prepared: 09/28/2010 1236

Analysis Batch: 680-181438
Prep Batch: N/A
Units: ug/L

Instrument ID: MSP2
Lab File ID: pq278.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

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

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	93	75 - 120
Dibromofluoromethane	99	75 - 121
Toluene-d8 (Surr)	101	75 - 120

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181438

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-181438/21	Analysis Batch:	680-181438	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq270.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2010 1039			Final Weight/Volume:	5 mL
Date Prepared:	09/28/2010 1039				

LCSD Lab Sample ID:	LCSD 680-181438/22	Analysis Batch:	680-181438	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq272.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/28/2010 1108			Final Weight/Volume:	5 mL
Date Prepared:	09/28/2010 1108				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	98	97	77 - 119	2	30		
Chlorobenzene	104	103	85 - 116	1	30		
1,2-Dichlorobenzene	102	100	79 - 124	1	30		
1,3-Dichlorobenzene	99	99	78 - 125	0.9	30		
1,4-Dichlorobenzene	98	98	81 - 122	0.07	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	97	96	75 - 120
Dibromofluoromethane	100	103	75 - 121
Toluene-d8 (Surr)	96	96	75 - 120

AG 12/2/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181578

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-181578/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1233
Date Prepared: 09/30/2010 1233

Analysis Batch: 680-181578
Prep Batch: N/A
Units: ug/L

Instrument ID: MSP2
Lab File ID: pq306.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

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

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	96	75 - 120
Dibromofluoromethane	103	75 - 121
Toluene-d8 (Surr)	105	75 - 120

AB 12/12/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181578

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-181578/5	Analysis Batch:	680-181578	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	pq298.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1036			Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1036				

LCSD Lab Sample ID:	LCSD 680-181578/6	Analysis Batch:	680-181578	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	pq300.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	09/30/2010 1105			Final Weight/Volume:	5 mL
Date Prepared:	09/30/2010 1105				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	93	95	77 - 119	2	30		
Chlorobenzene	103	103	85 - 116	1	30		
1,2-Dichlorobenzene	100	99	79 - 124	1	30		
1,3-Dichlorobenzene	96	98	78 - 125	2	30		
1,4-Dichlorobenzene	97	98	81 - 122	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	96	96	75 - 120
Dibromofluoromethane	97	96	75 - 121
Toluene-d8 (Surr)	93	95	75 - 120

AG 12/12/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181780

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 680-181780/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1237
Date Prepared: 10/01/2010 1237

Analysis Batch: 680-181780
Prep Batch: N/A
Units: ug/L

Instrument ID: MSP2
Lab File ID: pq320.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

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

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	92	75 - 120
Dibromofluoromethane	101	75 - 121
Toluene-d8 (Surr)	102	75 - 120

AL 10/12/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181780

Method: 8260B
Preparation: 5030B

LCS Lab Sample ID:	LCS 680-181780/5	Analysis Batch:	680-181780	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq312.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	10/01/2010 1035			Final Weight/Volume:	5 mL
Date Prepared:	10/01/2010 1035				

LCSD Lab Sample ID:	LCSD 680-181780/6	Analysis Batch:	680-181780	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	pq314.d
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	5 mL
Date Analyzed:	10/01/2010 1104			Final Weight/Volume:	5 mL
Date Prepared:	10/01/2010 1104				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Benzene	95	93	77 - 119	2	30		
Chlorobenzene	102	102	85 - 116	0	30		
1,2-Dichlorobenzene	98	99	79 - 124	1	30		
1,3-Dichlorobenzene	98	98	78 - 125	0	30		
1,4-Dichlorobenzene	96	98	81 - 122	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	97	99	75 - 120
Dibromofluoromethane	99	100	75 - 121
Toluene-d8 (Surr)	96	95	75 - 120

AO 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181780

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	680-61455-3	Analysis Batch:	680-181780	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	p0634.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Date Analyzed:	10/01/2010 2027			Final Weight/Volume:	5 mL
Date Prepared:	10/01/2010 2027				

MSD Lab Sample ID:	680-61455-3	Analysis Batch:	680-181780	Instrument ID:	MSP2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	p0636.d
Dilution:	5.0			Initial Weight/Volume:	5 mL
Date Analyzed:	10/01/2010 2057			Final Weight/Volume:	5 mL
Date Prepared:	10/01/2010 2057				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	91	91	77 - 119	0	30		
Chlorobenzene	86	87	85 - 116	1	30		
1,2-Dichlorobenzene	104	105	79 - 124	1	30		
1,3-Dichlorobenzene	102	105	78 - 125	3	30		
1,4-Dichlorobenzene	100	104	81 - 122	4	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
4-Bromofluorobenzene	100	102	75 - 120
Dibromofluoromethane	102	103	75 - 121
Toluene-d8 (Surr)	94	98	75 - 120

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-180934

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-180934/11-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/29/2010 0941
Date Prepared: 09/24/2010 1438

Analysis Batch: 680-181416
Prep Batch: 680-180934
Units: ug/L

Instrument ID: MSG
Lab File ID: g3574.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

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

Surrogate	% Rec	Acceptance Limits
Phenol-d5	54	38 - 116
2,4,6-Tribromophenol	66	40 - 139
2-Fluorophenol	49	36 - 110
2-Fluorobiphenyl	61	50 - 113
Nitrobenzene-d5	62	45 - 112
Terphenyl-d14	87	10 - 121

Lab Control Sample - Batch: 680-180934

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-180934/12-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/29/2010 1008
Date Prepared: 09/24/2010 1438

Analysis Batch: 680-181416
Prep Batch: 680-180934
Units: ug/L

Instrument ID: MSG
Lab File ID: g3575.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
4-Chloroaniline	100	54.1	54	10 - 110	
1,2,4-Trichlorobenzene	100	53.7	54	41 - 110	
1,4-Dioxane	100	41.3	41	11 - 110	
2-Chlorophenol	100	65.1	65	47 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	62	38 - 116
2,4,6-Tribromophenol	71	40 - 139
2-Fluorophenol	50	36 - 110
2-Fluorobiphenyl	62	50 - 113
Nitrobenzene-d5	62	45 - 112
Terphenyl-d14	72	10 - 121

AG 12/2/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-180934

Method: 8270C
Preparation: 3520C

MS Lab Sample ID:	680-61455-3	Analysis Batch:	680-181416	Instrument ID:	MSG
Client Matrix:	Water	Prep Batch:	680-180934	Lab File ID:	g3586.d
Dilution:	1.0			Initial Weight/Volume:	1050 mL
Date Analyzed:	09/29/2010 1504			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

MSD Lab Sample ID:	680-61455-3	Analysis Batch:	680-181416	Instrument ID:	MSG
Client Matrix:	Water	Prep Batch:	680-180934	Lab File ID:	g3587.d
Dilution:	1.0			Initial Weight/Volume:	1060 mL
Date Analyzed:	09/29/2010 1531			Final Weight/Volume:	1 mL
Date Prepared:	09/24/2010 1438			Injection Volume:	1 uL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
4-Chloroaniline	38	19	10 - 110	67	40		U F
1,2,4-Trichlorobenzene	61	61	41 - 110	2	40		
1,4-Dioxane	51	42	11 - 110	20	40		
2-Chlorophenol	67	65	47 - 110	4	40		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Phenol-d5	61	65	38 - 116
2,4,6-Tribromophenol	84	83	40 - 139
2-Fluorobiphenyl	69	69	50 - 113
2-Fluorophenol	53	53	36 - 110
Nitrobenzene-d5	67	65	45 - 112
Terphenyl-d14	35	34	10 - 121

AB 12/2/10.

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181388

Method: 8270C
Preparation: 3520C

Lab Sample ID: MB 680-181388/14-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1450
Date Prepared: 09/29/2010 1451

Analysis Batch: 680-181687
Prep Batch: 680-181388
Units: ug/L

Instrument ID: MSN
Lab File ID: n9498.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

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

Surrogate	% Rec	Acceptance Limits
Phenol-d5	72	38 - 116
2,4,6-Tribromophenol	75	40 - 139
2-Fluorophenol	72	36 - 110
2-Fluorobiphenyl	73	50 - 113
Nitrobenzene-d5	75	45 - 112
Terphenyl-d14	85	10 - 121

Lab Control Sample - Batch: 680-181388

Method: 8270C
Preparation: 3520C

Lab Sample ID: LCS 680-181388/15-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1516
Date Prepared: 09/29/2010 1451

Analysis Batch: 680-181687
Prep Batch: 680-181388
Units: ug/L

Instrument ID: MSN
Lab File ID: n9499.d
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,2,4-Trichlorobenzene	100	76.2	76	41 - 110	
2-Chlorophenol	100	79.7	80	47 - 110	

Surrogate	% Rec	Acceptance Limits
Phenol-d5	74	38 - 116
2,4,6-Tribromophenol	83	40 - 139
2-Fluorophenol	71	36 - 110
2-Fluorobiphenyl	75	50 - 113
Nitrobenzene-d5	76	45 - 112
Terphenyl-d14	80	10 - 121

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181388

Method: 8270C
Preparation: 3520C

MS Lab Sample ID:	680-61543-1	Analysis Batch:	680-181687	Instrument ID:	MSN
Client Matrix:	Water	Prep Batch:	680-181388	Lab File ID:	n9510.d
Dilution:	1.0			Initial Weight/Volume:	500 mL
Date Analyzed:	10/01/2010 1957			Final Weight/Volume:	0.5 mL
Date Prepared:	09/29/2010 1451			Injection Volume:	1 uL

MSD Lab Sample ID:	680-61543-1	Analysis Batch:	680-181862	Instrument ID:	MSG
Client Matrix:	Water	Prep Batch:	680-181388	Lab File ID:	g3637.d
Dilution:	1.0			Initial Weight/Volume:	500 mL
Date Analyzed:	10/04/2010 1427			Final Weight/Volume:	0.5 mL
Date Prepared:	09/29/2010 1451			Injection Volume:	1 uL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,2,4-Trichlorobenzene	42	60	41 - 110	34	40		
2-Chlorophenol	44	75	47 - 110	40	40	F	

Surrogate	MS % Rec		MSD % Rec	Acceptance Limits
Phenol-d5	41		60	38 - 116
2,4,6-Tribromophenol	67		82	40 - 139
2-Fluorophenol	40		53	36 - 110
2-Fluorobiphenyl	48	X	63	50 - 113
Nitrobenzene-d5	48		64	45 - 112
Terphenyl-d14	45		52	10 - 121

AO 12/8/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181772

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-181772/24
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1228
Date Prepared: N/A

Analysis Batch: 680-181772
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ907.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

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

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 680-181772

Method: RSK-175
Preparation: N/A

LCS Lab Sample ID: LCS 680-181772/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1202
Date Prepared: N/A

Analysis Batch: 680-181772
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ905.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 680-181772/25
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1928
Date Prepared: N/A

Analysis Batch: 680-181772
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ909.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethane	105	104	75 - 125	1	30		
Ethylene	103	98	75 - 125	5	30		
Methane	103	101	75 - 125	2	30		

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181773

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-181773/10
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1228
Date Prepared: N/A

Analysis Batch: 680-181773
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ907.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	RL
Methane	0.19	U	0.19

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181773

Method: RSK-175
Preparation: N/A

LCS Lab Sample ID: LCS 680-181773/9
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1137
Date Prepared: N/A

Analysis Batch: 680-181773
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ903.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 680-181773/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/01/2010 1915
Date Prepared: N/A

Analysis Batch: 680-181773
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ908.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methane	97	95	75 - 125	2	30		

AO 10/12/16

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181917

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-181917/23
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1234
Date Prepared: N/A

Analysis Batch: 680-181917
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ916.D
Initial Weight/Volume: 1000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	RL
Ethane	6.0	U	6.0
Ethylene	5.6	U	5.6
Methane	3.2	U	3.2

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181917

Method: RSK-175
Preparation: N/A

LCS Lab Sample ID: LCS 680-181917/22
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1222
Date Prepared: N/A

Analysis Batch: 680-181917
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ915.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 680-181917/24
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1840
Date Prepared: N/A

Analysis Batch: 680-181917
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUFID2
Lab File ID: UQ919.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ethane	108	102	75 - 125	6	30		
Ethylene	106	97	75 - 125	9	30		
Methane	105	100	75 - 125	5	30		

AS 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181925

Method: RSK-175
Preparation: N/A

Lab Sample ID: MB 680-181925/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1247
Date Prepared: N/A

Analysis Batch: 680-181925
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ917.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	Result	Qual	RL
Methane	0.19	U	0.19

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181925

Method: RSK-175
Preparation: N/A

LCS Lab Sample ID: LCS 680-181925/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1156
Date Prepared: N/A

Analysis Batch: 680-181925
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ913.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 680-181925/9
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/04/2010 1827
Date Prepared: N/A

Analysis Batch: 680-181925
Prep Batch: N/A
Units: ug/L

Instrument ID: VGUTCD1
Lab File ID: UQ918.D
Initial Weight/Volume: 17000 uL
Final Weight/Volume: 17 mL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methane	99	95	75 - 125	4	30		

AL 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-182835

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-182835/18-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/16/2010 0936
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835
Units: mg/L

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-182835

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-182835/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2010 1629
Date Prepared: 10/13/2010 1455

Analysis Batch: 680-183127
Prep Batch: 680-182835
Units: mg/L

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.01	101	75 - 125	
Iron, Dissolved	1.00	1.01	101	75 - 125	
Manganese	0.500	0.520	104	75 - 125	
Manganese, Dissolved	0.500	0.520	104	75 - 125	

AO 10/21/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-182835

Method: 6010B
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	680-61455-1	Analysis Batch:	680-183127	Instrument ID:	ICPD
Client Matrix:	Water	Prep Batch:	680-182835	Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1649			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

MSD Lab Sample ID:	680-61455-1	Analysis Batch:	680-183127	Instrument ID:	ICPD
Client Matrix:	Water	Prep Batch:	680-182835	Lab File ID:	1015101039.chr
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	10/15/2010 1655			Final Weight/Volume:	50 mL
Date Prepared:	10/13/2010 1455				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Iron	18	150	75 - 125	1	20	4	4
Iron, Dissolved	18	150	75 - 125	1	20	4	4
Manganese	97	107	75 - 125	1	20	4	4
Manganese, Dissolved	97	107	75 - 125	1	20	4	4

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Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-182836

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: MB 680-182836/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2010 1856
Date Prepared: 10/13/2010 1458

Analysis Batch: 680-183127
Prep Batch: 680-182836
Units: mg/L

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Iron	0.050	U	0.050
Iron, Dissolved	0.050	U	0.050
Manganese	0.010	U	0.010
Manganese, Dissolved	0.010	U	0.010

Lab Control Sample - Batch: 680-182836

Method: 6010B
Preparation: 3005A
Total Recoverable

Lab Sample ID: LCS 680-182836/20-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/15/2010 1902
Date Prepared: 10/13/2010 1458

Analysis Batch: 680-183127
Prep Batch: 680-182836
Units: mg/L

Instrument ID: ICPD
Lab File ID: 1015101039.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.06	106	75 - 125	
Iron, Dissolved	1.00	1.06	106	75 - 125	
Manganese	0.500	0.533	107	75 - 125	
Manganese, Dissolved	0.500	0.533	107	75 - 125	

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Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-182836

Method: 6010B
Preparation: 3005A
Total Recoverable

MS Lab Sample ID:	680-61543-1	Analysis Batch: 680-183127	Instrument ID: ICPD
Client Matrix:	Water	Prep Batch: 680-182836	Lab File ID: 1015101039.chr
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	10/15/2010 1923		Final Weight/Volume: 50 mL
Date Prepared:	10/13/2010 1458		

MSD Lab Sample ID:	680-61543-1	Analysis Batch: 680-183127	Instrument ID: ICPD
Client Matrix:	Water	Prep Batch: 680-182836	Lab File ID: 1015101039.chr
Dilution:	1.0		Initial Weight/Volume: 50 mL
Date Analyzed:	10/15/2010 1928		Final Weight/Volume: 50 mL
Date Prepared:	10/13/2010 1458		

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Iron	111	105	75 - 125	1	20	4	4
Iron, Dissolved	111	105	75 - 125	1	20	4	4
Manganese	103	103	75 - 125	0	20		
Manganese, Dissolved	103	103	75 - 125	0	20		

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-180753

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-180753/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 1957
Date Prepared: N/A

Analysis Batch: 680-180753
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092210.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	5.0	U	5.0

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 680-180753

Method: 310.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-180753/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 2007
Date Prepared: N/A

Analysis Batch: 680-180753
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092210.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

LCSD Lab Sample ID: LCSD 680-180753/15
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 2140
Date Prepared: N/A

Analysis Batch: 680-180753
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092210.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Alkalinity	89	90	80 - 120	1	30		

AO 10/12/16

Client: Solutia Inc.

Quality Control Results

Job Number: 680-61455-1
Sdg Number: KPS060

Duplicate - Batch: 680-180753

Method: 310.1
Preparation: N/A

Lab Sample ID: 680-61455-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 2112
Date Prepared: N/A

Analysis Batch: 680-180753
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092210.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	340	352	3	30	
Carbon Dioxide, Free	94	103	9	30	

AB 12/22/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181350

Method: 310.1
Preparation: N/A

Lab Sample ID: MB 680-181350/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1130
Date Prepared: N/A

Analysis Batch: 680-181350
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092810b.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Alkalinity	5.0	U	5.0
Carbon Dioxide, Free	5.0	U	5.0

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 680-181350

Method: 310.1
Preparation: N/A

LCS Lab Sample ID: LCS 680-181350/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1140
Date Prepared: N/A

Analysis Batch: 680-181350
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092810b.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

LCSD Lab Sample ID: LCSD 680-181350/21
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1407
Date Prepared: N/A

Analysis Batch: 680-181350
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092810b.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Alkalinity	92	87	80 - 120	6	30		

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Duplicate - Batch: 680-181350

Method: 310.1
Preparation: N/A

Lab Sample ID: 680-61543-4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1357
Date Prepared: N/A

Analysis Batch: 680-181350
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk092810b.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Alkalinity	990		1030	4	30	
Carbon Dioxide, Free	5.0	U	5.0	NC	30	U

PLO 10/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-182871

Method: 325.2
Preparation: N/A

Lab Sample ID: MB 680-182871/17
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/13/2010 1755
Date Prepared: N/A

Analysis Batch: 680-182871
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE11013101CLB.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Chloride	1.0	U	1.0

Lab Control Sample - Batch: 680-182871

Method: 325.2
Preparation: N/A

Lab Sample ID: LCS 680-182871/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/13/2010 1720
Date Prepared: N/A

Analysis Batch: 680-182871
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE11013101CLB.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	50.0	50.4	101	85 - 115	

Duplicate - Batch: 680-182871

Method: 325.2
Preparation: N/A

Lab Sample ID: 680-61495-5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/13/2010 1724
Date Prepared: N/A

Analysis Batch: 680-182871
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE11013101CLB.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Chloride	76	76.1	0.4	30	

AG 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-180829

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-180829/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 1658
Date Prepared: N/A

Analysis Batch: 680-180829
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-180829

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-180829/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/22/2010 1659
Date Prepared: N/A

Analysis Batch: 680-180829
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.500	0.510	102		
Nitrate Nitrite as N	1.00	1.00	100	90 - 110	
Nitrite as N	0.500	0.490	98	90 - 110	

AO 12/2/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-180829

Method: 353.2
Preparation: N/A

MS Lab Sample ID:	680-61455-1	Analysis Batch:	680-180829	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/22/2010 1702			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-61455-1	Analysis Batch:	680-180829	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch: N/A		Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/22/2010 1703			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	94	94		0.4			
Nitrate Nitrite as N	96	95	90 - 110	0.4	10		
Nitrite as N	98	97	90 - 110	0.3	10		

AO 12/2/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181103

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-181103/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/23/2010 1534
Date Prepared: N/A

Analysis Batch: 680-181103
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-181103

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-181103/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/23/2010 1535
Date Prepared: N/A

Analysis Batch: 680-181103
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.500	0.505	101		
Nitrate Nitrite as N	1.00	1.00	100	90 - 110	
Nitrite as N	0.500	0.497	99	90 - 110	

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181103

Method: 353.2
Preparation: N/A

MS Lab Sample ID:	680-61495-1	Analysis Batch:	680-181103	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/23/2010 1537			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-61495-1	Analysis Batch:	680-181103	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/23/2010 1538			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	99	98		0.5			
Nitrate Nitrite as N	99	98	90 - 110	0.2	10		
Nitrite as N	99	99	90 - 110	0.5	10		

AW 12/12/16

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181164

Method: 353.2
Preparation: N/A

Lab Sample ID: MB 680-181164/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/24/2010 1605
Date Prepared: N/A

Analysis Batch: 680-181164
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Nitrate as N	0.050	U	0.050
Nitrate Nitrite as N	0.050	U	0.050
Nitrite as N	0.050	U	0.050

Lab Control Sample - Batch: 680-181164

Method: 353.2
Preparation: N/A

Lab Sample ID: LCS 680-181164/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/24/2010 1605
Date Prepared: N/A

Analysis Batch: 680-181164
Prep Batch: N/A
Units: mg/L

Instrument ID: Latchat 2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.500	0.500	100		
Nitrate Nitrite as N	1.00	1.00	100	90 - 110	
Nitrite as N	0.500	0.501	100	90 - 110	

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181164

Method: 353.2
Preparation: N/A

MS Lab Sample ID:	680-61543-1	Analysis Batch:	680-181164	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/24/2010 1605			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-61543-1	Analysis Batch:	680-181164	Instrument ID:	Latchat 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	09/24/2010 1605			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Nitrate as N	99	99		0.3			
Nitrate Nitrite as N	99	99	90 - 110	0.2	10		
Nitrite as N	100	100	90 - 110	0.06	10		

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181295

Method: 375.4
Preparation: N/A

Lab Sample ID: MB 680-181295/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1351
Date Prepared: N/A

Analysis Batch: 680-181295
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE10928101SO4.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-181295

Method: 375.4
Preparation: N/A

Lab Sample ID: LCS 680-181295/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/28/2010 1351
Date Prepared: N/A

Analysis Batch: 680-181295
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE10928101SO4.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	21.4	107	75 - 125	

Duplicate - Batch: 680-181295

Method: 375.4
Preparation: N/A

Lab Sample ID: 680-61455-3
Client Matrix: Water
Dilution: 5.0
Date Analyzed: 09/28/2010 1454
Date Prepared: N/A

Analysis Batch: 680-181295
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB1
Lab File ID: KONE10928101SO4.xls
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	69	78.0	13	30	

AD 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-182273

Method: 375.4
Preparation: N/A

Lab Sample ID:	MB 680-182273/1	Analysis Batch:	680-182273	Instrument ID:	KONELAB1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	KONE11007101SO4A.xls
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	10/07/2010 1031			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Result	Qual	RL
Sulfate	5.0	U	5.0

Lab Control Sample - Batch: 680-182273

Method: 375.4
Preparation: N/A

Lab Sample ID:	LCS 680-182273/2	Analysis Batch:	680-182273	Instrument ID:	KONELAB1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	KONE11007101SO4A.xls
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	2 mL
Date Analyzed:	10/07/2010 1031			Final Weight/Volume:	2 mL
Date Prepared:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	20.0	20.6	103	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-182273

Method: 375.4
Preparation: N/A

MS Lab Sample ID:	680-61495-1	Analysis Batch:	680-182273	Instrument ID:	KONELAB1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	KONE11007101SO4A.xls
Dilution:	5.0			Initial Weight/Volume:	10 mL
Date Analyzed:	10/07/2010 1136			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-61495-1	Analysis Batch:	680-182273	Instrument ID:	KONELAB1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	KONE11007101SO4A.xls
Dilution:	5.0			Initial Weight/Volume:	10 mL
Date Analyzed:	10/07/2010 1220			Final Weight/Volume:	10 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	98	92	75 - 125	2	30		

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Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181510

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-181510/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/29/2010 1246
Date Prepared: N/A

Analysis Batch: 680-181510
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: TOC092910.txt
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-181510

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-181510/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/29/2010 1317
Date Prepared: N/A

Analysis Batch: 680-181510
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: TOC092910.txt
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.7	104	80 - 120	

AG 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181644

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-181644/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1303
Date Prepared: N/A

Analysis Batch: 680-181644
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: TOC093010.txt
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Total Organic Carbon	1.0	U	1.0

Lab Control Sample - Batch: 680-181644

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-181644/4
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1334
Date Prepared: N/A

Analysis Batch: 680-181644
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: TOC093010.txt
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	20.0	20.0	100	80 - 120	

Duplicate - Batch: 680-181644

Method: 415.1
Preparation: N/A

Lab Sample ID: 680-61495-8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1705
Date Prepared: N/A

Analysis Batch: 680-181644
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: TOC093010.txt
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Organic Carbon	11	10.8	1	25	

AG 12/2/10

Quality Control Results

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Method Blank - Batch: 680-181665

Method: 415.1
Preparation: N/A

Lab Sample ID: MB 680-181663/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1253
Date Prepared: N/A

Analysis Batch: 680-181665
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Dissolved Organic Carbon-Dissolved	1.0	U	1.0

Lab Control Sample - Batch: 680-181665

Method: 415.1
Preparation: N/A

Lab Sample ID: LCS 680-181663/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 09/30/2010 1253
Date Prepared: N/A

Analysis Batch: 680-181665
Prep Batch: N/A
Units: mg/L

Instrument ID: TOC3
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved Organic Carbon-Dissolved	20.0	20.0	100	80 - 120	

AG 12/12/10

Client: Solutia Inc.

Job Number: 680-61455-1
Sdg Number: KPS060

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 680-181927

Method: 415.1
Preparation: N/A

MS Lab Sample ID:	680-61495-2	Analysis Batch:	680-181927	Instrument ID:	TOC3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Date Analyzed:	10/04/2010 1137			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	680-61495-2	Analysis Batch:	680-181927	Instrument ID:	TOC3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	
Date Analyzed:	10/04/2010 1137			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dissolved Organic Carbon-Dissolved	108	108	80 - 120	0	20		

Duplicate - Batch: 680-181927

Method: 415.1
Preparation: N/A

Lab Sample ID:	680-61543-5	Analysis Batch:	680-181927	Instrument ID:	TOC3
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	
Date Analyzed:	10/04/2010 1137			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Dissolved Organic Carbon-Dissolved	85	84.7	0.8	30	

AG 12/2/10

Serial Number 032418

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

3Q10 LTM GW Samples

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: W.G. Krummrich	PROJECT NO.: LTM 3Q10 Long Term Monitoring	PROJECT LOCATION (STATE): IL
TAL (LAB) PROJECT MANAGER: G.M. Rinaldi	P.O. NUMBER: 4503869001	CONTRACT NO.:
CLIENT (SITE) PM: GM Rinaldi	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-0868
CLIENT NAME: Solutia, Inc.	CLIENT E-MAIL:	
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

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

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alkalinity 310.1	Chloride 325.2 / Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss. Fe/Mn 6010B	DOC 415.1	REMARKS
								HCl	None	HNO3	None	None	None	None	None	HNO3	HCl	
09/21/10	1225	CPA - MW5D - 0910	G	X				3	2	1	1	1	3	2	1			
09/21/10	1225	CPA - MW5D - F(0.2) - 0910	G	X												1	1	field filtered
09/21/10	1558	BSA - MW5D - 0910	G	X				3	2	1	1	1	3	2	1			
09/21/10	1558	BSA - MW5D - F(0.2) - 0910	G	X												1	1	field filtered.
09/21/10	1558	BSA - MW5D - 0910 - MS	G	X				3	2									
09/21/10	1558	BSA - MW5D - 0910 - MSD	G	X				3	2									
0		TRIP BLANK #1		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen [illegible]	9/21/10	1800						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
Ruth Daughtry	9/22/10	0937	YES ○ NO ○		680-614155	Temp 1.8/1.5

TAL 8240-680 (1207)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PAGE 1 OF 2

PROJECT REFERENCE	NGK - LTM - 3Q10
PROJECT NO.	
PROJECT LOCATION (STATE)	IL
LAB PROJECT MANAGER	GM Rinaldi
P.O. NUMBER	4503869001
CONTRACT NO.	
CLIENT (SITE) PM	GM Rinaldi
CLIENT PHONE	314-674-3312
CLIENT FAX	314-674-8808
CLIENT NAME	Solutia, Inc
CLIENT E-MAIL	gmrina@solutia.com
CLIENT ADDRESS	575 Maryville Center Dr. St. Louis, MO 63141
COMPANY CONTRACTING THIS WORK (if applicable)	

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

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER), SOLID OR SEMISOLID, AIR, NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alkal/CO_2 310.1	Chloride 325.2, Sulfate 375.4	Methane, Ethane, Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss Fe/Mn 6010B	DOC 415.1	REMARKS
								HCl	NaOH	HNO_3	PRESERVATIVE			H_2SO_4		HNO_3	HCl	
9/22/10	0815	BSA-MW-4D-0910	G	A				3	2	1	1	1	3	2	1			
9/22/10	0815	BSA-MW-4D-F(0.2) 0910	G	A											1	1		
9/22/10	1010	CPA-MW-4D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1010	CPA-MW-4D-F(0.2) 0910	G	A											1	1		
9/22/10	1130	BSA-MW-3D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1130	BSA-MW-3D F(0.2) 0910	G	A											1	1		
9/22/10	1200	BSA-MW-3D-0910 EB	G	A				3	2									
9/22/10	1410	CPA-MW-3D-0910	G	A				3	2	1	1	1	3	2				
9/22/10	1410	CPA-MW-3D-F(0.2) 0910	G	A											1	1		
9/22/10	1520	BSA-MW-1D 0910	G	A				3	2	1	1	1	3	2				
9/22/10	1520	BSA-MW-1D-F(0.2) 0910	G	A											1	1		
9/22/10	1630	BSA-MW-1S-0910	G	A				3	2	1	1	1	3	2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen Gordon	9/22/10	1800						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible signature]	9/23/10	0917	YES ● NO ○		680-61495	Temps (°C): 0.4, 2.0, 1.6, 0.8

TAL8240-680 (1207)

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PAGE 2 OF 2

PROJECT REFERENCE: UGK-LTM-3Q10	PROJECT NO.	PROJECT LOCATION (STATE): IL
TAL (LAB) PROJECT MANAGER: GM Rinaldi	P.O. NUMBER: 4503861001	CONTRACT NO.
CLIENT (SITE) PM: G.M. Rinaldi	CLIENT PHONE: 314-674-3312	CLIENT FAX: 314-674-9888
CLIENT NAME: Solutia, INC.	CLIENT E-MAIL: gmrina@solutia.com	
CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63146		
COMPANY CONTRACTING THIS WORK (if applicable)		

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

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	VOC 8260	SVOC 8270C	D35 Fe/Mn 6010B	DOC EPA 415.1	REMARKS
9/22/10	1630	BSN-MW15 F(0.2) 0910	G	A						1	1	
9/22/10	–	Trip Blank 2		A				2				

PRESERVATIVE: HCl | none | HNO3 | H2SO4

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Stephen [illegible]	9/22/10	1800						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible] Howard	9/23/10	1517	YES ● NO ○		681-61495	

TAL8240-680 (1207)

Serial Number 032424

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.testamericainc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
WGK LTM 3Q10		

TAL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
GM Rinaldi	4503869001	

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
GM Rinaldi	314-674-3312	314-674-8808

CLIENT NAME	CLIENT E-MAIL
Solutia, Inc	gmrina@solutia.com

CLIENT ADDRESS: 575 Maryville Center Dr. St. Louis, MO 63141

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

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

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	VOC 8260	SVOC 8270C	Total Fe/Mn 6010B	Alka 310.1	Chloride 325.2 Sulfate 375.4	Methane Ethane Ethene RSK 175	Nitrate 353.2	TOC 415.1	Diss. Fe/Mn 6010B	DOC 415.1	REMARKS
		PRESERVATIVE	HCl	None	HNO_3	None	None	None	H_2SO_4	None	HNO_3	HCl	
9/23/10	0800	CPA - MW - 2D - 0910	3	2	1	1	1	3	2	1			
9/23/10	0800	CPA - MW - 2D - F(0.2) - 0910									1	1	
9/23/10	0800	CPA - MW - 2D - 0910 - AD	3	2									
9/23/10	0920	CPA - MW - 1D - 0910	3	2	1	1	1	3	2	1			
9/23/10	0920	CPA - MW - 1D - F(0.2) - 0910									1	1	
9/23/10		Trip Blank #3	X										
9/23/10	1045	BSA - MW - 15	X										Resample (NO HCl)

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	9/23/10	1900						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	9/24/10	0915	YES ● NO ○		680-61543	Temp(°C): 4.8 and 4.2 C

TAL 8240 680 (1207)

Login Sample Receipt Check List

Client: Solutia Inc.

Job Number: 680-61455-1
SDG Number: KPS060

Login Number: 61455
Creator: Daughtry, Beth
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8 and 1.5
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	

Login Sample Receipt Check List

Client: Solutia Inc.

Job Number: 680-61455-1
SDG Number: KPS060

Login Number: 61495
Creator: Hornsby, Jess
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	4 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4, 2.0, 1.6, 0.8 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	DOC requested on filtered samples.
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Login Sample Receipt Check List

Client: Solutia Inc.

Job Number: 680-61455-1
SDG Number: KPS060

Login Number: 61543
Creator: Hornsby, Jess
List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2 coolers rec'd on ice
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.8 and 4.2 C
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 sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	MS/MSD not requested (no additional volume provided).
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

AG 12/2/16

MJW CORPORATION
Radiation Consulting Professionals

December 14, 2010

Mr. Duane T. Kreuger
Geotechnology, Inc.
11816 Lackland Road Suite 150
St. Louis, MO63146

RECEIVED
DEC 14 2010
GEOTECHNOLOGY

Dear Mr. Kreuger:

As per your request I have taken another look at the Total Organic and Dissolved Organic data for SDG's KOM09 and KPS060. I have reviewed the additional data that you supplied December 13, 2010. This data includes tests for the field filtering apparatus. The test results show that the 0.2 micron filters used in the field leached dissolved organic carbon into the samples. Based on this new data I have removed the rejection qualifiers on all samples of Total Organic Carbon. However, the rejection qualifiers are still attached to all samples of Dissolved Organic Carbon. I have included the corrected pages in this report. Please replace your existing pages with these revised pages.

If you have any questions concerning this data validation report, please contact me at 585-344-7197.

Very truly yours,

MJW Corporation Inc.

Annette Guilds

Annette Guilds
Senior Scientist

CC: David Dooley
2010-1914 File

2010-1918.004

KOM09 & KPS060

University Park, 1900 Sweet Home Road
Amherst, NY 14228-3359
Voice: (716) 631.8291 Fax: (716) 631.5631 Toll Free: 1 (888) MJW.CORP www.mjwcorp.com

MJW CORPORATION
Radiation Consulting Professionals

November 23, 2010

Mr. Duane T. Kreuger
Geotechnology, Inc.
11816 Lackland Road Suite 150
St. Louis, MO63146

Dear Mr. Kreuger:

The data reported by Test America Laboratories under SDG KPS060 has been reviewed for quality assurance validation. Data was reported for Volatiles, Semi-Volatiles, Volatiles (dissolved gases), ICP Metals (total and dissolved), Chloride, Nitrate, Sulfate, Organic Carbon (total and dissolved), Alkalinity, and Carbon Dioxide for 28 samples as requested by Geotechnology, Inc. The 28 samples listed below were validated by MJW. The data in this report has either been approved for use, approved with qualification, or rejected.

- CPA-MW-5D-0910 (Lab ID: 680-61455-1)
- CPA-MW-5D-F(0.2)-0910 (Lab ID: 680-61455-2)
- BSA-MW-5D-0910 (Lab ID: 680-61455-3)
- BSA-MW-5D-0910-MS (Lab ID: 680-61455-3MS)
- BSA-MW-5D-0910-MSD (Lab ID: 680-61455-3 MSD)
- BSA-MW-5D-F(0.2)-0910 (Lab ID: 680-61455-4)
- Trip Blank #1 (Lab ID: 680-61455-5)
- BSA-MW-4D-0910 (Lab ID: 680-61495-1)
- BSA-MW-4D-F(0.2)-0910 (Lab ID: 680-61495-2)
- CPA-MW-4D-0910 (Lab ID: 680-61495-3)
- CPA-MW-4D-F(0.2)-0910 (Lab ID: 680-61495-4)
- BSA-MW-3D-0910 (Lab ID: 680-61495-5)
- BSA-MW-3D-F(0.2)-0910 (Lab ID: 680-61495-6)
- BSA-MW-3D-0910-EB (Lab ID: 680-61495-7EB)
- CPA-MW-3D-0910 (Lab ID: 680-61495-8)
- CPA-MW-3D-F(0.2)-0910 (Lab ID: 680-61495-9)
- BSA-MW-2D-0910 (Lab ID: 680-61495-10)
- BSA-MW-2D-F(0.2)-0910 (Lab ID: 680-61495-11)
- BSA-MW-1S-0910 (Lab ID: 680-61495-12)
- BSA-MW-1S-F(0.2)-0910 (Lab ID: 680-61495-13)
- Trip Blank #2 (Lab ID: 680-61495-14TB)
- CPA-MW-2D-0910 (Lab ID: 680-61543-1)
- CPA-MW-2D-F(0.2)-0910 (Lab ID: 680-61543-2)
- CPA-MW-2D-0910-AD (Lab ID: 680-61543-3FD)
- CPA-MW-1D-0910 (Lab ID: 680-61543-4)
- CPA-MW-1D-F(0.2)-0910 (Lab ID: 680-61543-5)
- Trip Blank #3 (Lab ID: 680-61543-6TB)
- BSA-MW-1S-0910 (Lab ID: 680-61543-7)

If you have any questions concerning this data validation report, please contact me at 585-344-7197.

Very truly yours,

MJW Corporation Inc.

Annette Guilds
Senior Scientist

Approved by:

David A. Dooley, Ph.D., CHP
President, MJW Corporation Inc.

2010-1918.003

KPS060

University Park, 1900 Sweet Home Road
Amherst, NY 14228-3359
Voice: (716) 631 8291 Fax: (716) 631 5631 Toll Free: 1 (888) MJW CORP www.mjwcorp.com

Summary Data Qualifiers

Summary of Sample Data Qualifiers

SDG # KPS060 Site Name Solutia W.G. Krummrich Plant (LTM Site)

Client ID	Lab ID	Matrix	DOC				
CPA-MW5D-0910	680-61455- 2	Water	R				
BSA-MW5D-0910	680-61455- 4	Water	R				
BSA-MW4D-0910	680-61495- 2	Water	R				
CPA-MW4D-0910	680-61495- 4	Water	R				
BSA-MW3D-0910	680-61495- 6	Water	R				
CPA-MW3D-0910	680-61495- 9	Water	R				
BSA-MW2D-0910	680-61495- 11	Water	R				
BSA-MW1S-0910	680-61495- 13	Water	R				
CPA-MW2D-0910	680-61543- 2	Water	R				
CPA-MW1D-0910	680-61543- 5	Water	R				

AL 12/14/10

Data Outlier Forms

Total and Dissolved Analyses

Sample	Analyte	Total Amt (mg/L)	Dissolved Amt (mg/L)	Qualifier
CPA-MW5D-0910	Iron	96.00	94.00	none
CPA-MW5D-0910	Manganese	3.50	3.50	none
BSA-MW5D-0910	Iron	6.40	8.30	none
BSA-MW5D-0910	Manganese	0.41	0.43	none
BSA-MW4D-0910	Iron	10.00	8.30	none
BSA-MW4D-0910	Manganese	0.71	0.68	none
CPA-MW4D-0910	Iron	11.00	9.90	none
CPA-MW4D-0910	Manganese	0.24	0.24	none
BSA-MW3D-0910	Iron	12.00	11.00	none
BSA-MW3D-0910	Manganese	0.57	0.56	none
CPA-MW3D-0910	Iron	15.00	13.00	none
CPA-MW3D-0910	Manganese	0.72	0.72	none
BSA-MW2D-0910	Iron	4.00	3.00	none
BSA-MW2D-0910	Manganese	0.57	0.53	none
BSA-MW1S-0910	Iron	3.70	0.79	none
BSA-MW1S-0910	Manganese	0.43	0.33	none
CPA-MW2D-0910	Iron	5.70	4.70	none
CPA-MW2D-0910	Manganese	0.37	0.34	none
CPA-MW1D-0910	Iron	3.50	1.80	none
CPA-MW1D-0910	Manganese	0.28	0.14	none
CPA-MW5D-0910	DOC	4.40	8.40	R
BSA-MW5D-0910	DOC	6.10	81.00	R
BSA-MW4D-0910	DOC	5.40	9.80	R
CPA-MW4D-0910	DOC	6.50	10.00	R
BSA-MW3D-0910	DOC	4.40	8.40	R
CPA-MW3D-0910	DOC	11.00	15.00	R
BSA-MW2D-0910	DOC	5.90	9.40	R
BSA-MW1S-0910	DOC	7.60	14.00	R
CPA-MW2D-0910	DOC	11.00	86.00	R
CPA-MW1D-0910	DOC	15.00	85.00	R

Data Package: KPS060

Date: 12/14/2010

AK 12/14/10

DVP-4 Attachment 5

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE NO.: _____ SDG NO.: KPS060 _____ LABORATORY: Test America _____
SITE: Solutia W.G. Krummrich Plant (LTM Site)

DATA ASSESSMENT

The current SOP No. HW-6 (Revision 11), June 1996 for CLP Organics Review and Preliminary Review has been applied.

All data were found to be valid and acceptable except those analytes that have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: _____ Date: 11/23/2010

MJW Approval: _____ Date: 11/23/2010

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No action necessary.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

No action necessary.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

No action necessary.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

No action necessary.

B) Field or rinse blank contamination:

No action necessary.

C) Trip blank contamination:

No action necessary.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

No action necessary.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

No action necessary.

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

Continuing calibration-VOA's: Some analytes have %D>25. These analytes are not required for this data package so no samples have been qualified.

Initial calibration-BNA's: Some analytes have %D>30. These analytes are not required for this data package so no samples have been qualified.

Continuing calibration-BNA's: Some analytes have %D>25. These analytes are not required for this data package so no samples have been qualified.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

No action necessary.

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

No action necessary.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

10. CONTRACT PROBLEMS NON-COMPLIANCE: None

11. FIELD DOCUMENTATION: None

12. OTHER PROBLEMS: None

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified to be used.

none

DVP-4 Attachment 6

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

DPO: [ ] Action [ ] FYI

CASE/SAS NO.: _____ **LABORATORY:** Test America

SDG NO.: KPS060 **DATA USER:** Geotechnology, Inc.

SOW: _____ **REVIEW COMPLETION DATE:** 11/23/2010

NO. OF SAMPLES: 18 **WATER** _____ **SOIL** _____ **OTHER**

REVIEWER: [ ] **ESD** [ ] **ESAT** [X] **OTHER, CONTRACTOR** MJW Corporation, Inc.

QC ITEM	VOA	BNA	PEST		
HOLDING TIMES	O	O	N/A		
GC-MS PERFORMANCE	O	O	N/A		
INITIAL CALIBRATIONS	O	O	N/A		
CONTINUING CALIBRATIONS	O	O	N/A		
FIELD BLANKS (F = N/A)	O	O	N/A		
LABORATORY BLANKS	O	O	N/A		
SURROGATES	O	O	N/A		
MATRIX SPIKE/DUPLICATES	O	O	N/A		
QC SAMPLES (LCS, PVS)	O	O	N/A		
INTERNAL STANDARDS	O	O	N/A		
COMPOUND IDENTIFICATION	O	O	N/A		
COMPOUND QUANTITATION	O	O	N/A		
SYSTEM PERFORMANCE	O	O	N/A		
OVERALL ASSESSMENT	O	O	N/A		

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

DVP-4 Attachment 7

DATA REJECTION SUMMARY

DATA REJECTION SUMMARY

Type of Review: Level IV **Date:** 11/23/2010 **SDG No.:** KPS060
Site Name: Solutia W.G. Krummrich Plant (LTM Site) **Lab Name:** Test America

Reviewer's Initials: AG **Number of Samples:** 18

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(33)									/ = %
ACID(14)									/ = %
B/N(50)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(33)									/ = %
ACID(14)									%
B/N(50)									%
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

DVP-4 Attachment 8

Acronyms and Data Qualifiers

Acronyms and Data Qualifiers

Acronyms

BFB - bromofluorobenzene
BHC - benzene hexachloride
BNA - base neutral acid
CCS - contract compliance screening
CLASS - Contract Laboratory Analytical Services Support
CLP - Contract Laboratory Program
CRQL - Contract Required Quantitation Limit
%D - percent difference
DCB -decachlorobiphenyl
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenylethane
DDT - dichlorodiphenyltrichloroethane
GC - gas chromatography
GC/EC - gas chromatograph/electron capture detector
GC/MS - gas chromatograph/mass spectrometer
GPC - gel permeation chromatography
IS - internal standard
kg - kilogram
µg - microgram
MAGIC - Mainframe Access Graphical Interface with CARD
MS - matrix spike
MSD - matrix spike duplicate
l - liter
ml - mililiter
PCB - polychlorinated biphenyl
PE - performance evaluation
PEM - Performance Evaluation Mixture
QC - quality control
RAS - Routine Analytical Services
RIC - reconstructed ion chromatogram
RPD - relative percent difference
RRF - relative response factor
RRF - average relative response factor (from initial calibration)
RRT - relative retention time
RSD - relative standard deviation
RT - retention time

RSCC - Regional Sample Control Center
SDG - sample delivery group
SMC - system monitoring compound
SOP - standard operating procedure
SOW - Statement of Work
SVOA - semivolatile organic analysis
TCL - Target Compound List
TCLP - Toxicity Characteristics Leachate Procedure
TCX -tetrachloro-m-xylene
TIC - tentatively identified compound
TPO - technical project officer
VOA - volatile organic analysis
VTSR - validated time of sample receipt

Data Qualifiers

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

APPENDIX E

MICROBIAL INSIGHTS DATA PACKAGE

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Client: Duane Kreuger
Geotechnology, Inc.
11816 Lackland Road
St. Louis, MO 63146

Phone: 314.997.7740

Fax: 314.997.2067

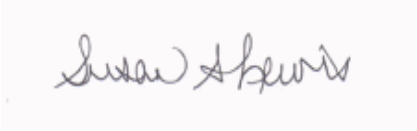
Identifier: 079HJ **Date Rec:** 10/27/2010 **Report Date:** 11/18/2010

Client Project #: J017210.02 **Client Project Name:** Solutia

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing

Reviewed By:



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MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
Date Received: 10/27/2010

Sample Information

Sample Name:	**BSAMW01S-1010**	**BSAMW02D-1010**	**BSAMW02D-1010**	**BSAMW03D-1010**	**BSAMW04D-1010**
Sample Date:	10/25/2010	10/25/2010	10/25/2010	10/25/2010	10/25/2010
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ

Biomass Concentrations

Total Biomass (cells/bead)	**9.90E+05**	**4.62E+05**	**1.64E+06**	**3.11E+05**	**2.48E+05**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**1.21**	**2.02**	**0.73**	**3.01**	**3.17**
Proteobacteria (Monos)	**50.58**	**82.13**	**81.79**	**56.69**	**64.87**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**1.45**	**1.91**
General (Nsats)	**45.94**	**14.07**	**17.48**	**34.47**	**25.79**
Eukaryotes (polyenoics)	**2.29**	**1.78**	**0.00**	**4.38**	**4.26**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.12**	**0.13**	**0.01**	**0.26**	**0.15**
Decreased Permeability	**0.89**	**0.20**	**0.03**	**0.48**	**0.38**

Legend:
NA = Not Analyzed NS = Not Sampled

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PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
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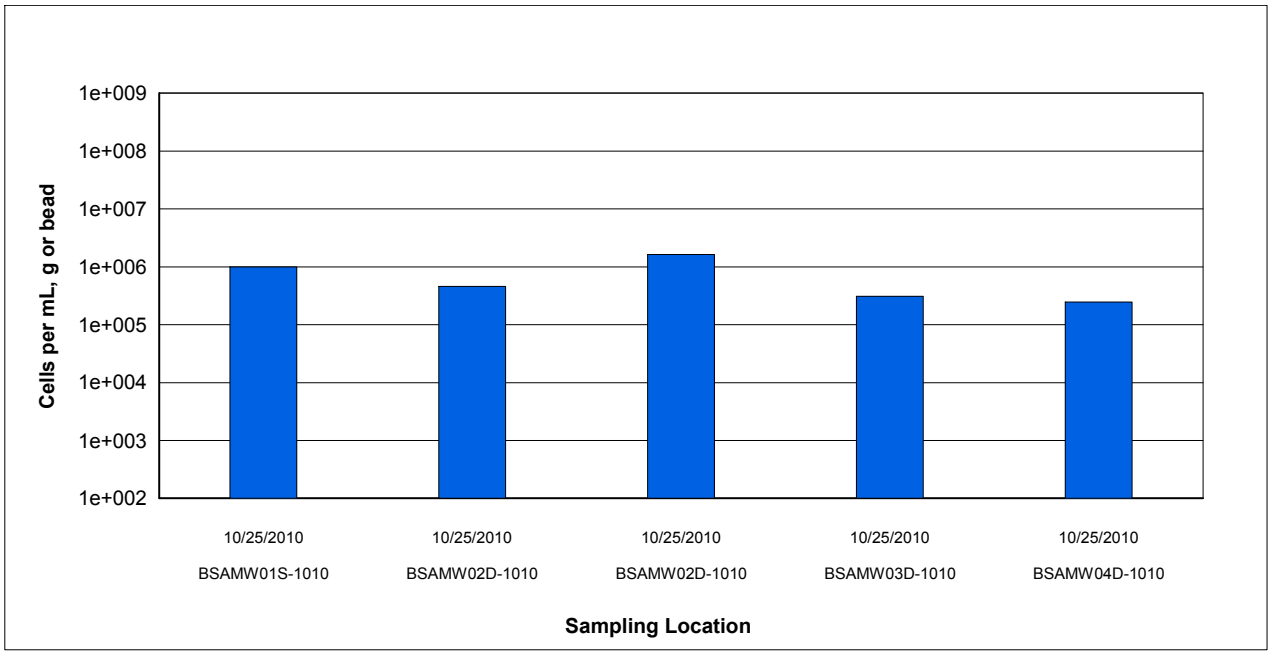

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

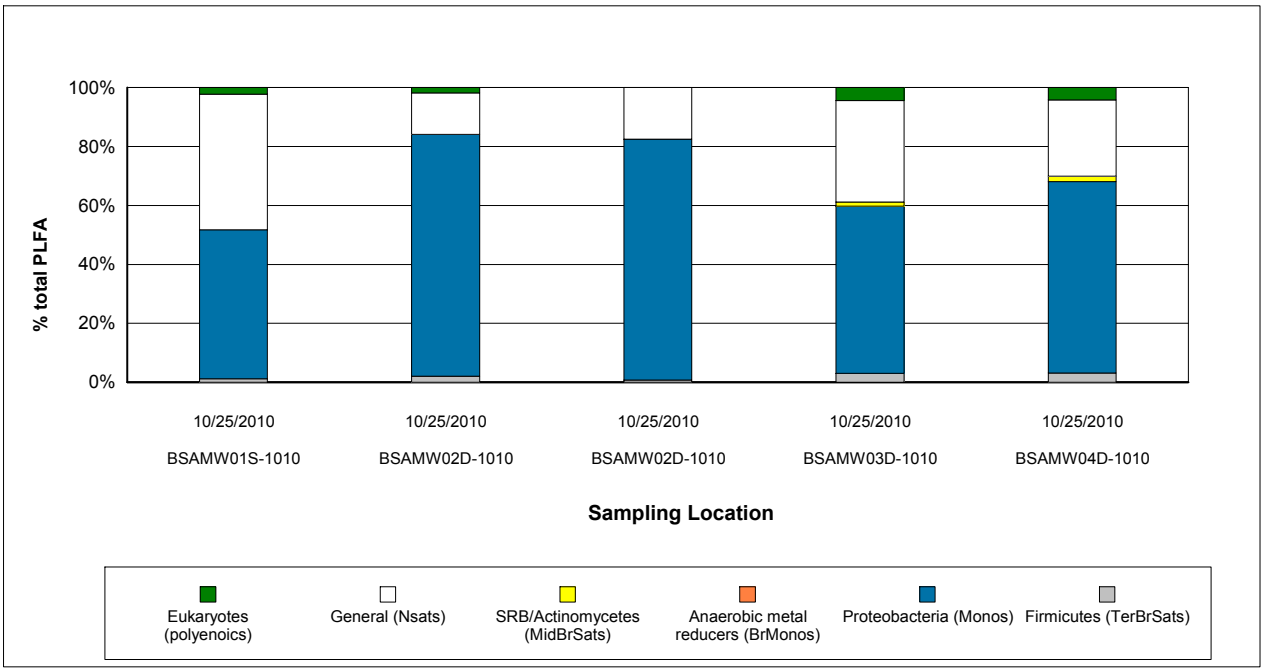

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

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Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
Date Received: 10/27/2010

Sample Information

Sample Name:	**BSAMW05D-1010**	**CPAMW01D-1010**	**CPAMW02D-1010**	**CPAMW03D-1010**	**CPAMW03D-1010**
Sample Date:	10/25/2010	10/25/2010	10/25/2010	10/25/2010	10/25/2010
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ

Biomass Concentrations

Total Biomass (cells/bead)	**3.35E+05**	**7.87E+04**	**2.33E+05**	**5.46E+05**	**9.23E+05**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**2.74**	**0.00**	**6.27**	**5.45**	**2.39**
Proteobacteria (Monos)	**62.43**	**53.29**	**56.72**	**55.51**	**52.18**
Anaerobic metal reducers (BrMonos)	**2.16**	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**2.81**	**0.00**	**2.29**	**0.89**	**11.52**
General (Nsats)	**25.60**	**46.70**	**28.99**	**31.15**	**28.47**
Eukaryotes (polyenoics)	**4.26**	**0.00**	**5.75**	**7.01**	**5.44**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.08**	**0.00**	**0.00**	**0.00**	**0.28**
Decreased Permeability	**0.32**	**0.00**	**0.47**	**0.46**	**0.71**

Legend:
NA = Not Analyzed NS = Not Sampled

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PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
Date Received: 10/27/2010

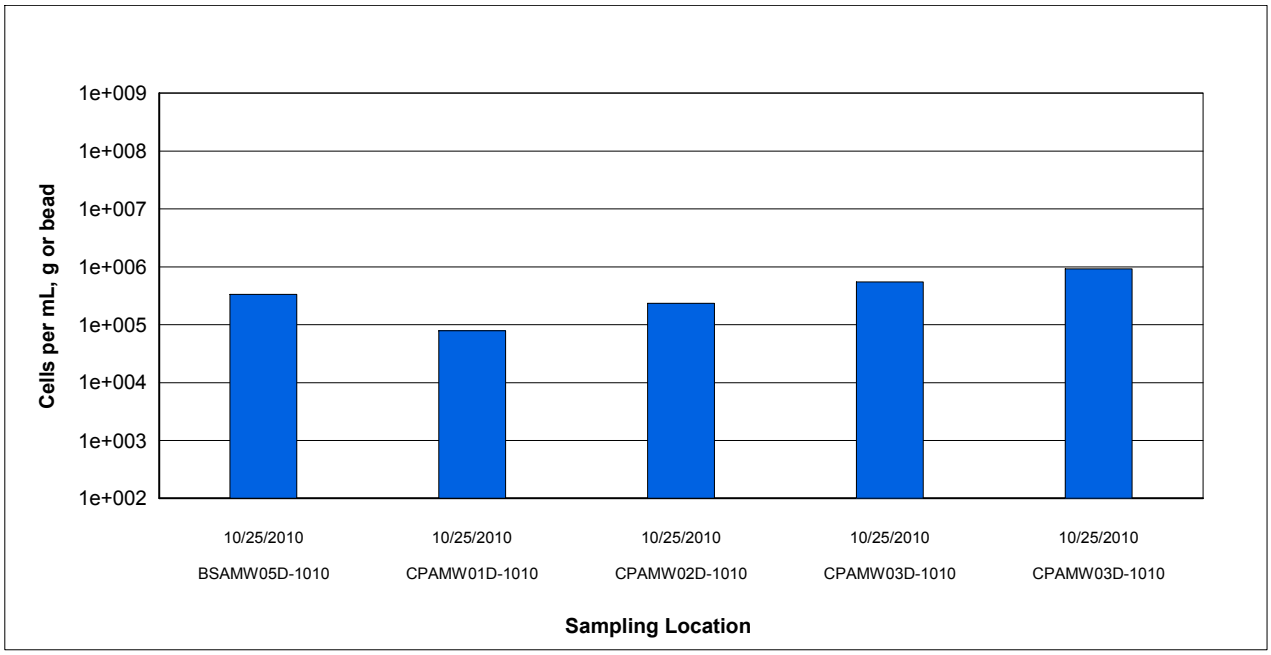

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

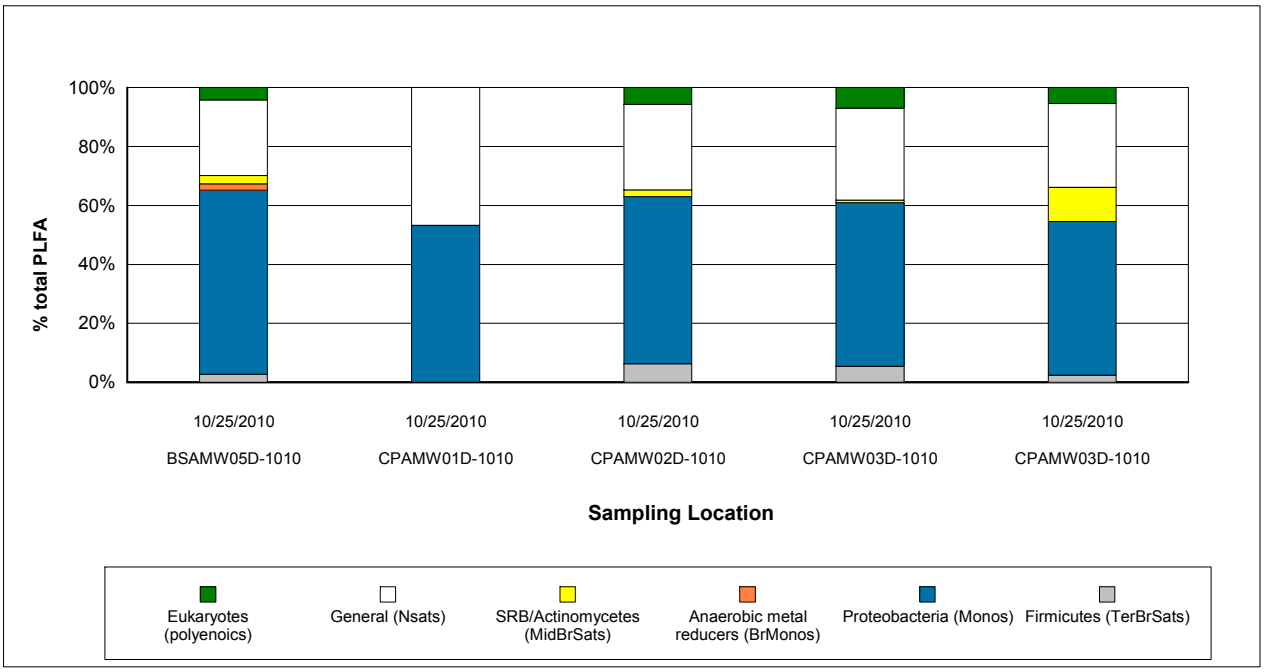

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

2340 Stock Creek Blvd. Rockford, TN 37853-3044
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
Date Received: 10/27/2010

Sample Information

Sample Name:	**CPAMW04D-1010**	**CPAMW05D-1010**
Sample Date:	10/25/2010	10/25/2010
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ

Biomass Concentrations

Total Biomass (cells/bead)	**2.47E+05**	**6.74E+04**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**5.57**	**8.67**
Proteobacteria (Monos)	**61.98**	**54.21**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**1.97**	**4.09**
General (Nsats)	**26.69**	**24.31**
Eukaryotes (polyenoics)	**3.80**	**8.71**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.00**	**0.00**
Decreased Permeability	**0.31**	**0.30**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

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Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Geotechnology, Inc.**
Project: Solutia

MI Project Number: **079HJ**
Date Received: 10/27/2010

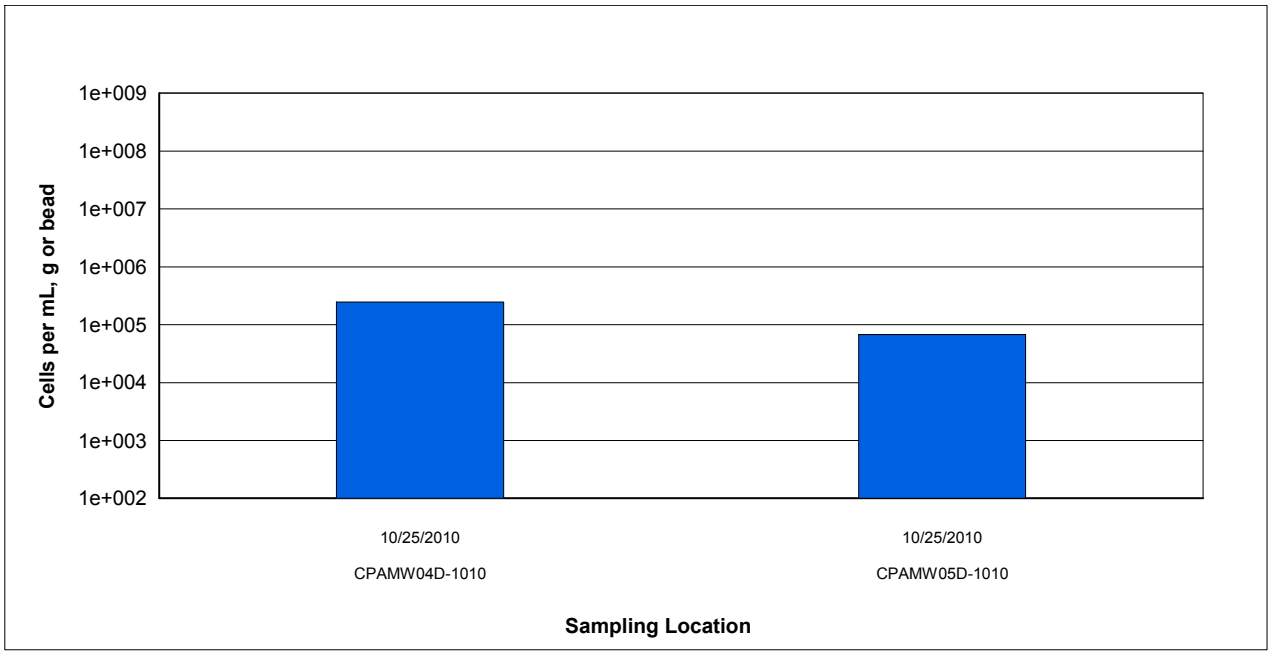

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

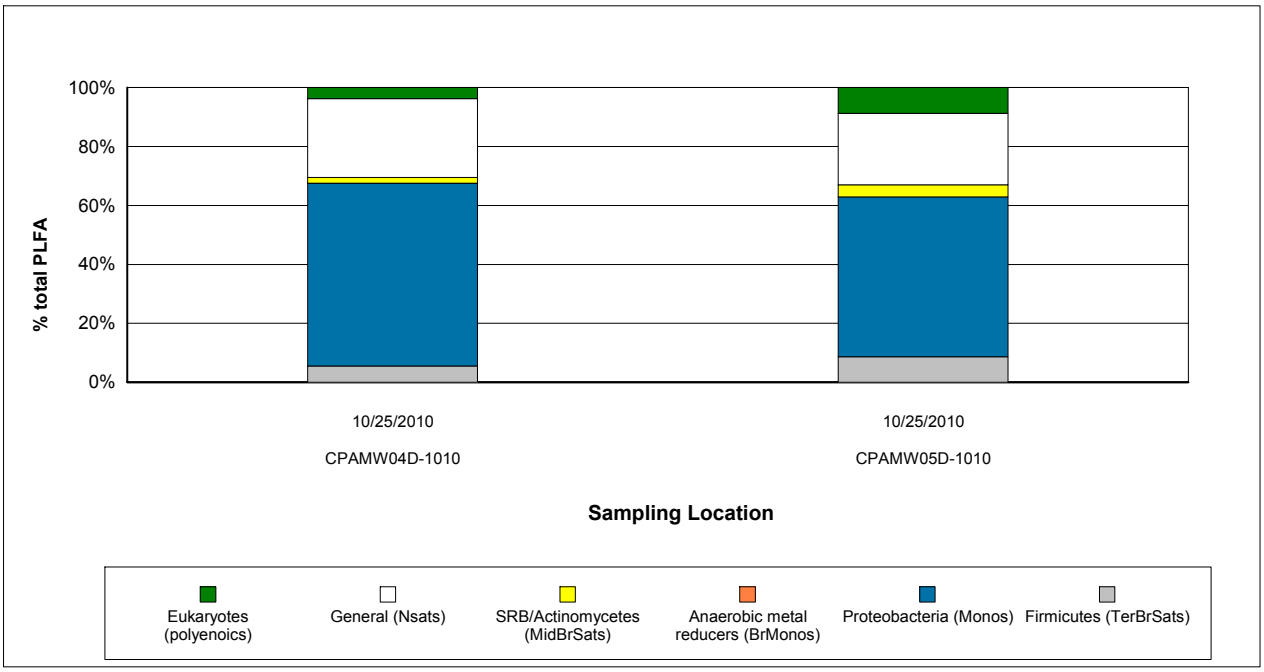

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

2340 Stock Creek Blvd.
Rockford TN 37853-3044
Phone (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

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.

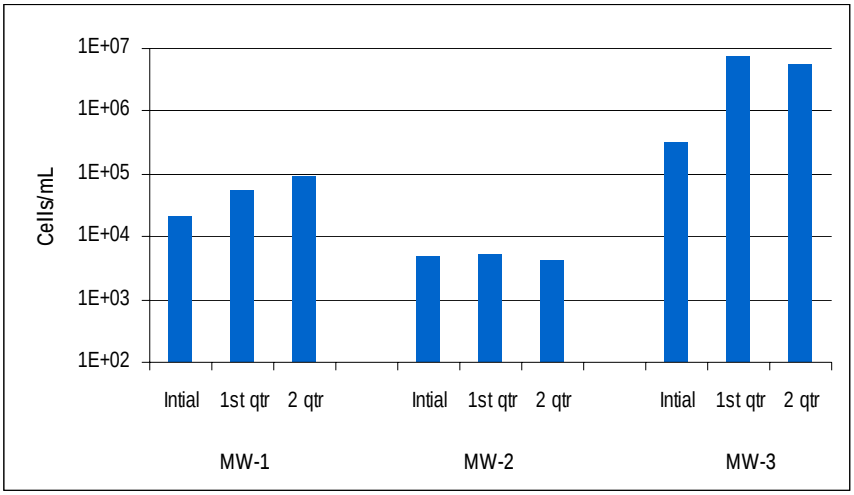

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

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:

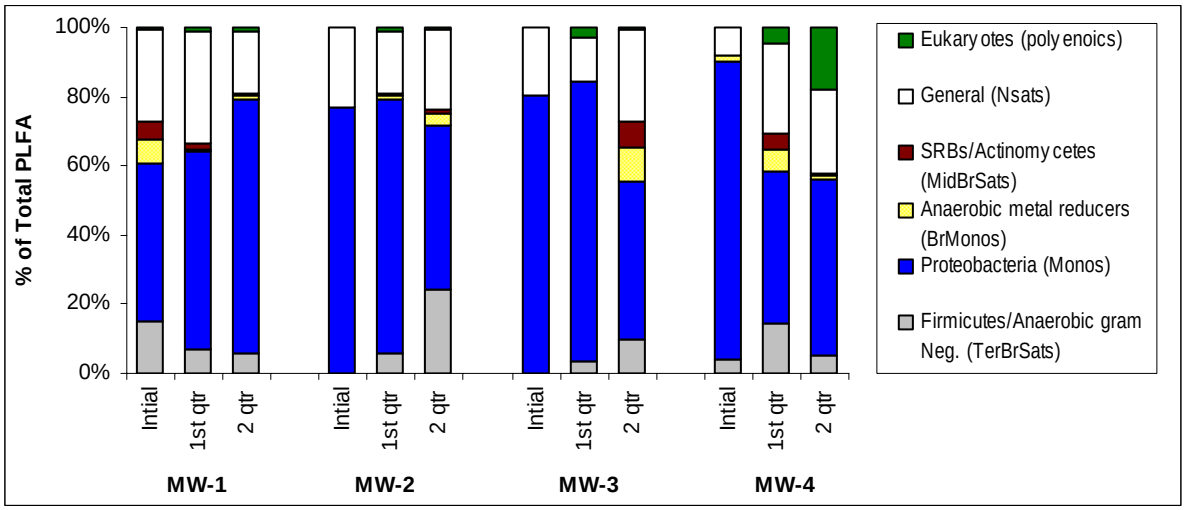

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See Table 1 for detailed descriptions of structural groups.

- **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.

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SITE LOGIC Report

Stable Isotope Probing (SIP) Study

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Report Date: 12/03/2010

Project: Solutia

Comments:

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Executive Summary

Bio-Trap® samplers baited with ^{13}C labeled benzene or chlorobenzene were deployed for 31 days and then recovered for analysis. A complete summary of the results is provided in Table 1.

- A moderate level of biomass was detected in the ^{13}C benzene sampler (~10^6 cells/bead) and in the ^{13}C chlorobenzene sampler (~10^5 cells/bead).
- Quantification of ^{13}C enriched biomass demonstrated a high level of utilization of the ^{13}C benzene in well BSA-MW02D-1010. There was a moderate amount of incorporation of ^{13}C chlorobenzene into the biomass in well CPA-MW03D-1010.
- Quantification of the ^{13}C dissolved inorganic carbon (DIC) showed a high level of mineralization occurring in the ^{13}C benzene sampler. There was a low level of mineralization occurring in the ^{13}C chlorobenzene sampler.
- Comparison of pre- and post-deployment concentrations of ^{13}C labeled benzene and ^{13}C labeled chlorobenzene demonstrated little, if any, loss of the labeled contaminants.

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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-MW02D-1010	CPA-MW03D-1010
^{13}C Contaminant Loss		
Benzene Pre-deployment (mg/bd)	1.01	----
Benzene Post-deployment (mg/bd)	1.08	----
Chlorobenzene Pre-deployment (mg/bd)	----	1.06
Chlorobenzene Post-deployment (mg/bd)	----	1.04
% Loss	Not calculated	2%
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bd)	1.64E+06	9.23E+05
^{13}C Enriched Biomass (Cells/bd)	2.09E+05	1.03E+04
% ^{13}C Incorporation	12.74%	1.12%
Average PLFA Del (‰)	7870	175
Maximum PLFA Del (‰)	14303	1435
^{13}C Mineralization		
DIC Del (‰)	6827	75
% 13C	7.96	1.17
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	0.7	2.4
Proteobacteria (Monos)	81.8	52.2
Anaerobic metal reducers (BrMonos)	0.0	0.0
Actinomycetes (MidBrSats)	0.0	11.5
General (Nsats)	17.5	28.5
Eukaryotes (Polyenoics)	0.0	5.4
Physiological Status (Proteobacteria only)		
Slowed Growth	0.01	0.28
Decreased Permeability	0.03	0.71

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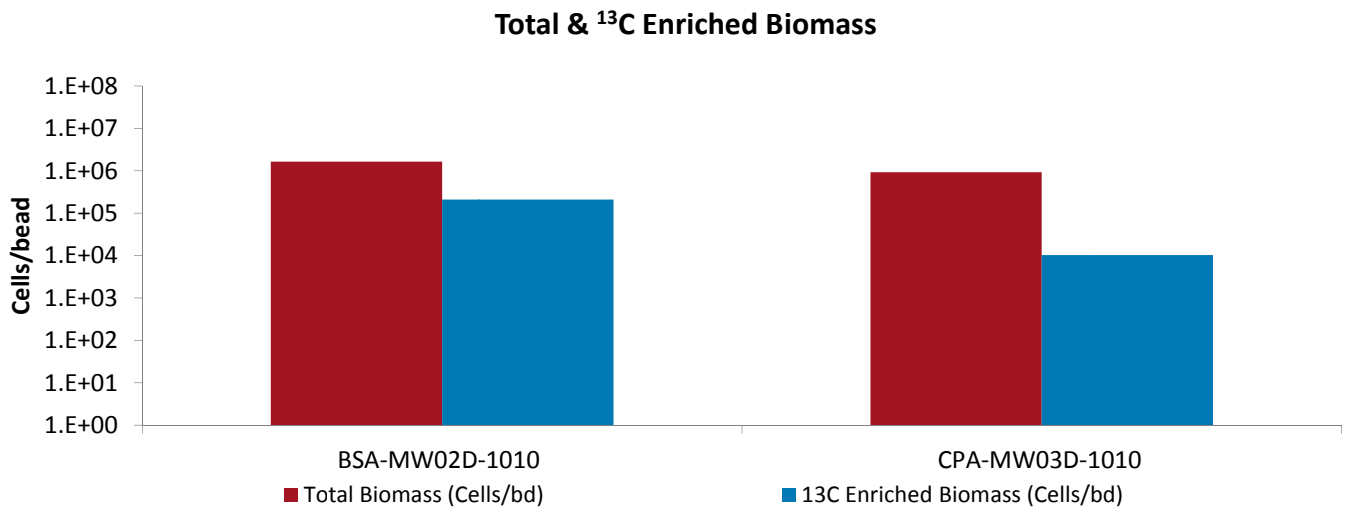

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

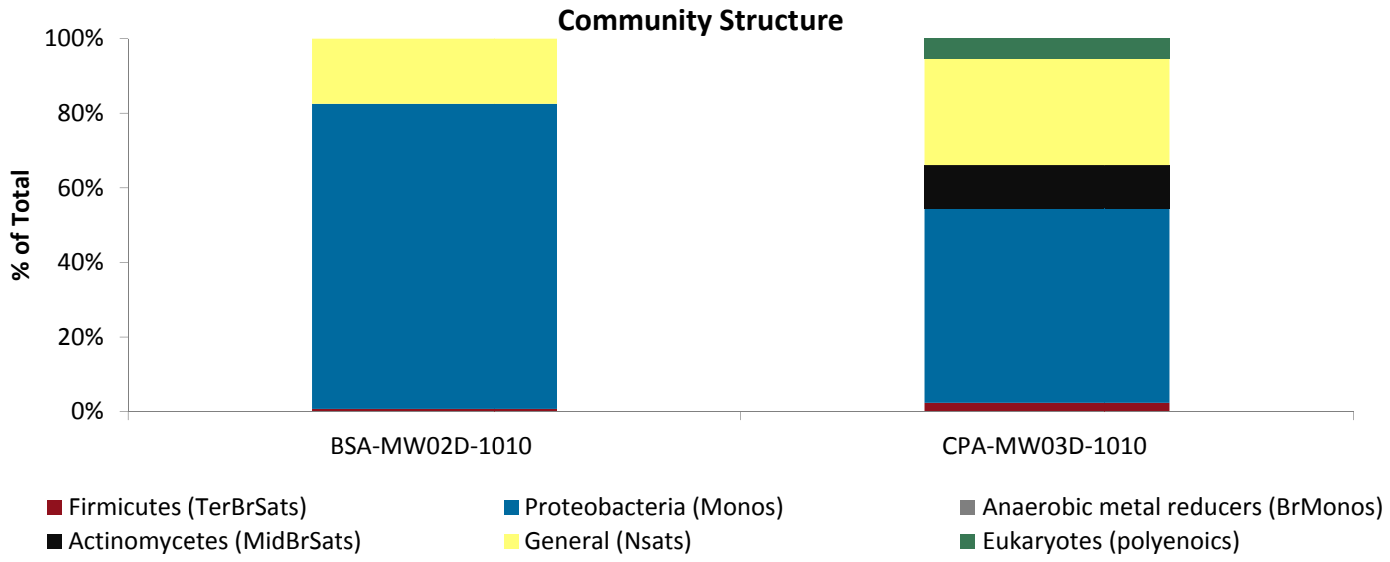

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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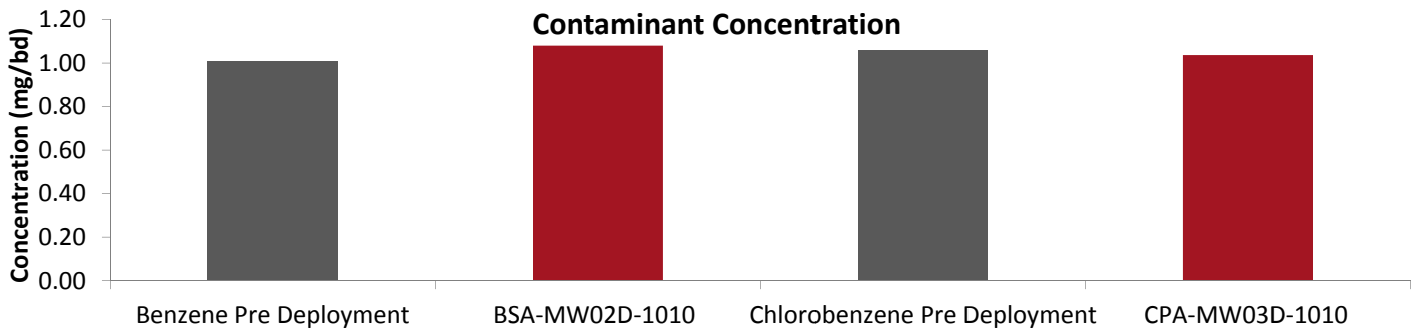

Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

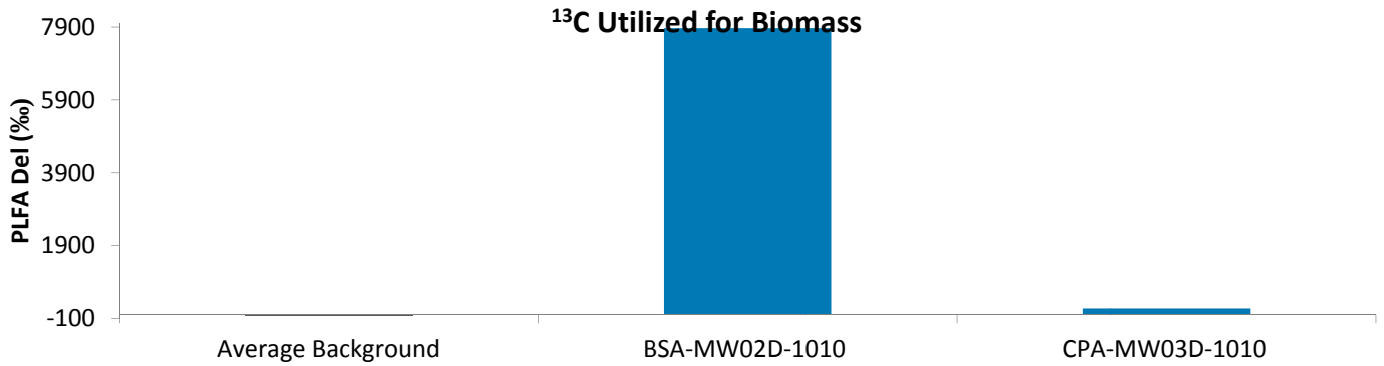

Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

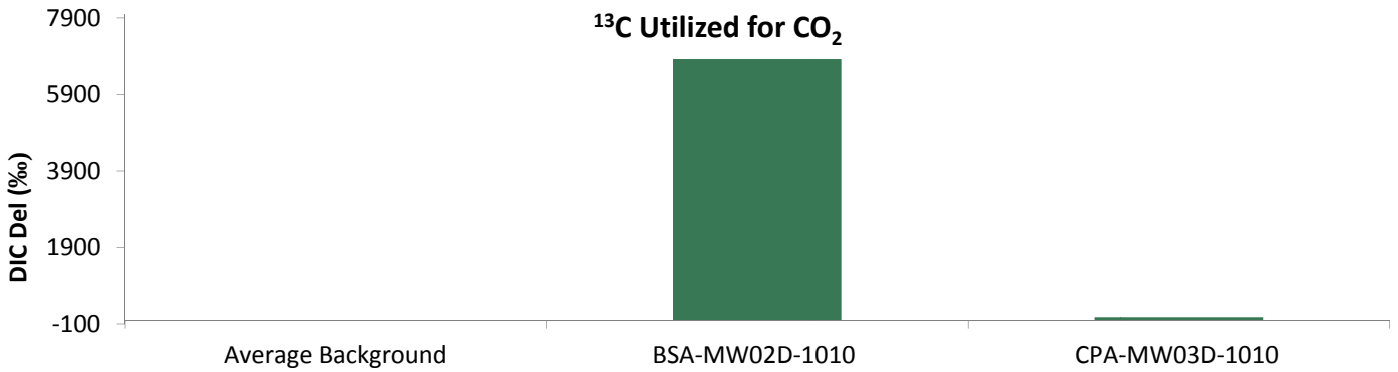

Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

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Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

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 eukaryotes such as fungi, protozoa, algae, higher plants, and animals.	Eukaryotic scavengers will often rise up and 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 ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

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Sample Information											CENSUS: Please select the target organism/gene																							
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	VFA	MI/E/E	DGGE+3ID	DGGE+5ID		qDHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	qDHB (Dehalobacter)	qDSM (Desulfuromonas)	qDSB (Desulfitobacterium)	qEBAC (Total)	qDSR (SRBs only)	qSRB/IRB	qMGN (methanogens)	qMOB (methanotrophs)	qDNF (Denitrifying)	qAOB (ammonia oxidizing)	qPM1 (MTBE aerobic)	qTOD (Intial PAHs aerobic)	qPHE (aerobic BTEX)	qBSS (Toluen/Xylene Anaerobic)	qNAH (Napthalene aerobic)	add. qPCR:	add. qPCR:	add. qPCR:	RNA (Expression Option)*	Oil Retention benzene SID	Other chloro-benz SID	Other:	Other:
079HJ 1	BSAMW01S-1010	10-25-10	1100	water	X																													
2,3	BSAMW02D-1010		1245		X																										X			
4	BSAMW03D-1010		1445		X																													
5	BSAMW04D-1010		1315		X																													
6	BSAMW05D-1010		1410		X																													
7	CPAMW01D-1010		1145		X																													
8	CPAMW02D-1010		1115		X																													
9,10	CPAMW03D-1010		1215		X																											X		
11	CPAMW04D-1010		1345		X																													
12	CPAMW05D-1010		1430		X																													

Relinquished by: [signature] Date: 10-25-10 Received by: Poonam Shah Date 10/27/10

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