



PPG Industries Fiber Glass Products, Inc. 940 Washburn Switch Road Shelby, NC 28150

Richard Young
EHS Supervisor I
Environmental

704-434-2261 ext. 359
Fax 704-434-0792
Richardyoung@ppg.com

August 22, 2014

Mr. Matt Gamble, Hydrogeologist
Solid Waste Division, NC DENR
1646 Mail Service Center
Raleigh, NC 27699-1646



Sent Via Certified Mail – Return Receipt Requested

Subject: Semi-Annual Groundwater Monitoring Results

Dear Mr. Gamble:

Enclosed are the results from the July 2014 sampling and analysis of the seven groundwater monitoring wells at PPG Industries Fiber Glass Products, Inc. located in Shelby.

If there are any questions, please contact me at (704) 434-2261 extension 359.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Richard Young', written over a horizontal line.

Richard Young

cc: File

**GROUNDWATER MONITORING REPORT
PPG INDUSTRIES, INC.
JULY 2014 MONITORING EVENT
940 WASHBURN SWITCH ROAD
SHELBY, CLEVELAND CO., NC
S&ME PROJECT # 1354-11-137**

Prepared for:



PPG Industries

PPG Industries, Inc.
940 Washburn Switch Road
Shelby, North Carolina 28150

Prepared by:



S&ME

S&ME, Inc.
9751 Southern Pine Boulevard
Charlotte, North Carolina 28273

August 18, 2014



August 18, 2014

PPG Industries, Inc.
940 Washburn Switch Road
Shelby, North Carolina 28150

Attention: Mr. Richard Young

Reference: **Groundwater Monitoring Report
July 2014 Semi-Annual Monitoring Event**
PPG Industries, Inc.
940 Washburn Switch Road
Shelby, Cleveland County, North Carolina
S&ME Project # 1354-11-137

Dear Mr. Young:

S&ME, Inc. (S&ME) submits this Groundwater Monitoring Report for the referenced facility as part of a continuing groundwater monitoring program in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) requirements. The sampling and reporting services were performed in general accordance with S&ME's Proposal No. 1354-24380-11 dated July 11, 2011. The July 2014 sampling results indicated concentrations of iron (MW-5 and MW-6) and manganese (MW-3, 4, 5, 6, and 7) at levels exceeding the 15A NCAC 2L .0202 groundwater quality standards (2L Standards). No other parameters were detected above the 2L Standards. Based on these findings, we recommend continued semi-annual groundwater monitoring.

We appreciate the opportunity to provide our professional environmental services to PPG Industries, Inc. on this project. Should you have any questions concerning this report, please contact us at your earliest convenience.

Sincerely,

S&ME, INC.

Coleman S. Marchin
Staff Professional

CSM:WAQ\csm

Al Quarles, L.G.
Senior Hydrogeologist

S:\1354\...\PPG Shelby MonRpt July 2014.docx

**GROUNDWATER MONITORING REPORT
JULY 2014 MONITORING EVENT
PPG INDUSTRIES, INC.
940 WASHBURN SWITCH ROAD
SHELBY, CLEVELAND CO., NC
S&ME PROJECT # 1354-11-137**

1 INTRODUCTION

S&ME includes herein, the results of the July 2014 semi-annual groundwater monitoring event for the referenced PPG Industries, Inc. fiberglass manufacturing plant located in Shelby, North Carolina (**Figures 1 and 2**). The NCDENR, Division of Waste Management (DWM) requires that a semi-annual monitoring program be implemented for this type of facility to monitor for potential environmental impacts. **Figure 3** is provided as a site plan of the subject facility and illustrates the locations of the seven groundwater monitor wells.

The report includes: 1) a description of the sample collection methodology; 2) groundwater level data and a groundwater surface map; and 3) results and conclusions of the groundwater quality analyses. Historical water quality data are also presented in the attached tables.

2 SAMPLING METHODOLOGY

On July 22 and 23, 2014, S&ME measured the depth to groundwater in the monitor wells from the top of monitor well casings (**Table 1**). Prior to water level measurements, monitor well seals were removed to allow groundwater levels to equilibrate with atmospheric pressure. Water level measurements were used to prepare a groundwater surface map from which the direction of groundwater flow could be inferred, as illustrated in **Figure 3**.

Low-flow sampling methods generally consistent with NCDENR guidance and EPA standard operating procedures were performed using a peristaltic pump with new tubing for each well. The base of the tubing was placed approximately 1 foot from the base of each well and the pump was operated at a low flow rate in an attempt to limit drawdown of the water column. During purging of each well, S&ME recorded pH, specific conductance, temperature, dissolved oxygen, oxygen-reduction potential, and turbidity. Field measurements are included on the Field Sampling Records in **Appendix I**.

After field measurements were generally stabilized, the groundwater samples were collected directly from the tubing into laboratory-provided sample containers in a manner to limit aeration of the sample. No field or laboratory filtration of the samples was performed. The samples were analyzed in accordance with EPA Methods and Standard Methods for the parameters listed in **Table 2**. Standard control measures, including

sample collection and handling, were implemented before, during and after sample collection. Sample containers were delivered to a NCDENR-certified laboratory (Pace Laboratories) in accordance with chain-of-custody protocol.

3 RESULTS

3.1 Water Levels and Groundwater Flow

On July 22 and 23, 2014, S&ME measured the depth to water from the monitor well's top of casing (TOC). Based on the TOC elevations and depths to water, groundwater elevations were calculated. The groundwater surface elevations are summarized in **Table 1** and are presented in **Figure 3**. The inferred direction of groundwater flow is generally to the west.

Compared to January 2014 water levels, the July 2014 water levels decreased in six of the wells ranging from 0.41 feet (MW-1) to 4.42 feet (MW-4). The water level in MW-3 increased by 0.36 feet.

3.2 Groundwater Quality

The results of the January 2014 groundwater sampling event are summarized in **Table 2**. A copy of the laboratory report is included in **Appendix II**. The historical results since January 2010 are summarized in **Table 3**.

The January 2014 sampling results indicated concentrations of iron (MW-5 and MW-6) and manganese (MW-3, 4, 5, 6, and 7) at levels exceeding the 15A NCAC 2L .0202 groundwater quality standards (2L Standards). Concentrations of manganese and iron are generally similar to those detected during prior sampling events, and no increasing or decreasing trend in concentrations is apparent. Barium, iron, and manganese were also detected in other monitor well samples at levels less than the 2L Standards: iron (MW-1, 2, and 7), barium (all seven monitor wells), and manganese (MW-1 and MW-2). Cadmium, copper, and lead were not detected above laboratory reporting limits in any of the monitor well samples.

Concentrations of chloride, nitrate, sulfate, and total dissolved solids (TDS) were either not detected above the laboratory reporting limits or not detected above the 2L Standards. There are no standards for biological oxygen demand (BOD), chemical oxygen demand (COD), or total organic carbon (TOC). The COD concentration of 103 mg/L in monitor well MW-5 is likely an anomaly, based on historical results.

3.3 Quality Control Sample

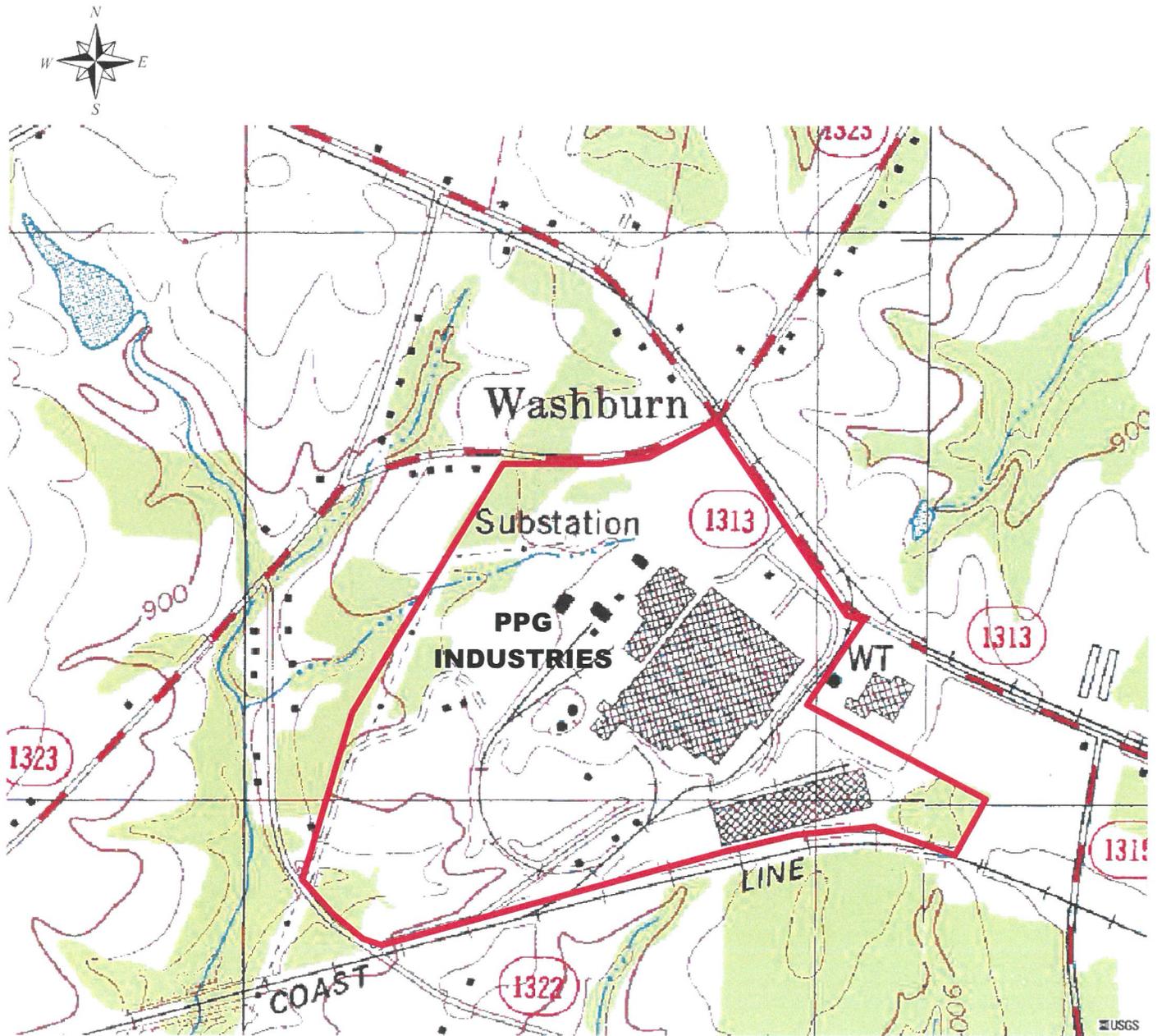
S&ME also collected an equipment blank (EQ-1) by pumping deionized (DI) water from 1 liter glass containers supplied by the laboratory through new inlet and outlet tubing attached to new peristaltic pump tubing directly into the laboratory containers (after

passing water through the tubing). The blank was analyzed for the same parameters as the groundwater samples. No compounds were detected above the laboratory detection limits in the equipment blank.

3.4 Recommendations

Based on the results of the July 2014 monitoring event, S&ME recommends continued semi-annual groundwater monitoring.

FIGURES



Source: USGS Topographic Map obtained from <http://terraserver-usa.com>

——— Approximate Location of Subject Property

Scale: Not To Scale

Drawn by: CSM

Checked by: WAQ

Date: 08-05-2014

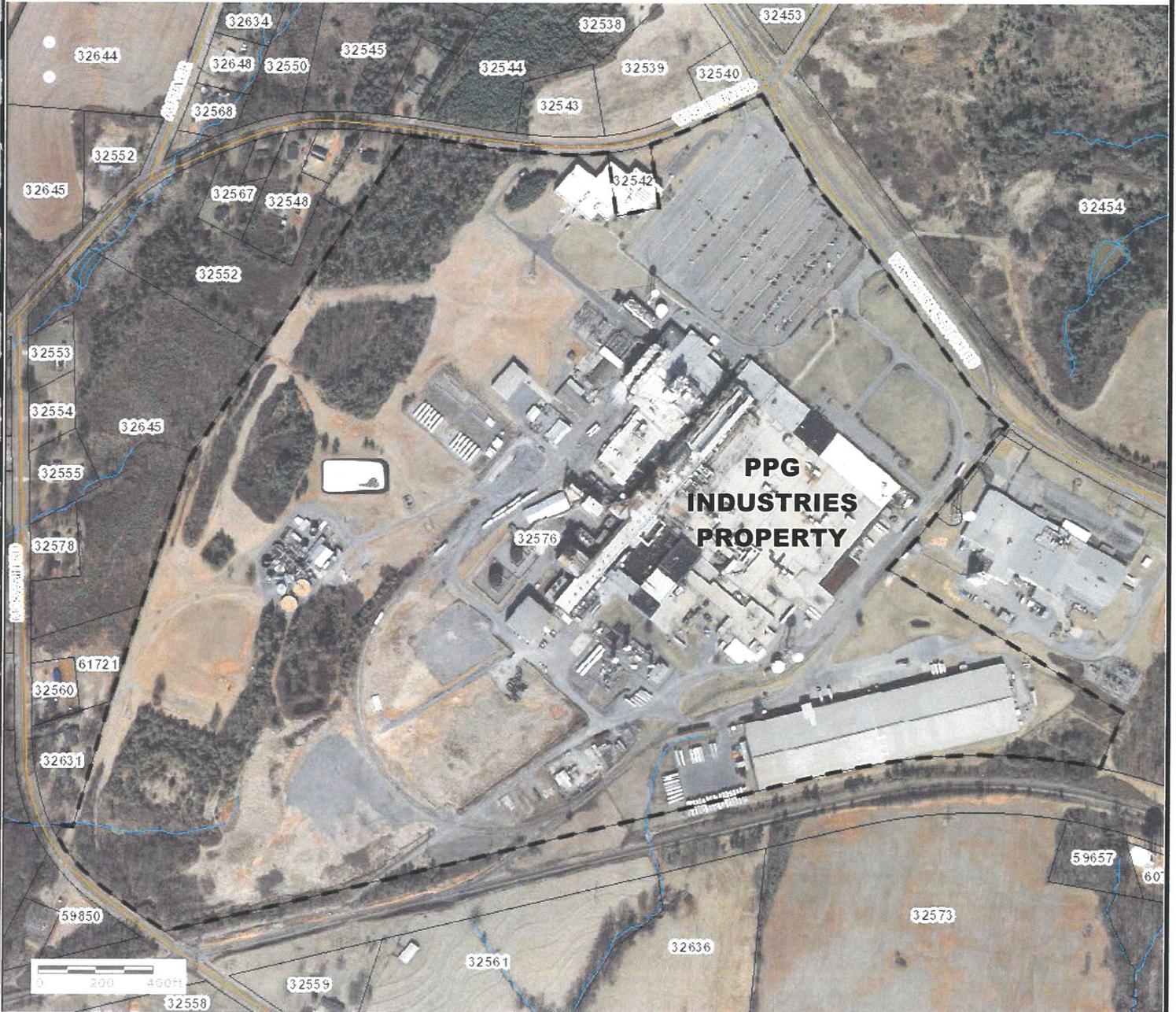


SITE LOCATION MAP
 PPG Industries
 940 Washburn Switch Road
 Shelby, North Carolina

S&ME Job No.: 1354-11-137

Figure

1



Property Boundary

32576 Cleveland County Parcel ID #'s

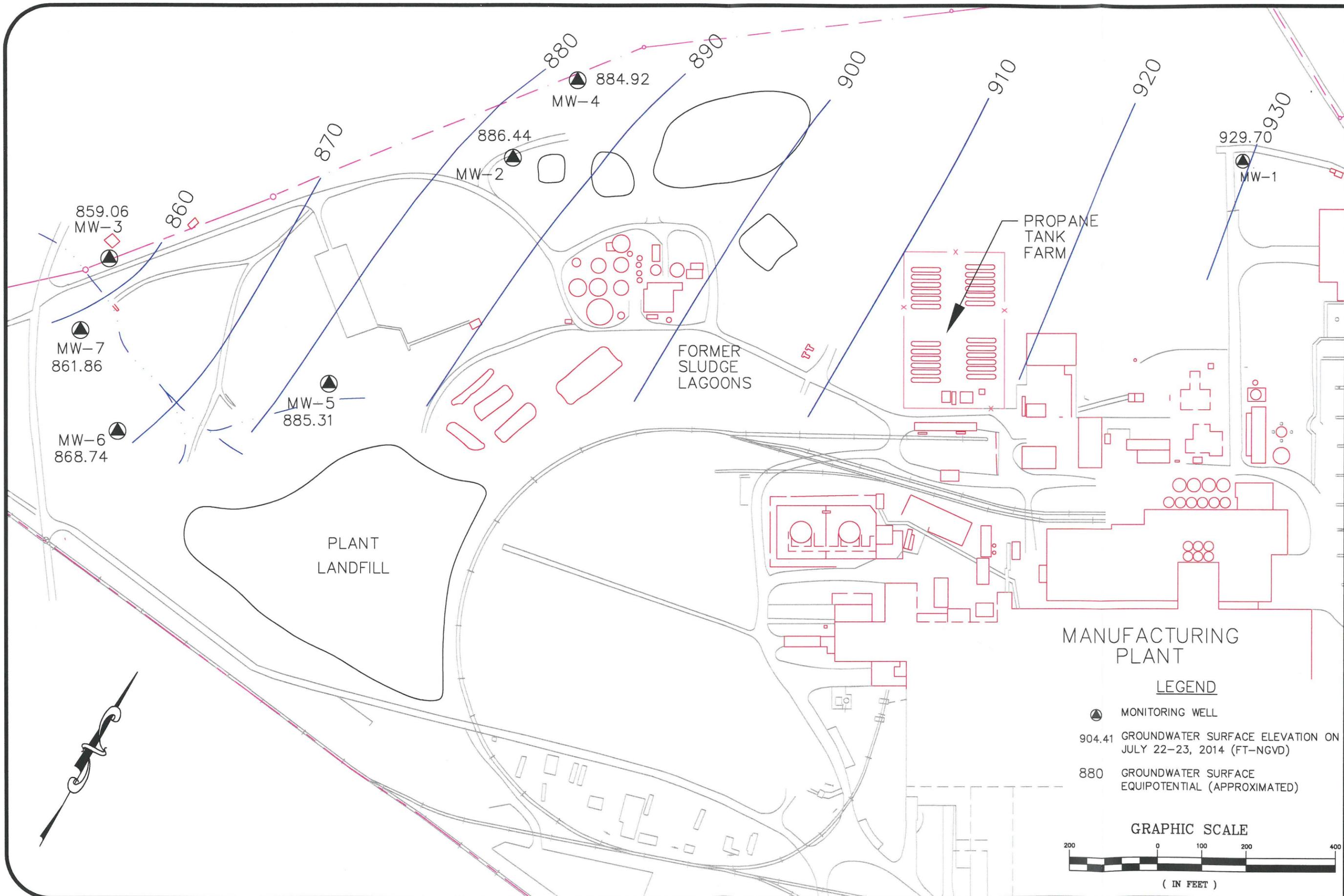
Source: 2010 Aerial obtained from Cleveland County GIS Website

Scale: As Shown
Drawn by: CSM
Checked by: WAQ
Date: 08-05-14



SITE AERIAL MAP PPG Industries 940 Washburn Switch Road Shelby, North Carolina
S&ME Job No.: 1354-11-137

Figure
2



DATE: 08-05-2014
 DRAWN BY: CSM
 CHECKED BY:
 SCALE: AS SHOWN
 PROJECT NO. 1354-11-137



GROUNDWATER CONTOUR MAP
 JULY 2014
 PPG INDUSTRIES INC.
 SHELBY, NORTH CAROLINA

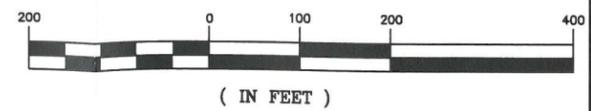
FIGURE NO.
 3

MANUFACTURING PLANT

LEGEND

- MONITORING WELL
- 904.41 GROUNDWATER SURFACE ELEVATION ON JULY 22-23, 2014 (FT-NGVD)
- 880 GROUNDWATER SURFACE EQUIPOTENTIAL (APPROXIMATED)

GRAPHIC SCALE



TABLES

Table 1
Water Levels and Well Purging Data (July 22-23, 2014)
PPG Industries, Inc.
Shelby, North Carolina
S&ME Project # 1354-11-137

Parameter	Unit	Monitor Well						
		MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Top-of-Casing Elevation	feet	953.03	904.41	867.01	901.39	892.41	886.65	870.34
Depth to Water from Top-of-Casing	feet	23.33	17.97	7.95	16.47	7.10	17.91	8.48
Water Level Elevation	feet	929.70	886.44	859.06	884.92	885.31	868.74	861.86
Elevation Change*	feet	(0.41)	(4.63)	0.36	(4.42)	(1.99)	(3.11)	(0.65)
Well Depth from Top-of-Casing	feet	29	30	20	27	21	21	21
Sample Appearance		Clear	Clear	Clear	Clear	Clear	Clear	Clear
Flow	milliliters per minute	75	100	75	100	50	50	50
pH	standard	4.54	4.82	4.91	5.12	4.34	4.92	4.62
Conductivity	microSiemens per centimeter	40	40	83	93	79	32	37
Turbidity	nephelometric turbidity units	1.79	3.80	1.31	1.59	2.11	8.20	2.11
Dissolved Oxygen	milligrams per liter	5.49	5.68	1.06	0.46	2.81	4.89	2.01
Temperature	Celcius	19.53	20.03	20.57	18.68	23.20	22.16	20.74
ORP	millivolts	184.9	155.8	160.1	146.6	176.4	143.2	184.2

Notes

* Difference in feet from the previous monitoring event.

TABLE 2
WATER QUALITY DATA (July 22-23, 2014)
PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	UNITS	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	EQ-1	15A NCAC 2L STND. Current
Barium	mg/L	0.0317	0.0224	0.116	0.116	0.176	0.0257	0.0527	<0.0050	0.7
Cadmium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Chromium	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.01
Copper	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	1
Iron	mg/L	0.147	0.0517	<0.050	<0.050	1.52 *	2.930 *	0.0533	<0.0500	0.3
Lead	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.015
Manganese	mg/L	0.0122	0.0111	0.636 *	0.0556 *	0.257 *	0.282 *	0.0708 *	<0.0050	0.05
BOD	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA
Chloride	mg/L	2.5	6.6	2.5	14.7	15.8	5.8	4.6	<1.0	250
COD	mg/L	<25	<25	<25.0	<25	103	<25	<25.0	<25.0	NA
Nitrate	mg/L	2.0	0.5	0.84	0.82	2.6	2.4	0.6	<0.020	10
Sulfate	mg/L	<2.0	<2.0	7.5	<2.0	<2.0	<2.0	<2.0	<2.0	250
TDS	mg/L	<25.0	<25.0	432	75.0	36.0	<25.0	<25.0	<25.0	NA
TOC	mg/L	4.5	3.0	7.0	6.1	2.7	2.2	2.2	<1.0	NA

NOTES: NA = No numerical standard
mg/L = Milligrams per liter
2L Standard = 15A NCAC 2L .0202 Groundwater Quality Standards , Class GA groundwaters.
* = Values exceeding current 15A NCAC 2L Standards (Amended April 1, 2013)

TABLE 3
WATER QUALITY DATA (MW-1)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/20/10	07/16/10	01/28/11	07/13/11	01/25/12	07/25/12	01/24/13	7/9-10/13	01/22-23/14	7/22-23/14
Barium	0.7	0.0295	0.0309	0.0278	0.0296	0.0312	dry	dry	0.0307	0.0323	0.0317
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	dry	dry	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	<0.0050	dry	dry	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	dry	dry	<0.0050	<0.0050	<0.0050
Iron	0.30	---	<0.05	0.69	<0.0500	0.604	dry	dry	0.128	0.0727	0.147
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	dry	dry	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.007	0.0084	0.0182	0.0065	0.0165	dry	dry	0.0094	0.0096	0.0122
BOD	NA	---	<2	NS	<2.0	<2.0	dry	dry	<2.0	<2.0	<2.0
Chloride	250	---	<5	NS	<5.0	5.3	dry	dry	5.0	4.9	2.5
COD	NA	---	<25	NS	<25.0	<25.0	dry	dry	<25.0	<25.0	<25.0
Nitrate	10	2.3	2.1	NS	2.1	2.2	dry	dry	2.2	2.0	2.0
Sulfate	250	---	<5	NS	<5.0	<5.0	dry	dry	<2.0	<2.0	<2.0
TDS	500	52	<25	NS	<25.0	<25.0	dry	dry	<25.0	<25.0	P
TOC	NA	---	<1	NS	1.2	1.1	dry	dry	1.2	1.8	4.5

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-2)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/19/10	07/16/10	01/27/11	07/12/11	01/25/12	07/25/12	01/24/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.0276	0.0241	0.0257	0.0263	0.0291	0.0258	0.0254	0.0255	0.0274	0.0224
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	---	<0.05	<0.05	0.13	<0.05	0.601	<0.0050	0.0525	<0.050	0.0517
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.0099	0.0079	0.0093	0.0142	0.0106	0.0165	0.0125	0.0106	0.0091	0.0111
BOD	NA	---	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	7.6	8	6.8	7.4	8.2	5	3.3	7.5	7.7	6.6
COD	NA	---	<25	<25	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Nitrate	10	0.53	0.53	0.45	0.47	0.37	0.29	0.065	0.61	0.54	0.5
Sulfate	250	---	<5	<5	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	500	30	<25	<25	<25.0	<25.0	<25.0	36	27.0	<25.0	<25.0
TOC	NA	2.5	<1	1.2	2.4	2.6	2	3.3	2.1	2.3	3.0

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-3)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/20/10	07/16/10	01/27/11	07/12/11	01/25/12	07/25/12	01/23/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.105	0.127	0.115	0.124	0.109	0.108	0.105	0.124	0.117	0.116
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	0.845	0.0969	0.252	0.133	0.132	0.163	1.08	0.0797	<0.050	<0.050
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	2	1.96	1.96	0.83	2.14	2.9	4.1	1.8	1.5	0.636
BOD	NA	---	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	---	<5	<5	<5.0	<5.0	2.5	2.7	3.0	2.5	2.5
COD	NA	---	<25	<25	<25.0	53	<25.0	<25	<25	28.0	<25.0
Nitrate	10	0.48	0.71	0.97	0.93	0.79	0.8	0.44	1.0	0.86	0.84
Sulfate	250	17.3	19.9	19.9	13.7	21.1	22.5	18.6	15.4	16.5	7.5
TDS	500	144	124	106	113	116	145	177	137	207	432
TOC	NA	1.9	5.3	4.7	5.2	38.8	<1.0	5	5.6	5.9	7.0

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-4)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/19/10	07/15/10	01/27/11	07/12/11	01/25/12	07/25/12	01/24/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.129	0.133	0.12	0.123	0.126	0.118	0.118	0.112	0.117	0.116
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	---	<0.05	<0.05	<0.0500	<0.0500	<0.500	<0.0500	<0.0500	<0.050	<0.050
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.0681	0.0694	0.0745	0.0691	0.093	0.071	0.0739	0.0569	0.056	0.0556
BOD	NA	2	<2	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	19.9	20.8	18.4	17.5	18.4	16.2	13.4	15.5	14.4	14.7
COD	NA	---	32	<25	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Nitrate	10	0.81	0.76	0.86	0.83	0.87	0.86	1.0	0.95	0.87	0.82
Sulfate	250	---	<5	<5	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	500	78	76	72	77	51	76	78	74	50	75
TOC	NA	9.6	38.6	6.2	6.5	5.5	4.4	4.5	5.6	5.9	6.1

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-5)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/20/10	07/16/10	01/28/11	07/13/11	01/26/12	07/25/12	01/23/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.152	0.17	0.0944	0.161	0.136	0.153	0.176	0.155	0.189	0.176
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	0.0064	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	1.52	1.23	4.75	2.07	1.98	1.39	1.11	5.94	1.41	1.52
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.306	0.145	0.643	0.0853	0.299	0.0546	0.172	0.217	0.656	0.257
BOD	NA	---	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	16.6	11.4	15.4	10.8	19.9	11	15.6	22.5	30.6	15.8
COD	NA	---	<25	<25	<25.0	<25.0	<25.0	<25	<25	32.0	103
Nitrate	10	1.2	3.7	0.99	3.5	0.79	3.2	1.3	0.27	0.25	2.6
Sulfate	250	---	<5	<5	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	500	76	32	52	34	37	39	55	57	65.0	36.0
TOC	NA	2.6	1.3	2	1.8	3	1.4	2.5	3.3	3.2	2.7

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-6)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/20/10	07/15/10	01/28/11	07/13/11	01/26/12	07/25/12	01/23/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.0202	0.0256	0.033	0.0298	0.0865	0.036	0.0287	0.0146	0.0178	0.0257
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	0.019	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	0.0109	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	---	0.449	0.0536	<0.0500	5.7	5.16	<0.050	0.237	0.275	2.930
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.0054	0.511	0.0485	0.0528	0.134	1.54	0.0718	0.0102	0.0061	0.282
BOD	NA	---	9.4	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	5.5	8	7.7	8.1	7.8	8.5	6.7	4.5	4.4	5.8
COD	NA	---	<25	<25	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Nitrate	10	0.14	0.11	0.26	<0.20	<0.20	0.046	0.23	0.029	0.15	2.4
Sulfate	250	---	<5	<5	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	500	56	<25	<25	<25.0	<25.0	40	41	<25.0	<25.0	<25.0
TOC	NA	7.5	<1	<1	1.4	1.2	1.3	1.5	1.4	1.8	2.2

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

TABLE 3
WATER QUALITY DATA (MW-7)

PPG INDUSTRIES, INC.
SHELBY, NORTH CAROLINA
S&ME PROJECT 1354-11-137

PARAMETER	2L STND.	SAMPLE COLLECTION DATE									
		01/20/10	07/15/10	01/27/11	07/12/11	01/26/12	07/25/12	01/23/13	07/9-10/13	01/22-23/14	7/22-23/2014
Barium	0.7	0.0473	0.0493	0.0462	0.0507	0.0523	0.548	0.0551	0.0545	0.053	0.0527
Cadmium	0.002	---	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.01	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Copper	1	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Iron	0.30	---	<0.05	<0.05	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0533
Lead	0.015	---	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	0.05	0.0651	0.047	0.0586	0.0542	0.067	0.0618	0.0684	0.0707	0.0717	0.0708
BOD	NA	---	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloride	250	---	<5	<5	<5.0	<5.0	4.2	4.9	5.2	4.5	4.6
COD	NA	---	<25	<25	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0
Nitrate	10	1	1.3	0.79	0.89	0.93	1	0.83	0.82	0.74	0.60
Sulfate	250	---	<5	<5	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0
TDS	500	66	<25	<25	<25.0	<25.0	29	30	<25.0	<25.0	<25.0
TOC	NA	1.3	<1	1	1.5	<1.0	1.1	1.5	11.5	2.1	2.2

BOD = Biological Oxygen Demand
 COD = Chemical Oxygen Demand
 TDS = Total Dissolved Solids
 TOC = Total Organic Carbon
 TOX = Total Organic Halides

All concentrations in milligrams per liter (mg/L)
 --- = Below quantitation limits unless otherwise noted
 Blank = Not Sampled
 Bold = Values exceeding 15A NCAC 2L Standards
 NA = No Standard Established

APPENDIX I
FIELD SAMPLING FORMS

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-1
 DATE: 7/23/14
 PERSONNEL: C. MARCHIN

WELL CONDITION: CLEAR 85°F
 WEATHER: GOOD

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: ft
 Total Well Depth from TOC: 29.0 ft
 Initial Depth to Water (DTW) from TOC: 23.33 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: ~28.0 ft
 Initial DTW - 0.33 ft from TOC: 23.0 ft

Water Column: 5.66 ft
 Well Diameter: 4' in
 Borehole Diameter: in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	0820	0830	0840	0850	0900	0910	0915
DTW (ft)	24.49	24.53	24.56	24.58	24.60	24.61	24.61
Vol Purged (Cumm-ml)	~1000	2500	3500	4500	5500	6500	7000
Flow Rate (ml/min)	~75	~75	~75	~75	~75	~75	~75
pH (Stand Units)	5.00	4.82	4.73	4.65	4.55	4.54	4.54
DO (mg/L)	8.64	5.80	5.67	5.69	5.78	5.59	5.49
Conductivity (mS/sec)	0.044	0.042	0.042	0.040	0.040	0.040	0.040
Turbidity (NTUs)	28.8	13.8	6.93	6.71	2.69	2.32	1.79
Temperature (°C)	19.23	19.22	19.22	19.23	19.51	19.54	19.53
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
Color (Subjective)	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
ORP	127.2	151.0	157.4	169.4	179.4	184.4	184.9

Parameters	#	Type	Size	Preservative
✓ BOD	1	Plastic	1 L	None
✓ COD	1	Plastic	125 ml	H2SO4
✓ TOC	2	Glass	40 ml	HCL orange
✓ TDS	1	Plastic	500 ml	None
✓ Metals	1	Plastic	250 ml	HNO3 red
✓ Chloride	1	Plastic	250 ml	None
✓ SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 0915
 Laboratory: Pace Analytical
 Shipping Date: 7/23/14
 Delivery Date: 7/23/14

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-2
 DATE: 7/23/14
 PERSONNEL: C. MacArthur

WELL CONDITION: GOOD

WEATHER: OVERCAST 80's

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: — ft
 Total Well Depth from TOC: 29.82 ft
 Initial Depth to Water (DTW) from TOC: 17.97 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: 29.0 ft
 Initial DTW - 0.33 ft from TOC: 17.64 ft

Water Column: 11.85 ft
 Well Diameter: 4 in
 Borehole Diameter: — in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	1345	1400	1415	1420	1440			
DTW (ft)	18.21	18.23	18.24	18.23	18.21			
Vol Purged (Cumm-ml)	1000	2000	3000	4000	5000			
Flow Rate (ml/min)	~100	~100	~100	~100	~100			
pH (Stand Units)	4.79	4.82	4.83	4.82	4.82			
DO (mg/L)	6.55	5.88	5.71	5.70	5.68			
Conductivity (mS/sec)	0.045	0.042	0.041	0.040	0.040			
Turbidity (NTUs)	20.4	12.2	8.3	6.2	3.8			
Temperature (°C)	18.65	19.25	19.94	19.99	20.03			
Odor (Subjective)	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR			
Color (Subjective)	NONE	NONE	NONE	NONE	NONE			
ORP	177.1	172.1	157.7	154.6	155.8			

Parameters	#	Type	Size	Preservative
BOD	1	Plastic	1 L	None
COD	1	Plastic	125 ml	H2SO4
TOC	2	Glass	40 ml	HCL orange
TDS	1	Plastic	500 ml	None
Metals	1	Plastic	250 ml	HNO3 red
Chloride	1	Plastic	250 ml	None
SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 14:40
 Laboratory: Pace Analytical
 Shipping Date: 7/23/14
 Delivery Date: 7/23/14

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-3
 DATE: 7/22/14
 PERSONNEL: C. MARCHIN

WELL CONDITION: GOOD
 WEATHER: OVERCAST 70's

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: - ft
 Total Well Depth from TOC: 20.0 ft
 Initial Depth to Water (DTW) from TOC: 7.95 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: ~11.5 ft
 Initial DTW - 0.33 ft from TOC: 7.62 ft

Water Column: 12.05 ft
 Well Diameter: 4" in
 Borehole Diameter: - in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	1015	1030	1045	1055	1105	1115		
DTW (ft)	9.15	9.22	9.27	9.26	9.25	9.25		
Vol Purged (Cumm-ml)	~1000	~2000	~2500	~3000	~3500	~4000		
Flow Rate (ml/min)	~100	~75	~75	~75	~75	~75		
pH (Stand Units)	5.05	5.00	4.93	4.93	4.92	4.91		
DO (mg/L)	1.92	1.59	1.20	1.05	1.03	1.06		
Conductivity (mS/sec)	0.139	0.092	0.085	0.083	0.083	0.083		
Turbidity (NTUs)	0.73	4.83	2.22	2.31	1.44	1.31		
Temperature (°C)	18.91	19.52	19.63	20.22	20.34	20.57		
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE	NONE		
Color (Subjective)	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR		
ORP	140.6	152.0	158.7	158.2	158.2	160.1		

Parameters	#	Type	Size	Preservative
✓ BOD ✓	1	Plastic	1 L	None
✓ COD ✓	1	Plastic	125 ml	H2SO4
✓ TOC ✓	2	Glass	40 ml	HCL orange
✓ TDS ✓	1	Plastic	500 ml	None
✓ Metals ✓	1	Plastic	250 ml	HNO3 red
✓ Chloride ✓	1	Plastic	250 ml	None
SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 11:15
 Laboratory: Pace Analytical
 Shipping Date: 7/23/14
 Delivery Date: 7/23/14

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-4
 DATE: 7/22/14
 PERSONNEL: C. MARECHAL

WELL CONDITION: GOOD
 WEATHER: OVERCAST 80'S

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: ft
 Total Well Depth from TOC: 27.73 ft
 Initial Depth to Water (DTW) from TOC: 10.47 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: ~26.0 ft
 Initial DTW - 0.33 ft from TOC: 16.14 ft

Water Column: 11.26 ft
 Well Diameter: 2 in
 Borehole Diameter: in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	1500	1515	1530	1540	1550	1600		
DTW (ft)	16.68	16.69	16.67	16.68	16.68	16.68		
Vol Purged (Cumm-ml)	1000	2000	3000	4000	4500	5000		
Flow Rate (ml/min)	100	100	100	100	100	100		
pH (Stand Units)	5.10	5.04	5.11	5.12	5.12	5.12		
DO (mg/L)	0.88	0.73	0.53	0.48	0.47	0.46		
Conductivity (mS/sec)	0.094	0.094	0.094	0.093	0.093	0.093		
Turbidity (NTUs)	8.93	4.22	1.84	1.31	1.47	1.59		
Temperature (°C)	18.33	18.48	18.26	18.55	18.66	18.68		
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE	NONE		
Color (Subjective)	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR		
ORP	154.9	154.9	145.8	146.6	146.6	146.6		

Parameters	#	Type	Size	Preservative
BOD	1	Plastic	1 L	None
COD	1	Plastic	125 ml	H2SO4
TOC	2	Glass	40 ml	HCL orange
TDS	1	Plastic	500 ml	None
Metals	1	Plastic	250 ml	HNO3 red
Chloride	1	Plastic	250 ml	None
SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 1600
 Laboratory: Pace Analytical
 Shipping Date: 7/22/14
 Delivery Date: 7/23/14

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-5
 DATE: 7/23/14
 PERSONNEL: C. MARCHIN

WELL CONDITION: GOOD
 WEATHER: CLEAR 90°

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: ft
 Total Well Depth from TOC: 21.0 ft
 Initial Depth to Water (DTW) from TOC: 7.10 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: -20 ft
 Initial DTW - 0.33 ft from TOC: 6.77 ft

Water Column: 13.9 ft
 Well Diameter: 2 in
 Borehole Diameter: in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	1145	1200	1210	1215	1220	1230		
DTW (ft)	7.19	7.17	7.17	7.17	7.16	7.17		
Vol Purged (Cumm-ml)	~1000	~1500	~2000	~2500	3000	3500		
Flow Rate (ml/min)	~50	~50	~50	~50	~50	~50		
pH (Stand Units)	4.42	4.36	4.35	4.35	4.35	4.34		
DO (mg/L)	12.84	3.16	2.79	2.77	2.80	2.81		
Conductivity (mS/sec)	0.081	0.080	0.079	0.079	0.079	0.079		
Turbidity (NTUs)	11.3	9.23	8.61	4.63	3.21	2.11		
Temperature (°C)	22.82	22.87	22.92	22.92	23.17	23.20		
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE	NONE		
Color (Subjective)	RED SILT	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR		
ORP	187.1	181.6	177.8	177.7	176.3	176.4		

Parameters	#	Type	Size	Preservative
BOD	1	Plastic	1 L	None
COD	1	Plastic	125 ml	H2SO4
TOC	2	Glass	40 ml	HCL orange
TDS	1	Plastic	500 ml	None
Metals	1	Plastic	250 ml	HNO3 red
Chloride	1	Plastic	250 ml	None
S04, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 12:30
 Laboratory: Pace Analytical
 Shipping Date: 7/23/14
 Delivery Date: 7/23/14

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-6

WELL CONDITION: GOOD

DATE: 7/23/14

PERSONNEL: C MARCHIA

WEATHER: CLEAR 85°F

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: ft
 Total Well Depth from TOC: 21.0 ft
 Initial Depth to Water (DTW) from TOC: 17.91 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: -20.0 ft
 Initial DTW - 0.33 ft from TOC: 17.58 ft

Water Column: 3.09 ft
 Well Diameter: 2 in
 Borehole Diameter: in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	1000	1020	1035	1045	1050			
DTW (ft)	18.21	18.15	18.15	18.17	18.17			
Vol Purged (Cumm-ml)	~1000	~1500	~2000	~2200	~2400			
Flow Rate (ml/min)	~100	~50	~50	~50	~50			
pH (Stand Units)	5.05	4.97	4.89	4.91	4.42			
DO (mg/L)	10.21	5.31	5.33	5.24	4.89			
Conductivity (mS/sec)	0.033	0.032	0.031	0.032	0.032			
Turbidity (NTUs)	26.6	21.1	17.1	12.1	8.2			
Temperature (°C)	19.74	22.14	21.92	22.02	22.16			
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE			
Color (Subjective)	SOME RED SILT	CLEAR	CLEAR	CLEAR	CLEAR			
ORP	155.9	148.0	147.3	143.4	143.2			

Parameters	#	Type	Size	Preservative
BOD	1	Plastic	1 L	None
COD	1	Plastic	125 ml	H2SO4
TOC	2	Glass	40 ml	HCL orange
TDS	1	Plastic	500 ml	None
Metals	1	Plastic	250 ml	HNO3 red
Chloride	1	Plastic	250 ml	None
SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 1100
 Laboratory: Pace Analytical
 Shipping Date: _____
 Delivery Date: _____

PPG INDUSTRIES, INC.
 940 WASHBURN SWITCH RD
 SHELBY, NORTH CAROLINA
 MONITOR WELL SAMPLING LOG



S&ME PROJECT #: 1354-11-137

WELL ID: MW-7
 DATE: 7/22/14
 PERSONNEL: C. MARCOTTA

WELL CONDITION: GOOD
 WEATHER: OVERCAST 80'S

REASON FOR SAMPLING: 2014 July Sampling Event

TOC - Ground Level: ✓ ft
 Total Well Depth from TOC: 21.0 ft
 Initial Depth to Water (DTW) from TOC: 8.48 ft
 Sand Pack or Open Hole: SAND PACK
 Depth to intake from TOC: 1.20 ft
 Initial DTW - 0.33 ft from TOC: 8.16 ft

Water Column: 12.52 ft
 Well Diameter: 2 in
 Borehole Diameter: — in

Purge Equipment:
Pegasus Peristaltic Pump + Tubing
YSI-556, Hanna Turbidity Meter

Record of Well Evacuation

Time	12 00	12 15	12 30	12 45	12 55	1 305		
DTW (ft)	8.53	8.55	8.54	8.53	8.53	8.54		
Vol Purged (Cumm-ml)	~1000	~1500	~200	~2500	~3000	~3500		
Flow Rate (ml/min)	~100	~50	~50	~50	~50	~50		
pH (Stand Units)	5.12	4.84	4.72	4.67	4.69	4.62		
DO (mg/L)	11.08	2.30	2.06	2.04	1.99	2.01		
Conductivity (mS/sec)	0.047	0.039	0.038	0.037	0.037	0.037		
Turbidity (NTUs)	15.2	6.58	5.35	4.24	3.85	2.11		
Temperature (°C)	19.40	20.15	20.56	20.57	20.72	20.74		
Odor (Subjective)	NONE	NONE	NONE	NONE	NONE	NONE		
Color (Subjective)	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR		
ORP	158.6	176.5	179.4	181.4	182.9	184.2		

Parameters	#	Type	Size	Preservative
BOD	1	Plastic	1 L	None
COD	1	Plastic	125 ml	H2SO4
POC	2	Glass	40 ml	HCL orange
TDS	1	Plastic	500 ml	None
Metals	1	Plastic	250 ml	HNO3 red
Chloride	1	Plastic	250 ml	None
SO4, NO2, NO3	1	Plastic	250 ml	None

Sample Time: 13:10
 Laboratory: Pace Analytical
 Shipping Date: 7/23/14
 Delivery Date: 7/23/14

**APPENDIX II
LABORATORY REPORT**

August 01, 2014

Mr. Al Quarles
S&ME, Inc.
9751 Southern Pine Blvd.
Charlotte, NC 28273

RE: Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Dear Mr. Quarles:

Enclosed are the analytical results for sample(s) received by the laboratory on July 24, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Roger Smith, S&ME, Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Asheville Certification IDs

2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92210521001	MW-1	Water	07/23/14 09:15	07/24/14 09:30
92210521002	MW-2	Water	07/22/14 14:40	07/24/14 09:30
92210521003	MW-3	Water	07/22/14 11:15	07/24/14 09:30
92210521004	MW-4	Water	07/22/14 16:00	07/24/14 09:30
92210521005	MW-5	Water	07/23/14 12:30	07/24/14 09:30
92210521006	MW-6	Water	07/23/14 11:00	07/24/14 09:30
92210521007	MW-7	Water	07/22/14 13:10	07/24/14 09:30
92210521008	EQ-1	Water	07/23/14 12:00	07/24/14 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92210521001	MW-1	EPA 200.7	JMW	7	PASI-A
		SM 2540C	TEP	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
		SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
92210521002	MW-2	EPA 200.7	JMW	7	PASI-A
		SM 2540C	MLS	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
		SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
92210521003	MW-3	EPA 200.7	JMW	7	PASI-A
		SM 2540C	MLS	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
		SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
92210521004	MW-4	EPA 200.7	JMW	7	PASI-A
		SM 2540C	MLS	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
		SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
92210521005	MW-5	EPA 200.7	JMW	7	PASI-A
		SM 2540C	TEP	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92210521006	MW-6	SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
		EPA 200.7	JMW	7	PASI-A
		SM 2540C	TEP	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
92210521007	MW-7	SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
		EPA 200.7	JMW	7	PASI-A
		SM 2540C	MLS	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A
92210521008	EQ-1	SM 4500-CI-E	DMN	1	PASI-A
		SM 5220D	SMW	1	PASI-A
		SM 5310B	SAE	1	PASI-A
		EPA 200.7	JMW	7	PASI-A
		SM 2540C	TEP	1	PASI-A
		SM 5210B	MAB	1	PASI-A
		EPA 300.0	SAE	1	PASI-A
		EPA 353.2	DMN	2	PASI-A

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92210521001	MW-1					
EPA 200.7	Barium	31.7	ug/L	5.0	07/25/14 19:43	
EPA 200.7	Copper	1.3J	ug/L	5.0	07/25/14 19:43	B
EPA 200.7	Iron	147	ug/L	50.0	07/25/14 19:43	
EPA 200.7	Manganese	12.2	ug/L	5.0	07/25/14 19:43	
EPA 300.0	Sulfate	1.3J	mg/L	2.0	07/30/14 23:34	
EPA 353.2	Nitrogen, Nitrate	2.0	mg/L	0.020	07/24/14 22:47	
SM 4500-Cl-E	Chloride	2.5	mg/L	1.0	07/30/14 18:47	
SM 5310B	Total Organic Carbon	4.5	mg/L	1.0	07/30/14 22:11	
92210521002	MW-2					
EPA 200.7	Barium	22.4	ug/L	5.0	07/25/14 19:46	
EPA 200.7	Chromium	0.59J	ug/L	5.0	07/25/14 19:46	
EPA 200.7	Iron	51.7	ug/L	50.0	07/25/14 19:46	
EPA 200.7	Manganese	11.1	ug/L	5.0	07/25/14 19:46	
EPA 300.0	Sulfate	1.3J	mg/L	2.0	07/30/14 23:48	
EPA 353.2	Nitrogen, Nitrate	0.50	mg/L	0.020	07/24/14 22:44	H3
SM 4500-Cl-E	Chloride	6.6	mg/L	1.0	07/30/14 18:48	
SM 5310B	Total Organic Carbon	3.0	mg/L	1.0	07/30/14 22:24	
92210521003	MW-3					
EPA 200.7	Barium	116	ug/L	5.0	07/25/14 19:49	
EPA 200.7	Chromium	0.50J	ug/L	5.0	07/25/14 19:49	
EPA 200.7	Iron	34.9J	ug/L	50.0	07/25/14 19:49	
EPA 200.7	Manganese	636	ug/L	5.0	07/25/14 19:49	
SM 2540C	Total Dissolved Solids	432	mg/L	25.0	07/29/14 06:45	
EPA 300.0	Sulfate	7.5	mg/L	2.0	07/31/14 00:02	
EPA 353.2	Nitrogen, Nitrate	0.84	mg/L	0.020	07/24/14 22:42	H3
SM 4500-Cl-E	Chloride	2.5	mg/L	1.0	07/30/14 18:48	
SM 5310B	Total Organic Carbon	7.0	mg/L	1.0	07/30/14 22:34	
92210521004	MW-4					
EPA 200.7	Barium	116	ug/L	5.0	07/25/14 19:52	
EPA 200.7	Iron	45.5J	ug/L	50.0	07/25/14 19:52	
EPA 200.7	Manganese	55.6	ug/L	5.0	07/25/14 19:52	
SM 2540C	Total Dissolved Solids	75.0	mg/L	25.0	07/29/14 07:04	
EPA 300.0	Sulfate	1.5J	mg/L	2.0	07/31/14 00:42	
EPA 353.2	Nitrogen, Nitrate	0.82	mg/L	0.020	07/24/14 22:46	H3
SM 4500-Cl-E	Chloride	14.7	mg/L	1.0	07/30/14 18:49	
SM 5310B	Total Organic Carbon	6.1	mg/L	1.0	07/30/14 23:09	
92210521005	MW-5					
EPA 200.7	Barium	176	ug/L	5.0	07/25/14 20:01	
EPA 200.7	Iron	1520	ug/L	50.0	07/25/14 20:01	
EPA 200.7	Manganese	257	ug/L	5.0	07/25/14 20:01	
SM 2540C	Total Dissolved Solids	36.0	mg/L	25.0	07/30/14 06:19	L2
EPA 353.2	Nitrogen, Nitrate	2.6	mg/L	0.020	07/24/14 23:10	
SM 4500-Cl-E	Chloride	15.8	mg/L	1.0	07/30/14 18:50	
SM 5220D	Chemical Oxygen Demand	103	mg/L	25.0	07/28/14 22:52	
SM 5310B	Total Organic Carbon	2.7	mg/L	1.0	07/30/14 23:19	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92210521006	MW-6					
EPA 200.7	Barium	25.7 ug/L		5.0	07/25/14 20:04	
EPA 200.7	Copper	0.59J ug/L		5.0	07/25/14 20:04	B
EPA 200.7	Iron	2930 ug/L		50.0	07/25/14 20:04	
EPA 200.7	Manganese	282 ug/L		5.0	07/25/14 20:04	
EPA 353.2	Nitrogen, Nitrate	2.4 mg/L		0.020	07/24/14 22:56	M1
SM 4500-Cl-E	Chloride	5.8 mg/L		1.0	07/30/14 18:50	
SM 5310B	Total Organic Carbon	2.2 mg/L		1.0	07/30/14 23:30	
92210521007	MW-7					
EPA 200.7	Barium	52.7 ug/L		5.0	07/25/14 20:08	
EPA 200.7	Copper	0.85J ug/L		5.0	07/25/14 20:08	B
EPA 200.7	Iron	53.3 ug/L		50.0	07/25/14 20:08	
EPA 200.7	Manganese	70.8 ug/L		5.0	07/25/14 20:08	
EPA 353.2	Nitrogen, Nitrate	0.60 mg/L		0.020	07/24/14 22:43	H3
SM 4500-Cl-E	Chloride	4.6 mg/L		1.0	07/30/14 18:51	
SM 5310B	Total Organic Carbon	2.2 mg/L		1.0	07/30/14 23:40	
92210521008	EQ-1					
EPA 200.7	Copper	0.34J ug/L		5.0	07/25/14 20:20	B
SM 5310B	Total Organic Carbon	0.60J mg/L		1.0	07/30/14 23:53	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: EPA 200.7
Description: 200.7 MET ICP
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: MPRP/16526

B: Analyte was detected in the associated method blank.

- BLANK for HBN 226015 [MPRP/165 (Lab ID: 1249840)]
 - Copper

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: SM 2540C
Description: 2540C Total Dissolved Solids
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for SM 2540C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: WET/32351

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 1252293)
- Total Dissolved Solids

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: SM 5210B
Description: 5210B BOD, 5 day
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for SM 5210B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

- MW-2 (Lab ID: 92210521002)
- MW-3 (Lab ID: 92210521003)
- MW-4 (Lab ID: 92210521004)
- MW-7 (Lab ID: 92210521007)

Sample Preparation:

The samples were prepared in accordance with with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: EPA 300.0
Description: 300.0 IC Anions 28 Days
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: EPA 353.2
Description: 353.2 Nitrogen, NO₂/NO₃ unpres
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.

- MW-2 (Lab ID: 92210521002)
- MW-3 (Lab ID: 92210521003)
- MW-4 (Lab ID: 92210521004)
- MW-7 (Lab ID: 92210521007)

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/19692

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92210521001,92210521006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1249500)
 - Nitrogen, Nitrate
- MSD (Lab ID: 1249501)
 - Nitrogen, Nitrate

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: SM 4500-CI-E
Description: 4500 Chloride
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for SM 4500-CI-E. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/19750

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92210440003,92210471001

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 1253220)
 - Chloride
- MSD (Lab ID: 1253221)
 - Chloride

Additional Comments:

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

Method: SM 5220D

Description: 5220D COD

Client: S&ME, Inc.

Date: August 01, 2014

General Information:

8 samples were analyzed for SM 5220D. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/19729

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92210510001,92210521006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1251249)
 - Chemical Oxygen Demand
- MS (Lab ID: 1251251)
 - Chemical Oxygen Demand
- MSD (Lab ID: 1251250)
 - Chemical Oxygen Demand
- MSD (Lab ID: 1251252)
 - Chemical Oxygen Demand

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Method: SM 5310B
Description: 5310B TOC
Client: S&ME, Inc.
Date: August 01, 2014

General Information:

8 samples were analyzed for SM 5310B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: MW-1 Lab ID: 92210521001 Collected: 07/23/14 09:15 Received: 07/24/14 09:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Barium	31.7	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 19:43	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 19:43	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 19:43	7440-47-3	
Copper	1.3J	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:43	7440-50-8	B
Iron	147	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 19:43	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 19:43	7439-92-1	
Manganese	12.2	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:43	7439-96-5	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		07/30/14 06:18		L2
5210B BOD, 5 day Analytical Method: SM 5210B									
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1.3J	mg/L	2.0	1.0	1		07/30/14 23:34	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres Analytical Method: EPA 353.2									
Nitrogen, Nitrate	2.0	mg/L	0.020	0.010	1		07/24/14 22:47		
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:47		
4500 Chloride Analytical Method: SM 4500-Cl-E									
Chloride	2.5	mg/L	1.0	0.50	1		07/30/14 18:47	16887-00-6	
5220D COD Analytical Method: SM 5220D									
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC Analytical Method: SM 5310B									
Total Organic Carbon	4.5	mg/L	1.0	0.50	1		07/30/14 22:11	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: MW-2 Lab ID: 92210521002 Collected: 07/22/14 14:40 Received: 07/24/14 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Barium	22.4	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 19:46	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 19:46	7440-43-9	
Chromium	0.59J	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 19:46	7440-47-3	
Copper	ND	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:46	7440-50-8	
Iron	51.7	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 19:46	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 19:46	7439-92-1	
Manganese	11.1	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:46	7439-96-5	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		07/29/14 06:45		
5210B BOD, 5 day Analytical Method: SM 5210B									
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		H2
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1.3J	mg/L	2.0	1.0	1		07/30/14 23:48	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres Analytical Method: EPA 353.2									
Nitrogen, Nitrate	0.50	mg/L	0.020	0.010	1		07/24/14 22:44		H3
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:44		H3
4500 Chloride Analytical Method: SM 4500-Cl-E									
Chloride	6.6	mg/L	1.0	0.50	1		07/30/14 18:48	16887-00-6	
5220D COD Analytical Method: SM 5220D									
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC Analytical Method: SM 5310B									
Total Organic Carbon	3.0	mg/L	1.0	0.50	1		07/30/14 22:24	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: MW-3 Lab ID: 92210521003 Collected: 07/22/14 11:15 Received: 07/24/14 09:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Barium	116	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 19:49	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 19:49	7440-43-9	
Chromium	0.50J	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 19:49	7440-47-3	
Copper	ND	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:49	7440-50-8	
Iron	34.9J	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 19:49	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 19:49	7439-92-1	
Manganese	636	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:49	7439-96-5	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	432	mg/L	25.0	25.0	1		07/29/14 06:45		
5210B BOD, 5 day Analytical Method: SM 5210B									
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		H2
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	7.5	mg/L	2.0	1.0	1		07/31/14 00:02	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres Analytical Method: EPA 353.2									
Nitrogen, Nitrate	0.84	mg/L	0.020	0.010	1		07/24/14 22:42		H3
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:42		H3
4500 Chloride Analytical Method: SM 4500-Cl-E									
Chloride	2.5	mg/L	1.0	0.50	1		07/30/14 18:48	16887-00-6	
5220D COD Analytical Method: SM 5220D									
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC Analytical Method: SM 5310B									
Total Organic Carbon	7.0	mg/L	1.0	0.50	1		07/30/14 22:34	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

Sample: MW-4		Lab ID: 92210521004		Collected: 07/22/14 16:00		Received: 07/24/14 09:30		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium	116	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 19:52	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 19:52	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 19:52	7440-47-3	
Copper	ND	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:52	7440-50-8	
Iron	45.5J	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 19:52	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 19:52	7439-92-1	
Manganese	55.6	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 19:52	7439-96-5	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	75.0	mg/L	25.0	25.0	1		07/29/14 07:04		
5210B BOD, 5 day		Analytical Method: SM 5210B							
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		H2
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	1.5J	mg/L	2.0	1.0	1		07/31/14 00:42	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2							
Nitrogen, Nitrate	0.82	mg/L	0.020	0.010	1		07/24/14 22:46		H3
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:46		H3
4500 Chloride		Analytical Method: SM 4500-Cl-E							
Chloride	14.7	mg/L	1.0	0.50	1		07/30/14 18:49	16887-00-6	
5220D COD		Analytical Method: SM 5220D							
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC		Analytical Method: SM 5310B							
Total Organic Carbon	6.1	mg/L	1.0	0.50	1		07/30/14 23:09	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

Sample: MW-5		Lab ID: 92210521005	Collected: 07/23/14 12:30	Received: 07/24/14 09:30	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium	176 ug/L		5.0	0.20	1	07/25/14 11:55	07/25/14 20:01	7440-39-3	
Cadmium	ND ug/L		1.0	0.50	1	07/25/14 11:55	07/25/14 20:01	7440-43-9	
Chromium	ND ug/L		5.0	0.40	1	07/25/14 11:55	07/25/14 20:01	7440-47-3	
Copper	ND ug/L		5.0	0.30	1	07/25/14 11:55	07/25/14 20:01	7440-50-8	
Iron	1520 ug/L		50.0	14.0	1	07/25/14 11:55	07/25/14 20:01	7439-89-6	
Lead	ND ug/L		5.0	4.0	1	07/25/14 11:55	07/25/14 20:01	7439-92-1	
Manganese	257 ug/L		5.0	0.30	1	07/25/14 11:55	07/25/14 20:01	7439-96-5	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	36.0 mg/L		25.0	25.0	1		07/30/14 06:19		L2
5210B BOD, 5 day		Analytical Method: SM 5210B							
BOD, 5 day	ND mg/L		2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	ND mg/L		2.0	1.0	1		07/31/14 00:56	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2							
Nitrogen, Nitrate	2.6 mg/L		0.020	0.010	1		07/24/14 23:10		
Nitrogen, Nitrite	ND mg/L		0.020	0.010	1		07/24/14 23:10		
4500 Chloride		Analytical Method: SM 4500-Cl-E							
Chloride	15.8 mg/L		1.0	0.50	1		07/30/14 18:50	16887-00-6	
5220D COD		Analytical Method: SM 5220D							
Chemical Oxygen Demand	103 mg/L		25.0	12.5	1		07/28/14 22:52		
5310B TOC		Analytical Method: SM 5310B							
Total Organic Carbon	2.7 mg/L		1.0	0.50	1		07/30/14 23:19	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: MW-6 Lab ID: 92210521006 Collected: 07/23/14 11:00 Received: 07/24/14 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium	25.7	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 20:04	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 20:04	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 20:04	7440-47-3	
Copper	0.59J	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:04	7440-50-8	B
Iron	2930	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 20:04	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 20:04	7439-92-1	
Manganese	282	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:04	7439-96-5	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		07/30/14 06:19		L2
5210B BOD, 5 day		Analytical Method: SM 5210B							
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	ND	mg/L	2.0	1.0	1		07/31/14 01:10	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2							
Nitrogen, Nitrate	2.4	mg/L	0.020	0.010	1		07/24/14 22:56		M1
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:56		
4500 Chloride		Analytical Method: SM 4500-Cl-E							
Chloride	5.8	mg/L	1.0	0.50	1		07/30/14 18:50	16887-00-6	
5220D COD		Analytical Method: SM 5220D							
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		M1
5310B TOC		Analytical Method: SM 5310B							
Total Organic Carbon	2.2	mg/L	1.0	0.50	1		07/30/14 23:30	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: MW-7 Lab ID: 92210521007 Collected: 07/22/14 13:10 Received: 07/24/14 09:30 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Barium	52.7	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 20:08	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 20:08	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 20:08	7440-47-3	
Copper	0.85J	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:08	7440-50-8	B
Iron	53.3	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 20:08	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 20:08	7439-92-1	
Manganese	70.8	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:08	7439-96-5	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		07/29/14 07:04		
5210B BOD, 5 day Analytical Method: SM 5210B									
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		H2
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	ND	mg/L	2.0	1.0	1		07/31/14 01:23	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres Analytical Method: EPA 353.2									
Nitrogen, Nitrate	0.60	mg/L	0.020	0.010	1		07/24/14 22:43		H3
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 22:43		H3
4500 Chloride Analytical Method: SM 4500-Cl-E									
Chloride	4.6	mg/L	1.0	0.50	1		07/30/14 18:51	16887-00-6	
5220D COD Analytical Method: SM 5220D									
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC Analytical Method: SM 5310B									
Total Organic Carbon	2.2	mg/L	1.0	0.50	1		07/30/14 23:40	7440-44-0	

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ANALYTICAL RESULTS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Sample: EQ-1 Lab ID: 92210521008 Collected: 07/23/14 12:00 Received: 07/24/14 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Barium	ND	ug/L	5.0	0.20	1	07/25/14 11:55	07/25/14 20:20	7440-39-3	
Cadmium	ND	ug/L	1.0	0.50	1	07/25/14 11:55	07/25/14 20:20	7440-43-9	
Chromium	ND	ug/L	5.0	0.40	1	07/25/14 11:55	07/25/14 20:20	7440-47-3	
Copper	0.34J	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:20	7440-50-8	B
Iron	ND	ug/L	50.0	14.0	1	07/25/14 11:55	07/25/14 20:20	7439-89-6	
Lead	ND	ug/L	5.0	4.0	1	07/25/14 11:55	07/25/14 20:20	7439-92-1	
Manganese	ND	ug/L	5.0	0.30	1	07/25/14 11:55	07/25/14 20:20	7439-96-5	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1		07/30/14 06:20		L2
5210B BOD, 5 day		Analytical Method: SM 5210B							
BOD, 5 day	ND	mg/L	2.0	2.0	1	07/25/14 07:38	07/30/14 02:30		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	ND	mg/L	2.0	1.0	1		07/31/14 01:37	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres		Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	0.010	1		07/24/14 23:05		
Nitrogen, Nitrite	ND	mg/L	0.020	0.010	1		07/24/14 23:05		
4500 Chloride		Analytical Method: SM 4500-Cl-E							
Chloride	ND	mg/L	1.0	0.50	1		07/30/14 18:52	16887-00-6	
5220D COD		Analytical Method: SM 5220D							
Chemical Oxygen Demand	ND	mg/L	25.0	12.5	1		07/28/14 22:52		
5310B TOC		Analytical Method: SM 5310B							
Total Organic Carbon	0.60J	mg/L	1.0	0.50	1		07/30/14 23:53	7440-44-0	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: MPRP/16526 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1249840 Matrix: Water
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	ug/L	ND	5.0	07/25/14 18:59	
Cadmium	ug/L	ND	1.0	07/25/14 18:59	
Chromium	ug/L	ND	5.0	07/25/14 18:59	
Copper	ug/L	1.8J	5.0	07/25/14 18:59	
Iron	ug/L	ND	50.0	07/25/14 18:59	
Lead	ug/L	ND	5.0	07/25/14 18:59	
Manganese	ug/L	ND	5.0	07/25/14 18:59	

LABORATORY CONTROL SAMPLE: 1249841

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	500	491	98	85-115	
Cadmium	ug/L	500	511	102	85-115	
Chromium	ug/L	500	491	98	85-115	
Copper	ug/L	500	513	103	85-115	
Iron	ug/L	5000	4960	99	85-115	
Lead	ug/L	500	497	99	85-115	
Manganese	ug/L	500	498	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1249842 1249843

Parameter	Units	92210249001		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Barium	ug/L	ND	500	500	464	459	93	92	70-130	1	20	
Cadmium	ug/L	ND	500	500	503	502	101	100	70-130	0	20	
Chromium	ug/L	ND	500	500	495	491	98	98	70-130	1	20	
Copper	ug/L	77.5	500	500	650	613	115	107	70-130	6	20	
Iron	ug/L	690	5000	5000	5730	5540	101	97	70-130	3	20	
Lead	ug/L	ND	500	500	453	451	90	89	70-130	0	20	
Manganese	ug/L	29.0	500	500	516	513	97	97	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1249844		1249845		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		92210521004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Barium	ug/L	116	500	500	602	607	97	98	70-130	1	20		
Cadmium	ug/L	ND	500	500	495	499	99	100	70-130	1	20		
Chromium	ug/L	ND	500	500	492	489	98	98	70-130	0	20		
Copper	ug/L	ND	500	500	498	502	100	100	70-130	1	20		
Iron	ug/L	45.5J	5000	5000	4860	4830	96	96	70-130	1	20		
Lead	ug/L	ND	500	500	490	488	98	98	70-130	0	20		
Manganese	ug/L	55.6	500	500	543	542	97	97	70-130	0	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

QC Batch: WET/32327

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 92210521002, 92210521003

METHOD BLANK: 1251327

Matrix: Water

Associated Lab Samples: 92210521002, 92210521003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	07/29/14 06:45	

LABORATORY CONTROL SAMPLE: 1251328

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	236	94	90-110	

SAMPLE DUPLICATE: 1251329

Parameter	Units	92210219007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	52.0	55.0	6	10	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WET/32329 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92210521004, 92210521007

METHOD BLANK: 1251333 Matrix: Water
Associated Lab Samples: 92210521004, 92210521007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	07/29/14 07:03	

LABORATORY CONTROL SAMPLE: 1251334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	248	99	90-110	

SAMPLE DUPLICATE: 1251335

Parameter	Units	92210521004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	75.0	74.0	1	10	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WET/32351 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92210521001, 92210521005, 92210521006, 92210521008

METHOD BLANK: 1252292 Matrix: Water
Associated Lab Samples: 92210521001, 92210521005, 92210521006, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	07/30/14 06:18	

LABORATORY CONTROL SAMPLE: 1252293

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	212	85	90-110	L0

SAMPLE DUPLICATE: 1252294

Parameter	Units	92210521001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WET/32277 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1249502 Matrix: Water
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	ND	2.0	07/30/14 02:30	

LABORATORY CONTROL SAMPLE: 1249503

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	197	99	84.5-115.4	

SAMPLE DUPLICATE: 1249504

Parameter	Units	92210521003 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	ND	ND		10	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WETA/19724 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1251087 Matrix: Water
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	07/30/14 21:59	

LABORATORY CONTROL SAMPLE: 1251088

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	19.7	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251089 1251090

Parameter	Units	92210421001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Sulfate	mg/L	4.7	20	20	24.5	24.4	99	98	90-110	1	10

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251091 1251092

Parameter	Units	92210521008 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Sulfate	mg/L	ND	20	20	19.2	19.3	96	97	90-110	0	10

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WETA/19692 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1249496 Matrix: Water
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	07/24/14 22:39	
Nitrogen, Nitrite	mg/L	ND	0.020	07/24/14 22:39	

LABORATORY CONTROL SAMPLE: 1249497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.5	101	90-110	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1249498 1249499

Parameter	Units	92210521001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Nitrogen, Nitrate	mg/L	2.0	2.5	2.5	4.3	4.2	92	90	90-110	1	10	
Nitrogen, Nitrite	mg/L	ND	1	1	1.1	1.1	108	107	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1249500 1249501

Parameter	Units	92210521006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Nitrogen, Nitrate	mg/L	2.4	2.5	2.5	4.6	4.6	88	88	90-110	0	10	M1
Nitrogen, Nitrite	mg/L	ND	1	1	0.94	0.94	94	94	90-110	0	10	

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

QC Batch: WETA/19750

Analysis Method: SM 4500-Cl-E

QC Batch Method: SM 4500-Cl-E

Analysis Description: 4500 Chloride

Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1253216

Matrix: Water

Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	07/30/14 18:33	

LABORATORY CONTROL SAMPLE: 1253217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.6	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1253218 1253219

Parameter	Units	92210440003 Result	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	% Rec	% Rec						
Chloride	mg/L	50.8	20	70.1	69.6	97	94	90-110	1	10			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1253220 1253221

Parameter	Units	92210471001 Result	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	% Rec	% Rec						
Chloride	mg/L	239	20	292	294	266	277	90-110	1	10	M6		

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137

Pace Project No.: 92210521

QC Batch:	WETA/19729	Analysis Method:	SM 5220D
QC Batch Method:	SM 5220D	Analysis Description:	5220D COD
Associated Lab Samples:	92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008		

METHOD BLANK: 1251247 Matrix: Water

Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	ND	25.0	07/28/14 22:52	

LABORATORY CONTROL SAMPLE: 1251248

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	750	722	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251249 1251250

Parameter	Units	92210510001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	889	750	1350	750	1350	61	62	90-110	0	3	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251251 1251252

Parameter	Units	92210521006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Chemical Oxygen Demand	mg/L	ND	750	502	750	495	66	65	90-110	1	3	M1

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QUALITY CONTROL DATA

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

QC Batch: WETA/19725 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

METHOD BLANK: 1251093 Matrix: Water
Associated Lab Samples: 92210521001, 92210521002, 92210521003, 92210521004, 92210521005, 92210521006, 92210521007, 92210521008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	07/30/14 20:28	

LABORATORY CONTROL SAMPLE: 1251094

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251095 1251096

Parameter	Units	92210440003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
Total Organic Carbon	mg/L	9.8	25	25	35.8	35.6	104	103	90-110	1	5		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1251097 1251098

Parameter	Units	92210521008 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits				
Total Organic Carbon	mg/L	0.60J	25	25	25.8	25.9	101	101	90-110	1	5		

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QUALIFIERS

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

H2 Extraction or preparation conducted outside EPA method holding time.

H3 Sample was received or analysis requested beyond the recognized method holding time.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92210521001	MW-1	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521002	MW-2	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521003	MW-3	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521004	MW-4	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521005	MW-5	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521006	MW-6	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521007	MW-7	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521008	EQ-1	EPA 200.7	MPRP/16526	EPA 200.7	ICP/14924
92210521001	MW-1	SM 2540C	WET/32351		
92210521002	MW-2	SM 2540C	WET/32327		
92210521003	MW-3	SM 2540C	WET/32327		
92210521004	MW-4	SM 2540C	WET/32329		
92210521005	MW-5	SM 2540C	WET/32351		
92210521006	MW-6	SM 2540C	WET/32351		
92210521007	MW-7	SM 2540C	WET/32329		
92210521008	EQ-1	SM 2540C	WET/32351		
92210521001	MW-1	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521002	MW-2	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521003	MW-3	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521004	MW-4	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521005	MW-5	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521006	MW-6	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521007	MW-7	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521008	EQ-1	SM 5210B	WET/32277	SM 5210B	WET/32284
92210521001	MW-1	EPA 300.0	WETA/19724		
92210521002	MW-2	EPA 300.0	WETA/19724		
92210521003	MW-3	EPA 300.0	WETA/19724		
92210521004	MW-4	EPA 300.0	WETA/19724		
92210521005	MW-5	EPA 300.0	WETA/19724		
92210521006	MW-6	EPA 300.0	WETA/19724		
92210521007	MW-7	EPA 300.0	WETA/19724		
92210521008	EQ-1	EPA 300.0	WETA/19724		
92210521001	MW-1	EPA 353.2	WETA/19692		
92210521002	MW-2	EPA 353.2	WETA/19692		
92210521003	MW-3	EPA 353.2	WETA/19692		
92210521004	MW-4	EPA 353.2	WETA/19692		
92210521005	MW-5	EPA 353.2	WETA/19692		
92210521006	MW-6	EPA 353.2	WETA/19692		
92210521007	MW-7	EPA 353.2	WETA/19692		
92210521008	EQ-1	EPA 353.2	WETA/19692		
92210521001	MW-1	SM 4500-CI-E	WETA/19750		
92210521002	MW-2	SM 4500-CI-E	WETA/19750		
92210521003	MW-3	SM 4500-CI-E	WETA/19750		
92210521004	MW-4	SM 4500-CI-E	WETA/19750		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PPG SHELBY 1354-11-137
Pace Project No.: 92210521

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92210521005	MW-5	SM 4500-CI-E	WETA/19750		
92210521006	MW-6	SM 4500-CI-E	WETA/19750		
92210521007	MW-7	SM 4500-CI-E	WETA/19750		
92210521008	EQ-1	SM 4500-CI-E	WETA/19750		
92210521001	MW-1	SM 5220D	WETA/19729		
92210521002	MW-2	SM 5220D	WETA/19729		
92210521003	MW-3	SM 5220D	WETA/19729		
92210521004	MW-4	SM 5220D	WETA/19729		
92210521005	MW-5	SM 5220D	WETA/19729		
92210521006	MW-6	SM 5220D	WETA/19729		
92210521007	MW-7	SM 5220D	WETA/19729		
92210521008	EQ-1	SM 5220D	WETA/19729		
92210521001	MW-1	SM 5310B	WETA/19725		
92210521002	MW-2	SM 5310B	WETA/19725		
92210521003	MW-3	SM 5310B	WETA/19725		
92210521004	MW-4	SM 5310B	WETA/19725		
92210521005	MW-5	SM 5310B	WETA/19725		
92210521006	MW-6	SM 5310B	WETA/19725		
92210521007	MW-7	SM 5310B	WETA/19725		
92210521008	EQ-1	SM 5310B	WETA/19725		

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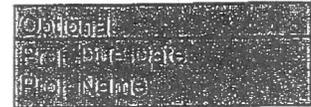
Document Name:
Sample Condition Upon Receipt (SCUR)
 Document Number:
F-CHR-CS-003-rev.14

Document Revised: April 07, 2017
 Page 1 of 2
 Issuing Authority:
 Pace Huntersville Quality Office

Client Name: Sfmc

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no



Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used: IR Gun T1102 (T1401) Type of Ice: (Wet) Blue None Samples on ice, cooling process has begun

Temp Correction Factor T1102: No Correction T1301: No Correction

Corrected Cooler Temp.: 28 °C Biological Tissue is Frozen: Yes No N/A
 Temp should be above freezing to 6°C

Date and Initials of person examining contents: Jan 24-14

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, colform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

SCURF Review: AMB Date: 7-24-14
 SRF Review: AMB Date: 7-24-14

Place label here
WO# : 92210521

 92210521

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)