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October 23, 2015

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

Re: PCB Groundwater Quality Assessment Program  
3<sup>rd</sup> Quarter 2015 Data Report  
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Ms. Bury:

Enclosed please find the PCB Groundwater Quality Assessment Program 3<sup>rd</sup> Quarter 2015 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@eastman.com

Sincerely,

Gerald M. Rinaldi  
Manager, Remediation Services

Enclosure

cc: Distribution List

## **DISTRIBUTION LIST**

**PCB Groundwater Quality Assessment Program  
3<sup>rd</sup> Quarter 2015 Data Report  
Solutia Inc., W. G. Krummrich Plant, Sauget, IL**

### USEPA

Stephanie Linebaugh  
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

### Solutia

Donn Haines                      500 Monsanto Avenue, Sauget, IL 62206-1198



# GROUNDWATER MONITORING REPORT

## GROUNDWATER MONITORING REPORT

PCB GROUNDWATER QUALITY  
ASSESSMENT PROGRAM  
SOLUTIA INC., W.G. KRUMMRICH FACILITY  
SAUGET, ILLINOIS

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

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

October 2015

140-3345

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## 1.0 INTRODUCTION

Golder Associates Inc. (Golder) is pleased to submit this report summarizing the 3<sup>rd</sup> Quarter 2015 (3Q15) PCB groundwater sampling activities at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. The facility is located at 500 Monsanto Avenue, Sauget, Illinois as shown on Figure 1. The 3Q15 sampling event was performed in general accordance with the Revised PCB Groundwater Quality Assessment Program Work Plan (Work Plan) (Solutia 2009).

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

Ten (10) monitoring wells are sampled during the PCB event. The locations of the monitoring wells are shown on Figure 2 and the sample locations are included in the table below.

Area	Location Relative to Area	Sample Identification
Former PCB Manufacturing	Source Area Well	PMA-MW-4S
		PMA-MW-4D
	Downgradient	PMA-MW-1S
		PMA-MW-1M
		PMA-MW-2S
		PMA-MW-2M
		PMA-MW-3S
		PMA-MW-3M
		PMA-MW-5M
		PMA-MW-6D

Water levels in the monitoring wells are measured quarterly and total depths are measured in the 1<sup>st</sup> quarter of each year.

During the quarterly sampling events, monitoring wells are sampled for the following polychlorinated biphenyl (PCB) isomer groups or homologs: monochlorobiphenyl; dichlorobiphenyl; trichlorobiphenyl; tetrachlorobiphenyl; pentachlorobiphenyl; hexachlorobiphenyl; heptachlorobiphenyl; octachlorobiphenyl; nonachlorobiphenyl; and decachlorobiphenyl.



## 2.0 FIELD ACTIVITIES

Golder conducted 3Q15 sampling events on August 10, 2015. Activities were performed in general accordance with the Work Plan.

### 2.1 Water Level Measurement

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

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

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

### 2.2 Groundwater Sample Collection

Monitoring wells sampled during the 3Q15 PCB event were purged and sampled using low-flow sampling techniques, low-density polyethylene tubing (LDPE) and a submersible pump. The pump intake was placed at approximately the middle of the screened interval for each well. Purging was conducted at a rate of approximately 300 mL/min to reduce drawdown. Drawdown was measured throughout purging activities to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Measurement of field parameters began once the flow rate and drawdown were stable. Parameters were measured for each system volume purged using a SmartTROLL™ multi-parameter meter. The system volume includes the volume of the tubing, the volume of the pump and the volume of flow-through cell containing the multi-parameter device. Samples were collected after field parameters were stabilized within the ranges below for three (3) consecutive measurements:



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

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

Sample bottles were provided by TestAmerica Laboratories, Inc. (TestAmerica) for analysis of PCBs by United States Environmental Protection Agency (USEPA) Method 680. Groundwater purging and sampling forms are included in Appendix A.

## 2.3 Quality Assurance and Sample Handling

One (1) analytical duplicate (AD), one (1) equipment blank (EB) and one (1) matrix spike/matrix spike duplicate (MS/MSD) pair were collected during the 3Q15 PCB sampling event. Sample bottles were labeled with the date and time of sample collection, sampler initials, analysis requested, preservative used, and sample identification based on the following nomenclature “PMA-MW#-MMYY-QA/QC” where:

- “**PMA**” denotes “PCB Manufacturing Area” and “**MW#**” denotes monitoring well number
- “**MMYY**” denotes month and year of sampling quarter, e.g.: August (3<sup>rd</sup> quarter), 2015 (0815)
- “**QA/QC**” denotes QA/QC sample
  - **AD** – Analytical Duplicate
  - **EB** – Equipment Blank
  - **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Sample information was recorded on a chain-of-custody (COC) that included project identification, sample identification, date and time of sample collection, analysis requested, preservative used, sample matrix and type, number of sample containers, sampler signature, and date COC was completed. Copies of the COCs are included in Appendix B.

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



## 2.4 Decontamination and Investigation Derived Waste

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

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

## 3.0 QUALITY ASSURANCE

Sample results were provided by the TestAmerica laboratory in electronic format and reviewed for quality and completeness by Golder in accordance with the Work Plan. Sample results are included in Appendix D. Results were submitted in one (1) sample delivery group (SDG) as follows:

Sample Delivery Group (SDG)	Sample Identification
KPM066	PMA-MW-1M-0815
	PMA-MW-1S-0815
	PMA-MW-2M-0815
	PMA-MW-2M-0815-AD
	PMA-MW-2S-0815
	PMA-MW-2S-0815-EB
	PMA-MW-3M-0815
	PMA-MW-3S-0815
	PMA-MW-4D-0815
	PMA-MW-4S-0815
	PMA-MW-5M-0815
	PMA-MW-6D-0815

Golder completed validation of the analytical data following the general guidelines in Section 3.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent version of the national data validation guidelines be used for data review. The following guidelines were generally used:

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

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



## 4.0 OBSERVATIONS

Groundwater analytical data for the 3Q15 PCB event is discussed below and presented in Table 2. Sample results are also shown for the SHU and the MHU/DHU in Figures 4 and 5, respectively.

### 4.1 Shallow Hydrogeologic Unit

Historically, dense non-aqueous phase liquid (DNAPL) has been periodically detected in PMA-MW-4S, located in the former PCB Manufacturing Area. DNAPL was not detected in PMA-MW-4S during the 3Q15 event. A groundwater sample was collected at PMA-MW-4S and PCBs were detected at a concentration of 77.1 µg/L. PCBs were detected in one (1) of three (3) monitoring wells in the SHU downgradient of the former PCB Manufacturing Area (PMA-MW-3S) at a concentration of 3.8 µg/L. PCBs were not detected in monitoring wells PMA-MW-1S and PMA-MW-2S.

### 4.2 Middle/Deep Hydrogeologic Unit

PCBs were detected in five (5) of the six (6) monitoring wells located in the MHU and DHU. Results are summarized below.

- Former PCB Manufacturing Area: PCBs were detected at a concentration of 2.2 µg/L in PMA-MW-4D.
- Downgradient of Former PCB Manufacturing Area: PCBs were detected in four (4) of five (5) monitoring wells downgradient of the former PCB Manufacturing Area at concentrations of 0.53 µg/L (PMA-MW-1M), 7.1 µg/L / 8.1 µg/L (PMA-MW-2M and AD), 0.59 µg/L (PMA-MW-3M) and 0.24 µg/L (PMA-MW-6D). PCBs were not detected in PMA-MW-5M.

### 4.3 Mann-Kendall Trend Analysis

Mann-Kendall trend analyses of total PCBs in groundwater samples from select monitoring wells within (PMA-MW-4D) or downgradient (PMA-MW-1M, -2M, -3S, -3M, and -6D) of the former PCB Manufacturing Area were performed. Results are shown on Table 3. The trends using analytical data from the 3Q15 event appeared similar to historical trends. There was an increasing trend in PCB concentrations at monitoring wells PMA-MW-1M, PMA-MW-2M and PMA-MW-4D and a probably decreasing trend at PMA-MW-3M. Concentrations of PCBs show either no trend or stable at monitoring wells PMA-MW-3S and PMA-MW-6D.



## 5.0 CLOSING

Golder appreciates the opportunity to assist Solutia Inc. with the PCB Groundwater Quality Assessment Program sampling events. Please contact the undersigned if you need additional information.

Sincerely,

**GOLDER ASSOCIATES INC.**

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

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



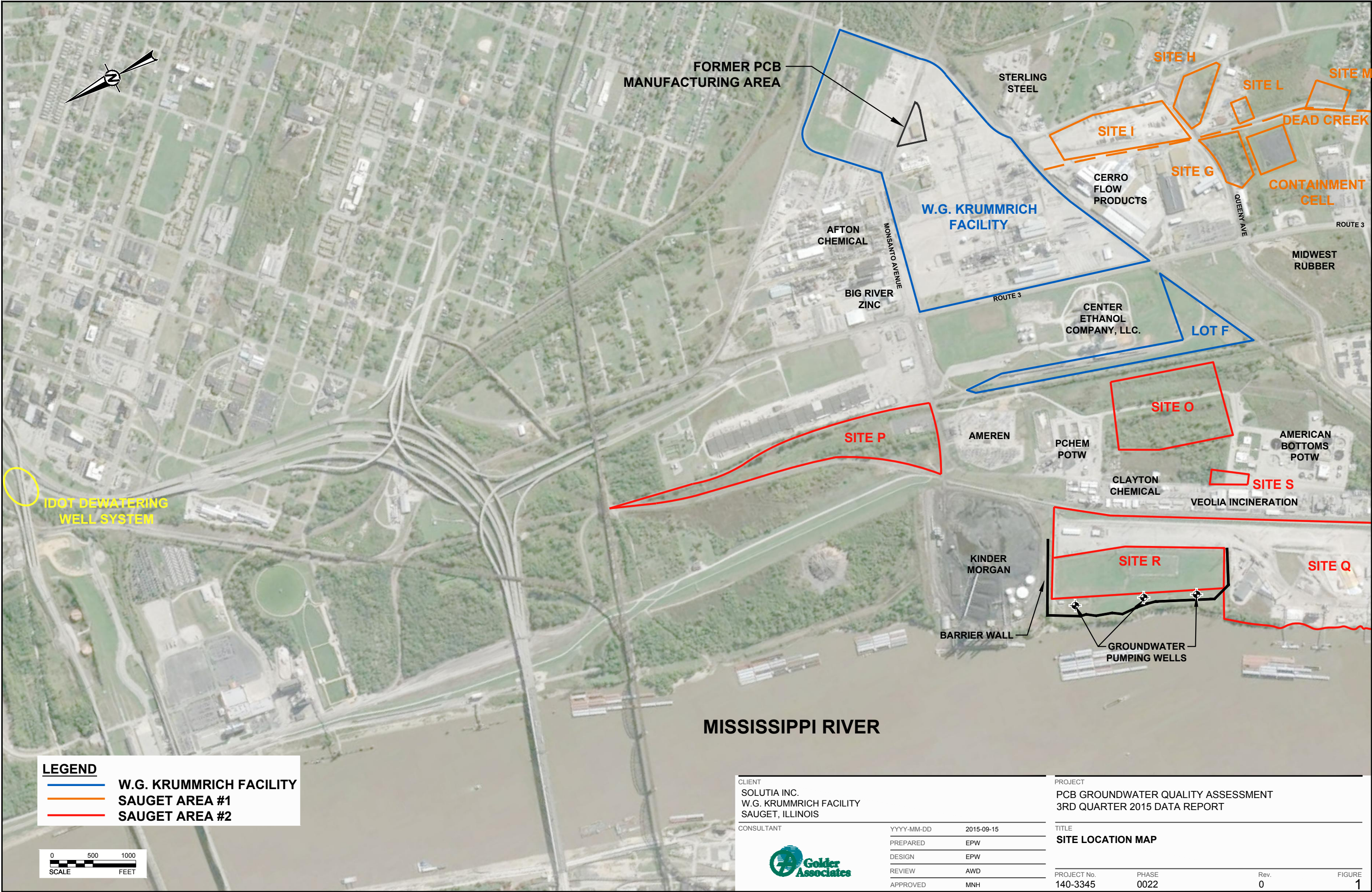
## 6.0 REFERENCES

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

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

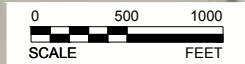
## FIGURES





**LEGEND**

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



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

CONSULTANT



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

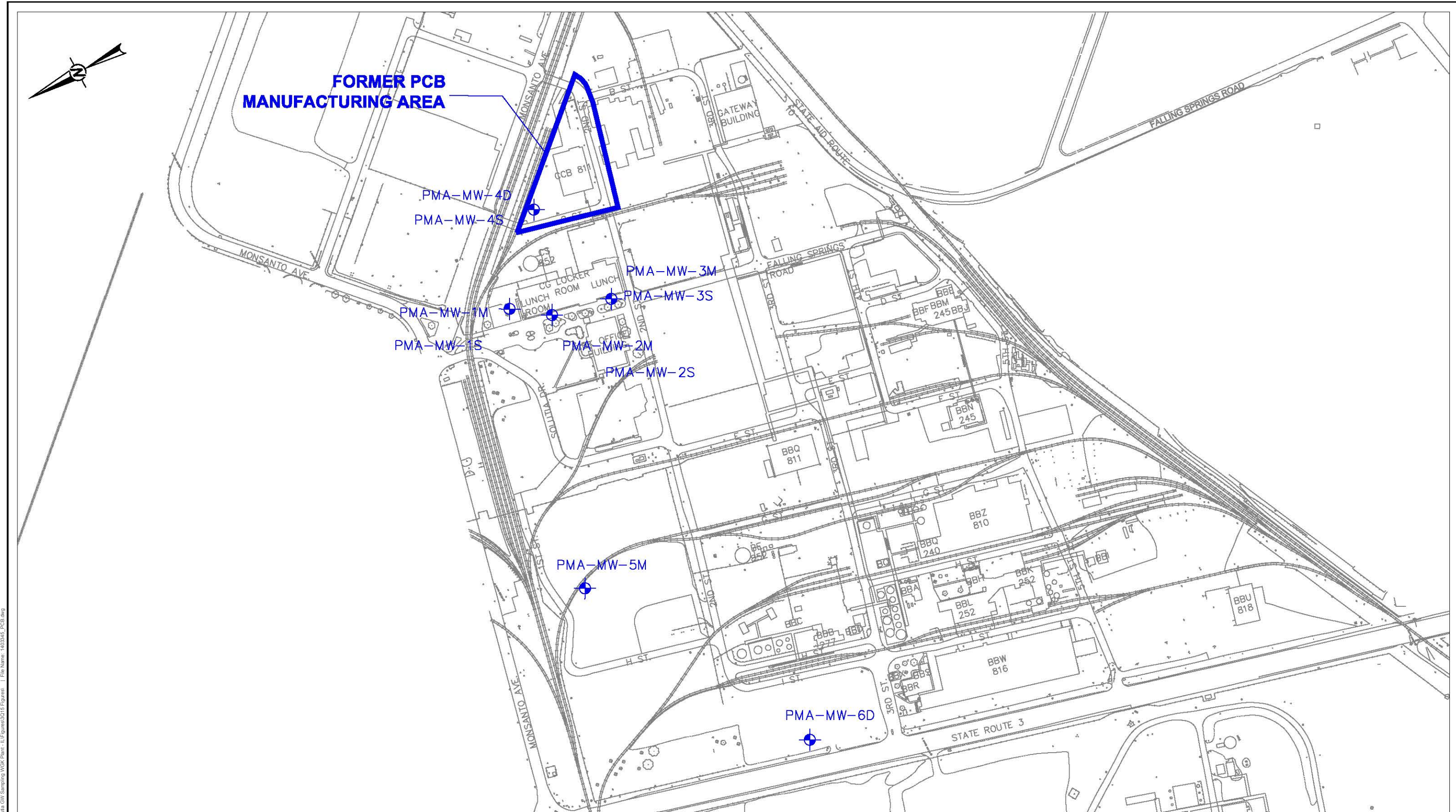
PROJECT  
PCB GROUNDWATER QUALITY ASSESSMENT  
3RD QUARTER 2015 DATA REPORT

TITLE  
**SITE LOCATION MAP**

PROJECT No.	PHASE	Rev.	FIGURE
140-3345	0022	0	1



Path: \\valuelis.com\mnt\Projects\140\Projects\1403345 - Solutia GW Sampling WCK Plant - LE\Figures\3015\Figure1 - File Name: 1403345\_PCB.dwg

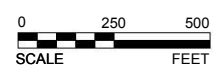


LEGEND

 PCB MONITORING WELL LOCATION

NOTES

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



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

CONSULTANT



YYYY-MM-DD	2015-07-23
PREPARED	LAB
DESIGN	LAB
REVIEW	AWD
APPROVED	MNH

PROJECT  
PCB GROUNDWATER QUALITY ASSESSMENT  
3RD QUARTER 2015 DATA REPORT

TITLE  
**FORMER PCB MANUFACTURING AREA  
MONITORING WELL LOCATIONS**

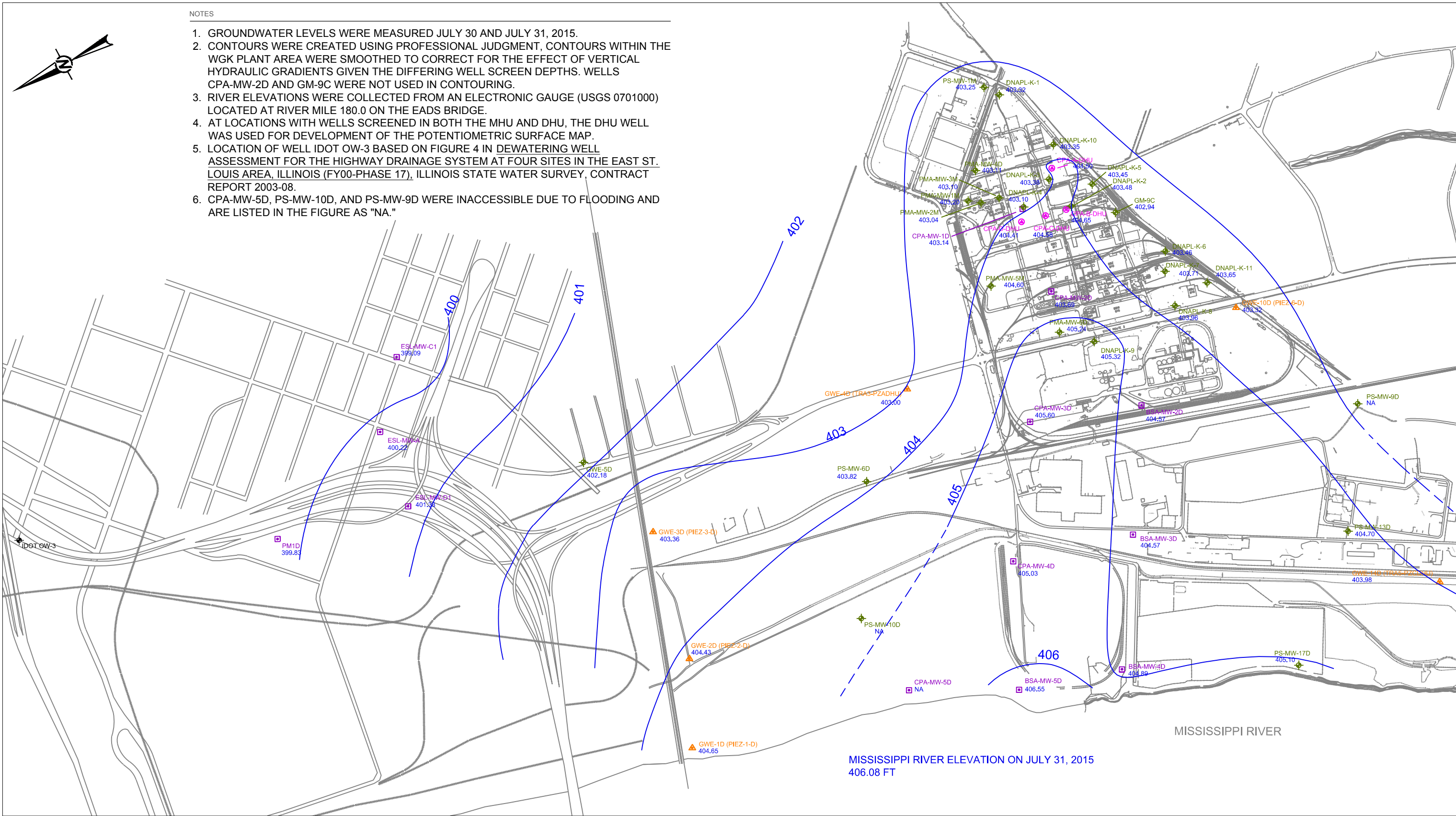
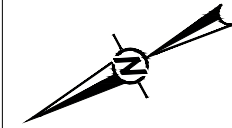
PROJECT No.	140-3345	PHASE:	0022	Rev.	0	FIGURE:	2
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



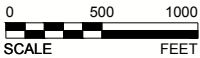
NOTES

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



LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- CPA MONITORING WELL USED FOR GROUNDWATER CONTOURING
- IDOT GROUNDWATER WELL
- APPROXIMATE GROUNDWATER ELEVATION CONTOUR (FT NAVD)



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



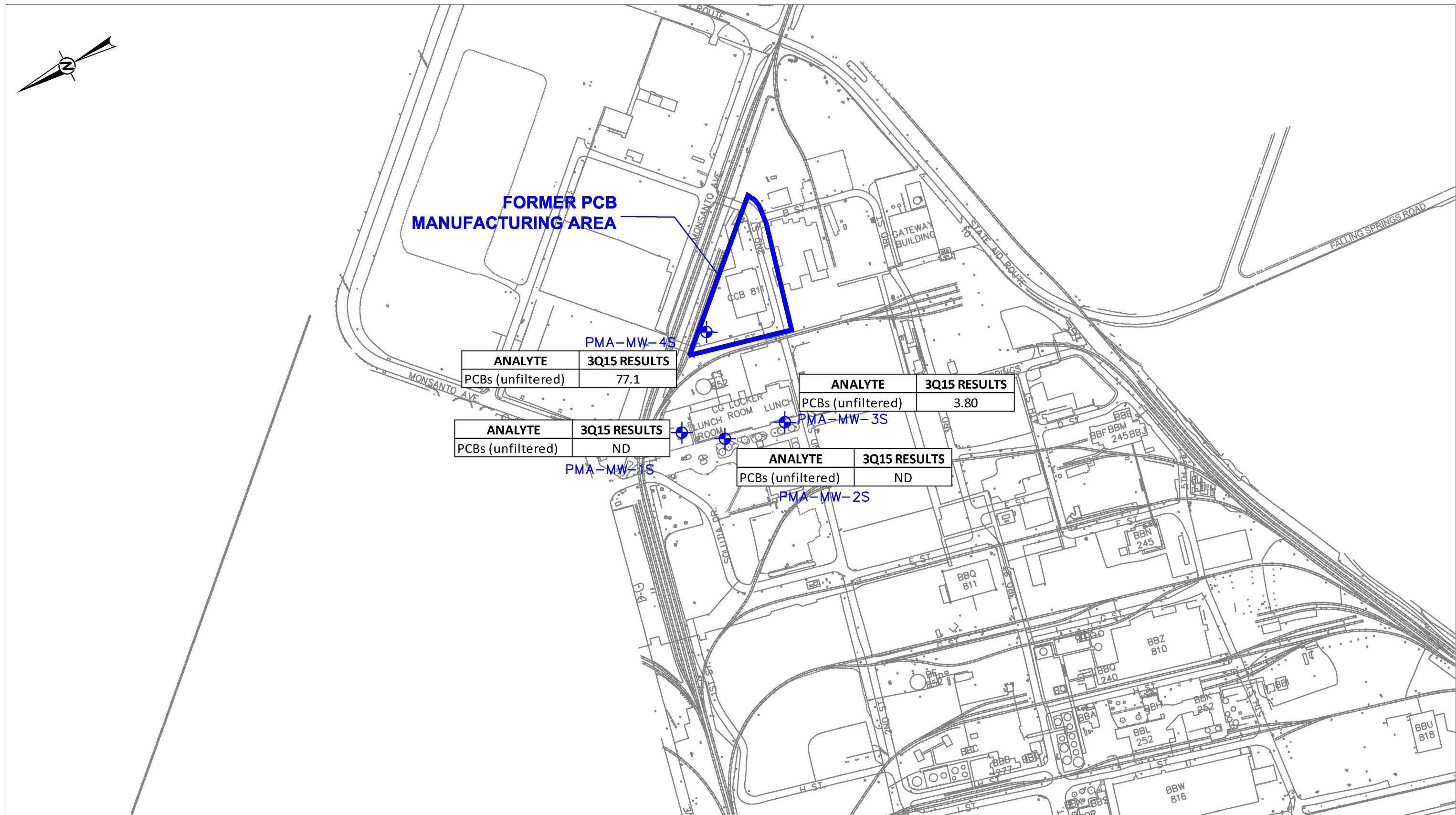
YYYY-MM-DD	2015-08-27
PREPARED	JS
DESIGN	EPW
REVIEW	AWD
APPROVED	MNH

PROJECT  
PCB GROUNDWATER QUALITY ASSESSMENT  
3RD QUARTER 2015 DATA REPORT

TITLE  
**POTENTIOMETRIC SURFACE MAP  
MIDDLE/DEEP HYDROGEOLOGIC UNIT**

PROJECT No.	140-3345	PHASE:	0022	Rev.	0	FIGURE:	3
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LEGEND

 PCB MONITORING WELL LOCATION

- NOTES
1. TOTAL PCB RESULTS INCLUDE THE SUM OF ALL METHOD 680 HOMOLOGS.
  2. RESULTS SHOWN ARE IN  $\mu\text{g/L}$ .
  3. ND - NOT DETECTED.



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

CONSULTANT



YYYY-MM-DD	2015-09-18
PREPARED	JS
DESIGN	JS
REVIEW	AWD
APPROVED	MNH

PROJECT  
PCB GROUNDWATER QUALITY ASSESSMENT  
3RD QUARTER 2015 DATA REPORT

TITLE  
**PCB RESULTS**  
**SHALLOW HYDROGEOLOGIC UNIT**

PROJECT No.	140-3345	PHASE:	0022	Rev.	0	FIGURE:	4
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Path: \\valuelis.com\mnt\Projects\140 Projects\1403345 - Solutia GW Sampling WGR Plant - LE\Figures\3Q15\Figures - File Name: 1403345\_PCB.dwg



**FORMER PCB  
MANUFACTURING AREA**

PMA-MW-4D

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	2.20

PMA-MW-1M

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	0.53

PMA-MW-3M

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	0.59

PMA-MW-2M

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	7.1 / 8.1

PMA-MW-5M

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	ND

PMA-MW-6D

ANALYTE	3Q15 RESULTS
PCBs (unfiltered)	0.24

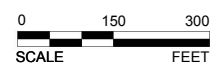
LEGEND



PCB MONITORING WELL LOCATION

NOTES

1. TOTAL PCB RESULTS INCLUDE THE SUM OF ALL METHOD 680 HOMOLOGS.
2. RESULTS SHOWN ARE IN  $\mu\text{g/L}$ .
3. ND - NOT DETECTED.
4. MULTIPLE SAMPLE RESULTS INDICATE DUPLICATE SAMPLES.



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



YYYY-MM-DD	2015-09-18
PREPARED	JS
DESIGN	JS
REVIEW	AWD
APPROVED	MNH

PROJECT  
PCB GROUNDWATER QUALITY ASSESSMENT  
3RD QUARTER 2015 DATA REPORT

TITLE  
**PCB RESULTS  
MIDDLE/DEEP HYDROGEOLOGIC UNIT**

PROJECT No.	PHASE	Rev.	FIGURE
140-3345	0022	0	5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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## TABLES

**Table 1**  
**Monitoring Well Gauging Information**  
**3Q15 PCB Groundwater Quality Assurance Program**  
**Solutia Inc., W.G. Krummrich Facility**  
**Sauget, Illinois**

Well Identification	Monitoring Well Construction Data						3Q15 - July 30 and 31, 2015			
	Ground Surface Elevation <sup>1</sup> (ft)	Top of Casing Elevation <sup>1</sup> (ft)	Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Top of Screen Elevation <sup>1</sup> (ft)	Bottom of Screen Elevation <sup>1</sup> (ft)	Water Level (ft btoc)	Depth to NAPL (ft btoc)	Total Depth <sup>2</sup> (ft btoc)	Water Level Elevation <sup>1</sup> (ft)
<b>SHU 395-380 ft NAVD 88</b>										
PMA-MW-1S	410.30	410.06	20.18	25.18	390.12	385.12	6.72	NP	24.93	403.34
PMA-MW-2S	412.27	411.66	22.94	27.94	389.33	384.33	8.64	NP	27.34	403.02
PMA-MW-3S	412.37	412.06	22.71	27.71	389.66	384.66	8.95	NP	27.40	403.11
PMA-MW-4S	411.09	410.43	20.99	25.99	390.10	385.10	7.19	NP	25.38	403.24
<b>MHU 380-350 ft NAVD 88</b>										
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	7.06	NP	59.60	403.02
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	8.89	NP	61.27	403.04
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	9.00	NP	61.81	403.10
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	6.37	NP	56.98	404.60
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	9.34	NP	46.05	403.25
<b>DHU 350 ft NAVD 88 - Bedrock</b>										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	10.56	NP	77.00	404.57
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	11.17	NP	114.75	404.57
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	19.80	NP	123.12	404.89
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	13.94	NP	120.89	406.55
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	9.09	NP	74.69	403.14
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	4.51	NP	104.56	403.69
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	5.07	NP	112.76	405.60
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	16.17	NP	120.98	405.03
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	NA	NP	114.64	NA
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	12.24	NP	123.10	403.32
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	4.24	NP	112.40	403.48
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	12.53	NP	123.28	403.38
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	9.43	NP	118.21	403.10
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	8.46	NP	116.54	403.45
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	6.63	NP	116.87	403.46
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	4.01	NP	115.31	403.71
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	7.42	NP	117.56	403.96
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	0.65	NP	111.05	405.32
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	9.90	NP	120.26	403.35
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	8.13	NP	120.18	403.65
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	8.27	NP	108.23	402.94
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	10.95	NP	128.22	404.65
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	12.71	NP	136.59	404.43
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	14.30	NP	114.88	403.36
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	2.74	NP	78.75	403.00
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	6.20	NP	105.14	402.18
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	9.55	NP	114.81	403.32
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	18.92	NP	97.00	403.98
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	7.77	NP	73.38	403.11
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	2.08	NP	101.22	405.24
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	2.81	NP	109.81	403.82
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	NA	NP	105.00	NA
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	NA	NP	111.25	NA
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	0.83	NP	110.55	404.70
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	18.16	NP	133.90	405.10

**Notes**

ft - feet

bgs - below ground surface

btoc - below top of casing

NP - no product observed

NR - not reported

SHU - shallow hydrogeologic unit

MHU - middle hydrogeologic unit

DHU - deep hydrogeologic unit

<sup>1</sup> - Elevations based on North American Vertical Datum (NAVD) 88 datum.

<sup>2</sup> - Total depths are measured annually during the first quarter of each year.

NA - Wells were not accessible due to flooding.

Prepared By: EPW 8/12/2015

Checked By: JS 8/13/2015

Reviewed By: AWD 9/30/2015

**Table 2**  
**Groundwater Analytical Results**  
**3Q15 PCB Groundwater Quality Assurance Program**  
**Solutia Inc., W.G. Krummrich Facility**  
**Sauget, Illinois**

Sample Identification	Sample Date	PCBs (µg/L)									
		Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
SHU											
PMA-MW-1S-0815	8/10/2015	<0.096	<0.096	<0.096	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-2S-0815	8/10/2015	<0.096	<0.096	<0.096	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-3S-0815	8/10/2015	3.2	0.60	<0.097	<0.19	<0.19	<0.19	<0.29	<0.29	<0.49	<0.49
PMA-MW-4S-0815	8/10/2015	1.9	8.1	14	15	10	14	11	2.5	0.60	<0.54
MHU/DHU											
PMA-MW-1M-0815	8/10/2015	0.53	<0.11	<0.11	<0.21	<0.21	<0.21	<0.32	<0.32	<0.53	<0.53
PMA-MW-2M-0815	8/10/2015	7.1 D	<0.19	<0.19	<0.38	<0.38	<0.38	<0.57	<0.57	<0.96	<0.96
PMA-MW-2M-0815-AD	8/10/2015	8.1 D	<0.19	<0.19	<0.38	<0.38	<0.38	<0.58	<0.58	<0.96	<0.96
PMA-MW-3M-0815	8/10/2015	0.59	<0.10	<0.10	<0.20	<0.20	<0.20	<0.31	<0.31	<0.51	<0.51
PMA-MW-4D-0815	8/10/2015	1.1	1.1	<0.10	<0.20	<0.20	<0.20	<0.31	<0.31	<0.51	<0.51
PMA-MW-5M-0815	8/10/2015	<0.10	<0.10	<0.10	<0.21	<0.21	<0.21	<0.31	<0.31	<0.52	<0.52
PMA-MW-6D-0815	8/10/2015	0.24	<0.10	<0.10	<0.20	<0.20	<0.20	<0.30	<0.30	<0.50	<0.50

**Notes**

PCBs - polychlorinated biphenyls

µg/L - micrograms per liter

< - result is non-detect, less than the reporting limit

JD - compound is analyzed at a dilution; result is an estimated value

AD - analytical duplicate

**Bold** - indicates concentration greater than reporting limit

SHU - shallow hydrogeologic unit

MHU - middle hydrogeologic unit

DHU - deep hydrogeologic unit

Prepared By: JS 9/17/2015

Checked By: EPW 9/17/2015

Reviewed By: AWD 9/30/2015



**Table 3**  
**Mann-Kendall Trend Analysis**  
**3Q15 PCB Groundwater Quality Assessment Program**  
**W.G. Krummrich Facility**  
**Sauget, IL**

Event Number	Quarter	Total PCB Concentration (µg/L)					
		PMA-MW-1M	PMA-MW-2M	PMA-MW-3S	PMA-MW-3M	PMA-MW-4D	PMA-MW-6D
1	2Q06	ND	2.3	0.66	5.18	NA	NA
2	3Q06	0.24	2.4	0.32	1.90	0.34	NA
3	4Q06	0.21	2.8	0.20	ND	0.10	NA
4	1Q07	0.17	2.1	0.35	0.77	2.07	NA
5	2Q07	0.26	3.3	0.80	ND	0.33	NA
6	3Q07	0.29	2.5	0.30	0.86	0.50	NA
7	4Q07	48	3.1	0.21	0.76	0.35	NA
8	1Q08	ND	1.7	0.25	0.39	0.23	NA
9	2Q08	0.18	3.0	0.64	0.92	0.27	NA
10	3Q08	0.38	4.3	0.26	1.30	0.44	0.21
11	4Q08	0.26	2.5	0.24	0.71	0.27	0.43
12	1Q09	0.16	2.9	0.79	1.40	2.73	0.32
13	2Q09	0.21	4.14	ND	1.30	0.59	0.29
14	3Q09	0.27	3.1	0.34	0.85	0.37	0.20
15	4Q09	0.27	2.7	2.03	0.85	0.61	0.30
16	1Q10	0.20	2.4	ND	0.87	0.54	0.19
17	2Q10	ND	3.9	0.63	0.82	0.72	0.33
18	3Q10	0.29	2.1	0.28	0.75	0.42	0.10
19	4Q10	0.31	2.199	0.68	0.73	0.31	0.65
20	1Q11	0.59	4.04	0.71	1.20	0.35	0.22
21	2Q11	0.37	3.7	0.23	0.94	1.03	0.18
22	3Q11	0.35	4.52	0.13	1.10	1.10	ND
23	4Q11	0.52	2.7	0.46	0.92	0.54	0.72
24	1Q12	0.30	3.7	1.12	1.30	0.92	0.19
25	2Q12	0.48	4.79	1.19	1.20	1.47	0.22
26	3Q12	0.31	3.52	0.46	0.95	0.40	0.16
27	4Q12	0.38	4.4	0.21	0.69	0.35	0.11
28	1Q13	0.36	3.7	0.66	1.22	1.31	0.19
29	2Q13	0.32	3.2	ND	0.23	0.92	0.23
30	3Q13	0.59	5.8	0.35	2.10	0.97	0.20
31	4Q13	0.34	3.3	0.16	0.48	0.70	0.11
32	1Q14	0.54	5.9	0.48	0.72	1.50	0.23
33	2Q14	0.43	3.9	ND	0.84	1.43	0.21
34	3Q14	0.59	5.4	1.86	1.00	1.68	0.72
35	4Q14	0.36	3.9	ND	0.88	1.39	0.71
36	1Q15	ND	4.7	0.51	0.76	0.59	0.22
37	2Q15	ND	5.1	0.37	0.58	2.07	0.13
38	3Q15	0.53	7.1	3.8	0.59	2.2	0.24
Coefficient of Variation		4.64	0.33	1.09	0.75	0.75	0.65
Mann-Kendall Statistic (S)		256	353	78	-113	310	-25
Confidence in Trend <sup>1</sup>		>99.9%	>99.9%	88.3%	93.6%	>99.9%	68.1%
Concentration Trend		Increasing	Increasing	No Trend	Prob. Decreasing	Increasing	Stable

**Notes**

NA - not analyzed

ND - non-detect (values detected below the detection limit)

<sup>1</sup> - confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0)

> 90% - probably increasing or decreasing

> 95% - Increasing or Decreasing

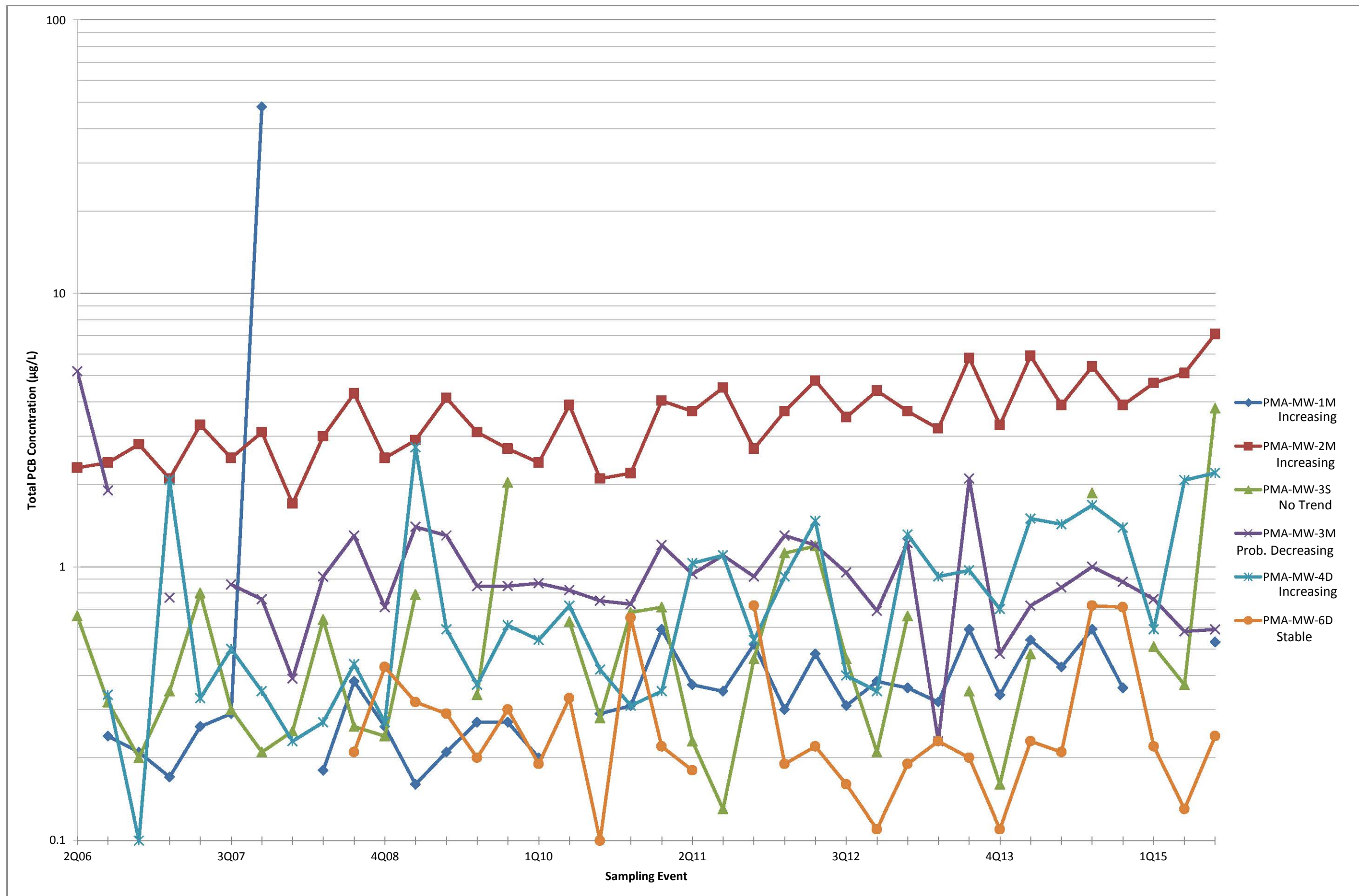
Data from 2Q06 to 1Q14 was compiled by former consultant

Prepared By: JS 9/17/2015

Checked By: EPW 9/20/2015

Reviewed By: AWD 9/30/2015

Table 3  
Mann-Kendall Trend Analysis  
3Q15 PCB Groundwater Quality Assessment Program  
W.G. Krummrich Facility  
Sauget, IL



**APPENDIX A**  
**GROUNDWATER PURGING AND SAMPLING FORMS**



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 28.44 ft  
Pump Placement from TOC 22.43 ft

**Well Information:**

Well Id PMA-MW-1S  
Well Diameter 2 in  
Well Total Depth 24.93 ft  
Depth to Top of Screen 19.93 ft  
Screen Length 5 ft  
Depth to Water 6.96 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 349 mL  
Calculated Sample Rate 69 sec  
Sample Rate 69 sec  
Stabilized Drawdown 0.50 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	11:02:23	20.96	7.53	877.93	25.60	0.11	30.09
	11:03:32	20.60	7.49	877.51	15.30	0.09	33.07
	11:04:41	20.46	7.46	879.46	8.31	0.08	35.22
	11:05:50	20.31	7.44	876.96	6.49	0.07	36.89
	11:06:59	20.31	7.42	878.35	5.61	0.07	38.26
Variance in Last 3 Readings		-0.14	-0.03	1.95	-6.99	-0.01	2.15
		-0.15	-0.02	-2.50	-1.82	-0.01	1.67
		0.00	-0.02	1.39	-0.88	0.00	1.37

Notes:



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 62.80 ft  
Pump Placement from TOC 57.10 ft

**Well Information:**

Well Id PMA-MW-1M  
Well Diameter 2 in  
Well Total Depth 59.60 ft  
Depth to Top of Screen 54.60 ft  
Screen Length 5 ft  
Depth to Water 7.80 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 540 mL  
Calculated Sample Rate 108 sec  
Sample Rate 108 sec  
Stabilized Drawdown 0.02 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	10:32:05	21.89	7.25	2033.64	7.00	0.19	-47.47
	10:33:53	20.94	7.21	2062.52	7.06	0.13	-60.04
	10:35:41	20.60	7.20	2077.93	7.33	0.09	-68.49
	10:37:29	20.47	7.19	2084.06	6.19	0.08	-74.52
	10:39:17	20.30	7.19	2081.43	7.43	0.07	-78.60
Variance in Last 3 Readings		-0.34	-0.01	15.41	0.27	-0.04	-8.45
		-0.13	-0.01	6.13	-1.14	-0.01	-6.03
		-0.17	0.00	-2.63	1.24	-0.01	-4.08

Notes:



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Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 30.83 ft  
Pump Placement from TOC 24.84 ft

**Well Information:**

Well Id PMA-MW-2S  
Well Diameter 2 in  
Well Total Depth 27.34 ft  
Depth to Top of Screen 22.34 ft  
Screen Length 5 ft  
Depth to Water 9.12 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 362 mL  
Calculated Sample Rate 72 sec  
Sample Rate 72 sec  
Stabilized Drawdown 0.18 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:19:59	19.80	7.57	1225.43	15.30	0.08	33.48
	12:21:11	19.66	7.54	1244.16	10.30	0.08	36.00
	12:22:23	19.57	7.52	1265.45	8.14	0.08	37.58
	12:23:35	19.53	7.51	1283.20	6.74	0.07	38.82
	12:24:47	19.46	7.49	1293.25	5.12	0.06	40.00
Variance in Last 3 Readings		-0.09	-0.02	21.29	-2.16	0.00	1.58
		-0.04	-0.01	17.75	-1.40	-0.01	1.24
		-0.07	-0.02	10.05	-1.62	-0.01	1.18

Notes:



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8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 65.04 ft  
Pump Placement from TOC 58.77 ft

**Well Information:**

Well Id PMA-MW-2M  
Well Diameter 2 in  
Well Total Depth 61.27 ft  
Depth to Top of Screen 56.27 ft  
Screen Length 5 ft  
Depth to Water 9.38 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 553 mL  
Calculated Sample Rate 110 sec  
Sample Rate 110 sec  
Stabilized Drawdown 0.02 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	11:47:21	19.98	7.28	1990.09	9.66	1.52	-46.87
	11:49:12	19.93	7.30	1983.53	10.60	1.66	-55.51
	11:51:02	19.80	7.30	1989.38	15.70	0.21	-60.60
	11:52:52	19.71	7.31	1988.86	11.00	0.06	-64.44
	11:54:42	19.79	7.31	1996.26	7.45	0.06	-67.70
Variance in Last 3 Readings		-0.13	0.00	5.85	5.10	-1.45	-5.09
		-0.09	0.01	-0.52	-4.70	-0.15	-3.84
		0.08	0.00	7.40	-3.55	0.00	-3.26

Notes:



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8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 30.90 ft  
Pump Placement from TOC 24.90 ft

**Well Information:**

Well Id PMA-MW-3S  
Well Diameter 2 in  
Well Total Depth 27.40 ft  
Depth to Top of Screen 22.40 ft  
Screen Length 5 ft  
Depth to Water 9.44 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 362 mL  
Calculated Sample Rate 72 sec  
Sample Rate 72 sec  
Stabilized Drawdown 0.06 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	13:17:10	21.06	8.17	2120.20	21.10	0.15	39.85
	13:18:22	20.64	8.05	2138.41	21.40	0.13	43.25
	13:19:34	20.54	7.95	2157.74	14.90	0.11	44.57
	13:20:46	20.47	7.89	2146.89	13.70	0.09	45.39
	13:21:58	20.34	7.83	2155.99	16.90	0.08	46.14
Variance in Last 3 Readings		-0.10	-0.10	19.33	-6.50	-0.02	1.32
		-0.07	-0.06	-10.85	-1.20	-0.02	0.82
		-0.13	-0.06	9.10	3.20	-0.01	0.75

Notes:





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8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 75.31 ft  
Pump Placement from TOC 59.31 ft

**Well Information:**

Well Id PMA-MW-3M  
Well Diameter 2 in  
Well Total Depth 61.81 ft  
Depth to Top of Screen 56.81 ft  
Screen Length 5 ft  
Depth to Water 9.48 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 610 mL  
Calculated Sample Rate 121 sec  
Sample Rate 121 sec  
Stabilized Drawdown 0.00 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	12:52:08	19.93	8.61	2309.12	6.63	0.12	-70.89
	12:54:09	19.40	8.73	2331.41	7.02	0.21	-68.53
	12:56:10	19.31	8.81	2328.76	11.20	0.27	-67.58
	12:58:12	19.22	8.84	2334.36	5.96	0.34	-65.26
	13:00:13	19.22	8.87	2325.28	5.37	0.35	-64.05
Variance in Last 3 Readings		-0.09	0.08	-2.65	4.18	0.06	0.95
		-0.09	0.03	5.60	-5.24	0.07	2.32
		0.00	0.03	-9.08	-0.59	0.01	1.21

Notes:



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 25.88 ft  
Pump Placement from TOC 22.88 ft

**Well Information:**

Well Id PMA-MW-4S  
Well Diameter 2 in  
Well Total Depth 25.38 ft  
Depth to Top of Screen 20.38 ft  
Screen Length 5 ft  
Depth to Water 7.43 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 334 mL  
Calculated Sample Rate 66 sec  
Sample Rate 66 sec  
Stabilized Drawdown 0.98 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:38:04	20.31	7.38	1456.80	16.60	0.09	-12.87
	14:39:10	20.28	7.38	1500.91	19.10	0.08	-16.45
	14:40:16	20.15	7.37	1548.12	11.60	0.07	-18.99
	14:41:22	20.04	7.37	1572.31	9.02	0.07	-21.94
	14:42:28	20.02	7.37	1587.42	9.21	0.07	-24.26
Variance in Last 3 Readings		-0.13	-0.01	47.21	-7.50	-0.01	-2.54
		-0.11	0.00	24.19	-2.58	0.00	-2.95
		-0.02	0.00	15.11	0.19	0.00	-2.32

Notes:



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 74.80 ft  
Pump Placement from TOC 70.88 ft

**Well Information:**

Well Id PMA-MW-4D  
Well Diameter 2 in  
Well Total Depth 73.38 ft  
Depth to Top of Screen 68.38 ft  
Screen Length 5 ft  
Depth to Water 8.26 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 607 mL  
Calculated Sample Rate 121 sec  
Sample Rate 121 sec  
Stabilized Drawdown 0.02 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	14:07:49	21.27	7.77	1168.40	16.30	0.19	-21.48
	14:09:50	20.47	7.67	1191.48	8.15	0.12	-37.66
	14:11:51	20.01	7.61	1210.85	8.54	0.10	-47.39
	14:13:53	19.78	7.57	1224.15	14.00	0.08	-54.46
	14:15:54	19.74	7.54	1236.96	9.43	0.08	-59.48
Variance in Last 3 Readings		-0.46	-0.06	19.37	0.39	-0.02	-9.73
		-0.23	-0.04	13.30	5.46	-0.02	-7.07
		-0.04	-0.03	12.81	-4.57	0.00	-5.02

Notes:



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 60.37 ft  
Pump Placement from TOC 54.48 ft

**Well Information:**

Well Id PMA-MW-5M  
Well Diameter 2 in  
Well Total Depth 56.98 ft  
Depth to Top of Screen 51.98 ft  
Screen Length 5 ft  
Depth to Water 7.17 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 527 mL  
Calculated Sample Rate 105 sec  
Sample Rate 105 sec  
Stabilized Drawdown 0.03 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:54:37	19.24	7.22	3430.00	3.78	0.18	-17.74
	9:56:22	19.03	7.23	3450.94	2.27	0.20	-19.12
	9:58:07	19.04	7.23	3466.10	3.53	0.18	-20.51
	9:59:52	18.92	7.23	3470.35	1.25	0.17	-20.30
	10:01:37	18.80	7.23	3478.85	1.44	0.16	-19.90
Variance in Last 3 Readings		0.01	0.00	15.16	1.26	-0.02	-1.39
		-0.12	0.00	4.25	-2.28	-0.01	0.21
		-0.12	0.00	8.50	0.19	-0.01	0.40

**Notes:**



SmartTroll  
8/10/2015

Low-Flow System  
ISI Low-Flow Log

**Project Information:**

Operator Name LAB  
Company Name Golder Associates  
Project Name W.G. Krummrich  
Site Name PCB

**Pump Information:**

Pump Model/Type SS Monsoon  
Tubing Type LDPE  
Tubing Diameter 0.19 in  
Tubing Length 104.68 ft  
Pump Placement from TOC 98.72 ft

**Well Information:**

Well Id PMA-MW-6D  
Well Diameter 2 in  
Well Total Depth 101.22 ft  
Depth to Top of Screen 96.22 ft  
Screen Length 5 ft  
Depth to Water 3.42 ft

**Pumping Information:**

Final Pumping Rate 300 mL/min  
System Volume 774 mL  
Calculated Sample Rate 154 sec  
Sample Rate 154 sec  
Stabilized Drawdown 0.02 ft

**Low-Flow Sampling Stabilization Summary**

	Time	Temp [C]	pH [pH]	Cond [ $\mu$ S/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3%	+/-1 +/-10%	+/-0.2 +/-10%	+/-20
Last 5 Readings	9:09:44	20.37	7.22	1066.26	1.87	0.21	-39.93
	9:12:18	20.34	7.21	1073.16	3.65	0.17	-52.03
	9:14:52	20.38	7.21	1077.34	1.86	0.15	-59.36
	9:17:26	20.39	7.21	1080.35	1.94	0.13	-64.54
	9:20:00	20.35	7.22	1088.03	1.32	0.12	-68.35
Variance in Last 3 Readings		0.04	0.00	4.18	-1.79	-0.02	-7.33
		0.01	0.00	3.01	0.08	-0.02	-5.18
		-0.04	0.01	7.68	-0.62	-0.01	-3.81

**Notes:**

**APPENDIX B**  
**CHAINS-OF-CUSTODY**

TestAmerica Savannah  
5102 LaRoche Avenue

Savannah, GA 31404  
phone 912 354 7858 fax

## Chain of Custody Record

TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ NPDES ☐ RCR ☐ Other:

Client Contact		Project Manager: Amanda Derhake		Site Contact: Lori Bindner		Date: 8/10/15		COC No: 1 of 2 COCs	
Golder Associates Inc.		Tel/Fax: 636-724-9191		Lab Contact: Michele Kersey		Carrier: FedEx		Sampler:	
820 South Main Street		Analysis Turnaround Time		Perform MS / MSD (Y / N)		Total PCBs by 680		For Lab Use Only:	
St Charles, MO 63301		CALENDAR WORKING		Filtered Sample (Y / N)				Walk-in Client:	
(636) 724-9191		TAT if different from Below Standard		# of Cont.				Lab Sampling:	
(636) 724-9323		2		Matrix				Job / SDG No.:	
Project Name: 3Q15 PCB GW Sampling-1403345		1 week		Sample Type (G-Comp, G-Grab)					
Site: Solutia WG Krummrich Facility		2 days		Sample Time					
P O # 42447936		1 day		Sample Date					
PMA-MW-1S-0815	8/10/15 1107	G	W	Z					
PMA-MW-1S-0815-MS				Z					
PMA-MW-1S-0815-MSD				Z					
PMA-MW-1M-0815	1038			Z					
PMA-MW-2S-0815	1225			Z					
PMA-MW-2S-0815-EB	1235			Z					
PMA-MW-2M-0815	1155			Z					
PMA-MW-2M-0815-AD	1155			Z					
PMA-MW-3S-0815	1320			Z					
PMA-MW-3M-0815	1300			Z					
PMA-MW-4S-0815	1440			Z					
PMA-MW-4D-0815	1445			Z					

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

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin ☐ Poison B ☐ Unknown

☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months

Sample Disposal (A fee may be a)

680-115473 Chain of Custody

Special Instructions/QC Requirements & Comments:

Custody Seal Intact: ☐ No

Relinquished by: *An Dione*

Relinquished by:

Relinquished by:

Custody Seal No.: 504804/504805/504806

Company: *Golder*

Received by: *m. bindner*

Date/Time: 8/10/15

Date/Time:

Date/Time:

Therm ID No.: 680-115473

Company:

Date/Time:

Date/Time:

Date/Time: 8/11/15 09:39

Regulatory Program: ☐ C-1 ☐ NPDE ☒ RCR ☐ Other:

**TestAmerica Laboratories, Inc.**

Client Contact		Project Manager: Amanda Derhake Tel/Fax: 636-724-9191		Site Contact: Lori Bindner Lab Contact: Michele Kersey		Date: 8/10/15 Carrier: FedEx		COC No: 2 of 2 COCs	
Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR <input type="checkbox"/> WORKING TAT if different from Below Standard 2 1 week 2 days 1 day		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		# of Cont.	
		8/10/15		1002		G		2	
		1		0920		L		2	
Sample Identification		PMA-MW-SM-0815		PMA-MW-6D-0815					
Sample Specific Notes:									
Job / SDG No.:									
Walk-in Client:									
Lab Sampling:									
Sampler:									
For Lab Use Only:									
Total PCBs by 680									
Perform MS/MSD (Y/N)									
Filtered Sample (Y/N)									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other									
Possible Hazard Identification:									
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.									
Special Instructions/QC Requirements & Comments:									
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		1.8 / 1.4 / 2.8 2.2 / 1.8 / 3.2		680-115473			
Custody Seal No.: 504004501903		Cooler Temp. (°C): 5.8		Obs'd: 3.2		Therm ID No.:			
Relinquished by: J. Binows		Received by:		Company:		Date/Time:			
Relinquished by:		Received by:		Company:		Date/Time:			
Relinquished by:		Received in Laboratory by: M. L. Kersey		Company:		Date/Time:		8/11/15 09:39	



**APPENDIX C**  
**QUALITY ASSURANCE REPORT**



# QUALITY ASSURANCE REPORT

PCB GROUNDWATER QUALITY  
ASSESSMENT PROGRAM  
SOLUTIA INC., W.G. KRUMMRICH FACILITY  
SAUGET, ILLINOIS

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

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

October 2015

140-3345

A world of  
capabilities  
delivered locally





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## 1.0 INTRODUCTION

Golder Associates Inc. (Golder) completed a review of analytical data for the groundwater samples collected on August 10, 2015 at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) facility (Site) in Sauget, Illinois. Golder collected a total of fourteen (14) samples from groundwater monitoring wells as part of the 3<sup>rd</sup> Quarter 2015 (3Q15) PCB Groundwater Quality Assessment Program (PCB). Ten (10) groundwater samples, one (1) equipment blank (EB), one (1) analytical duplicate (AD) and one (1) matrix spike/matrix spike duplicate (MS/MSD) pair were prepared. Groundwater monitoring locations were located at the WGK facility. The samples were submitted to the TestAmerica Laboratories, Inc. (TestAmerica) facility located in Savannah, Georgia for analysis using United States Environmental Protection Agency (USEPA) Method 680. Samples submitted to TestAmerica were analyzed for polychlorinated biphenyls (PCBs). The analytical results were placed into one (1) sample delivery group (SDG) as described in the table below:

Sample Delivery Group (SDG)	Sample Identification
KPM066	PMA-MW-1M-0815
	PMA-MW-1S-0815
	PMA-MW-2M-0815
	PMA-MW-2M-0815-AD
	PMA-MW-2S-0815
	PMA-MW-2S-0815-EB
	PMA-MW-3M-0815
	PMA-MW-3S-0815
	PMA-MW-4D-0815
	PMA-MW-4S-0815
	PMA-MW-5M-0815
	PMA-MW-6D-0815

The samples were collected and analyzed in general accordance with the Revised PCB Groundwater Quality Assessment Program Work Plan (Work Plan) (Solutia 2009). Groundwater samples were analyzed for polychlorinated biphenyls (PCBs) using USEPA Method 680. In addition, the EB, AD and MS/MSD pair were submitted and analyzed for PCBs.

Golder completed validation of the analytical data following the general guidelines in Section 3.4 Data Review and Validation of the Work Plan. The Work Plan specifies that the most recent version of the national data validation guidelines be used for data review. The following guidelines were generally used:

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



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

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

- U – The analyte was analyzed for but not was not detected
- 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

Golder data qualifiers are defined below:

- D – The analyte was analyzed at a dilution

Section 2 summarizes the specific instances where quality control criteria in the functional guidelines were not met. As specified in the functional guidelines, if the non-adherence to quality control criteria is slight, professional judgment is used in qualification of the data. However, if the non-adherence is significant, qualification and rejection of the data may be necessary. A summary of qualified data is provided in Section 3.0.

Following data validation, the qualified data were summarized in tables, which are included in the main body of the report.

## **2.0 POLYCHLORINATED BIPHENYLS**

Samples were collected from ten (10) groundwater monitoring locations and analyzed for PCBs. One (1) AD sample was collected from sampling location, PMA-MW-2M. One (1) EB, associated with PMA-MW-2S was also prepared and shipped for laboratory analysis. The samples were submitted to TestAmerica, placed into one (1) data package or SDG (KPM066), and were prepared and analyzed using USEPA Method 680. Samples were validated in general accordance with the functional guidelines. Results of the validation are summarized below.

### **2.1 Receipt Condition and Sample Holding Times**

The SDG Case Narrative, chain-of-custody, login sample receipt checklist, and analysis dates were reviewed to verify analytical method holding times and proper preservation upon sampling. Samples were received by TestAmerica in good condition.



## 2.2 Blanks

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

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

One (1) EB, associated with sample PMA-MW-2S, was collected during the 3Q15 event to assess the effectiveness of the decontamination procedure. There were no detections in the EB.

## 2.3 Surrogate Spike Recoveries

Samples to be analyzed for PCBs were spiked with surrogate compound decachlorobiphenyl-13C12 prior to analysis, to evaluate overall laboratory performance. No deficiencies were noted; therefore no qualification was required.

## 2.4 Laboratory Control Sample Recoveries

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

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

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

## 2.6 Analytical Duplicates

One (1) AD is collected for every ten (10) field samples to determine the overall precision of field and laboratory methods. One (1) AD was collected during the 3Q15 event associated with sample PMA-MW-2M. The relative percent difference (RPD) between the sample, PMA-MW-2M, and the AD, PMA-MW-2M-AD, did not exceed 25%; therefore, data qualification was not required.

## 2.7 Results Reported From Dilutions

PCB samples, PMA-MW-2M and PMA-MW-2M-AD required dilutions due to high levels of target analytes or initial appearance. Reporting limits were adjusted to reflect the dilution. Result qualifications are shown in Section 3.0.



### 3.0 SUMMARY

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

**Qualification Summary Table**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Monochlorobiphenyl	D	PMA-MW-2M and PMA-MW-2M-AD



## 4.0 REFERENCES

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

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



**APPENDIX D**  
**GROUNDWATER ANALYTICAL RESULTS**  
**(INCLUDING DATA VALIDATION REPORTS)**



**Level IV Data Validation Summary**  
**Solutia Inc., W.G. Krummrich, Sauget, Illinois**  
**3Q15 PCB Groundwater Quality Assessment**

**Company Name:** Golder Associates  
**Project Name:** WGK-3Q15 PCB  
**Reviewer:** A. Derhake  
**Laboratory:** TestAmerica  
**SDG#:** KPM066  
**Matrix:** Water

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

**Analytical Method:** PCB (680)

**Sample Names:** PMA-MW-1S-0815, PMA-MW-1M-0815, PMA-MW-2S-0815, PMA-MW-2S-0815-EB, PMA-MW-2M-0815, PMA-MW-2M-0815-AD, PMA-MW-3S-0815, PMA-MW-3M-0815, PMA-MW-4S-0815, PMA-MW-4D-0815, PMA-MW-5M-0815, and PMA-MW-6D-0815

**Field Information**

**YES NO NA**

- |   |                                     |                          |                          |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Sampling dates noted?                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the laboratory narrative indicate deficiencies? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments:**

**PCBs:** Samples PMA-MW-2M-0815 and PMA-MW-2M-0815-AD required a dilution prior to analysis, reporting limits were adjusted accordingly. Due to the sample matrix, phenanthrene-d-10 was used as the internal standard in place of chrysene-d12.

**Chain-of-Custody (COC)**

**YES NO NA**

- |   |                                     |                          |                          |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Was the COC signed by both field and laboratory personnel? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Were samples received in good condition?                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments:** Samples were received at 1.8°C, 2.2°C and 3.2°C, some outside the 4°C +/- 2°C criteria.

**General**

**YES NO NA**

- |   |                                     |                          |                          |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Were hold times met for sample analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Were the correct preservatives used?     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Was the correct method used?             | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Any sample dilutions noted?              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments:** Detections in diluted analysis were qualified.

**Calibrations**

**YES NO NA**

- |   |                                     |                          |                          |
|---|-------------------------------------|--------------------------|--------------------------|
| a) Initial calibration analyzed at the appropriate frequency and met the appropriate standards?     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Continuing calibrations analyzed at the appropriate frequency and met the appropriate standards? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments:** None

**Blanks**

**YES NO NA**

- |   |                                     |                                     |                          |
|---|-------------------------------------|-------------------------------------|--------------------------|
| a) Were blanks (trip, equipment, method) performed at required frequency? | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| b) Were analytes detected in any blanks?                                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Comments:** Equipment blank PMA-MW-2S-0815-EB was submitted with SDG KPM066.

**Matrix Spike/Matrix Spike Duplicate (MS/MSD)****YES NO NA**

- a) Was MS/MSD accuracy criteria met?
- b) Was MS/MSD precision criteria met?

☒ ☐ ☐

☒ ☐ ☐

**Comments:** None**Laboratory Control Sample (LCS)****YES NO NA**

- a) LCS analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐

**Comments:** None**Surrogate (System Monitoring) Compounds****YES NO NA**

- a) Surrogate compounds analyzed at the appropriate frequency and met appropriate standards?

☒ ☐ ☐

**Comments:** None**Duplicates****YES NO NA**

- a) Were field duplicates collected?
- b) Was field duplicate precision criteria met?

☒ ☐ ☐

☒ ☐ ☐

**Comments:** Duplicate sample PMA-MW-2M-0815-AD was submitted with SDG KPM066.**Additional Comments:** None**Qualifications:**

Quality Control Issue	Compound(s)	Qualifier	Samples Affected
Compounds analyzed at a dilution	Monochlorobiphenyl	D	PMA-MW-2M and PMA-MW-2M-AD

**SDG KPM066**

**Sample Results from:**

**PMA-MW-1S  
PMA-MW-1M  
PMA-MW-2S  
PMA-MW-2M  
PMA-MW-3S  
PMA-MW-3M  
PMA-MW-4S  
PMW-MW-4D  
PMA-MW-5M  
PMA-MW-6D**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

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

TestAmerica Job ID: 680-115473-1  
TestAmerica Sample Delivery Group: KPM066  
Client Project/Site: 3Q15 PCB GW Sampling - 1403345

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

Attn: Mr. Jerry Rinaldi

*Michele R. Kersey*

Authorized for release by:  
8/27/2015 4:00:45 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?

**?** Ask  
The  
Expert

Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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

AWD  
8/14/15



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AWD  
11/15

## Case Narrative

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

**Job ID: 680-115473-1**

**Laboratory: TestAmerica Savannah**

### Narrative

## CASE NARRATIVE

**Client: Solutia Inc.**

**Project: 3Q15 PCB GW Sampling - 1403345**

**Report Number: 680-115473-1**

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

### RECEIPT

The samples were received on 8/11/2015 9:39 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 2.2° C and 3.2° C.

### POLYCHLORINATED BIPHENYLS (PCBS)

Samples PMA-MW-1S-0815 (680-115473-1), PMA-MW-1M-0815 (680-115473-2), PMA-MW-2S-0815 (680-115473-3), PMA-MW-2S-0815 EB (680-115473-4), PMA-MW-2M-0815 (680-115473-5), PMA-MW-2M-0815 AD (680-115473-6), PMA-MW-3S-0815 (680-115473-7), PMA-MW-3M-0815 (680-115473-8), PMA-MW-4S-0815 (680-115473-9), PMA-MW-4D-0815 (680-115473-10), PMA-MW-5M-0815 (680-115473-11) and PMA-MW-6D-0815 (680-115473-12) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 680. The samples were prepared on 08/13/2015 and analyzed on 08/22/2015 and 08/27/2015.

Due to the matrix of the samples, phenanthrene-d10 was used as the internal standard instead of chrysene-d12: PMA-MW-1S-0815 (680-115473-1), PMA-MW-1S-0815 (680-115473-1[MS]), PMA-MW-1S-0815 (680-115473-1[MSD]), PMA-MW-1M-0815 (680-115473-2), PMA-MW-2S-0815 (680-115473-3), PMA-MW-2S-0815 EB (680-115473-4), PMA-MW-3S-0815 (680-115473-7), PMA-MW-3M-0815 (680-115473-8), PMA-MW-4S-0815 (680-115473-9), PMA-MW-4D-0815 (680-115473-10), PMA-MW-5M-0815 (680-115473-11) and PMA-MW-6D-0815 (680-115473-12)

The following samples was diluted to bring the concentration of target analytes within the calibration range: PMA-MW-2M-0815 (680-115473-5) and PMA-MW-2M-0815 AD (680-115473-6). Elevated reporting limits (RLs) are provided.

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

AWD  
8/14/15

## Sample Summary

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-115473-1	PMA-MW-1S-0815	Water	08/10/15 11:07	08/11/15 09:39
680-115473-2	PMA-MW-1M-0815	Water	08/10/15 10:38	08/11/15 09:39
680-115473-3	PMA-MW-2S-0815	Water	08/10/15 12:25	08/11/15 09:39
680-115473-4	PMA-MW-2S-0815 EB	Water	08/10/15 12:35	08/11/15 09:39
680-115473-5	PMA-MW-2M-0815	Water	08/10/15 11:55	08/11/15 09:39
680-115473-6	PMA-MW-2M-0815 AD	Water	08/10/15 11:55	08/11/15 09:39
680-115473-7	PMA-MW-3S-0815	Water	08/10/15 13:20	08/11/15 09:39
680-115473-8	PMA-MW-3M-0815	Water	08/10/15 13:00	08/11/15 09:39
680-115473-9	PMA-MW-4S-0815	Water	08/10/15 14:40	08/11/15 09:39
680-115473-10	PMA-MW-4D-0815	Water	08/10/15 14:15	08/11/15 09:39
680-115473-11	PMA-MW-5M-0815	Water	08/10/15 10:02	08/11/15 09:39
680-115473-12	PMA-MW-6D-0815	Water	08/10/15 09:20	08/11/15 09:39

AMP  
9/4/15

TestAmerica Savannah



## Method Summary

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Method	Method Description	Protocol	Laboratory
680	Polychlorinated Biphenyls (PCBs) (GC/MS)	EPA	TAL SAV

### Protocol References:

EPA = US Environmental Protection Agency

### Laboratory References:

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

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TestAmerica Savannah

## Definitions/Glossary

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

### Qualifiers

#### GC/MS Semi VOA

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

### Glossary

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

AWP  
9/4/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-1S-0815

Lab Sample ID: 680-115473-1

Date Collected: 08/10/15 11:07

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 16:01	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:01	1
Nonachlorobiphenyl	0.48	U	0.48		ug/L		08/13/15 14:56	08/22/15 16:01	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 16:01	1
Monochlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:01	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		08/13/15 14:56	08/22/15 16:01	1
Dichlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:01	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:01	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:01	1
Trichlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	82		25 - 113				08/13/15 14:56	08/22/15 16:01	1

AWP  
8/4/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-1M-0815

Lab Sample ID: 680-115473-2

Date Collected: 08/10/15 10:38

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.32	U	0.32		ug/L		08/13/15 14:56	08/22/15 16:30	1
Hexachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 16:30	1
Nonachlorobiphenyl	0.53	U	0.53		ug/L		08/13/15 14:56	08/22/15 16:30	1
Octachlorobiphenyl	0.32	U	0.32		ug/L		08/13/15 14:56	08/22/15 16:30	1
<b>Monochlorobiphenyl</b>	<b>0.53</b>		0.11		ug/L		08/13/15 14:56	08/22/15 16:30	1
DCB Decachlorobiphenyl	0.53	U	0.53		ug/L		08/13/15 14:56	08/22/15 16:30	1
Dichlorobiphenyl	0.11	U	0.11		ug/L		08/13/15 14:56	08/22/15 16:30	1
Pentachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 16:30	1
Tetrachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 16:30	1
Trichlorobiphenyl	0.11	U	0.11		ug/L		08/13/15 14:56	08/22/15 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	65		25 - 113	08/13/15 14:56	08/22/15 16:30	1

AWD  
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TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-2S-0815

Lab Sample ID: 680-115473-3

Date Collected: 08/10/15 12:25

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 16:59	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:59	1
Nonachlorobiphenyl	0.48	U	0.48		ug/L		08/13/15 14:56	08/22/15 16:59	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 16:59	1
Monochlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:59	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		08/13/15 14:56	08/22/15 16:59	1
Dichlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:59	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:59	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 16:59	1
Trichlorobiphenyl	0.096	U	0.096		ug/L		08/13/15 14:56	08/22/15 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	86		25 - 113	08/13/15 14:56	08/22/15 16:59	1

AWD  
8/14/15

TestAmerica Savannah



# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-2S-0815 EB

Lab Sample ID: 680-115473-4

Date Collected: 08/10/15 12:35

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 17:27	1
Hexachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 17:27	1
Nonachlorobiphenyl	0.52	U	0.52		ug/L		08/13/15 14:56	08/22/15 17:27	1
Octachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 17:27	1
Monochlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 17:27	1
DCB Decachlorobiphenyl	0.52	U	0.52		ug/L		08/13/15 14:56	08/22/15 17:27	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 17:27	1
Pentachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 17:27	1
Tetrachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 17:27	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 17:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	81		25 - 113				08/13/15 14:56	08/22/15 17:27	1

AWD  
8/14/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-2M-0815

Lab Sample ID: 680-115473-5

Date Collected: 08/10/15 11:55

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.57	U	0.57		ug/L		08/13/15 14:56	08/27/15 04:34	2
Hexachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 04:34	2
Nonachlorobiphenyl	0.96	U	0.96		ug/L		08/13/15 14:56	08/27/15 04:34	2
Octachlorobiphenyl	0.57	U	0.57		ug/L		08/13/15 14:56	08/27/15 04:34	2
Monochlorobiphenyl	7.1	D	0.19		ug/L		08/13/15 14:56	08/27/15 04:34	2
DCB Decachlorobiphenyl	0.96	U	0.96		ug/L		08/13/15 14:56	08/27/15 04:34	2
Dichlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/27/15 04:34	2
Pentachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 04:34	2
Tetrachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 04:34	2
Trichlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/27/15 04:34	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	69		25 - 113				08/13/15 14:56	08/27/15 04:34	2

AWD  
8/14/15

TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-2M-0815 AD

Lab Sample ID: 680-115473-6

Date Collected: 08/10/15 11:55

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.58	U	0.58		ug/L		08/13/15 14:56	08/27/15 05:02	2
Hexachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 05:02	2
Nonachlorobiphenyl	0.96	U	0.96		ug/L		08/13/15 14:56	08/27/15 05:02	2
Octachlorobiphenyl	0.58	U	0.58		ug/L		08/13/15 14:56	08/27/15 05:02	2
Monochlorobiphenyl	8.1	D	0.19		ug/L		08/13/15 14:56	08/27/15 05:02	2
DCB Decachlorobiphenyl	0.96	U	0.96		ug/L		08/13/15 14:56	08/27/15 05:02	2
Dichlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/27/15 05:02	2
Pentachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 05:02	2
Tetrachlorobiphenyl	0.38	U	0.38		ug/L		08/13/15 14:56	08/27/15 05:02	2
Trichlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/27/15 05:02	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	77		25 - 113				08/13/15 14:56	08/27/15 05:02	2

AWP  
8/14/15  
TestAmerica Savannah



# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

**Client Sample ID: PMA-MW-3S-0815**

**Lab Sample ID: 680-115473-7**

Date Collected: 08/10/15 13:20

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 18:54	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 18:54	1
Nonachlorobiphenyl	0.49	U	0.49		ug/L		08/13/15 14:56	08/22/15 18:54	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		08/13/15 14:56	08/22/15 18:54	1
Monochlorobiphenyl	3.2		0.097		ug/L		08/13/15 14:56	08/22/15 18:54	1
DCB Decachlorobiphenyl	0.49	U	0.49		ug/L		08/13/15 14:56	08/22/15 18:54	1
Dichlorobiphenyl	0.60		0.097		ug/L		08/13/15 14:56	08/22/15 18:54	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 18:54	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		08/13/15 14:56	08/22/15 18:54	1
Trichlorobiphenyl	0.097	U	0.097		ug/L		08/13/15 14:56	08/22/15 18:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Decachlorobiphenyl-13C12	84		25 - 113				08/13/15 14:56	08/22/15 18:54	1

AWD  
9/4/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-3M-0815

Lab Sample ID: 680-115473-8

Date Collected: 08/10/15 13:00

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 19:22	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 19:22	1
Nonachlorobiphenyl	0.51	U	0.51		ug/L		08/13/15 14:56	08/22/15 19:22	1
Octachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 19:22	1
Monochlorobiphenyl	0.59		0.10		ug/L		08/13/15 14:56	08/22/15 19:22	1
DCB Decachlorobiphenyl	0.51	U	0.51		ug/L		08/13/15 14:56	08/22/15 19:22	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 19:22	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 19:22	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 19:22	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 19:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	91		25 - 113				08/13/15 14:56	08/22/15 19:22	1

AWD  
9/4/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-4S-0815

Lab Sample ID: 680-115473-9

Date Collected: 08/10/15 14:40

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	11		0.33		ug/L		08/13/15 14:56	08/22/15 19:51	1
Hexachlorobiphenyl	14		0.22		ug/L		08/13/15 14:56	08/22/15 19:51	1
Nonachlorobiphenyl	0.60		0.54		ug/L		08/13/15 14:56	08/22/15 19:51	1
Octachlorobiphenyl	2.5		0.33		ug/L		08/13/15 14:56	08/22/15 19:51	1
Monochlorobiphenyl	1.9		0.11		ug/L		08/13/15 14:56	08/22/15 19:51	1
DCB Decachlorobiphenyl	0.54	U	0.54		ug/L		08/13/15 14:56	08/22/15 19:51	1
Dichlorobiphenyl	8.1		0.11		ug/L		08/13/15 14:56	08/22/15 19:51	1
Pentachlorobiphenyl	10		0.22		ug/L		08/13/15 14:56	08/22/15 19:51	1
Tetrachlorobiphenyl	15		0.22		ug/L		08/13/15 14:56	08/22/15 19:51	1
Trichlorobiphenyl	14		0.11		ug/L		08/13/15 14:56	08/22/15 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	87		25 - 113				08/13/15 14:56	08/22/15 19:51	1

AWP  
08/14/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

**Client Sample ID: PMA-MW-4D-0815**

**Lab Sample ID: 680-115473-10**

Date Collected: 08/10/15 14:15

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 20:19	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 20:19	1
Nonachlorobiphenyl	0.51	U	0.51		ug/L		08/13/15 14:56	08/22/15 20:19	1
Octachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 20:19	1
Monochlorobiphenyl	1.1		0.10		ug/L		08/13/15 14:56	08/22/15 20:19	1
DCB Decachlorobiphenyl	0.51	U	0.51		ug/L		08/13/15 14:56	08/22/15 20:19	1
Dichlorobiphenyl	1.1		0.10		ug/L		08/13/15 14:56	08/22/15 20:19	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 20:19	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 20:19	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 20:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	85		25 - 113	08/13/15 14:56	08/22/15 20:19	1

AWD  
9/4/15  
TestAmerica Savannah

# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-5M-0815

Lab Sample ID: 680-115473-11

Date Collected: 08/10/15 10:02

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 20:48	1
Hexachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 20:48	1
Nonachlorobiphenyl	0.52	U	0.52		ug/L		08/13/15 14:56	08/22/15 20:48	1
Octachlorobiphenyl	0.31	U	0.31		ug/L		08/13/15 14:56	08/22/15 20:48	1
Monochlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 20:48	1
DCB Decachlorobiphenyl	0.52	U	0.52		ug/L		08/13/15 14:56	08/22/15 20:48	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 20:48	1
Pentachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 20:48	1
Tetrachlorobiphenyl	0.21	U	0.21		ug/L		08/13/15 14:56	08/22/15 20:48	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 20:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	77		25 - 113				08/13/15 14:56	08/22/15 20:48	1

AWD  
9/4/15  
TestAmerica Savannah



# Client Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

Client Sample ID: PMA-MW-6D-0815

Lab Sample ID: 680-115473-12

Date Collected: 08/10/15 09:20

Matrix: Water

Date Received: 08/11/15 09:39

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.30	U	0.30		ug/L		08/13/15 14:56	08/22/15 21:16	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 21:16	1
Nonachlorobiphenyl	0.50	U	0.50		ug/L		08/13/15 14:56	08/22/15 21:16	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		08/13/15 14:56	08/22/15 21:16	1
Monochlorobiphenyl	0.24		0.10		ug/L		08/13/15 14:56	08/22/15 21:16	1
DCB Decachlorobiphenyl	0.50	U	0.50		ug/L		08/13/15 14:56	08/22/15 21:16	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 21:16	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 21:16	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 21:16	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	80		25 - 113	08/13/15 14:56	08/22/15 21:16	1

MWD  
9/14/15

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# QC Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Lab Sample ID: MB 680-395868/13-A  
Matrix: Water  
Analysis Batch: 397557

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 395868

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlorobiphenyl	0.30	U	0.30		ug/L		08/13/15 14:56	08/22/15 14:06	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 14:06	1
Nonachlorobiphenyl	0.50	U	0.50		ug/L		08/13/15 14:56	08/22/15 14:06	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		08/13/15 14:56	08/22/15 14:06	1
Monochlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 14:06	1
DCB Decachlorobiphenyl	0.50	U	0.50		ug/L		08/13/15 14:56	08/22/15 14:06	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 14:06	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 14:06	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		08/13/15 14:56	08/22/15 14:06	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		08/13/15 14:56	08/22/15 14:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Decachlorobiphenyl-13C12	88		25 - 113	08/13/15 14:56	08/22/15 14:06	1

Lab Sample ID: LCS 680-395868/14-A  
Matrix: Water  
Analysis Batch: 397557

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 395868

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Heptachlorobiphenyl	6.00	4.67		ug/L		78	62 - 130
Hexachlorobiphenyl	4.00	2.93		ug/L		73	62 - 130
Nonachlorobiphenyl	10.0	17.9		ug/L		179	70 - 195
Octachlorobiphenyl	6.00	4.91		ug/L		82	64 - 130
Monochlorobiphenyl	2.00	1.46		ug/L		73	42 - 130
DCB Decachlorobiphenyl	10.0	9.44		ug/L		94	59 - 130
Dichlorobiphenyl	2.00	1.49		ug/L		75	49 - 130
Pentachlorobiphenyl	4.00	3.03		ug/L		76	63 - 130
Tetrachlorobiphenyl	4.00	2.93		ug/L		73	54 - 130
Trichlorobiphenyl	2.00	1.47		ug/L		74	51 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Decachlorobiphenyl-13C12	95		25 - 113

Lab Sample ID: 680-115473-1 MS  
Matrix: Water  
Analysis Batch: 397557

Client Sample ID: PMA-MW-1S-0815  
Prep Type: Total/NA  
Prep Batch: 395868

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Heptachlorobiphenyl	0.29	U	5.74	4.71		ug/L		82	62 - 130
Hexachlorobiphenyl	0.19	U	3.83	2.94		ug/L		77	62 - 130
Nonachlorobiphenyl	0.48	U	9.56	16.2		ug/L		170	70 - 195
Octachlorobiphenyl	0.29	U	5.74	4.75		ug/L		83	64 - 130
Monochlorobiphenyl	0.096	U	1.91	1.42		ug/L		74	42 - 130
DCB Decachlorobiphenyl	0.48	U	9.56	8.71		ug/L		91	59 - 130
Dichlorobiphenyl	0.096	U	1.91	1.51		ug/L		79	49 - 130
Pentachlorobiphenyl	0.19	U	3.83	4.53		ug/L		118	63 - 130
Tetrachlorobiphenyl	0.19	U	3.83	2.88		ug/L		75	54 - 130

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9/14/15

# QC Sample Results

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

## Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS) (Continued)

Lab Sample ID: 680-115473-1 MS

Matrix: Water

Analysis Batch: 397557

Client Sample ID: PMA-MW-1S-0815

Prep Type: Total/NA

Prep Batch: 395868

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorobiphenyl	0.096	U	1.91	1.46		ug/L		76	51 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
Decachlorobiphenyl-13C12	92		25 - 113

Lab Sample ID: 680-115473-1 MSD

Matrix: Water

Analysis Batch: 397557

Client Sample ID: PMA-MW-1S-0815

Prep Type: Total/NA

Prep Batch: 395868

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Heptachlorobiphenyl	0.29	U	6.15	4.93		ug/L		80	62 - 130	5	40
Hexachlorobiphenyl	0.19	U	4.10	3.07		ug/L		75	62 - 130	4	40
Nonachlorobiphenyl	0.48	U	10.2	17.5		ug/L		171	70 - 195	8	40
Octachlorobiphenyl	0.29	U	6.15	5.12		ug/L		83	64 - 130	8	40
Monochlorobiphenyl	0.096	U	2.05	1.43		ug/L		70	42 - 130	1	40
DCB Decachlorobiphenyl	0.48	U	10.2	9.28		ug/L		91	59 - 130	6	40
Dichlorobiphenyl	0.096	U	2.05	1.49		ug/L		73	49 - 130	1	40
Pentachlorobiphenyl	0.19	U	4.10	5.00		ug/L		122	63 - 130	10	40
Tetrachlorobiphenyl	0.19	U	4.10	3.00		ug/L		73	54 - 130	4	40
Trichlorobiphenyl	0.096	U	2.05	1.46		ug/L		71	51 - 130	0	40

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
Decachlorobiphenyl-13C12	88		25 - 113

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## QC Association Summary

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

### GC/MS Semi VOA

#### Prep Batch: 395868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115473-1	PMA-MW-1S-0815	Total/NA	Water	680	
680-115473-1 MS	PMA-MW-1S-0815	Total/NA	Water	680	
680-115473-1 MSD	PMA-MW-1S-0815	Total/NA	Water	680	
680-115473-2	PMA-MW-1M-0815	Total/NA	Water	680	
680-115473-3	PMA-MW-2S-0815	Total/NA	Water	680	
680-115473-4	PMA-MW-2S-0815 EB	Total/NA	Water	680	
680-115473-5	PMA-MW-2M-0815	Total/NA	Water	680	
680-115473-6	PMA-MW-2M-0815 AD	Total/NA	Water	680	
680-115473-7	PMA-MW-3S-0815	Total/NA	Water	680	
680-115473-8	PMA-MW-3M-0815	Total/NA	Water	680	
680-115473-9	PMA-MW-4S-0815	Total/NA	Water	680	
680-115473-10	PMA-MW-4D-0815	Total/NA	Water	680	
680-115473-11	PMA-MW-5M-0815	Total/NA	Water	680	
680-115473-12	PMA-MW-6D-0815	Total/NA	Water	680	
LCS 680-395868/14-A	Lab Control Sample	Total/NA	Water	680	
MB 680-395868/13-A	Method Blank	Total/NA	Water	680	

#### Analysis Batch: 397557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115473-1	PMA-MW-1S-0815	Total/NA	Water	680	395868
680-115473-1 MS	PMA-MW-1S-0815	Total/NA	Water	680	395868
680-115473-1 MSD	PMA-MW-1S-0815	Total/NA	Water	680	395868
680-115473-2	PMA-MW-1M-0815	Total/NA	Water	680	395868
680-115473-3	PMA-MW-2S-0815	Total/NA	Water	680	395868
680-115473-4	PMA-MW-2S-0815 EB	Total/NA	Water	680	395868
680-115473-7	PMA-MW-3S-0815	Total/NA	Water	680	395868
680-115473-8	PMA-MW-3M-0815	Total/NA	Water	680	395868
680-115473-9	PMA-MW-4S-0815	Total/NA	Water	680	395868
680-115473-10	PMA-MW-4D-0815	Total/NA	Water	680	395868
680-115473-11	PMA-MW-5M-0815	Total/NA	Water	680	395868
680-115473-12	PMA-MW-6D-0815	Total/NA	Water	680	395868
LCS 680-395868/14-A	Lab Control Sample	Total/NA	Water	680	395868
MB 680-395868/13-A	Method Blank	Total/NA	Water	680	395868

#### Analysis Batch: 398173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-115473-5	PMA-MW-2M-0815	Total/NA	Water	680	395868
680-115473-6	PMA-MW-2M-0815 AD	Total/NA	Water	680	395868

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TestAmerica Savannah

# Lab Chronicle

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

**Client Sample ID: PMA-MW-1S-0815**

**Lab Sample ID: 680-115473-1**

Date Collected: 08/10/15 11:07

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1040.3 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	1040.3 mL	1.0 mL	397557	08/22/15 16:01	NED	TAL SAV

**Client Sample ID: PMA-MW-1M-0815**

**Lab Sample ID: 680-115473-2**

Date Collected: 08/10/15 10:38

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			942.6 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	942.6 mL	1.0 mL	397557	08/22/15 16:30	NED	TAL SAV

**Client Sample ID: PMA-MW-2S-0815**

**Lab Sample ID: 680-115473-3**

Date Collected: 08/10/15 12:25

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1037.8 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	1037.8 mL	1.0 mL	397557	08/22/15 16:59	NED	TAL SAV

**Client Sample ID: PMA-MW-2S-0815 EB**

**Lab Sample ID: 680-115473-4**

Date Collected: 08/10/15 12:35

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			955.4 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	955.4 mL	1.0 mL	397557	08/22/15 17:27	NED	TAL SAV

**Client Sample ID: PMA-MW-2M-0815**

**Lab Sample ID: 680-115473-5**

Date Collected: 08/10/15 11:55

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1045.8 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		2	1045.8 mL	1.0 mL	398173	08/27/15 04:34	NED	TAL SAV

**Client Sample ID: PMA-MW-2M-0815 AD**

**Lab Sample ID: 680-115473-6**

Date Collected: 08/10/15 11:55

Matrix: Water

Date Received: 08/11/15 09:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1041.9 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		2	1041.9 mL	1.0 mL	398173	08/27/15 05:02	NED	TAL SAV

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# Lab Chronicle

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

TestAmerica Job ID: 680-115473-1  
SDG: KPM066

## Client Sample ID: PMA-MW-3S-0815

Date Collected: 08/10/15 13:20

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1030.5 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	1030.5 mL	1.0 mL	397557	08/22/15 18:54	NED	TAL SAV

## Client Sample ID: PMA-MW-3M-0815

Date Collected: 08/10/15 13:00

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			980 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	980 mL	1.0 mL	397557	08/22/15 19:22	NED	TAL SAV

## Client Sample ID: PMA-MW-4S-0815

Date Collected: 08/10/15 14:40

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			921 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	921 mL	1.0 mL	397557	08/22/15 19:51	NED	TAL SAV

## Client Sample ID: PMA-MW-4D-0815

Date Collected: 08/10/15 14:15

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			979.3 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	979.3 mL	1.0 mL	397557	08/22/15 20:19	NED	TAL SAV

## Client Sample ID: PMA-MW-5M-0815

Date Collected: 08/10/15 10:02

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			960.4 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	960.4 mL	1.0 mL	397557	08/22/15 20:48	NED	TAL SAV

## Client Sample ID: PMA-MW-6D-0815

Date Collected: 08/10/15 09:20

Date Received: 08/11/15 09:39

## Lab Sample ID: 680-115473-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1002.9 mL	1.0 mL	395868	08/13/15 14:56	RBS	TAL SAV
Total/NA	Analysis	680		1	1002.9 mL	1.0 mL	397557	08/22/15 21:16	NED	TAL SAV

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AWD 9/4/15

## Lab Chronicle

Client: Solutia Inc.

Project/Site: 3Q15 PCB GW Sampling - 1403345

TestAmerica Job ID: 680-115473-1

SDG: KPM066

### Laboratory References:

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



# TestAmerica Savannah

5102 LaRoche Avenue

Savannah, GA 31404  
phone 912 354 7858 fax

## Chain of Custody Record

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DV ☒ NPDES ☐ RCR ☐ Other:

<b>Client Contact</b>		<b>Project Manager:</b> Amanda Derhake		<b>Site Contact:</b> Lori Bindner		<b>Date:</b> 8/10/15		<b>COC No:</b>		
Golder Associates Inc.		Tel/Fax: 636-724-9191		Lab Contact: Michele Kersey		Carrier: FedEx		1 of 2 COCs		
820 South Main Street		<b>Analysis Turnaround Time</b>		Filtered Sample (Y/N) Perform MS/MSD (Y/N) Total PCBs by 880				Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:		
St Charles, MO 63301		<input checked="" type="checkbox"/> CALENDAR <input type="checkbox"/> WORKING TAT if different from Below: Standard								
(636) 724-9191 Phone		2								
(636) 724-9323 FAX		1 week								
Project Name: 3Q15 PCB GW Sampling-1403345		2 days								
Site: Solutia WG Krummrich Facility		1 day								
P O # 42447936										
<b>Sample Identification</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type</b> (C=Comp, G=Grab)	<b>Matrix</b>	<b># of Cont.</b>	<b>Sample Specific Notes:</b>			
PMA-MW-1S-0815	8/10/15	1107	G	W	Z	2				
PMA-MW-1S-0815-MS					Z	2				
PMA-MW-1S-0815-MSD					Z	2				
PMA-MW-1M-0815		1038			Z	2				
PMA-MW-2S-0815		1225			Z	2				
PMA-MW-2S-0815-EB		1235			Z	2				
PMA-MW-2M-0815		1155			Z	2				
PMA-MW-2M-0815-AD		1155			Z	2				
PMA-MW-3S-0815		1320			Z	2				
PMA-MW-3M-0815		1300			Z	2				
PMA-MW-4S-0815		1440			Z	2				
PMA-MW-4D-0815		1445			Z	2				
Preservation Used: 1= Ice, 2=HCL, 3=H2SO4, 4=HNO3, 5=NaOH, 6= Other: V Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		Sample Disposal (A fee may be a:		<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		680-115473 Chain of Custody		(th)		
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammab <input type="checkbox"/> Skin <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Special Instructions/QC Requirements & Comments:								
Custody Seals Intact: <input type="checkbox"/> No		Custody Seal No.: 504804/504805/504806		Cooler Temp. (°C): Obs'd: _____ Cor'd: _____		Therm ID No.: _____		1.8 / 1.4 / 2.8 2.2 / 1.8 / 3.2 680-115473		
Relinquished by: <i>Joe Brione</i>		Company: <i>Golder</i>		Date/Time: 8/10/15		Received by:		Company:		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		
Relinquished by:		Company:		Date/Time:		Received in Laboratory by: <i>m. mckel...</i>		Company: <i>TA</i>		
Date/Time:		Date/Time:		Date/Time:		Date/Time: 8/11/15		09:39		



5102 LaRoche Avenue

Savannah, GA 31404  
phone 912.354.7858 fax

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**TestAmerica Laboratories, Inc.**

Regulatory Program: ☐ DV ☐ NPDES ☒ RCR ☐ Other:[illegible]

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

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## Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-115473-1

SDG Number: KPM066

Login Number: 115473

List Source: TestAmerica Savannah

List Number: 1

Creator: Kicklighter, Marilyn D

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ ( $1/4"$ ).	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

AWP  
9/4/15

## Certification Summary

Client: Solutia Inc.

Project/Site: 3Q15 PCB GW Sampling - 1403345

TestAmerica Job ID: 680-115473-1

SDG: KPM066

### Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	200022	11-30-15

AWD 9/4/15  
TestAmerica Savannah



At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
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Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

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