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March 15, 2011

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

Re:

PCB Groundwater Quality Assessment Program

4th Quarter 2010 Data Report

Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the PCB Groundwater Quality Assessment Program 4th 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

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Enclosure

cc: Distribution List

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PCB Groundwater Quality Assessment Program 4th Quarter 2010 Data Report Solutia Inc., W. G. Krummrich Plant, Sauget, IL

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FOURTH QUARTER 2010 DATA REPORT PCB GROUNDWATER QUALITY ASSESSMENT 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. J017210.07

March 15, 2011

FOURTH QUARTER 2010 DATA REPORT PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM SOLUTIA INC. W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS

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FOURTH QUARTER 2010 DATA REPORT PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM SOLUTIA INC. W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS

1.0 INTRODUCTION

This report presents the results of the 4th Quarter 2010 (4Q10) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised PCB Groundwater Quality Assessment Program Work Plan (Solutia 2009). The Site location map is presented in Figure 1.

The PCB Groundwater Quality Assessment Program well network consists of ten monitoring wells, as follows (Figure 2):

- Two source area wells, PMA-MW-4S and PMA-MW-4D, are screened in the Shallow Hydrogeologic Unit (SHU) (designated with an "S") and Deep Hydrogeologic Unit (DHU) (designated with a "D"), respectively.
- Three well clusters (PMA-MW-1S/M, PMA-MW-2S/M and PMA-MW-3S/M) are located down-gradient of the source area. These clusters include wells screened in the SHU and Middle Hydrogeologic Unit (MHU) (designated with an "M").
- Two individual wells designated PMA-MW-5M and PMA-MW-6D are located further down-gradient of the source area, with PMA-MW-5M screened in the MHU and PMA-MW-6D screened in the DHU.

Groundwater samples were collected from the ten monitoring wells during the 4Q10 sampling event.

Field sampling activities were conducted in accordance with the procedures outlined in the Revised PCB Groundwater Quality Assessment Program Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes the field investigative procedures.

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2.0 FIELD PROCEDURES

Geotechnology, Inc. (Geotechnology) conducted the 4Q10 PCB Groundwater Quality Assessment Program field activities between December 9 and 14, 2010.

Groundwater Level Measurements. An oil/water interface probe was used to measure depth to static groundwater levels and determine the presence of non-aqueous phase liquids (NAPL) in the PCB Groundwater Quality Assessment Program well network. Periodically, well PMA-MW-4S has contained measurable DNAPL, however none was observed in this well during the fourth quarter sampling event. 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 PCB Groundwater Quality Assessment Program Work Plan.

Well gauging information for the 4Q10 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 MHU and DHU is presented as Figure 3.

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 200 to 250 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

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

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

Sampling commenced upon completion of purging. Prior to sample collection, the flow-thru cell was bypassed to allow for collection of uncompromised groundwater. Consistent with the work plan, samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved.

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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%, complying with the work plan. All samples were submitted to TestAmerica for PCB analysis.

Each sample was labeled immediately following collection. The sample identification system used for each sample involved the following nomenclature "PMA-MW#-MMYY-QAC" where:

- PMA-MW# Monitoring Well Location (PCB Manufacturing Area (PMA)) and Number
- MMYY Month and year of sampling quarter, e.g.: December (fourth quarter), 2010 (1210)
- QAC denotes QA/QC samples (when applicable):
 - EB equipment blank
 - AD analytical duplicate
 - MS or MSD Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, 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 overnight delivery service (FedEx). Field sampling data sheets are included in Appendix A, COC forms are included in Appendix B.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for PCBs using Method 680.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009). 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.

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A total of 14 samples (ten investigative groundwater samples, one field duplicate pair, one MS/MSD, one equipment blank) were prepared and analyzed by TestAmerica for PCBs. Results for the various analyses were submitted as sample delivery group (SDG) KPM.

The samples contained in SDG KPM040 are listed below:

KPM040

PMA-MW-01M-1210 PMA-MW-01S-1210 PMA-MW-01S MS-1210 PMA-MW-01S MSD-1210 PMA-MW-02M-1210 PMA-MW-02M AD-1210 PMA-MW-02S-1210 PMA-MW-02S EB-1210 PMA-MW-3M-1210 PMA-MW-3S-1210 PMA-MW-04D-1210 PMA-MW-04S-1210 PMA-MW-04S-1210 PMA-MW-5M-1210 PMA-MW-6D-1210

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, (USEPA 2008) and the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for this SDG to meet the project objectives. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect (J) data was 100 percent.

5.0 OBSERVATIONS

This section presents a brief summary of the groundwater analytical results from the 4Q10 PCB Groundwater Quality Assessment sampling event. A summary of the laboratory results is provided in Table 2 and the entire laboratory data package is provided in Appendix D.

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SHALLOW HYDROGEOLOGIC UNIT

Historically, measurable DNAPL has been periodically observed in the source area SHU monitoring well PMA-MW-4S during previous sampling events however, none was observed in this well during the fourth quarter sampling event. Laboratory analytical results for monitoring well PMA-MW-4S, located in the Former PCB Manufacturing Area, indicated a total PCB concentration of 20,670 μ g/L for the 4Q10 event. PCBs were detected in two of the three down-gradient PCB Groundwater Quality Assessment Program SHU monitoring wells at total concentrations of 0.11 μ g/L (PMA-MW-1S) and 0.68 μ g/L (PMA-MW-3S). Such data do not indicate that PCBs in the SHU are attenuating over the 300 to 400 ft distance between PMA-MW-4S and the three downgradient monitoring wells. PCB sampling results for the SHU are presented on Figure 4.

MIDDLE/DEEP HYDROGEOLOGIC UNIT

Laboratory analytical results for monitoring well PMA-MW-4D, located in the Former PCB Manufacturing Area, indicated a total PCB concentration of 0.31 μ g/L for the 4Q10 sampling event. PCBs were also detected in all five of the downgradient monitoring wells at concentrations of 0.31 μ g/L (PMA-MW-1M), 2.1/2.0 μ g/L (PMA-MW-2M/duplicate), 0.64 μ g/L (PMA-MW-3M), 0.59 μ g/L (PMA-MW-5M) and 0.65 μ g/L (PMA-MW-6D). Figure 5 displays the 4Q10 PCB sampling results for the MHU/DHU.

The 4Q10 sampling event was the tenth event conducted under the PCB Groundwater Quality Assessment Program. Mann-Kendall trend analyses data forms of total PCBs in unfiltered samples of groundwater from monitoring wells within (PMA-MW-4D) or downgradient of (PMA-MW-1M, -2M, -3S, -3M, and -6D) the former PCB Manufacturing Area are presented in Appendix A. The data do not indicate upward trends in PCB concentrations in the wells.

6.0 REFERENCES

Solutia Inc, 2009. Revised PCB Groundwater Quality Assessment Program Work Plan, W.G. Krummrich Facility, Sauget, IL, Prepared by URS Corporation, May 2009.

U.S. Environmental Protection Agency (USEPA), 2008 Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

DOCUMENT **EPA ARCHIVE** See last page of table for notes.

Table 1

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Monitoring Well Gauging Information

			Constructi	on Details				November 2010	
			Depth to	Depth to		Bottom of			
Well ID	Ground	Casing	Тор	Bottom	Top of Screen	Screen	Depth to	Depth to	Water
	Elevation*	Elevation*	of Screen	of Screen	Elevation*	Elevation*	Water	Bottom	Elevation*
	(feet)	(feet)	(feet bgs)	(feet bgs)	(feet)	(feet)	(feet btoc)	(feet btoc)	(feet)
Shallow Hydrogeologic Unit (SHU 395-380 fe	et NAVD 88)							
PMA-MW-1S	410.30	410.06	20.18	25.18	390.12	385.12	11.27	25.01	398.79
PMA-MW-2S	412.27	411.66	22.94	27.94	389.33	384.33	13.26	27.5	398.40
PMA-MW-3S	412.37	412.06	22.71	27.71	389.66	384.66	13.55	27.6	398.51
PMA-MW-4S	411.09	410.43	20.99	25.99	390.10	385.10	11.95	25.4	398.48
Middle Hydrogeologic Unit (M	1HU 380-350 fee	t NAVD 88)							
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	11.76	59.7	398.32
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	3.50.39	13.56	61.77	398.37
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	13.61	61.9	398.49
PMA-MW-4M	411.27	410.97	52.17	57.17	359.10	354.10	12.08	57.13	398.89
PMA-MW-1	409.37	412.59	37.78	42.78	371.59	366.59	13.57	46.26	399.02
Deep Hydrogeologic Unit (DH									
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	18.22	77.3	396.91
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	20.33	116	395.41
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	30.70	123.75	393.99
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	26.00	122.45	394.49
CPA-MW-1D	408.62	408.32	66.12	71.12	342.50	337.50	10.00	71.3	398.32
CPA-MW-2D	408.51	408.20	96.96	104.96	308.55	303.55	10.70	105.3	397.50
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	13.15	114.45	397.52
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	26.60	122.4	394.60
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	20.95	114.75	392.20
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	16.67	124	398.89
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	9.21	112.42	398.51
DNAPL-K-3	412.13	411.91	104.80	119.80	307.33	292.33	12.80	120.4	399.11
DNAPL-K-4	409.48	409.15	102.55	117.55	306.93	291.93	11.24	115.31	397.91
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	13.45	117.54	398.46
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	11.71	118	398.38
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	9.53	116.32	398.19
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	13.54	117.8	397.84
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	7.58	111.15	398.39
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	14.45	121.5	398.80
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	13.57	121.5	398.21
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	12.88	110.9	398.33

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See last page of table for notes.

Table 1

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Monitoring Well Gauging Information

			Constructi	on Details				November 2010	
			Depth to	Depth to		Bottom of			
Well ID	Ground	Casing	Тор	Bottom	Top of Screen	Screen	Depth to	Depth to	Water
	Elevation*	Elevation*	of Screen	of Screen	Elevation*	Elevation*	Water	Bottom	Elevation*
	(feet)	(feet)	(feet bgs)	(feet bgs)	(feet)	(feet)	(feet btoc)	(feet btoc)	(feet)
Deep Hydrogeologic Unit (DH	U 350 feet NAV	D 88 - Bedrock							
GWE-1D (PIEZ-1D)	412.80	415.60	117.00	127.00	295.80	285.80	24.35	130.35	391.25
GWE-2D (PIEZ-2D)	417.45	417.14	127.00	137.00	290.45	280.45	24.22	137.55	392.92
GWE-4D (TRA3-PZADHU)	406.05	405.74	74.00	80.00	332.05	326.05	9.70	79.20	396.04
GWE-10D (PIEZ 6D)	410.15	412.87	102.50	112.50	307.65	297.65	15.65	115.50	397.22
GWE-14D (TRA5-PZCDHU)	420.47	422.90	90.00	96.00	330.47	324.47	28.35	97.50	394.55
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	12.50	73.80	398.38
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	8.90	102.00	398.42
PSMW-6	404.11	406.63	99.80	104.80	304.31	299.31	11.75	110.65	394.88
PSMW-9	403.92	403.52	100.40	105.40	303.52	298.52	5.80	106.15	397.72
PSMW-10	409.63	412.18	101.23	106.23	308.40	303.40	17.95	112.15	394.23
PSMW-13	405.80	405.53	106.08	111.08	299.72	294.72	9.30	111.60	396.23
PSMW-17	420.22	423.26	121.25	126.25	298.97	293.97	30.90	136.00	392.36

Table 2 J017210.07

Table 2 Groundwater Analytical Detections

Sample ID	Sample Date	Units	Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Shallow Hydrologic Unit								_				
PMA-MW-1S-1210	12/13/10	μg/L	< 0.097	< 0.097	0.11	<0.19	<0.19	<0.19	<0.29	<0.29	< 0.49	< 0.49
PMA-MW-2S-1210	12/14/10	μg/L	0.14	< 0.094	0.14	<0.19	<0.19	<0.19	<0.28	<0.28	< 0.47	< 0.47
PMA-MW-3S-1210	12/10/10	μg/L	0.38	0.16	0.14	<0.19	<0.19	<0.19	<0.29	<0.29	< 0.49	< 0.49
PMA-MW-4S-1210	12/09/10	μg/L	120	830	2,700	4,300	3,300	4,700	4,100	620	<490	<490
Middle / Deep Hydrologic	Unit											
PMA-MW-1M-1210	12/13/10	μg/L	0.31	<0.094	<0.094	<0.19	<0.19	<0.19	<0.28	<0.28	<0.47	< 0.47
PMA-MW-2M-1210	12/14/10	μg/L	2.1	<0.094	0.099	<0.19	<0.19	<0.19	<0.28	<0.28	<0.47	< 0.47
PMA-MW-2M-1210-AD	12/14/10	μg/L	2.0	< 0.097	< 0.097	<0.19	<0.19	<0.19	<0.29	<0.29	< 0.49	< 0.49
PMA-MW-3M-1210	12/10/10	μg/L	0.63	<0.095	0.1	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-4D-1210	12/09/10	μg/L	0.16	0.15	<0.094	<0.19	<0.19	<0.19	<0.28	<0.28	<0.47	<0.47
PMA-MW-5M-1210	12/10/10	μg/L	<0.098	<0.098	0.29	0.3	<0.20	<0.20	<0.29	<0.29	<0.49	<0.49
PMA-MW-6D-1210	12/10/10	μg/L	0.13	<0.095	0.26	0.26	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48

Notes:

μg/L = micrograms per liter

< = Result is non-detect, less than the reporting limit

AD = Analytical Duplicate

BOLD indicates concentration greater than the reporting limit

Table 3
Monitoring Well PMA MW-1M Mann-Kendall Trend Analysis

				ı	N.G.Krum	mrich Fa	cility PCB	Mfg. Are	a Monitor	ing Well N	/IW-1M Ma	ann-Kend	all Trend /	Analysis						
	Event 1 2Q06	Event 2 3Q06	Event 3 4Q06	Event 4 1Q07	Event 5 2Q07	Event 6 3Q07	Event 7 4Q07	Event 8 1Q08	Event 9 2Q08	Event 10 3Q08	Event 11 4Q08	Event 12 1Q09	Event 13 2Q09	Event 14 3Q09	Event 15 4Q09	Event 16 1Q10	Event 17 2Q10	Event 18 3Q10	Event 19 4Q10	Row
Tatal DCDs/l																				Total
Total PCBs, µg/L	ND	0.24	0.21	0.17	0.26	0.29	48	ND	0.18	0.38	0.26	0.16	0.21	0.27	0.27	0.20	ND	0.29	0.31	
Compare to Event 1		1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	16
Compare to Event 2			-1	-1	1	1	1	-1	-1	1	1	-1	-1	1	1	-1	-1	1	1	1
Compare to Event 3				-1	1	1	1	-1	-1	1	1	-1	0	1	1	-1	-1	1	1	3
Compare to Event 4					1	1	1	-1	1	1	1	-1	1	1	1	1	-1	1	1	9
Compare to Event 5						1	1	-1	-1	1	0	-1	-1	1	1	-1	-1	1	1	1
Compare to Event 6							1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	0	1	-6
Compare to Event 7								-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-12
Compare to Event 8									1	1	1	1	1	1	1	1	0	1	1	10
Compare to Event 9										1	1	-1	1	1	1	1	-1	1	1	6
Compare to Event 10											-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Compare to Event 11												-1	-1	1	1	-1	-1	1	1	0
Compare to Event 12													1	1	1	1	-1	1	1	5
Compare to Event 13													<u> </u>	1	1	-1	-1	1	1	2
Compare to Event 14														<u> </u>	'n	l -i	-1	1	1	0
Compare to Event 15																-1	-1		1	0
Compare to Event 16																	1 1		1	1
																			1	-
Compare to Event 17																		1	1	2
Compare to Event 18																			ĩ	1

30

90 % Confidence Mann-Kendall Statistic

Table 4
Monitoring Well PMA MW-2M Mann-Kendall Trend Analysis

				,	W.G.Krum	mrich Fa	cility PCB	Mfg. Area	a Monitor	ing Well N	/IW-2M Ma	ann-Kenda	all Trend A	Analysis						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Event 19	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10	Total
Total PCBs, µg/L	2.3	2.4	2.8	2.1	3.3	2.5	3.1	1.7	3.0	4.3	2.5	2.9	4.14	3.1	2.7	2.4	3.9	2.25	2.10	
Compare to Event 1		1	1	-1	1	1	1	-1	1	1	1	1	1	1	1	1	1	-1	-1	10
Compare to Event 2			1	-1	1	1	1	-1	1	1	1	1	1	1	1	0	1	-1	-1	8
Compare to Event 3				-1	1	-1	1	-1	1	1	-1	1	1	1	-1	-1	1	-1	-1	0
Compare to Event 4					1	1	1	-1	1	1	1	1	1	1	1	1	1	1	0	12
Compare to Event 5						-1	-1	-1	-1	1	-1	-1	1	-1	-1	-1	1	-1	-1	-8
Compare to Event 6							1	-1	1	1	0	1	1	1	1	-1	1	-1	-1	4
Compare to Event 7								-1	-1	1	-1	-1	1	0	-1	-1	1	-1	-1	-5
Compare to Event 8									1	1	1	1	1	1	1	1	1	1	1	11
Compare to Event 9										1	-1	-1	1	1	-1	-1	1	-1	-1	-2
Compare to Event 10											-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Compare to Event 11													1	1	1	-1	1	-1	-1	2
Compare to Event 12 Compare to Event 13														1	-1 -1	-1	-1	-1 -1	-1	-1 -6
Compare to Event 14														-1	-1	-1	-1	-1	-1	-6 -3
Compare to Event 15																-1		-1	-1 -1	-3 -2
Compare to Event 16																	1	_1	-1	- <u>-</u> 2
Compare to Event 17																		-1	-1	-2
Compare to Event 18																		<u> </u>	-1	1 -1
Compare to Event 16																			-1	

90 % Confidence Mann-Kendall Statistic

Table 5
Monitoring Well PMA MW-3S Mann-Kendall Trend Analysis

				1	W.G.Krum	mrich Fa	cility PCB	Mfg. Are	a Monitor	ing Well I	/W-3S Ma	nn-Kenda	all Trend A	Analysis						
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Event 19	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10	Total
Total PCBs, µg/L	0.66	0.32	0.2	0.35	0.8	0.3	0.21	0.25	0.64	0.26	0.24	0.79	ND	0.34	2.0	ND	0.63	0.28	0.68	
Compare to Event 1		-1	-1	-1	1	-1	-1	-1	-1	-1	-1	1	-1	-1	1	-1	-1	-1	1	-10
Compare to Event 2			-1	1	1	-1	-1	-1	1	-1	-1	1	-1	1	1	-1	1	-1	1	-1
Compare to Event 3				1	1	1	1	1	1	1	1	1	-1	1	1	-1	1	1	1	12
Compare to Event 4					1	-1	-1	-1	1	-1	-1	1	-1	-1	1	-1	1	-1	1	-3
Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-12
Compare to Event 6							-1	-1	1	-1	-1	1	-1	1	1	-1	1	-1	1	-1
Compare to Event 7								1	1	1	1	1	-1	1	1	-1	1	1	1	8
Compare to Event 8									1	1	-1	1	-1	1	1	-1	1	1	1	5
Compare to Event 9										-1	-1	1	-1	-1	1	-1	-1	-1	1	-4
Compare to Event 10											-1	1	-1	1	1	-1	1	1	1	3
Compare to Event 11												1	-1	1	1	-1	1	1	1	4
Compare to Event 12													-1	-1	1	-1	-1	-1	-1	-5
Compare to Event 13														1	1	0	1	1	1	5
Compare to Event 14															1	-1	1	-1	1	1
Compare to Event 15																1	-1	-1	-1	-4
Compare to Event 16																	1	1 1	1	3
Compare to Event 17																		1	1 1	0
Compare to Event 18																			1	1

2

90 % Confidence Mann-Kendall Statistic

Table 6
Monitoring Well PMA MW-3M Mann-Kendall Trend Analysis

				1	N.G.Krum	mrich Fa	cility PCB	Mfg. Are	a Monitor	ing Well N	/W-3M Ma	ann-Kenda	all Trend A	Analysis						
	Event 1 2Q06	Event 2 3Q06	Event 3 4Q06	Event 4 1Q07	Event 5 2Q07	Event 6 3Q07	Event 7 4Q07	Event 8 1Q08	Event 9 2Q08	Event 10 3Q08	Event 11 4Q08	Event 12 1Q09	Event 13 2Q09	Event 14 3Q09	Event 15 4Q09	Event 16 1Q10	Event 17 2Q10	Event 18 3Q10	Event 19 4Q10	Row Total
Total PCBs, µg/L	5.18	1.9	ND	0.77	ND	0.86	0.76	0.39	0.92	1.3	0.71	1.4	1.3	0.85	0.85	0.87	0.82	0.75	0.73	
Compare to Event 1 Compare to Event 2 Compare to Event 3 Compare to Event 4 Compare to Event 5 Compare to Event 6 Compare to Event 7 Compare to Event 8 Compare to Event 9 Compare to Event 10 Compare to Event 11 Compare to Event 12 Compare to Event 13 Compare to Event 14 Compare to Event 15 Compare to Event 16 Compare to Event 16 Compare to Event 16 Compare to Event 17		-1	1 1	-1 -1 1	-1 -1 0 -1	-1 -1 1 1 1	-1 -1 1 -1 -1 -1	-1 -1 1 -1 1 -1 -1	-1 -1 1 1 1 1 1	-1 -1 1 1 1 1 1 1	-1 -1 1 -1 1 -1 -1 1 -1	-1 -1 1 1 1 1 1 1 1 1	-1 -1 1 1 1 1 1 1 1 0 1	-1 -1 1 1 -1 1 -1 -1 -1 -1 -1	-1 -1 1 1 1 -1 1 1 -1 -1 -1 -1 -1 0	-1 -1 1 1 1 1 1 -1 -1 -1 -1 1	-1 -1 1 1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	-1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	-1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -	-18 -17 15 3 14 -3 4 11 -4 -6 8 -7 -6 -2 -2

-16

90 % Confidence Mann-Kendall Statistic

-39

Table 7
Monitoring Well PMA MW-4D Mann-Kendall Trend Analysis

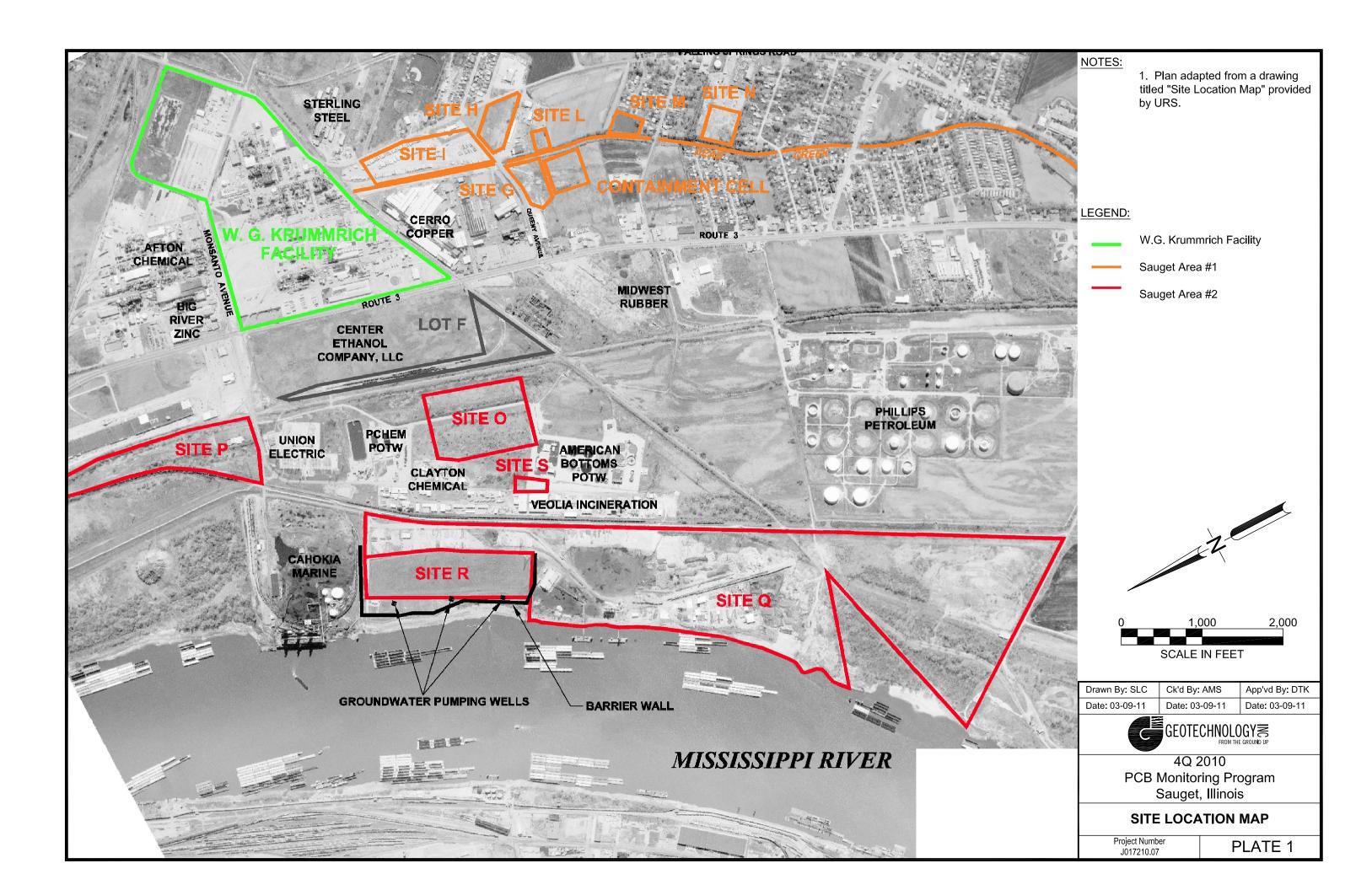
				W.G.	Krummric	h Facility	PCB Mfg	. Area Mo	nitoring W	/ell MW-4l) Mann-K	endall Tre	nd Analys	sis					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Row
	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10	Total
Total PCBs, µg/L	0.34	0.10	2.07	0.33	0.50	0.35	0.23	0.27	0.44	0.27	2.73	0.59	0.37	0.61	0.54	0.72	0.42	0.31	
Compare to Event 1		-1	1	-1	1	1	-1	-1	1	-1	1	1	1	1	1	1	1	-1	5
Compare to Event 2			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
Compare to Event 3				-1	-1	-1	-1	-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-13
Compare to Event 4					1	1	-1	-1	1	-1	1	1	1	1	1	1	1	-1	6
Compare to Event 5						-1	-1	-1	-1	-1	1	1	-1	1	1	1	-1	-1	-3
Compare to Event 6							-1	-1	1	-1	1	1	1	1	1	1	1	-1	4
Compare to Event 7								1	1	1	1	1	1	1	1	1	1	1	11
Compare to Event 8									1	0	1	1	1	1	1	1	1	1	9
Compare to Event 9										-1	1	1	-1	1	1	1	-1	-1	1
Compare to Event 10											1	1	1	1	1	1	1	1	8
Compare to Event 11												-1	-1	-1	-1	-1	-1	-1	-7
Compare to Event 12													-1	1	-1	1	-1	-1	-2
Compare to Event 13														1	1	1	1	-1	3
Compare to Event 14															-1	1	-1	-1	-2
Compare to Event 15																1	-1	-1	-1
Compare to Event 16																	-1	-1	-2
Compare to Event 17																		-1	-1

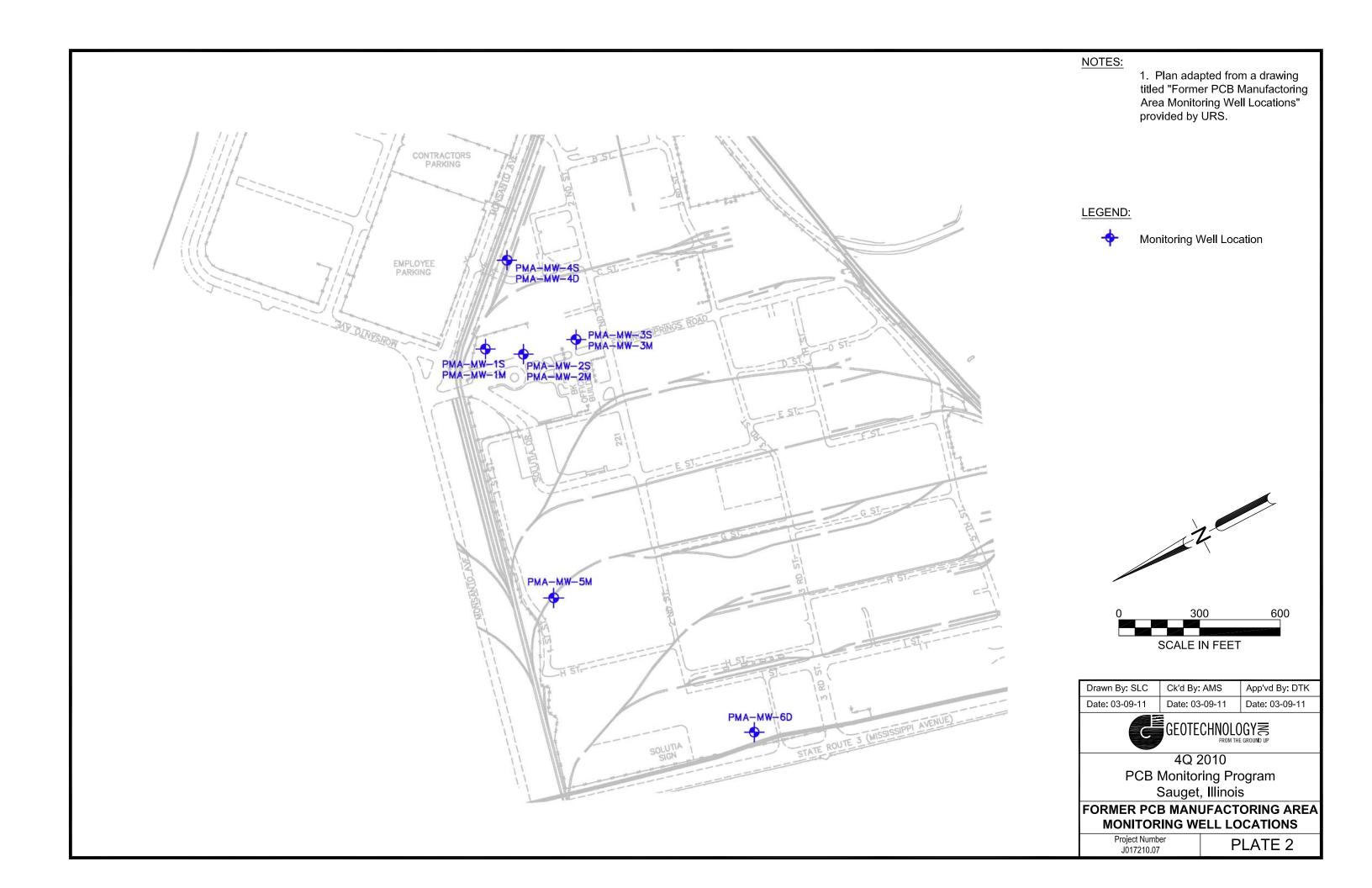
90 % Confidence Mann-Kendall Statistic

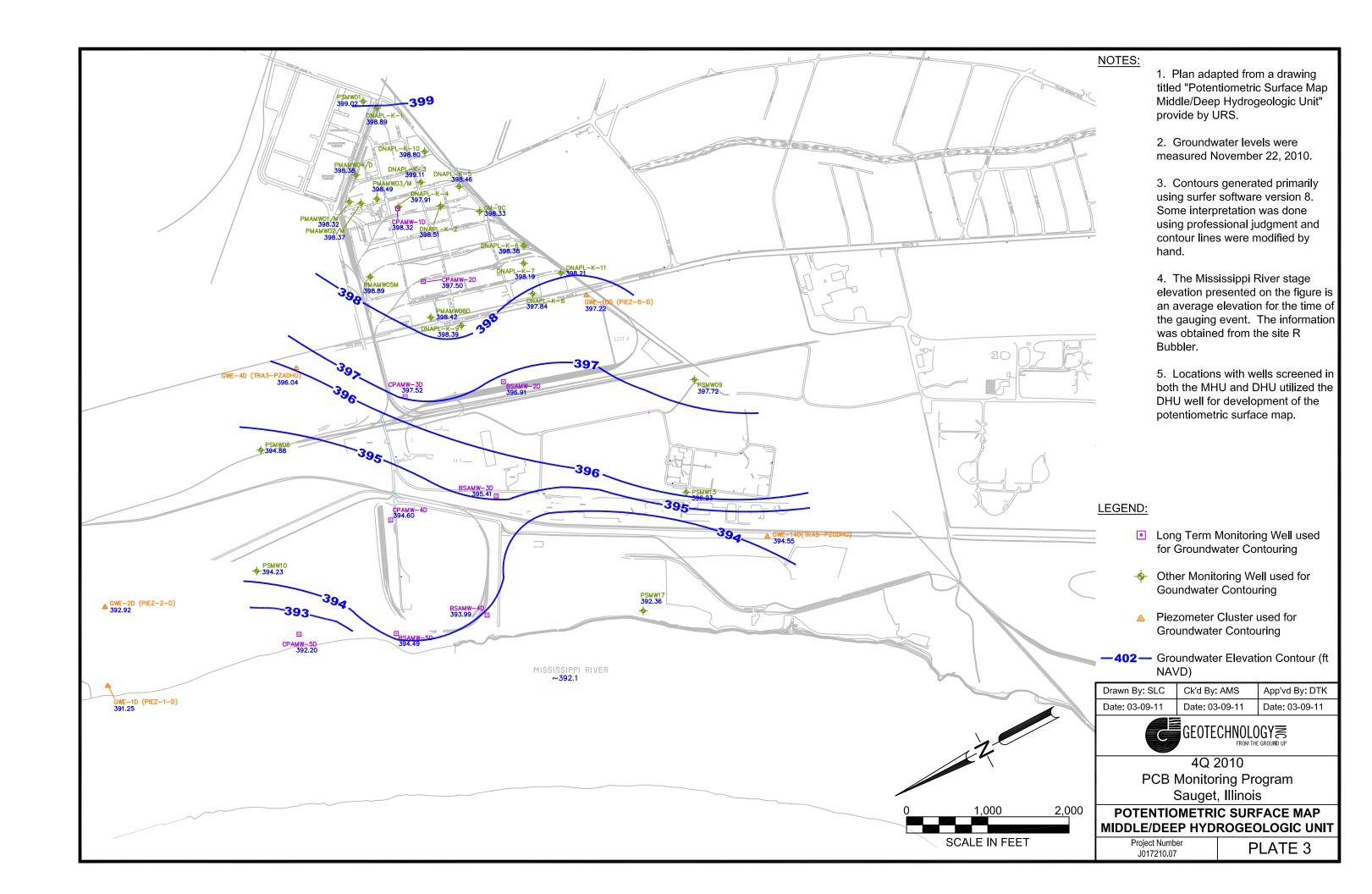
Table 8
Monitoring Well PMA MW-6D Mann-Kendall Trend Analysis

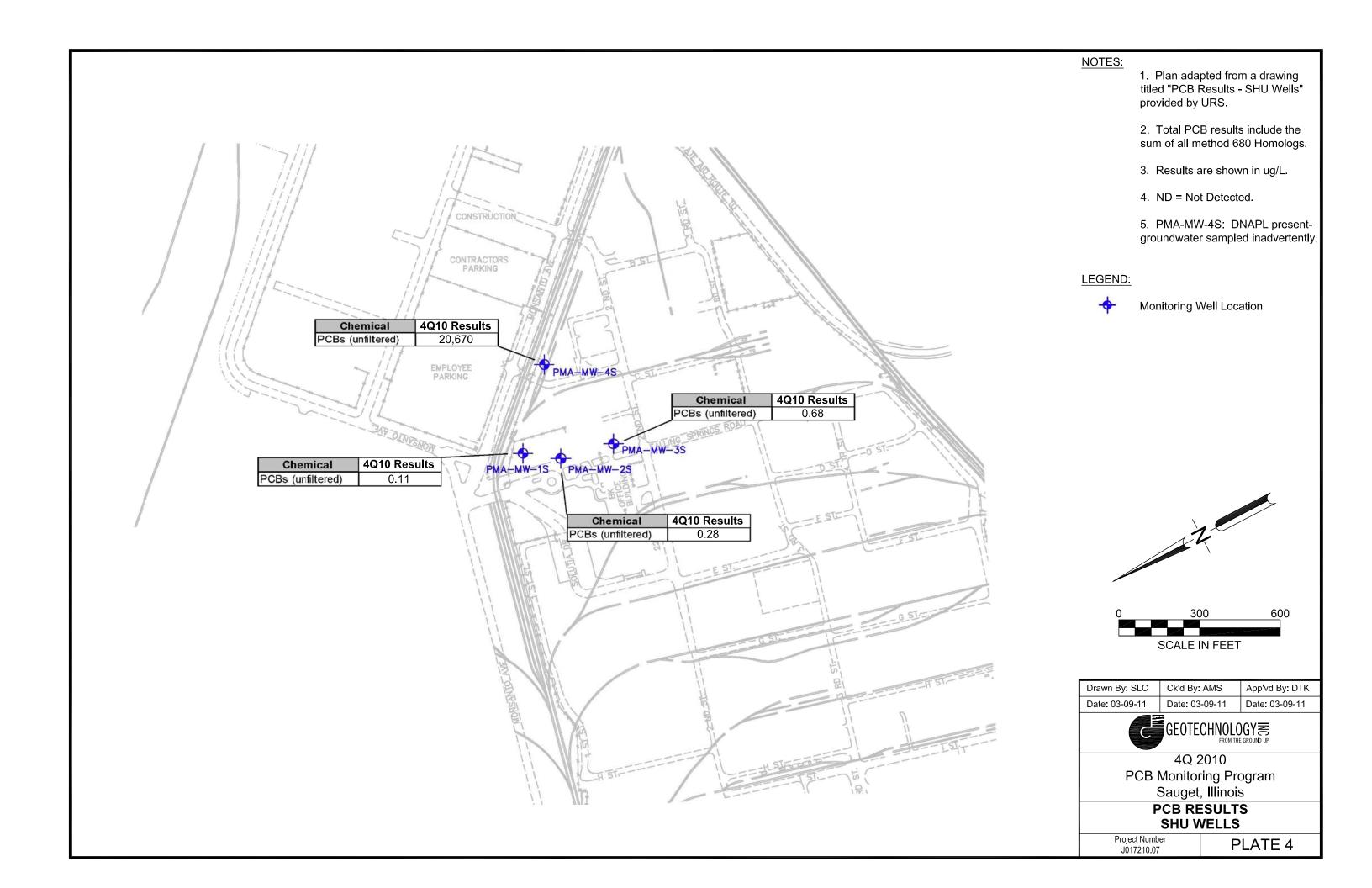
		W.G.Krum	mrich Facil	lity Well PN	MA MW-6D	Mann-Kend	dall Trend A	Analysis			
	Event 1 3Q08	Event 2 4Q08	Event 3 1Q09	Event 4 2Q09	Event 5 3Q09	Event 6 4Q09	Event 7 1Q10	Event 8 2Q10	Event 9 3Q10	Event 10 4Q10	Row Total
Total PCBs, ug/L	0.21	0.43	0.32	0.29	0.20	0.30	0.19	0.33	0.10	0.65	
Compare to Event 1		1	1	1	-1	1	-1	1	-1	1	3
Compare to Event 2			-1	-1	-1	-1	-1	-1	-1	1	-6
Compare to Event 3				-1	-1	-1	-1	1	-1	1	-3
Compare to Event 4					-1	1	-1	1	-1	1	0
Compare to Event 5						1	-1	1	-1	1	1
Compare to Event 6							-1	1	-1	1	0
Compare to Event 7							•	1	-1	1	1
Compare to Event 8									-1	1	0
Compare to Event 9										1	1

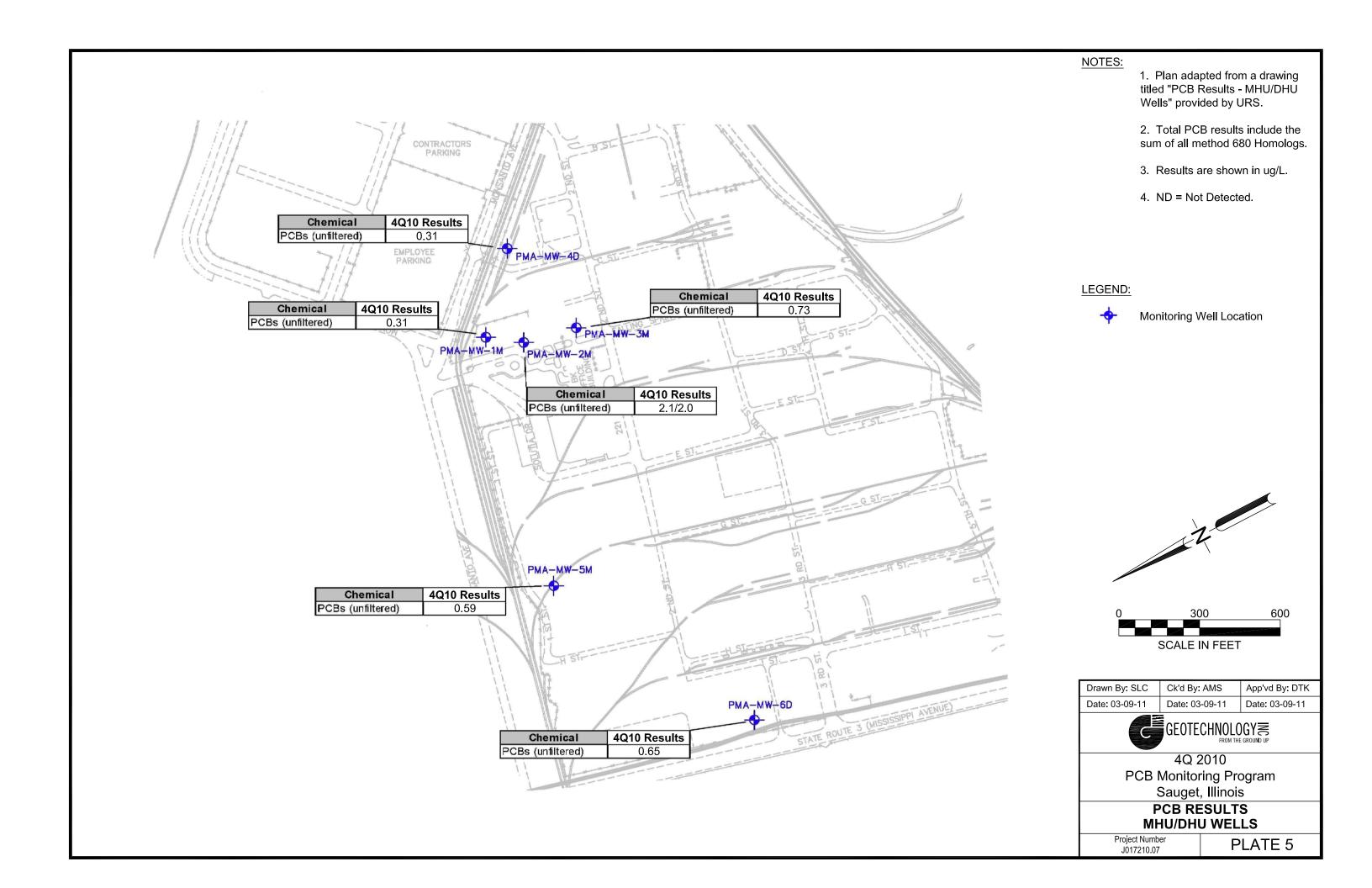
90 % Confidence Mann-Kendall Statistic -17











APPENDIX A GROUNDWATER PURGING AND SAMPLING FORMS

PROJECT NAME: DATE: <u>V2-U</u> MONITORING W	2-10	-	WEATHER:		¥3°						
INITIAL DATA Well Diameter: Measured Well De Constructed Well E Depth to Water (bt Depth to LNAPL/I Depth to Top of Sc Screen Length: PURGE DATA	Depth (btoc): ock): DNAPL (btoc):	2 25.01 24.94 11.90 19.94	ft If Depth to Top ft Place Pump at: ft If Depth to Top ft Place Pump at:	Height (do not include LNA of Screen is > Depth to Wa Total Well Depth - 0.5 (Scr of Screen is < Depth to Wa Total Well Depth -)9.5 X V h and/or water column heigh	ter AND Scree een Length + I ter AND Water Vater Column I	n Length is <4 feet DNAPL Column Heig Column Height and Height + DNAPL Col e Pump at: Total Wel	ght) = Screen Length are umn Height) =	20.30 ft 27.44 ft btoc <4 ft, ft btoc ft btoc	Minimum Purge Vo (3 x Flow Through Ambient PID/FID R	Market Alle 1000	
Pump Type:	DED Y	BLADDER	2 PUMP			HAVE THE STA	BILIZATION PA	ARAMETERS BEEN SA	TISFIED? All are uni	its unless %	
					± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20	
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor NONE	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)	
1000	1440	11.90			6.92	13.15	71.4	46.60	0.00	-72	
2000	TIUHH	11.90			6.95	14.92	1.4	27.40	0.00	-74	
3000	1448	11.90		1	6.97	13.44	1.6	13.70	0.00	11	
4000	1452	<u> </u>	<u> </u>		le.99	II.Db	1.5	16.30	0,00	-64	
5000	11456	U.90			6.98	10.90	1.5	13.70	0.00	-63	
10000	1500	K,GD			6.95	12.64	1.1	\5.6D	0.00	-61	
						-		450	A CONTRACTOR OF THE PROPERTY O		
								737		The state of the s	
Start Time: Stop Time:	1436	-	Aver	Elapsed Time:_age Purge Rate (mL/min):_	24 min 250			Water Qual Da	lity Meter ID: 170 R 16 te Calibrated: 12-13	2A U-22	
SAMPLING DAT	A										
Sample Date: Sample Method:	12-13-1 Lauf	0 10 W BL F	FODER	Sample Time: Sample Flow Rate:	1510 250 mL	/min		Analysis: Total	AL PCBS L	.80	
VOA Vials, No He	adspace	Initials	"_NX								
COMMENTS:	00	meter a	necked -ok					Ferrous Iron (Filtered	d 0.2 micron) = NA		
			***************************************	7							
				. , , , , , , , , , , , , , , , , , , ,							

PROJECT NAME DATE: \\mathcal{\gamma}2- MONITORING W	14-10	11	WEATHER:	BER: JOITZIO. 14°F OVERC PMA-MW-	:AST	10	FIELD	PERSONNEL: LEN	WA VUIL			
INITIAL DATA Well Diameter: Measured Well De Constructed Well Depth to Water (b Depth to LNAPL/ Depth to Top of Se Screen Length:	Depth (btoc): tock): DNAPL (btoc):	27, 50 27, 33 13, 34	ft If Depth to Top of Sc ft Place Pump at: Tota ft If Depth to Top of Sc ft Place Pump at: Total	of (do not include LNA treen is > Depth to Wa I Well Depth - 0.5 (Screen is < Depth to Wa Well Depth -)9.5 X V for water column heigh	ter AND Screen reen Length + E ter AND Water Vater Column E nt is <4 ft, Place	n Length is <4 feet DNAPL Column Heig Column Height and Jeight + DNAPL Co Pump at: Total We	ght) = Screen Length are dumn Height) =	ft btoc ft btoc ft btoc ft btoc	Minimum Purge Vo (3 x Flow Through Ambient PID/FID R	rough Cell): 700 mL lume = 700 mL Cell Volume) mL eading: 0.0 ppm leading: 0.0 ppm		
PURGE DATA Pump Type:	55	D RIAN	GALF SER			HAVE THE ST	ADII 17 ATION DA	RAMETERS BEEN SA	TIONIEDO AHERAREI	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Tump Type.							± 3%	Record Data Only	$\pm 10\% \text{ or } \pm 0.2$	± 20		
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	± 0.2	Record Data Only Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)		
1000 2000 3000	1224 1228 1232 1236		CLEAR/DALE YELLOW	CHEMICAL	7.72	18.15 18.92 18.92	0.90 0.85 0.85	42.6 40.5	0.55 0.50	-52 -48 -46		
4000 5000	1240 1244				7.12	19.15	0.86	30,9 29,2	0.00	-42 -39		
						e surregionale de sont conference en la servicio de la conference de la co		A A A A A A A A A A A A A A A A A A A	5570 J Parisson			
										And the state of t		
Start Time: Stop Time:	1224	-	Average P	Elapsed Time:_ urge Rate (mL/min):_	ZD wiv 250	3		Water Qual Dai	ity Meter ID: HORIR te Calibrated: 12-14	25U-A-0		
SAMPLING DAT	î A									A CONTRACTOR OF THE PARTY OF TH		
Sample Date: Sample Method:	12-14-1 LOW FO	0 10W BU	HODER	Sample Time: Sample Flow Rate:	1245 250 ML	Jmin	Q		tal Pebb (o 80		
VOA Vials, No He	adspace] Initials:	LIA_									
COMMENTS: Ferrous Iron (Filtered 0.2 micron) = NA												

Do meyer cx,c

PROJECT NAME: DATE: 12-1 MONITORING W	0-10		WEATHER:	MBER: <u>JO.7216</u> 45°F SVN PMA-MW-	MA	10	FIEL	D PERSONNEL:	NNA JULIC	
INITIAL DATA		***								
Well Diameter: Measured Well Depender of Water (but Depth to UNAPL/E Depth to Top of Sc Screen Length:	Depth (btoc): Dock): DNAPL (btoc)	13.30	ft If Depth to Top of ft Place Pump at: To ft If Depth to Top of ft Place Pump at: To	eight (do not include LNA f Screen is > Depth to Wa otal Well Depth - 0.5 (Sci f Screen is < Depth to Wa otal Well Depth -)9.5 X V and/or water column heig	iter AND Screen reen Length + E iter AND Water Water Column F	n Length is <4 feet DNAPL Column Heig Column Height and Height + DNAPL Col Pump at: Total Wel	Screen Length are umn Height) =	ft btoc <4 ft, ft btoc ft btoc ft btoc	Minimum Purge Volu (3 x Flow Through C Ambient PID/FID Re	
PURGE DATA	. A see									
Pump Type:	<u> QED</u>	BLADDE	6 DWB		. 0.0			ARAMETERS BEEN SA		· · · · · · · · · · · · · · · · · · ·
		1	T		± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20
Purge Volume (mL)	Time	Depth to Water (ft)	6.1		**	Temp	Cond.	Turbidity	DO	ORP
3000	1450	12.30	Color	Odor	pH (0.83	(°C)	Ms/cm	(NTUs)	(mg/l)	(mv) 43
4000	1454	13.30	124001	10000	6.80	18.57	2,9	45.6	0.00	
5000	1458	13.30			6.80	18.02	2.9	24.2	· · · · · · · · · · · · · · · · · · ·	2 <u>\</u>
6000	1502	13.30	 		6.81	17,99	2.9	27.5	0.00	<u> </u>
2000	120/	13137			6:0:	11.41		61.3	0.00	12
			The state of the s	Printerior vaccinations and in the contraction of t				<u> </u>		
					The second secon					
								The second secon		
				***************************************	-					
								45)	The state of the s	
Start Time: Stop Time:	1450 1502		Averag	Elapsed Time: _ e Purge Rate (mL/min): _	12 min 250			Water Qual	lity Meter ID: 1702.(3 A-UZZ
SAMPLING DAT	A									
Sample Date: Sample Method:	17-10-	PLOW BL	ADDER	Sample Time: Sample Flow Rate:	151b 2GD W	Umin		Analysis: To T		
VOA Vials, No He			:NA							
COMMENTS:				· · · · · · · · · · · · · · · · · · ·				Ferrous Iron (Filtered	d 0.2 micron) = NA	
										· · · · · · · · · · · · · · · · · · ·
								***************************************	14	

PROJECT NAME: DATE: 12-0-1 MONITORING WE	٥		WEATHER:	BER: JOIT 21 25°F DVER	CAST		FIELD	PERSONNEL: JEN	UNA VUJIC			
Well Diameter: Measured Well Dep Constructed Well D Depth to Water (bto Depth to LNAPL/D Depth to Top of Screen Length: PURGE DATA	epth (btoc): ock); NAPL (btoc):	20.33	ft If Depth to Top of S ft Place Pump at: Tota ft If Depth to Top of S ft Place Pump at: Tota	al Well Depth - 0.5 (Scr creen is < Depth to Wat l Well Depth -)9.5 X W d/or water column heigh	ter AND Screen Length is <4 feet een Length + DNAPL Column Height) = 72.83 ft btoc ter AND Water Column Height and Screen Length are <4 ft, Vater Column Height + DNAPL Column Height) = ft btoc at is <4 ft, Place Pump at: Total Well Depth - 2 ft = ft btoc If Present, Do Not Sample Minimum Purge Volume = (3 x Flow Through Cell Volume) 2 min Ambient PID/FID Reading: 5.0 pp Wellbore PID/FID Reading: 3.0 pp							
Pump Type:	QED	BLADDI	ER PUMP			HAVE THE STA	BILIZATION PA	RAMETERS BEEN SA	TISFIED? All are un	its unless %		
					± 0.2	Record Data Only	± 3%	Record Data Only	$\pm 10\% \text{ or } \pm 0.2$	± 20		
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pН	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)		
2000 3000 4000 5000	1550 1555 1059 1603	11.50 11.50 11.50 11.50	None	CITEMICAL	6.90 6.83 6.83	16.06 15.81 19.95 16.00	(8), (8) (6), (8)	44,4 36.8 26.6 32.4	2.07 0.00 0.00 0.00	-85 -88 -90 -92		
				15V						5/		
Start Time: Stop Time:	155D 1603		Average	Elapsed Time: Purge Rate (mL/min):				Water Qua Da	lity Meter ID: 100 Rete Calibrated: 12 - 12	1BA UZZ		
Sample Date: Sample Method: VOA Vials, No Hea	SAMPLING DATA Sample Date: \2-9-10 \ Sample Time: \610 \ Analysis: \tag{ToTAL PC &S}											
COMMENTS:	COMMENTS: THICK, DILY SCHEEN ON DUTSIDE OF RLADDER PUMP Ferrous Iron (Filtered 0.2 micron) = NA WHEN REMOVED FROM HOLE											

rinsed probe periodically

PROJECT NAME DATE: <u>\2-17</u> MONITORING W	3-10		WEATHER:	BER: JOITZIE 5°F SUNA! PMA-MW-	14							
INITIAL DATA Well Diameter: Measured Well De Constructed Well: Depth to Water (b) Depth to LNAPL/I Depth to Top of So Screen Length: PURGE DATA	Depth (btoc): cock): DNAPL (btoc):	59.70 59.30 12.0b	ft If Depth to Top of S ft Place Pump at: Tot ft If Depth to Top of S ft Place Pump at: Tota	ght (do not include LNA Screen is > Depth to Wa tal Well Depth - 0.5 (Scr Screen is < Depth to Wa al Well Depth -)9.5 X V od/or water column heig	iter AND Screei reen Length + E iter AND Water Water Column H ht is <4 ft, Place	n Length is <4 feet DNAPL Column Heig' Column Height and S Height + DNAPL Colu e Pump at: Total Well	ht) = Screen Length are umn Height) =	2.44 ft 50.80 ft btoc - ft btoc ft btoc	Minimum Purge Vo (3 x Flow Through	Cell Volume) mL eading: O-O ppm		
Pump Type:	QED	RLADO	ER PUMP			HAVE THE STA	BILIZATION P.	ARAMETERS BEEN SA	TISFIED? All are uni	ts unless %		
					± 0.2	Record Data Only	± 3%	Record Data Only	$\pm 10\% \text{ or } \pm 0.2$	± 20		
Purge Volume (mL) 3000 4000 5000	Depth to Water (ft) Color Odor 1228			CHEMICAL	pH 699 698	Temp (°C) 14.36 \3.65	Cond. Ms/cm 2.3 2.4	Turbidity (NTUs) 48.90 19.8	DO (mg/l) 0.08 0.00	ORP (mv) -91 -41		
4000	1243				6.97	13.20	2,4	30.9	0,00	-113		
										AMARINA TO		
Start Time: Stop Time:	\228 \243		Average	Elapsed Time: _ Purge Rate (mL/min): _	15 min 200		:	Water Qual Dat	ity Meter ID: HOR	25-10 AS		
Sample Date: Sample Method:	12-13-10 Sample Time: 1245 Analysis: TOTAL PCB 680											
VOA Vials, No He	adspace	Initials:	NA									
COMMENTS:					WAS talked to the control of the con			Ferrous Iron (Filtered	0.2 micron) = NA			
										THE STATE OF THE S		

PROJECT NAME: DATE: 12-14 MONITORING W	-10		WEATHER:	BER: 5017210 15°F DVE PMA-MW	TRC AST	1-1210	FIEL	D PERSONNEL:	UU AUNT	316
INITIAL DATA								united in the second second	÷ -	
Well Diameter: Measured Well De Constructed Well I Depth to Water (bt Depth to LNAPL/I Depth to Top of Sc Screen Length:	Depth (btoc): ock): DNAPL (btoc):		ft If Depth to Top of Sc ft Place Pump at: Total ft If Depth to Top of Sc ft Place Pump at: Total	at (do not include LNAI creen is > Depth to Wat I Well Depth - 0.5 (Screen is < Depth to Wat Well Depth -)9.5 X W /or water column heigh	er AND Scree een Length + I er AND Water 'ater Column I	n Length is <4 feet DNAPL Column Heig r Column Height and Height + DNAPL Col e Pump at: Total Wel	Screen Length are umn Height) =	5 9 . 04 ft btoc		olume = 7100
PURGE DATA						HAVE THE STA	DIL 17 ATION D	ARAMETERS BEEN SA	TISEIED? All are in	its unloss %
Pump Type:			-		± 0.2	Record Data Only	± 3%	Record Data Only	$\pm 10\% \text{ or } \pm 0.2$	± 20
Purge Volume (mL) 1000	Time	Depth to Water (ft)	Color PALE YELL DWY	Odor CHEMICAL SMELL	pH 7.21	Temp (°C) 16.36	Cond. Ms/cm 2.1	Turbidity (NTUs)	DO (mg/l) リミる	ORP (mv)
3000 4000	1115				7.23	15.94 16.02 15.94	2.1	20.5 20.3 14.0	0.00	-120 -123 -122
5000	111.42			The real of the contract of th	1,29	14.5 Secretary				
						60.000		A PA		The state of the s
Start Time: Stop Time:	1103		Average P	Elapsed Time: Purge Rate (mL/min):		N		,	lity Meter ID: 10 te Calibrated: 12 -	E18A V-22
SAMPLING DATA Sample Date: Sample Method:		ow Bi	ADDER	Sample Time: Sample Flow Rate:	1130 250 v	ne/min		Analysis: ToTA QA/QC Samples: AD	the PCBs 682)
VOA Vials, No He	eadspace	Initials	: NA							
COMMENTS:		· · · · · · · · · · · · · · · · · · ·						Ferrous Iron (Filtere	d 0.2 micron) = 1 1	
		10/4								1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		rinsed	probe periodic	ally		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				

doc/proj/data/J017210.02 Low Flow GW Sampling 4Q10.xls

PROJECT NAME: DATE: 12-10 MONITORING W	7-10		WEATHER:	BER: <u>JOI7210</u> <u>40°F SUNI</u> <u>PMA-MW-</u>	NY	<u> </u>	FIELI	PERSONNEL: SEN	JICOV AINE	
INITIAL DATA							/		4 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	A STATE OF THE STA
Well Diameter: Measured Well Deconstructed Well I Depth to Water (but Depth to LNAPL/I Depth to Top of Sc Screen Length:	Depth (btoc): ock): DNAPL (btoc):	2 61.90 61.81 13.40 56.81	ft If Depth to Top of S ft Place Pump at: Tot ft If Depth to Top of S ft Place Pump at: Tota	ght (do not include LNA Screen is > Depth to War al Well Depth - 0.5 (Scr Screen is < Depth to War al Well Depth -)9.5 X W d/or water column heigh	ter AND Screer een Length + D ter AND Water Vater Column H	n Length is <4 feet NAPL Column Heigh Column Height and S leight + DNAPL Colu Pump at: Total Well	Screen Length are mn Height) =	ft btoc	Volume of Flow Thro Minimum Purge Volu (3 x Flow Through (Ambient PID/FID Re Wellbore PID/FID Re	me = 2100 mL Cell Volume) mL ading: 0.0 ppm
PURGE DATA	0000	. 15	my des i a to		 					
Pump Type:	MED E	TH POEI	2 PUMP		± 0.2	Record Data Only	$\frac{\text{BILIZATION PA}}{\pm 3\%}$	RAMETERS BEEN ŠA Record Data Only	$\pm 10\%$ or ± 0.2	± 20
D 17.1	1	Dtl- t		1	1 10.2	T T			r r	
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)
(IIIL)	1325	13, 4p	Color	0001	PII	1 . (0)	IVIS/CIII	(14108)	(mg/i)	(IIIV)
1000	1330	18:45	BROWN	CHEMICAL	8.70	17.67	2.8	49,6	1,47	-67
7000	1335	13,40		SWELL	8.71	17,90	2.8	28.1	0.38	-107
3000	1340	13.40			18.73	171.10	2.8	25.3	0.00	-116
4000	1345	13,40	444		8.77	17.81	2.8	24.7	0.00	-126
5000	1350	13.4D			6.78	17.76	7.8	44.1	0.00	-136
-				3	75.0		480.5	* * *	803 + MD 427	1 500 April 2
		The state of the s								
				ALIAN CONTRACTOR AND ACTION OF THE PROPERTY OF	the commentation of the same and the same same same same same same same sam	of the state of th				
							NATIO POPULAÇÃO AND PROPRIATOR AND	The state of the s		
								SCV	LATINGAGE CONTRACTOR OF THE PARTY OF THE PAR	
						<u> </u>		7 7 7	The state of the s	The same of the sa
Start Time: Stop Time:	1325		Average	Elapsed Time: Purge Rate (mL/min):	25 min 200				ity Meter ID: HORI'	
SAMPLING DAT	`A								The state of the s	
Sample Date: Sample Method:	12-10-10	DM Br/	<u>NOOF</u>	Sample Time: Sample Flow Rate:	1400 200 w	it Imir		Analysis: Total	AL PCBS (GB)	2
VOA Vials, No He	adspace	Initials	: <u>NA</u>							
COMMENTS:								Ferrous Iron (Filtered	1 0.2 micron) = 10.4	· · · · · · · · · · · · · · · · · · ·
	·									

PROJECT NAME: DATE: 12-9 MONITORING WE	7 - 10		WEATHER:	BER: <u>JOITZID</u> 25°F DVER	CAST		FIELD	PERSONNEL:	JIEUL AMO		
INITIAL DATA			***************************************					,			
Well Diameter: Measured Well Dep Constructed Well D Depth to Water (bto Depth to LNAPL/D	epth (btoc): ock):	73,80 73,50 12,00	ft If Depth to Top of ft Place Pump at: To ft If Depth to Top of ft	ght (do not include LNA Screen is > Depth to Wa tal Well Depth - 0.5 (Scr Screen is < Depth to Wa al Well Depth -)9.5 X W	ter AND Screen een Length + D ter AND Water	Length is <4 feet NAPL Column Heig Column Height and	Screen Length are	e, DO ft btoc	Minimum Purge Volt (3 x Flow Through C Ambient PID/FID Re		
Depth to Top of Scr Screen Length:		6 8,50		nd/or water column heigh		Pump at: Total Wel		ft btoc	Welloofe LESTED IN	<u>O. O</u> pp	
PURGE DATA Pump Type:	_030_	RLADDER	PUMP		± 0.2	HAVE THE STABILIZATION PARAMETERS BEEN SATISFIED? All are units unless % ± 0.2 Record Data Only $\pm 3\%$ Record Data Only $\pm 10\%$ or ± 0.2 ± 20					
Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	рН	Temp (°C)	Cond. Ms/cm	Turbidity (NTUs)	DO (mg/l)	ORP (mv)	
3000 4000 5000	1433 1438 1443	12.00 12.00 12.00	NONE Clear, no sediment	CHEMICAL	10.76 10.75 6.71e	15.20 15.17 15.11	2.3 2.3 2.3	28.0 -48.6 42.9	0.00 0.00 0.00	-126 -128 -124	
6000	14.48	17.00		*	10.76	15.14	2.3	42.8	0.00	on 1 2 km	
			5						SSV		
Start Time: Stop Time:	1433 1448		Average	Elapsed Time: _ Purge Rate (mL/min): _					ity Meter ID: Hogic te Calibrated: 12-9-		
SAMPLING DAT	A										
Sample Date: Sample Method:	12-9-1 L)WF	o Low RLAI	<u> </u>	Sample Time: Sample Flow Rate:							
VOA Vials, No He	adspace] Initials:	NA							÷	
COMMENTS:	A	on and the second secon	lin below 1					Ferrous Iron (Filtered	10.2 micron) = NA		
				With the State of							

probe rinsed periodically, DO meter OK

DATE: 12-1	PROJECT NAME: WIGK-PCB-4010 PROJECT NUMBER: JD17210 DATE: 17-10-10 WEATHER: 35°F, SUNM MONITORING WELL ID: PMA-MW-SM SAMPLE ID: PMA-MW						3	FIELD	PERSONNEL: SEN	INIA VOSIL		
INITIAL DATA									-		1,000,000	
Well Diameter: Measured Well Depth (btoc): Constructed Well Depth (btoc): Depth to Water (btock): Depth to Water (btock): Depth to LNAPL/DNAPL (btoc): Depth to Top of Screen (btoc): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Top of Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Top of Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Top of Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pump at: Total Well Depth - 0.5 (Screen is > Depth to Water (btock): The place Pum						ter AND Screet een Length + E ter AND Water Vater Column H nt is <4 ft, Place	n Length is <4 feet NAPL Column Heig Column Height and leight + DNAPL Column Pump at: Total Well	Screen Length are cumn Height) =	54.37 ft btoc	Minimum Purge Volume = 2(20) ft btoc (3 x Flow Through Cell Volume) m Ambient PID/FID Reading: p ft btoc Wellbore PID/FID Reading: p p		
PURGE DATA		_										
Pump Type:	DED T	BLADDER	PUMP	<u> </u>		1.0.3	With the comment of t		RAMETERS BEEN SA			
	1					± 0.2	Record Data Only	± 3%	Record Data Only	± 10% or ± 0.2	± 20	
Purge Volume (mL)	Time	Depth to Water (ft)		Color	Odor		Temp	Cond.	Turbidity	DO	ORP	
1000	1014	12.10	NON		CHEMICAL	pH	(°C)	Ms/cm	(NTUs)	(mg/l)	(mv)	
2000	1019	12.10	T	EAR	SMELL	7.01	15.92	2.4	12.7	5.46	-52	
3000	1024	12.70		1	1 Sal V Vindon har	7.00	13.72	2.4	4.50	9.45	* lo l	
4000	1029	12.10				14.00	5.84	2.5	26.2	10.99	-69	
5000	1034	12.10				6.99	15.91	2.5	0,0	5.00	-73	
6000	1039	12.15				7.01	116.07	2.5	0,0	0,00	-76	
7000	1044	17 - 10		7		7.02	15.90	2.5	0.0	0.00	-76	
2,2			,		1	7.02	16.12	2.5	0.0	0.00	TELL (TELL)	
						1 1 1 1 1	100.11	4-1-1-2	Cr w	See		
Start Time: Stop Time:	1014	-		Average	Elapsed Time: _ Purge Rate (mL/min): _					ity Meter ID: HDE16 e Calibrated: 12-10		
SAMPLING DAT	`A								A STATE OF THE STA			
Sample Date: Sample Method:		OW RLAD			Sample Time: Sample Flow Rate:	1045 700 m	Ymin	Q	Analysis: FCB A/QC Samples: none			
VOA Vials, No He	adspace		NA									
COMMENTS:	Marine Marine Marine		······································						Ferrous Iron (Filtered	0.2 micron) = NA	***************************************	
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				**************************************							HARLES CONTRACTOR OF THE PARTY	
						· · · · · · · · · · · · · · · · · · ·						

rinsed probe periodically

PROJECT NAME: DATE: <u>12-10-</u> MONITORING WE	10		WEATHER:	MBER: JOITZIO 40°F SUNN PCB-MW-C	Y	D	FIELC	PERSONNEL: \EN	INA VUSIL		
INITIAL DATA Well Diameter: Measured Well Dep Constructed Well D: Depth to Water (bto Depth to LNAPL/D: Depth to Top of Scr Screen Length: PURGE DATA	epth (btoc): ck): NAPL (btoc):	102.00 101.18 9.05	ft If Depth to Top of ft Place Pump at: To ft If Depth to Top of ft Place Pump at: Tot	tal Well Depth - 0.5 (Scre Screen is < Depth to Wat al Well Depth -)9.5 X W nd/or water column heigh	ter AND Screen een Length + Di ter AND Water Vater Column H ot is <4 ft, Place	or DNAPL): AND Screen Length is <4 feet I Length + DNAPL Column Height) =					
Pump Type:	QED	BLADDER	2 PUMP		A service of the serv	HAVE THE STA	ABILIZATION PA	RAMETERS BEEN SA	TISFIED? All are uni	ts unless %	
J F					± 0.2	Record Data Only	± 3%	Record Data Only	\pm 10% or \pm 0.2	± 20	
Purge Volume (mL) 0 1000 2000 3000 4000 5000 6000 7000 8000	Time 1149 1159 1159 1204 1209 1214 1219 1224 1229	Depth to Water (ft) 9,05 9,05 9,05 9,05 9,05 9,05 9,05 9,05 9,05	Color	Odor CHEMICAL SMELL Elapsed Time: 3		Temp (°C) 17.96 17.85 18.11 18.16 13.11 18.05 18.26	Cond. Ms/cm		DO (mg/l) 2.00 2.13 0.34 0.31 0.56 0.13 0.00 0.00		
Stop Time:	- 3		Average								
Sample Date: 12-10-10 Sample Time: 12-30 Analysis: PCB 680 Sample Method: 10W FLOW Sample Flow Rate: 200 mL/min QA/QC Samples: von 6 VOA Vials, No Headspace Initials: NA											
Start Time: Stop Time: SAMPLING DAT. Sample Date: Sample Method:	12-10- 10W F	9.05		e Purge Rate (mL/min):	40 min 200			Water Qual Da Analysis: PCE QA/QC Samples:	ity Meter ID: HSC. te Calibrated: 12-1	8A UZZ 0-10	

* last turb reading is inconsistant when comparing the visual darity of sample.

APPENDIX B

CHAINS-OF-CUSTODY

ANALYSIS REQUEST AND CHAIN TestAmerica	OF CUSTODY R	ECC	RD	,	A	5102	2 LaRo	i ca Sav oche Av , GA 314	enue				P	/ebsite: www hone: (912) ax: (912) 35		ainc.con	n	
	e ne	k.		-) Alte	rnate L	aborato	ry Name	e/Loca	tion			hone; ax:				
THE LEADER IN ENVIRONMENTAL TESTING PROJECT REFERENCE PROJECT NO.	PROJECT LOCATION	.1	MATE	DIV										· ·	PAGE	T	OF	
PROJECT REFERENCE PROJECT NO.	(STATE)		TYF						REQ	UIRED	ANALYS	SIS	,	university to the second				
TAL (LAB) PROJECT MANAGER P.O. NUMBER	CONTRACT NO.	ATE			۲۲,)	Ma									STANDÂRI DELIVERY		т У	27
CLIENT (SITE) PM CLIENT PHONE 31-(-3.312	CLIENT FAX	INDICATE			OLVEI	TOTAL PCB		-						- Tribunation		DUE	······································	
CHENT NAME CLIENT E-MAIL		GRAB (G)			JI, S(DELIVERY			>
GM RNALDI gmrina DSoin	tra, com	GRAI	G		000	*			.]						(SURCHAI	RGE)		
I CLIENT ADDRESS		(C) OH	E C		릴										DATE			
SOLUTIA 1575 WARYULE OFR 1 STI N COMPANY CONTRACTING THIS WORK (If applicable)	70	COMPOSITE (C	OUS (WA	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,	nene		men illumi	Joseph Mary	stano tren 1982 (1990 1987 (1990)			VE		NUMBER (PER SHIPI		ERS SUB	BMITTED
SAMPLE SAMPLE IDENTIFICATION	N	OW I			NON			NUN	IBER OF	CONTA	INERS	SUBMIT	TED		***	REMAR	RKS	
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92-8-10 1100 PMA -MW-05M-1210	AAL STATE OF THE S		-	+														
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RECEIVED BY: (SIGNATUBE) - DATE TIME	RECEIVED BY: (SIGNATUR	RE)					DATE		TIME		RECE	VED BY	: (S GNAT	URE)	DA	TE	TIME	E
		LABO	ORAT	ORY		ONLY		#0 HAW 100 A 100			Area Department	2000	······································	+114.04.000 · · · · · · · · · · · · · · · · · ·	- Land			
RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME 12/9/10/9/10/9/10/9/10/9/10/9/10/9/10/9/	CUSTODY INTACT ÝES O		STOE AL NO			SAVAN LOG N	NAH 0. 1 38	- ひd - ひd	LABORA	ATORY	REMAF	KS -	Te	11P O.	6			

Serial Number U33342

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THE LEADER									⊃ Alt	ernate	Laborat	ory Nar	ne/Loc	ation			hone: '		•	•
PROJECT REFERE	ENCE 40	10	PROJECT NO.		PROJECT LOCATION (STATE)		/ATR					RE	QUIRE	O ANALY	SIS	*************************************		PAGE		OF
TAL (LAB) PROJECT	T MANAGER		P.O. NUMBER		CLIENT FAX 314-674-83	ATE		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	33									STANDARD REDELIVERY	EPORT	\bowtie
CLIENT (SITE) PM GM RW			314-674	1-3312	314-1074-88	1 000		E S	D.	2					-			DATE DUE	=	
CLIENT NAME	, , , ,					(G)		Ö.		3								EXPEDITED R	EPORT	
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CLIENT ADDRESS						1516	泛	Ē	10									DATE DUE		
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Serial Number 033125

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TAL (LAB) PROJ	S		P.O. NUMBER		CONTRACT NO.	ATE			(J	of o		***								STANDARD RI DELIVERY	EPORT	0
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CLIENT ADDRES	SS				-	- E	EH	9	38	To							-			DATE DUE	,	
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APPENDIX C QUALITY ASSURANCE REPORT

FOURTH QUARTER 2010 PCB GROUNDWATER QUALITY ASSESSMENT 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. J017210.07

March 15, 2011

FOURTH QUARTER 2010 PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM QUALITY ASSURANCE REPORT SOLUTIA INC. W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS

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FOURTH QUARTER 2010 PCB GROUNDWATER QUALITY ASSESSMENT 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 December of 2010 at the Solutia W.G. Krummrich plant as part of the 4th Quarter 2010 PCB Groundwater Quality Assessment 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 polychlorinated biphenyls (PCBs).

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 (PMA-MW-4D-1210, PMA-MW-4S-1210, PMA-MW-5M-1210 and PMA-MW-6D-1210.) 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. These samples were analyzed as part of Sample Delivery Group (SDG) KPM040 utilizing the following USEPA SW-846 Methods:

Method 680 for PCBs

Samples were reviewed following procedures outlined in the USEPA National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and the Revised PCB Groundwater Quality Assessment Work Plan (Solutia 2009).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. The data reviewed by the MJW Corporation has been approved for use as no samples required qualification. The various Test America qualifiers are explained in Table 1:

Table 1 – Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits.
F	MS or MSD exceeds the control limits.
Н	Sample was prepped or analyzed beyond the specified holding time
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.

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, including estimated detect/nondetect (J/UJ) values was 100 percent, which meets 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) values
- Field duplicate results
- Results reported from dilutions
- Internal standard responses
- Mass spectrometer tuning
- Calibration
- Compound identification
- Other problems/documentation

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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 conducted within the recommended holding time requirements except for water samples PMA-MW-5M-1210, PMA-MW-6D-1210, PMA-MW-3M-1210, PMA-MW-3S-1210, PMA-MW-1S-1210, PMA-MW-2M-1210 and PMA-MW-2S-1210.

The cooler receipt form indicated that the five coolers were received by the laboratory at temperatures below the $4^{\circ}C \pm 2^{\circ}C$ criteria. Samples received were in good condition and not frozen; therefore, no qualification of data was required.

3.0 LABORATORY METHOD BLANK 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 blanks.

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 PCBs 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; therefore, 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 except for

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the following: nonachlorobiphenyl results for water samples PMA-MW-4D-1210, PMA-MW-4S-1210, PMA-MW-5M-1210, PMA-MW-5M-1210, PMA-MW-6D-1210, PMA-MW-3B-1210, PMA-MW-3S-1210, PMA-MW-1M-1210, PMA-MW-1S-1210, PMA-MW-2M-1210, PMA-MW-2S-1210. The laboratory qualified the results for those samples, and no other 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, meeting 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. The MS/MSD duplicate recoveries for batch 189105 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Sample PMA-MW-2M-1210 was spiked and analyzed for PCBs in SDG KPM040. All MS/MSD recoveries were within evaluation criteria. No qualification of data was required.

7.0 FIELD DUPLICATE RESULTS

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

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Page 5

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 PCBs (Method 680), the IS areas must be within +/- 30 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. If the IS area count is outside criteria, Method 680 indicates the mean IS area obtained during the initial calibration (ICAL) (+/- 50 percent) should be used.

The internal standards area responses for PCBs were verified for the data reviews. IS responses met the criteria as described above.

9.0 RESULTS REPORTED FROM DILUTIONS

Sample PMA-MW-4S-1210 was diluted due to abundance of target analytes. The diluted sample results for PCBs were reported at the lowest possible reporting limit.

10. MASS SPECTROMETER TUNING

Instrument performance was determined to be satisfactory; therefore, 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%. Instrument calibration was determined to be satisfactory; therefore, no qualifications of data were required.

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12.0 COMPOUND IDENTIFICATION

Compound identification was determined to be satisfactory; therefore, no qualifications of data were required.

13.0 OTHER PROBLEMS/DOCUMENTATION

Other problems with non-compliance, field documentation, etc., were not identified; therefore, no qualifications of data were required.

= FROM THE GROUND UP =

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS (WITH DATA REVIEW SHEETS)

SDG KPM040

Results of Samples from Monitoring Wells:

PMA-MW-1M

PMA-MW-1S

PMA-MW-2M

PMA-MW-2S

PMA-MW-3M

PMA-MW-3S

PMA-MW-4D

PMA-MW-4S

PMA-MW-5M

PMA-MW-6D



ANALYTICAL REPORT

Job Number: 680-63899-1

SDG Number: KPM040

Job Description: WGK PCB GW Quality 4Q10 - DEC 2010

For:

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

Attention: Mr. Jerry Rinaldi

Lideja grieia

Approved for release Lidya Gulizia Project Manager I 1/31/2011 10:55 AM

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
01/31/2011

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: LA000244; SC: 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA; WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8: 8TMS-Q

TestAmerica Laboratories, Inc.

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



Job Narrative 680-63899-1 / SDG KPM040

Receipt

All samples were received in good condition within temperature requirements.

GC/MS Semi VOA

Method(s) 680: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 189105 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 680: The following sample(s) was diluted due to the nature of the sample matrix: PMA-MW-04S-1210 (680-63929-2). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Comments

Select samples were re-extracted outside of the holding time at the instruction of the laboratory project manager to confirm reported detections in the original analysis. Both sets of data are reported for these samples.

No additional comments.



METHOD SUMMARY

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Polychlorinated Biphenyls (PCBs) (GC/MS)	TAL SAV	EPA 680	
Liquid-Liquid Extraction (Separatory Funnel)	TAL SAV		EPA 680

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

EPA = US Environmental Protection Agency



METHOD/ANALYST SUMMARY

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Method	Analyst	Analyst ID
EPA 680	Davis, Nancy	ND

SAMPLE SUMMARY

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

l ah Campia ID	Client Commis ID	Client Blothin	Date/Time	Date/Time
Lab Sample ID	Client Sample ID	Client Matrix	Sampled	Received
680-63929-1	PMA-MW-04D-1210	Water	12/09/2010 1500	12/10/2010 0933
680-63929-2	PMA-MW-04S-1210	Water	12/09/2010 1610	12/10/2010 0933
680-64004-1	PMA-MW-5M-1210	Water	12/10/2010 1045	12/11/2010 0953
680-64004-2	PMA-MW-6D-1210	Water	12/10/2010 1230	12/11/2010 0953
680-64004-3	PMA-MW-3M-1210	Water	12/10/2010 1400	12/11/2010 0953
680-64004-4	PMA-MW-3S-1210	Water	12/10/2010 1510	12/11/2010 0953
680-64048-1	PMA-MW-01M-1210	Water	12/13/2010 1245	12/14/2010 0954
680-64048-2	PMA-MW-01S-1210	Water	12/13/2010 1510	12/14/2010 0954
680-64048-2MS	PMA-MW-01S-1210	Water	12/13/2010 1510	12/14/2010 0954
680-64048-2MSD	PMA-MW-01S-1210	Water	12/13/2010 1510	12/14/2010 0954
680-64106-1	PMA-MW-02M-1210	Water	12/14/2010 1130	12/15/2010 1850
680-64106-2FD	PMA-MW-02M-AD-1210	Water	12/14/2010 1130	12/15/2010 1850
680-64106-3	PMA-MW-02S-1210	Water	12/14/2010 1245	12/15/2010 1850
680-64106-4EB	PMA-MW-02S-1210-EB	Water	12/14/2010 1245	12/15/2010 1850

SAMPLE RESULTS

TestAmerica Savannah

X0/11

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-04D-1210

Lab Sample ID:

680-63929-1

Client Matrix:

Water

12/15/2010 1451

Date Sampled: 12/09/2010 1500

Date Received: 12/10/2010 0933

680 Pol	ychlorinated	Rinhenvis	(PCBs)	(GC/MS)
000 1 01	youndinated	DINIGHTE	11 00001	

Method: Preparation:

Date Analyzed:

Date Prepared:

680 680 Analysis Batch: 680-190572

Instrument ID:

MSF N/A

Dilution:

1.0 01/01/2011 0400 Prep Batch: 680-189105

Lab File ID: Initial Weight/Volume:

1060 mL

Final Weight/Volume:

1 mL

Injection Volume:

Qualifier

Analyte Result (ug/L) Qualifier RL Monochlorobiphenyl 0.16 0.094 Dichlorobiphenyl 0.15 0.094 Trichlorobiphenyl 0.094 U 0.094 Tetrachlorobiphenyl 0.19 U 0.19 Pentachlorobiphenyl 0.19 U 0.19 Hexachlorobiphenyl 0.19 U 0.19 Heptachlorobiphenyl 0.28 U 0.28 Octachlorobiphenyl 0.28 U 0.28 Nonachlorobiphenyl 0.47 U * 0.47 DCB Decachlorobiphenyl 0.47 U 0.47 %Rec

Surrogate Decachlorobiphenyl-13C12

58

25 - 113

Acceptance Limits

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-04S-1210

Lab Sample ID:

680-63929-2

Client Matrix:

Water

Date Sampled: 12/09/2010 1610

Date Received: 12/10/2010 0933

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method:

680 680 Analysis Batch: 680-190610

Instrument ID:

MSF

Preparation: Dilution:

1000

Prep Batch: 680-189105

Lab File ID:

N/A 1030 mL

Date Analyzed: Date Prepared: 01/03/2011 1652 12/15/2010 1451

Initial Weight/Volume: Final Weight/Volume:

1 mL

490

Injection Volume:

Analyte Result (ug/L) Qualifier

RL Monochlorobiphenyl 120 97 Dichlorobiphenyl 830 97 Trichlorobiphenyl 2700 97 Tetrachlorobiphenyl 4300 190 Pentachlorobiphenyl 3300 190 Hexachlorobiphenyl 4700 190 Heptachlorobiphenyl 4100 290 Octachlorobiphenyl 620 290 Nonachlorobiphenyl U * 490 490 DCB Decachlorobiphenyl 490 U

Surrogate %Rec Qualifier Acceptance Limits Decachlorobiphenyl-13C12 0 D 25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-5M-1210

Lab Sample ID: Client Matrix:

680-64004-1

Water

Date Sampled: 12/10/2010 1045

Date Received: 12/11/2010 0953

680 Polychlorinated	Biphenyls	(PCBs)	(GC/MS)
---------------------	-----------	--------	---------

Method: Preparation:

680 680 Analysis Batch: 680-190572 Prep Batch: 680-189105

Instrument ID: Lab File ID:

MSF N/A

Dilution: 1.0 01/01/2011 0501 Date Analyzed:

Initial Weight/Volume: Final Weight/Volume:

1020 mL 1 mL

Injection Volume:

Date Prepared: 12/15/2010 1451

Analytė	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.098	U	0.098
Dichlorobiphenyl	0.098	U	0.098
Trichlorobiphenyl	0.29		0.098
Tetrachlorobiphenyl	0.30		0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20		0.20
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U *	0.49
DCB Decachlorobiphenyl	0.49	U	0.49
Surrogate	%Rec	Qualifier	Acceptance Limits

Decachlorobiphenyl-13C12

62

25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-5M-1210

Lab Sample ID:

680-64004-1

Client Matrix:

Water

Date Sampled: 12/10/2010 1045

Date Received: 12/11/2010 0953

680 Polychlorinated Bip	henyls (PCBs	(GC/MS)
-------------------------	--------------	---------

Method: Preparation: 680 680 Analysis Batch: 680-192387

Instrument ID:

MSF N/A

Dilution:

1.0

Prep Batch: 680-190477

Lab File ID: Initial Weight/Volume:

1060 mL

Date Analyzed: Date Prepared: 01/21/2011 1645

01/03/2011 1437

Run Type: RE

Final Weight/Volume:

1 mL

•		Ngosion volumo.		
Analyte	Result (ug/L)	Qualifier	RL	
Monochlorobiphenyl	0.094	UH	0.094	
Dichlorobiphenyl	0.094	UН	0.094	
Trichlorobiphenyl	0.27	Н	0.094	
Tetrachlorobiphenyl	0.24	Н	0.19	
Pentachlorobiphenyl	0.19	UН	0.19	
Hexachlorobiphenyl	0.19	UH	0.19	
Heptachlorobiphenyl	0.28	UH	0.28	
Octachlorobiphenyl	0.28	UН	0.28	
Nonachlorobiphenyl	0.47	U H *	0.47	
DCB Decachlorobiphenyl	0.47	UН	0.47	
Surrogate	%Rec	Qualifier	Acceptance Limits	
Decachlorobiphenyl-13C12	66	25 - 113		

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-6D-1210

Lab Sample ID:

680-64004-2

12/15/2010 1451

Client Matrix:

Water

Date Sampled: 12/10/2010 1230

Date Received: 12/11/2010 0953

Method: Preparation:

Date Prepared:

680 680 Analysis Batch: 680-190572

Instrument ID: Lab File ID: MSF N/A

Dilution:
Date Analyzed:

1.0 01/01/2011 0531 Prep Batch: 680-189105

Initial Weight/Volume:

1050 mL

Final Weight/Volume:

1 mL

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.13		0.095
Dichlorobiphenyl	0.095	U	0.095
Trichlorobiphenyl	0.26		0.095
Tetrachlorobiphenyl	0.26		0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.48	U *	0.48
DCB Decachlorobiphenyl	0.48	U	0.48
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	62	***************************************	25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-6D-1210

Lab Sample ID:

680-64004-2

Client Matrix:

Water

Date Sampled: 12/10/2010 1230

Date Received: 12/11/2010 0953

680 Polychlorinated Biphenyls (PCBs) (GC/MS)
--

Method: Preparation:

680 680 Analysis Batch: 680-192387

Instrument ID:

MSF N/A

Dilution:

Prep Batch: 680-191838

Lab File ID:

1051 mL

Date Analyzed:

1.0

Run Type: RE

Initial Weight/Volume: Final Weight/Volume:

1 mL

Date Prepared:

01/21/2011 1715 01/18/2011 1417

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.15	H	0.095
Dichlorobiphenyl	0.095	UH	0.095
Trichlorobiphenyl	0.21	Н	0.095
Tetrachlorobiphenyl	0.24	Н	0.19
Pentachlorobiphenyl	0.19	UН	0.19
Hexachlorobiphenyl	0.22	Н	0.19
Heptachlorobiphenyl	0.29	UН	0.29
Octachlorobiphenyl	0.29	UН	0.29
Nonachlorobiphenyl	0.48	U H *	0.48
DCB Decachlorobiphenyl	0.48	UH	0.48
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	65		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-3M-1210

Lab Sample ID:

680-64004-3

Client Matrix:

Water

Date Sampled: 12/10/2010 1400

Date Received: 12/11/2010 0953

Method: Preparation: 680 680 Analysis Batch: 680-190572

Instrument ID:

MSF N/A

Difution:

1.0

Prep Batch: 680-189105

59

Lab File ID:

1050 mL

Date Analyzed:

Decachlorobiphenyl-13C12

Initial Weight/Volume: Final Weight/Volume:

25 - 113

1 mL

Date Prepared:

01/01/2011 0601 12/15/2010 1451

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.63		0.095
Dichlorobiphenyl	0.095	U	0.095
Trichlorobiphenyl	0.10		0.095
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.48	U *	0.48
DCB Decachlorobiphenyl	0.48	U	0.48
Surrogate	%Rec	Qualifier	Acceptance Limits

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-3M-1210

Lab Sample ID:

680-64004-3

Client Matrix:

Water

01/21/2011 1746

Date Sampled: 12/10/2010 1400

Date Received: 12/11/2010 0953

680 Polychlorinated Biphenyls (PCBs) (GC/MS	680 Po	lychlorinated	Biphenvis	(PCBs)	(GC/MS
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Method: Preparation:

Date Analyzed:

Dilution:

680 680 1.0

Analysis Batch: 680-192387

Run Type: RE

Prep Batch: 680-191838

Instrument ID: Lab File ID:

MSF N/A

Initial Weight/Volume: Final Weight/Volume:

1042 mL 1 mL

Injection Volume:

Date Prepared: 01/18/2011 1417 Analyte Qualifier Result (ug/L) RL Monochlorobiphenyl 0.25 0.096 Dichlorobiphenyl UН 0.096 0.096 Trichlorobiphenyl 0.12 Н 0.096 Tetrachlorobiphenyl 0.19 UН 0.19 Pentachlorobiphenyl 0.19 UН 0.19 Hexachlorobiphenyl 0.19 UН 0.19 Heptachlorobiphenyl 0.29 UН 0.29 Octachlorobiphenyl 0.29 UН 0.29 Nonachlorobiphenyl 0.48 UH* 0.48 DCB Decachlorobiphenyl 0.48 UН 0.48 Surrogate %Rec Qualifier Acceptance Limits Decachlorobiphenyl-13C12

64

25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-3S-1210

Lab Sample ID:

680-64004-4

Client Matrix:

Water

01/01/2011 0632

Date Sampled: 12/10/2010 1510

Date Received: 12/11/2010 0953

680	Polychlorinated	Biphenyls	(PCBs)	(GC/MS)
000	. oryonnonnacca	Piblichais	(i ons)	(CONTREO)

Method: Preparation:

Date Analyzed:

Dilution:

680 680 1.0

Analysis Batch: 680-190572 Prep Batch: 680-189105

Instrument ID: Lab File ID:

MSF N/A

1030 mL

Initial Weight/Volume: Final Weight/Volume:

1 mL

Date Prepared: 12/15/2010 1451	Injection Volume:		
Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.38	***************************************	0.097
Dichlorobiphenyl	0.16		0.097
Trichlorobiphenyl	0.14		0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U *	0.49
DCB Decachlorobiphenyl	0.49	U	0.49
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	69		25 - 113

Client: Solutia Inc. Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-3S-1210

Lab Sample ID:

680-64004-4

Client Matrix:

Water

Date Sampled: 12/10/2010 1510

Date Received: 12/11/2010 0953

Method: Preparation: 680 680 Analysis Batch: 680-192387 Prep Batch: 680-191838

Instrument ID: Lab File ID: MSF N/A

Dilution: 1.0

Date Analyzed: 0
Date Prepared: 0

01/21/2011 1816 01/18/2011 1417 Run Type: RE

Initial Weight/Volume: Final Weight/Volume:

1049 mL

Weight/Volume: 1 mL

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.095	UН	0.095
Dichlorobiphenyl	0.095	UH	0.095
Trichlorobiphenyl	0.095	UН	0.095
Tetrachlorobiphenyl	0.19	UН	0.19
Pentachlorobiphenyl	0.19	UН	0.19
Hexachlorobiphenyl	0.19	UН	0.19
Heptachlorobiphenyl	0.29	UН	0.29
Octachlorobiphenyl	0.29	UH	0.29
Nonachlorobiphenyl	0.48	U H *	0.48
DCB Decachlorobiphenyl	0.48	UH	0.48
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	62	***************************************	25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-01M-1210

Lab Sample ID:

680-64048-1

Client Matrix:

Water

Date Sampled: 12/13/2010 1245

Date Received: 12/14/2010 0954

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: Preparation: 680

680 1.0

Dilution: Date Analyzed: Date Prepared: 01/01/2011 1036

12/15/2010 1451

Analysis Batch: 680-190572

Prep Batch: 680-189105

Instrument ID:

Lab File ID: Initial Weight/Volume:

MSF N/A 1060 mL

Final Weight/Volume: 1 mL

Injection Volume:

Analyte Result (ug/L) Qualifier RL Monochlorobiphenyl 0.31 0.094 Dichlorobiphenyl 0.094 U 0.094 Trichlorobiphenyl 0.094 U 0.094 Tetrachlorobiphenyl 0.19 U 0.19 Pentachlorobiphenyl 0.19 U 0.19 Hexachlorobiphenyl 0.19 U 0.19 Heptachlorobiphenyl 0.28 U 0.28 Octachlorobiphenyl 0.28 U 0.28 Nonachlorobiphenyl 0.47 U 0.47 DCB Decachlorobiphenyl 0.47 U 0.47 Surrogate %Rec Qualifier Acceptance Limits Decachlorobiphenyl-13C12 70 25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-01S-1210

Lab Sample ID:

680-64048-2

Client Matrix:

Water

Date Sampled: 12/13/2010 1510

Date Received: 12/14/2010 0954

Method: Preparation: 680 680

Analysis Batch: 680-190572 Prep Batch: 680-189105

Instrument ID:

MSF N/A

Dilution:

1.0

Lab File ID: Initial Weight/Volume:

1030 mL

Date Analyzed: Date Prepared:

01/01/2011 0732 12/15/2010 1451

Final Weight/Volume:

1 mL

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.097	U	0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.11		0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U *	0.49
DCB Decachlorobiphenyl	0.49	U	0.49
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	68		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-01S-1210

Lab Sample ID:

680-64048-2

Client Matrix:

Water

Date Sampled: 12/13/2010 1510

Date Received: 12/14/2010 0954

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: Preparation:

680 680 Analysis Batch: 680-192387

Instrument ID: Lab File ID:

MSF N/A

Dilution:

1.0

Prep Batch: 680-191838

Initial Weight/Volume:

1015 mL

Date Analyzed: Date Prepared:

01/21/2011 1846 01/18/2011 1417 Run Type: RE

Final Weight/Volume:

1 mL

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.099	UH	0.099
Dichlorobiphenyl	0.099	UН	0.099
Trichlorobiphenyl	0.099	UН	0.099
Tetrachlorobiphenyl	0.20	UН	0.20
Pentachlorobiphenyl	0.20	UH	0.20
Hexachlorobiphenyl	0.20	UН	0.20
Heptachlorobiphenyl	0.30	UН	0.30
Octachlorobiphenyl	0.30	UН	0.30
Nonachlorobiphenyl	0.49	U H *	0.49
DCB Decachlorobiphenyl	0.49	UН	0.49
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	68		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-02M-1210

Lab Sample ID:

680-64106-1

Client Matrix: Water Date Sampled: 12/14/2010 1130

Date Received: 12/15/2010 1850

680 Polychlorinated Biphenyls (PCBs) (GC/M	680	Polychlorinated	Biphenyls :	(PCBs)	(GC/MS
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Method: Preparation: Dilution:

680

1.0

Date Analyzed: Date Prepared:

680

12/31/2010 1923 12/20/2010 1506 Analysis Batch: 680-190621

Prep Batch: 680-189561

Instrument ID:

Lab File ID: Initial Weight/Volume: Final Weight/Volume:

N/A 1060 mL 1 mL

MSF

Injection Volume:

Analyte Result (ug/L) Qualifier RL Monochlorobiphenyl 2.1 0.094 Dichlorobiphenyl U 0.094 0.094 Trichlorobiphenyl 0.0990.094 Tetrachlorobiphenyl U 0.19 0.19 Pentachlorobiphenyl U 0.19 0.19 Hexachlorobiphenyl U 0.19 0.19 Heptachlorobiphenyl 0.28 U 0.28 Octachlorobiphenyl 0.28 U 0.28 Nonachlorobiphenyl 0.47 U 0.47 DCB Decachlorobiphenyl U 0.47 0.47 Surrogate %Rec Qualifier Acceptance Limits Decachlorobiphenyl-13C12 63 25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-02M-1210

Lab Sample ID:

680-64106-1

Client Matrix:

Water

Date Sampled: 12/14/2010 1130

Date Received: 12/15/2010 1850

Method: Preparation: 680 680 Analysis Batch: 680-192387

Instrument ID: Lab File ID: MSF N/A

Dilution:

1.0

Prep Batch: 680-191838

Initial Weight/Volume:

1056 mL

Date Analyzed: Date Prepared: 01/21/2011 1917 01/18/2011 1417

Run Type: RE

Final Weight/Volume:

1 mL

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	2.6	H	0.095
Dichlorobiphenyl	0.095	UН	0.095
Trichlorobiphenyl	0.10	Н	0.095
Tetrachlorobiphenyl	0.19	UН	0.19
Pentachlorobiphenyl	0.19	UH	0.19
Hexachlorobiphenyl	0.19	UН	0.19
-leptachlorobiphenyl	0.28	UH	0.28
Octachlorobiphenyl	0.28	UH	0.28
Nonachlorobiphenyl	0.47	U H *	0.47
DCB Decachlorobiphenyl	0.47	UH	0.47
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	52		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-02M-AD-1210

Lab Sample ID:

680-64106-2FD

Client Matrix:

Water

Date Sampled: 12/14/2010 1130

Date Received: 12/15/2010 1850

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: Preparation:

Date Prepared:

680 680 Analysis Batch: 680-190621

Instrument ID:

MSF N/A

Dilution:

1.0

Prep Batch: 680-189561

Lab File ID:

1030 mL

Date Analyzed:

12/31/2010 1953

12/20/2010 1506

Initial Weight/Volume: Final Weight/Volume:

1 mL

Analyte	Result (ug/L)	Qualifier	RL.
Monochlorobiphenyl	2.0		0.097
Dichlorobiphenyl	0.097	U	0.097
Trichlorobiphenyl	0.097	U	0.097
Tetrachlorobiphenyl	0.19	U	0.19
Pentachlorobiphenyl	0.19	U	0.19
Hexachlorobiphenyl	0.19	U	0.19
Heptachlorobiphenyl	0.29	U	0.29
Octachlorobiphenyl	0.29	U	0.29
Nonachlorobiphenyl	0.49	U	0.49
DCB Decachlorobiphenyl	0.49	U	0.49
Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl-13C12	61		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-02S-1210

Lab Sample ID:

680-64106-3

Client Matrix:

Water

12/31/2010 2023

12/20/2010 1506

Date Sampled: 12/14/2010 1245

Date Received: 12/15/2010 1850

Method: Preparation:

Date Analyzed:

Date Prepared:

Decachlorobiphenyl-13C12

Dilution:

680 680 1.0 Analysis Batch: 680-190621 Prep Batch: 680-189561 Instrument ID: Lab File ID:

Final Weight/Volume:

MSF N/A

Lab File ID: N/A
Initial Weight/Volume: 1060

25 - 113

1060 mL 1 mL

Injection Volume:

Analyte Result (ug/L) Qualifier RL Monochlorobiphenyl 0.14 0.094 Dichlorobiphenyl 0.094 U 0.094 Trichlorobiphenyl 0.14 0.094 Tetrachlorobiphenyl 0.19 U 0.19 Pentachlorobiphenyl 0.19 U 0.19 Hexachlorobiphenyl 0.19 U 0.19 Heptachlorobiphenyl 0.28 U 0.28 Octachlorobiphenyl 0.28 U 0.28 Nonachlorobiphenyl U 0.47 0.47 DCB Decachlorobiphenyl 0.47 U 0.47 Surrogate %Rec Qualifier Acceptance Limits

80

K2/11

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID:

PMA-MW-02S-1210

Lab Sample ID:

680-64106-3

Client Matrix:

Water

Date Sampled: 12/14/2010 1245

Date Received: 12/15/2010 1850

680 Pal	vchlorinated	Rinhanyle	(DCRe)	(CC/B/IC)
980 POI	veniorinated	Bibnenvis	(PCBS)	(GC/MS)

Method: Preparation: 680 680 Analysis Batch: 680-192387

Instrument ID: Lab File ID:

MSF N/A

Dilution:

1.0

Prep Batch: 680-191838

Initial Weight/Volume:

1052 mL

Date Analyzed:

01/21/2011 1948

Run Type: RE

47

Final Weight/Volume:

1 mL

Date Prepared:

Decachlorobiphenyl-13C12

01/18/2011 1417

Injection Volume:

25 - 113

Analyte	Result (ug/L)	Qualifier	RL
Monochlorobiphenyl	0.14	H	0.095
Dichlorobiphenyl	0.095	UН	0.095
Trichlorobiphenyl	0.10	Н	0.095
Tetrachlorobiphenyl	0.19	UН	0.19
Pentachlorobiphenyl	0.19	UН	0.19
Hexachlorobiphenyl	0.19	UН	0.19
Heptachlorobiphenyl	0.29	UН	0.29
Octachlorobiphenyl	0.29	UН	0.29
Nonachlorobiphenyl	0.48	U H *	0.48
DCB Decachlorobiphenyl	0.48	UH	0.48
Surrogate	%Rec	Qualifier	Acceptance Limits

Client: Solutia Inc. Job Number: 680-63899-1

Sdg Number: KPM040

Client Sample ID: PMA-MW-02S-1210-EB

Lab Sample ID: 680-64106-4EB Date Sampled: 12/14/2010 1245 Client Matrix:

Water Date Received: 12/15/2010 1850

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Method: 680 Analysis Batch: 680-190621 MSF Instrument ID: Preparation: 680 Prep Batch: 680-189561 Lab File ID: N/A Dilution: 1.0

Initial Weight/Volume: 1050 mL Date Analyzed: 12/31/2010 2054 Final Weight/Volume: 1 mL

Date Prepared: 12/20/2010 1506 Injection Volume:

Analyte Result (ug/L) Qualifier RL Monochlorobiphenyl 0.095 U 0.095 Dichlorobiphenyl 0.095 U 0.095 Trichlorobiphenyl 0.095 U 0.095 Tetrachlorobiphenyl 0.19 U 0.19 Pentachlorobiphenyl 0.19 U 0.19 Hexachlorobiphenyl 0.19 U 0.19 Heptachlorobiphenyl 0.29 U 0.29 Octachlorobiphenyl 0.29 U 0.29 Nonachlorobiphenyl 0.48 U 0.48 DCB Decachlorobiphenyl 0.48 U 0.48 Surrogate %Rec Qualifier Acceptance Limits

Decachlorobiphenyl-13C12 63 25 - 113

DATA REPORTING QUALIFIERS

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	U	Indicates the analyte was analyzed for but not detected.
	*	LCS or LCSD exceeds the control limits
	F	MS or MSD exceeds the control limits
	Н	Sample was prepped or analyzed beyond the specified holding time
	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.

QUALITY CONTROL RESULTS

TestAmerica Savannah

K2/11

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Duon Batah
GC/MS Semi VOA	Olient Gample 15		Offent Matrix	IAIGRUOD	Prep Batch

Prep Batch: 680-189105 _CS 680-189105/11-A	Lab Control Sample	т	Water	coo	
MB 680-189105/10-A	Method Blank	T		680	
880-63929-1	PMA-MW-04D-1210	T	Water	680	
580-63929-2	PMA-MW-04S-1210	T	Water	680	
580-64004-1		T T	Water	680	
580-64004-1 580-64004-2	PMA-MW-5M-1210	T	Water	680	
	PMA-MW-6D-1210		Water	680	
580-64004-3 580-64004-4	PMA-MW-3M-1210	Ţ	Water	680	
580-64004-4	PMA-MW-3S-1210	<u>T</u>	Water	680	
S80-64048-1	PMA-MW-01M-1210	T	Water	680	
880-64048-2	PMA-MW-01S-1210	T	Water	680	
880-64048-2MS	Matrix Spike	Т	Water	680	
680-64048-2MSD	Matrix Spike Duplicate	Т	Water	680	
Prep Batch: 680-189561					
.CS 680-189561/18-A	Lab Control Sample	Т	Water	680	
/IB 680-189561/17-A	Method Blank	T	Water	680	
80-64106-1	PMA-MW-02M-1210	T	Water	680	
80-64106-2FD	PMA-MW-02M-AD-1210	T	Water	680	
880-64106-3	PMA-MW-02S-1210	T	Water	680	
880-64106-4EB	PMA-MW-02S-1210-EB	Т	Water	680	
Prep Batch: 680-190477					
.CS 680-190477/3-A	Lab Control Sample	Т	Water	680	
/IB 680-190477/2-A	Method Blank	T	Water	680	
80-64004-1RE	PMA-MW-5M-1210	Ť	Water	680	
Analysis Batch:680-190572					
CS 680-189105/11-A	Lab Control Sample	Т	Water	680	680-189105
/IB 680-189105/10-A	Method Blank	Ť	Water	680	680-189105
80-63929-1	PMA-MW-04D-1210	Ť	Water	680	680-189105
80-64004-1	PMA-MW-5M-1210	, T	Water	680	
80-64004-2	PMA-MW-6D-1210	Ť	Water	680	680-189105
80-64004-3	PMA-MW-3M-1210	, T	Water	680	680-189105
80-64004-4	PMA-MW-3S-1210	T T	Water	680	680-189105
80-64048-1	PMA-MW-01M-1210	T	vvater Water		680-189105
80-64048-2	PMA-MW-01S-1210	T	vvater Water	680	680-189105
80-64048-2MS	Matrix Spike	T T	Water	680 680	680-189105 680-189105
					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Analysis Batch:680-190610	D844 8844 040 4040	-			
80-63929-2	PMA-MW-04S-1210	T	Water	680	680-189105
680-64048-2MSD	Matrix Spike Duplicate	Т	Water	680	680-189105

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Analysis Batch:680-19062	:1	***************************************			
LCS 680-189561/18-A	Lab Control Sample	T	Water	680	680-189561
MB 680-189561/17-A	Method Blank	Т	Water	680	680-189561
680-64106-1	PMA-MW-02M-1210	T	Water	680	680-189561
680-64106-2FD	PMA-MW-02M-AD-1210	Т	Water	680	680-189561
680-64106-3	PMA-MW-02S-1210	T	Water	680	680-189561
680-64106-4EB	PMA-MW-02S-1210-EB	Т	Water	680	680-189561
Analysis Batch:680-19134	3				
LCS 680-190477/3-A	Lab Control Sample	Т	Water	680	680-190477
MB 680-190477/2-A	Method Blank	Т	Water	680	680-190477
Prep Batch: 680-191838					
LCS 680-191838/8-A	Lab Control Sample	Т	Water	680	
LCSD 680-191838/9-A	Lab Control Sample Duplicate	T	Water	680	
MB 680-191838/7-A	Method Blank	Т	Water	680	
680-64004-2RE	PMA-MW-6D-1210	Т	Water	680	
680-64004-3RE	PMA-MW-3M-1210	Т	Water	680	
680-64004-4RE	PMA-MW-3S-1210	T	Water	680	
680-64048-2RE	PMA-MW-01S-1210	Т	Water	680	
680-64106-1RE	PMA-MW-02M-1210	T	Water	680	
680-64106-3RE	PMA-MW-02S-1210	T	Water	680	
Analysis Batch:680-19238	7				
LCS 680-191838/8-A	Lab Control Sample	Т	Water	680	680-191838
LCSD 680-191838/9-A	Lab Control Sample Duplicate	T	Water	680	680-191838
MB 680-191838/7-A	Method Blank	T	Water	680	680-191838
680-64004-1RE	PMA-MW-5M-1210	Т	Water	680	680-190477
680-64004-2RE	PMA-MW-6D-1210	T	Water	680	680-191838
680-64004-3RE	PMA-MW-3M-1210	T	Water	680	680-191838
680-64004-4RE	PMA-MW-3S-1210	Т	Water	680	680-191838
680-64048-2RE	PMA-MW-01S-1210	T	Water	680	680-191838
680-64106-1RE	PMA-MW-02M-1210	Т	Water	680	680-191838
680-64106-3RE	PMA-MW-02S-1210	Т	Water	680	680-191838

Report Basis

T = Total



Sdg Number: KPM040

Client: Solutia Inc. Job Number: 680-63899-1

Surrogate Recovery Report

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	13DCB %Rec
680-63929-1	PMA-MW-04D-1210	58
680-63929-2	PMA-MW-04S-1210	0D
680-64004-1	PMA-MW-5M-1210	62
680-64004-1 RE	PMA-MW-5M-1210 RE	66
680-64004-2	PMA-MW-6D-1210	62
680-64004-2 RE	PMA-MW-6D-1210 RE	65
680-64004-3	PMA-MW-3M-1210	59
680-64004-3 RE	PMA-MW-3M-1210 RE	64
680-64004-4	PMA-MW-3S-1210	69
680-64004-4 RE	PMA-MW-3S-1210 RE	62
680-64048-1	PMA-MW-01M-1210	70
680-64048-2	PMA-MW-01S-1210	68
680-64048-2 RE	PMA-MW-01S-1210 RE	68
680-64106-1	PMA-MW-02M-1210	63
680-64106-1 RE	PMA-MW-02M-1210 RE	52
680-64106-2	PMA-MW-02M-AD-12 10	61
680-64106-3	PMA-MW-02S-1210	80
680-64106-3 RE	PMA-MW-02S-1210 RE	47
680-64106-4	PMA-MW-02S-1210-E B	63
MB 680-189105/10-A		74
MB 680-189561/17-A		78
MB 680-190477/2-A		68
MB 680-191838/7-A		66
LCS 680-189105/11-A		78

Surrogate	Acceptance Limits
13DCB = Decachlorobiphenyl-13C12	25-113

Client: Solutia Inc.

Job Number: 680-63899-1 Sdg Number: KPM040

Surrogate Recovery Report

680 Polychlorinated Biphenyls (PCBs) (GC/MS)

Client Matrix: Water

		13DCB
Lab Sample ID	Client Sample ID	%Rec
LCS 680-189561/18-A		74
LCS 680-190477/3-A		87
LCS 680-191838/8-A		91
LCSD 680-191838/9-A		70
680-64048-2 MS	PMA-MW-01S-1210 MS	65
680-64048-2 MSD	PMA-MW-01S-1210 MSD	68

Surrogate

Acceptance Limits

13DCB = Decachlorobiphenyl-13C12

25-113



Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Method Blank - Batch: 680-189105

Method: 680 Preparation: 680

Lab Sample ID:

MB 680-189105/10-A

Analysis Batch: 680-190572

Instrument ID: MSF

Client Matrix:

Water

Prep Batch: 680-189105

Lab File ID: N/A

Dilution:

1.0

Units: ug/L

Initial Weight/Volume:

1000 mL 1 mL

Date Analyzed: Date Prepared: 01/01/2011 0230 12/15/2010 1451

Final Weight/Volume: Injection Volume:

Analyte	Result	Qual	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50
Surrogate	% Rec		Acceptance Limits
D	7.4	0.000,000,000,000,000,000,000,000,000,0	

Decachlorobiphenyl-13C12

74

25 - 113

Lab Control Sample - Batch: 680-189105

Method: 680 Preparation: 680

Lab Sample ID: LCS 680-189105/11-A

Analysis Batch: 680-190572

Instrument ID: MSF

Client Matrix: Dilution:

Water

Prep Batch: 680-189105

1.0

Units: ug/L

Lab File ID: N/A

Date Analyzed:

01/01/2011 0300

Initial Weight/Volume: 1000 mL

1 mL

Date Prepared: 12/15/2010 1451

Final Weight/Volume: Injection Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Monochlorobiphenyl	2.00	1.45	72	10 - 125	***************************************
Dichlorobiphenyl	2.00	1.46	73	10 - 110	
Trichlorobiphenyl	2.00	1.44	72	17 - 110	
Tetrachlorobiphenyl	4.00	2.91	73	18 - 110	
Pentachlorobiphenyl	4.00	3.05	76	34 - 110	
Hexachlorobiphenyl	4.00	3.02	76	31 - 110	
Heptachlorobiphenyl	6.00	4.68	78	33 - 110	
Octachlorobiphenyl	6.00	4.71	78	33 - 110	
Nonachlorobiphenyl	10.0	11.8	118	26 - 115	*
DCB Decachlorobiphenyl	10.0	7.41	74	26 - 115	
Surrogate	% R	ec	Acc	ceptance Limits	
Decachlorobiphenyl-13C12	78			25 - 113	***************************************

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 680-189105

Method: 680 Preparation: 680

MS Lab Sample ID:

680-64048-2

Client Matrix:

Water

Analysis Batch: 680-190572

Instrument ID:

MSF

Dilution:

Prep Batch: 680-189105

Lab File ID:

N/A

1.0

Initial Weight/Volume:

1020 mL

Date Analyzed:

01/01/2011 0832

Final Weight/Volume:

1 mL

Date Prepared:

12/15/2010 1451

Injection Volume:

MSD Lab Sample ID:

680-64048-2 Water

Analysis Batch: 680-190610

Instrument ID: MSF

Client Matrix:

Lab File ID:

Dilution: Date Analyzed: 1.0

Prep Batch: 680-189105

Initial Weight/Volume: Final Weight/Volume:

1030 mL 1 mL

Date Prepared:

01/03/2011 1352 12/15/2010 1451

	<u>9</u>	<u>6 Rec.</u>					
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Monochlorobiphenyl	66	51	10 - 125	26	40	**************************************	
Dichlorobiphenyl	71	55	10 - 110	25	40		
Trichlorobiphenyl	71	55	17 - 110	25	40		
Tetrachlorobiphenyl	69	56	18 - 110	21	40		
Pentachlorobiphenyl	207	173	34 - 110	19	40	F	F
Hexachlorobiphenyl	71	63	31 - 110	12	40		
Heptachlorobiphenyl	73	66	33 - 110	10	40		
Octachlorobiphenyl	68	64	33 - 110	6	40		
Nonachlorobiphenyl	94	100	26 - 115	5	40		
DCB Decachlorobiphenyl	62	67	26 - 115	7	40		
Surrogate		MS % Rec	MSD %	% Rec	Acce	eptance Limits	S
Decachlorobiphenyl-13C12	- 10-11000	65	68		2	25 - 113	

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Method Blank - Batch: 680-189561

Method: 680 Preparation: 680

Lab Sample ID: Client Matrix:

MB 680-189561/17-A

Water

Dilution: 1.0

Date Analyzed: 12/31/2010 1823 12/20/2010 1506 Date Prepared:

Analysis Batch: 680-190621 Prep Batch: 680-189561

Units: ug/L

Instrument ID: MSF Lab File ID: N/A

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Injection Volume:

Analyte	Result	Qual	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50
Surrogate	% Rec		Acceptance Limits
D			

Decachlorobiphenyl-13C12

78

25 - 113

Lab Control Sample - Batch: 680-189561

Method: 680 Preparation: 680

Lab Sample ID: LCS 680-189561/18-A

Client Matrix: Water 1.0

Dilution:

12/31/2010 1853 Date Analyzed: Date Prepared:

12/20/2010 1506

Analysis Batch: 680-190621

Prep Batch: 680-189561

Units: ug/L

Instrument ID: MSF

Lab File ID: N/A

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual	
Monochlorobiphenyl	2.00	1.38	69	10 - 125	***************************************	
Dichlorobiphenyl	2.00	1.45	73	10 - 110		
Trichlorobiphenyl	2.00	1.49	75	17 - 110		
Tetrachlorobiphenyl	4.00	2.96	74	18 - 110		
Pentachlorobiphenyl	4.00	3.14	78	34 - 110		
lexachlorobiphenyl	4.00	3.00	75	31 - 110		
leptachlorobiphenyl	6.00	4.54	76	33 - 110		
Octachlorobiphenyl	6.00	4.44	74	33 - 110		
lonachlorobiphenyl	10.0	11.3	113	26 - 115		
OCB Decachlorobiphenyl	10.0	7.26	73	26 - 115		
Surrogate	% R	ec	Acc	ceptance Limits		
Decachlorobiphenyl-13C12	74			25 - 113		



Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Method Blank - Batch: 680-190477

Method: 680 Preparation: 680

Lab Sample ID: MB 680-190477/2-A

Analysis Batch: 680-191343

Instrument ID: MSF

Client Matrix:

Water

Dilution:

Prep Batch: 680-190477

Lab File ID: N/A

1.0

Units: ug/L

Initial Weight/Volume:

Final Weight/Volume:

1000 mL 1 mL

Date Analyzed: 01/11/2011 2044 Date Prepared: 01/03/2011 1437

Injection Volume:

Analyte	Result	Qual	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50
Surrogate	% Rec		Acceptance Limits
Decachlorobiphenyl-13C12	68		25 - 113

Lab Control Sample - Batch: 680-190477

Method: 680

Lab Sample ID: LCS 680-190477/3-A

Preparation: 680

Client Matrix:

Water

Analysis Batch: 680-191343 Prep Batch: 680-190477

Units: ug/L

Instrument ID: MSF

1000 mL

1 mL

Dilution:

1.0

Lab File ID: N/A

Date Analyzed: 01/11/2011 2114

Date Prepared: 01/03/2011 1437

Initial Weight/Volume: Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Monochlorobiphenyl	2.00	1.25	63	10 - 125	***************************************
Dichlorobiphenyl	2.00	1.46	73	10 - 110	
Trichlorobiphenyl	2.00	1.52	76	17 - 110	
Tetrachlorobiphenyl	4.00	3.10	78	18 - 110	
Pentachlorobiphenyl	4.00	3.34	83	34 - 110	
Hexachlorobiphenyl	4.00	3.38	84	31 - 110	
Heptachlorobiphenyl	6.00	5.14	86	33 - 110	
Octachlorobiphenyl	6.00	5.12	85	33 - 110	
Nonachlorobiphenyl	10.0	11.7	117	26 - 115	*
DCB Decachlorobiphenyl	10.0	8.18	82	26 - 115	
Surrogate	% R	tec	Acc	ceptance Limits	
Decachlorobiphenyl-13C12	87	,		25 - 113	

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Method Blank - Batch: 680-191838

Method: 680 Preparation: 680

Lab Sample ID: MB 680-191838/7-A

Water

Client Matrix: Dilution:

1.0

Date Analyzed: 01/21/2011 1514 Date Prepared: 01/18/2011 1417

Analysis Batch: 680-192387 Prep Batch: 680-191838

Units: ug/L

Instrument ID: MSF

Lab File ID: N/A

Initial Weight/Volume: 1000 mL Final Weight/Volume: 1 mL

Analyte	Result	Qual	RL
Monochlorobiphenyl	0.10	U	0.10
Dichlorobiphenyl	0.10	U	0.10
Trichlorobiphenyl	0.10	U	0.10
Tetrachlorobiphenyl	0.20	U	0.20
Pentachlorobiphenyl	0.20	U	0.20
Hexachlorobiphenyl	0.20	U	0.20
Heptachlorobiphenyl	0.30	U	0.30
Octachlorobiphenyl	0.30	U	0.30
Nonachlorobiphenyl	0.50	U	0.50
DCB Decachlorobiphenyl	0.50	U	0.50
Surrogate	% Rec		Acceptance Limits
Decachlorobiphenyl-13C12	66		25 - 113

Client: Solutia Inc.

Job Number: 680-63899-1

Sdg Number: KPM040

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 680-191838

Method: 680 Preparation: 680

LCS Lab Sample ID: LCS 680-191838/8-A

Analysis Batch: 680-192387

Instrument ID:

MSF

Client Matrix:

Water

Lab File ID: N/A

Dilution:

1.0

Prep Batch: 680-191838 Units: ug/L

Initial Weight/Volume:

1000 mL 1 mL

Date Analyzed: Date Prepared: 01/21/2011 1544 01/18/2011 1417

Final Weight/Volume:

Injection Volume:

LCSD Lab Sample ID: LCSD 680-191838/9-A

Analysis Batch: 680-192387

Instrument ID:

MSF

Client Matrix:

Water

Prep Batch: 680-191838

Lab File ID:

N/A

Dilution:

1.0

Units: ug/L

Initial Weight/Volume:

1000 mL

Date Analyzed: Date Prepared: 01/21/2011 1614 01/18/2011 1417

Final Weight/Volume:

1 mL

	0	<u> </u>					
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Monochlorobiphenyl	80	70	10 - 125	13	40	***************************************	
Dichlorobiphenyl	85	78	10 - 110	8	40		
Trichlorobiphenyl	86	80	17 - 110	6	40		
Tetrachlorobiphenyl	88	82	18 - 110	7	40		
Pentachlorobiphenyl	89	87	34 - 110	3	40		
Hexachlorobiphenyl	95	90	31 - 110	6	40		
Heptachlorobiphenyl	94	89	33 - 110	6	40		
Octachlorobiphenyl	96	87	33 - 110	9	40		
Nonachlorobiphenyl	143	138	26 - 115	4	40	*	*
DCB Decachlorobiphenyl	93	84	26 - 115	11	40		
Surrogate	L	CS % Rec	LCSD %	Rec	Accep	tance Limits	
Decachlorobiphenyl-13C12	9	1	70		2	5 - 113	

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Testamerica Savannah, GA 31404 Fax: (912) 352-0165 Alternate Laboratory Name/Location Phone: Fax: PROJECT REFERENCE WGK PCB 4Q10 PROJECT NO. PROJECT LOCATION MATRIX TYPE REQUIRED ANALYSIS PAGE PA	OF PORT
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Client: Solutia Inc.

Job Number: 680-63899-1

List Source: TestAmerica Savannah

SDG Number: KPM040

Login Number: 63899

Creator: Daughtry, Beth

List Number: 1

LIST NUMBER: 1		
Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6 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?	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	MS/MSD not received in sample receipt for SDG.
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.	N/A	
Samples do not require splitting or compositing.	N/A	

Client: Solutia Inc.

Job Number: 680-63899-1

SDG Number: KPM040

List Source: TestAmerica Savannah

Login Number: 63929 Creator: Hornsby, Jess

List Number: 1

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	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7 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?	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	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	MS/MSD not received in sample receipt.
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	

Kon

Client: Solutia Inc.

Job Number: 680-63899-1

SDG Number: KPM040

Login Number: 64004

Creator: Hornsby, Jess List Number: 1

Sample bottles are completely filled.

Multiphasic samples are not present.

Samples do not require splitting or compositing.

There is sufficient vol. for all requested analyses, incl. any requested

VOA sample vials do not have headspace or bubble is <6mm (1/4") in

If necessary, staff have been informed of any short hold time or quick TAT

Sample Preservation Verified

diameter.

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below	True	- Common
background The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2 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?	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	

True

N/A

True

N/A

True

True

True

MS/MSD not received in client receipt.

Client: Solutia Inc.

Job Number: 680-63899-1 SDG Number: KPM040

List Source: TestAmerica Savannah

Login Number: 64048 Creator: Stokes, Mark E

List Number: 1

T/F/NA	Comment
True	
True	0.2 C
True	
True	
True	
N/A	
True	
N/A	
True	Received MS/MSD for SDG in sample receipt.
N/A	
True	
True	
True	
	True True True True True True True True

Client: Solutia Inc.

Job Number: 680-63899-1

SDG Number: KPM040

Login Number: 64106 Creator: Stokes, Mark E

List Number: 1

List Source: TestAmerica Savannah

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below	True	Comment
background	rrue	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8 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?	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	
f 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	



March 7, 2011

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 KPM040 has been reviewed for quality assurance validation. Data was reported for PCB's for 14 samples as requested by Geotechnology, Inc. The 14 samples listed below were validated by MJW. The samples in **bold type** have been validated for level IV validation. The data in this report has been approved for use as no samples required qualification.

- PMA-MW-4D-1210 (Lab ID: 680-63929-1)
- PMA-MW-4S-1210 (Lab ID: 680-63929-2)
- PMA-MW-5M-1210 (Lab ID: 680-64004-1)
- PMA-MW-6D-1210 (Lab ID: 680-64004-2)
- PMA-MW-3M-1210 (Lab ID: 680-64004-3)
- PMA-MW-3S-1210 (Lab ID: 680-64004-4)
- PMA-MW-1M-1210 (Lab ID: 680-64048-1)

- PMA-MW-1S-1210 (Lab ID: 680-64048-2)
- PMA-MW-1S-1210 MS (Lab ID: 680-64048-2 MS)
- PMA-MW-1S-1210 MSD (Lab ID: 680-64048-2 MSD)
- PMA-MW-2M-1210 (Lab ID: 680-64106-1)
- PMA-MW-2M-1210-AD (Lab ID: 680-64106-2 FD)
- PMA-MW-2S-1210 (Lab ID: 680-64106-3)
- PMA-MW-2S-1210-EB (Lab ID: 680-64106-4 EB)

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, CES Senior Scientist

Approved by:

David A. Dooley, Ph.D., CHP Oresident, MJW Corporation Inc.

amothe Center

2010-1918.005

KPM040

QUALITY ASSURANCE REPORT

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

4th Quarter 2010 Data Validation Report PCB Groundwater Quality Assessment Program SDG: KPM040

Prepared for

GEOTECHNOLOGY, INC. 11816 Lackland Road, Suite 150 St. Louis, MO 63146

March 2011

MJW

MJW Corporation, Inc. 1900 Sweet Home Road Amherst, NY 14228 (716)-631-8291 **Project # 2010-1918**

DATA ASSESSMENT NARRATIVE (ORGANICS)

ORGANIC DATA ASSESSMENT

Functional Guidelines	for Evaluating Organic Analysi	3
	SDG NO.: <u>KPM040</u> ummrich Plant (PCB Site)	LABORATORY: Test America
DATA ASSESSMENT		
(unusable). Due to vari (estimated), "N" (presu	ous QC problems some analytem ptive evidence for the presence for the presence of the material	shose analytes that have been rejected, "R" s may have been qualified with a "J" se of the material), "U" (non-detect), or "JN" at an estimated value) flag. All action is
The "R" flag means that evident and the reported	t the associated value is unusab I analyte concentration is unreli	le. In other words, significant data bias is able.
All data is fully accept	able and usable.	
Reviewer's		
Signature: Unn	ette Centis	Date: <u>3/07/2011</u>
MJW Approval:	und A Colly	Date: <u>3/07/2011</u>
Organic Data Assessme	nt	page 1 of 5

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.

Samples PMA-MW-5M-1210, PMA-MW-6D-1210, PMA-MW-3M-1210, PMA-MW-3S-1210, PMA-MW-01S-1210, PMA-MW-02M-1210, and PMA-MW-02S-1210 were reextracted outside of the holding time at the instruction of the laboratory project manager and re-analyzed to confirm reported detections in the original analysis. The validator recommends using only the original analysis results and thus has not applied any qualifiers to the re-extracted/re-analyzed data.

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.

The surrogate recovery for sample PMA-MW-04S-1210 is 0%. This was due to the fact that the sample results were out of range and had to be diluted and rerun. Thus, qualification of this sample is not required.

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.

Although both the MS and MSD were out of control for Pentachlorobiphenyl, no data was qualified as all other QC was acceptable.

4. LABORATORY CONTROL SAMPLE/DUPLICATE, LCS/LCSD

Although both the LCS and LCSD were out of control for Nonachlorobiphenyl, no data was qualified as all other QC was acceptable.

5. 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.

6. 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.

7. 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.

- 8. 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:

No action necessary.

9. 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.

10. 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 \pm 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.

Form X was not completed for those samples in which there was a positive hit for PCB's.

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

- 11. CONTRACT PROBLEMS NON-COMPLIANCE: None
- 12. FIELD DOCUMENTATION:

A field duplicate was analyzed for sample PMA-MW-02M-1210 and all %RPD's were acceptable.

- 13. OTHER PROBLEMS: None
- 14. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified to be used.

Samples PMA-MW-5M-1210, PMA-MW-6D-1210, PMA-MW-3M-1210, PMA-MW-3S-1210, PMA-MW-01S-1210, PMA-MW-02M-1210, and PMA-MW-02S-1210 were re-extracted and re-analyzed at the instruction of the laboratory project manager to confirm reported detections in the original analysis. The validator recommends to only report/use the original analysis results as the re-extractions were beyond the acceptable holding time.

Data Outlier Forms

Samples					
Affected	Matrix	Analyte	Percent Recovery	Control Limits	Ouglisian
PMA-MW-4D-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	Qualifier
PMA-MW-4S-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-5M-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-6D-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-3M-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-5S-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-1M-1210	Water	Nonachlorobiphenyl	118.0%	26-115%	none
PMA-MW-1S-1210	Water	Nonachlorobiphenyl	118.0%		none
PMA-MW-5S-1210 RE	Water	Nonachlorobiphenyl	117.0%	26-115% 26-115%	none
PMA-MW-6D-1210 RE	Water	Nonachlorobiphenyl	143.0%	26-115%	none
PMA-MW-3M-1210 RE	Water	Nonachlorobiphenyl	143.0%	26-115%	none
PMA-MW-5S-1210 RE	Water	Nonachlorobiphenyl	143.0%		none
PMA-MW-1S-1210 RE	Water	Nonachlorobiphenyl	143.0%	26-115%	none
PMA-MW-2M-1210 RE	Water	Nonachlorobiphenyl	143.0%	26-115%	none
PMA-MW-2S-1210 RE	Water	Nonachlorobiphenyl	143.0%	26-115%	none
PMA-MW-6D-1210 RE	Water	Nonachlorobiphenyl	138.0%	26-115%	none
PMA-MW-3M-1210 RE	Water	Nonachlorobiphenyl		26-115%	none
PMA-MW-5S-1210 RE	Water	Nonachlorobiphenyl	138.0% 138.0%	26-115%	none
PMA-MW-1S-1210 RE	Water	Nonachlorobiphenyl		26-115%	none
PMA-MW-2M-1210 RE	Water		138.0%	26-115%	none
PMA-MW-2S-1210 RE	Water	Nonachlorobiphenyl	138.0%	26-115%	none
1 WA-W W-25-1210 KE	vvater	Nonachlorobiphenyl	138.0%	26-115%	none
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Samples				Control	7
Affected	Matrix	Analyte	Percent Recovery	Control Limits	Qualifier
PMA-MW-4D-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	
PMA-MW-4S-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none
PMA-MW-5M-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none
PMA-MW-6D-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	
PMA-MW-3M-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none
PMA-MW-5S-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none none
PMA-MW-1M-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none
PMA-MW-1S-1210	Water	Pentachlorobiphenyl	207.0%	34-110%	none
PMA-MW-4D-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-4S-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-5M-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-6D-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-3M-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-5S-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-1M-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	none
PMA-MW-1S-1210	Water	Pentachlorobiphenyl	173.0%	34-110%	
		. ontogenioropipiioriyi	170.070	34-11076	none
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