ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

ATC Group Services LLC

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January 30, 2019

Mr. Lon Petts
Hoosier Energy REC, Inc.
P.O. Box 908
Bloomington, Indiana 47402

Re: **2018 CCR Annual Groundwater Monitoring and Corrective Action Report**
Merom Generating Station – Area 3 Landfill
CCR Monitoring System
5500 West Old Highway 54
Sullivan County, Indiana
ATC Project No. 170LF00518

Dear Mr. Petts:

ATC Group Services LLC (ATC) has prepared this 2018 CCR Annual Groundwater Monitoring and Corrective Action Report for the bedrock aquifer groundwater monitoring system at the Hoosier Energy REC, Inc. (Hoosier Energy) Merom Generating Station located outside Sullivan, Sullivan County, Indiana. This report has been prepared to comply with reporting requirements described in the United States Environmental Protection Agency's (USEPA) Coal Combustion Residuals (CCR) Rule § 257.90(e). This annual report documents the status of the groundwater monitoring and corrective action program for the Area 3 Landfill and summarizes information required by § 257.90(e)(1) through § 257.90(e)(5).

Federal CCR Rule § 257.90(e) specifies the following:

> *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the*

CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

The following key actions have been completed to comply with the CCR Rule:

- Descriptions of the design, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices were placed in the operating record as required by §§ 257.91(e)(1) and 257.105(h)(2).
- Appendix III groundwater monitoring data was evaluated for statistically significant increases (SSIs).
- Detection monitoring was completed on a semi-annual basis in May and November 2018 in accordance with § 257.94(c).

The following required reports were completed:

- *CCR Annual Groundwater Monitoring and Corrective Action Report, Merom Generating Station Area 3 Landfill*, ATC Group Services, January 31, 2018.

To report on the activities conducted during the prior calendar year and document compliance with the CCR Rule, the specific requirements listed in § 257.90(e)(1) through § 257.90(e)(5) are provided below in bold/italic type followed by a short narrative addressing how that specific requirement has been met.

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

§ 257.90(e)(1) A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

Hoosier Energy operates the Merom Generating Station, located approximately six miles west of Sullivan, Indiana. It is located at 5500 West Old Highway 54, Sullivan, Indiana. A Vicinity Map is provided as Figure 1. A map showing the location of the CCR management unit and associated upgradient and downgradient monitoring wells is provided as Figure 2.

§ 257.90(e)(2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No new monitoring wells were installed, nor were any wells decommissioned during the preceding year.

§ 257.90(e)(3) In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Table 1 provides a summary of the number of samples collected at each well, sampling dates, and designation of whether samples were required by the detection or assessment monitoring program. Groundwater analytical results for samples collected during the 2018 sampling events are summarized in Table 2 through Table 9.

§ 257.90(e)(4) A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);

Consistent with § 257.90(e), the 2018 annual report documents activities conducted during the prior calendar year at the CCR management units subject to the Rule.

Pursuant to 257.93(h), the statistical analysis of the initial minimum eight rounds of Appendix III groundwater sampling data was completed in January 2018. Statistically Significant Increases (SSIs) were not identified in the background dataset, therefore the facility continued with detection monitoring.

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§ 257.90(e)(5) Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

In accordance with § 257.94(c), detection monitoring of Appendix III parameters was completed on a semi-annual basis in May and November 2018 to fulfill the semi-annual monitoring requirement. Analytical results are summarized in Table 2 through Table 9. The associated analytical reports are provided in Appendix A. Background analytical data was previously provided in the CCR Annual Groundwater Monitoring and Corrective Action Report dated January 31, 2018. Evaluation of the data associated with the November 2018 sampling event for SSIs had not been completed by December 31, 2018.

Projected key activities for the upcoming year include the following:

- Statistical analysis (second 2018 semi-annual event).
- Semi-annual detection monitoring sampling events and associated statistical analysis (first 2019 semi-annual sampling event).

We appreciate the opportunity to assist with Hoosier Energy's CCR Rule groundwater monitoring program at Merom Generating Station's Area 3 Landfill. Please contact either of the undersigned at 317.849.4990 if you have any questions regarding this report.

Sincerely,

Mark E. Breting

Mark E. Breting, L.P.G.
Senior Project Geologist

John R. Noel

John R. Noel, L.P.G.
Principal Geologist

TABLES

Table 1: Well Sampling Summary
Table 2: Analytical Data Summary - SWW-40
Table 3: Analytical Data Summary - SWW-41
Table 4: Analytical Data Summary - SWW-42
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Table 6: Analytical Data Summary - SWW-44
Table 7: Analytical Data Summary - SWW-45
Table 8: Analytical Data Summary - SWW-46
Table 9: Analytical Data Summary - SWW-47

Table 1
Well Sampling Summary
Area 3 Landfill
Hoosier Energy, REC, Inc.
Merom Generating Station
Sullivan, Indiana
ATC Project No. 170LF00518

Identification	Date Installed	Upgradient or Downgradient	Number of Samples	Sample Date	Detection or Assessment Monitoring
SWW-40	12/11/2015	Upgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-41	12/19/2015	Downgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-42	12/16/2015	Downgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-43	1/5/2016	Downgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-44	1/7/2016	Downgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-45	1/14/2016	Downgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-46	1/21/2016	Upgradient	2	5/15/2018	Detection
				11/15/2018	
SWW-47	1/19/2016	Upgradient	2	5/15/2018	Detection
				11/15/2018	

Table 2

Analytical Data Summary for SWW-40

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	890	912
Calcium	ug/L	4060	7080
Chloride	mg/L	285	229
Fluoride	mg/L	4.3	3.9
pH field	SU	8.61	8.52
Sulfate	mg/L	17	16
Total dissolved solids	mg/L	1200	1200

* - The displayed value is the arithmetic mean of multiple database matches.

Table 3

Analytical Data Summary for SWW-41

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	1120	1080
Calcium	ug/L	4460	2910
Chloride	mg/L	238	255
Fluoride	mg/L	4.9	5.0
pH field	SU	8.40	8.53
Sulfate	mg/L	2	2
Total dissolved solids	mg/L	1420	1460

* - The displayed value is the arithmetic mean of multiple database matches.

Table 4

Analytical Data Summary for SWW-42

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	1160	1200
Calcium	ug/L	2820	2710
Chloride	mg/L	285	288
Fluoride	mg/L	4.2	3.7
pH field	SU	8.74	8.73
Sulfate	mg/L	1.6	1.7
Total dissolved solids	mg/L	1430	1420

* - The displayed value is the arithmetic mean of multiple database matches.

Table 5

Analytical Data Summary for SWW-43

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	1050	1160
Calcium	ug/L	5230	4470
Chloride	mg/L	280	374
Fluoride	mg/L	4.2	4.0
pH field	SU	8.53	8.72
Sulfate	mg/L	1.4	1.7
Total dissolved solids	mg/L	1390	1410

* - The displayed value is the arithmetic mean of multiple database matches.

Table 6

Analytical Data Summary for SWW-44

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	1100	1100
Calcium	ug/L	3380	2760
Chloride	mg/L	389	318
Fluoride	mg/L	5.0	4.8
pH field	SU	8.61	8.69
Sulfate	mg/L	4.2	3.8
Total dissolved solids	mg/L	1640	1640

* - The displayed value is the arithmetic mean of multiple database matches.

Table 7

Analytical Data Summary for SWW-45

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	1030	1050
Calcium	ug/L	3530	3210
Chloride	mg/L	458	475
Fluoride	mg/L	4.9	4.4
pH field	SU	8.69	8.70
Sulfate	mg/L	1.10	.96
Total dissolved solids	mg/L	1740	1740

* - The displayed value is the arithmetic mean of multiple database matches.

Table 8

Analytical Data Summary for SWW-46

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	935	1220
Calcium	ug/L	7600	39600
Chloride	mg/L	316	302
Fluoride	mg/L	4.2	4.3
pH field	SU	8.54	8.83
Sulfate	mg/L	5.2	22.2
Total dissolved solids	mg/L	1680	2800

* - The displayed value is the arithmetic mean of multiple database matches.

Table 9

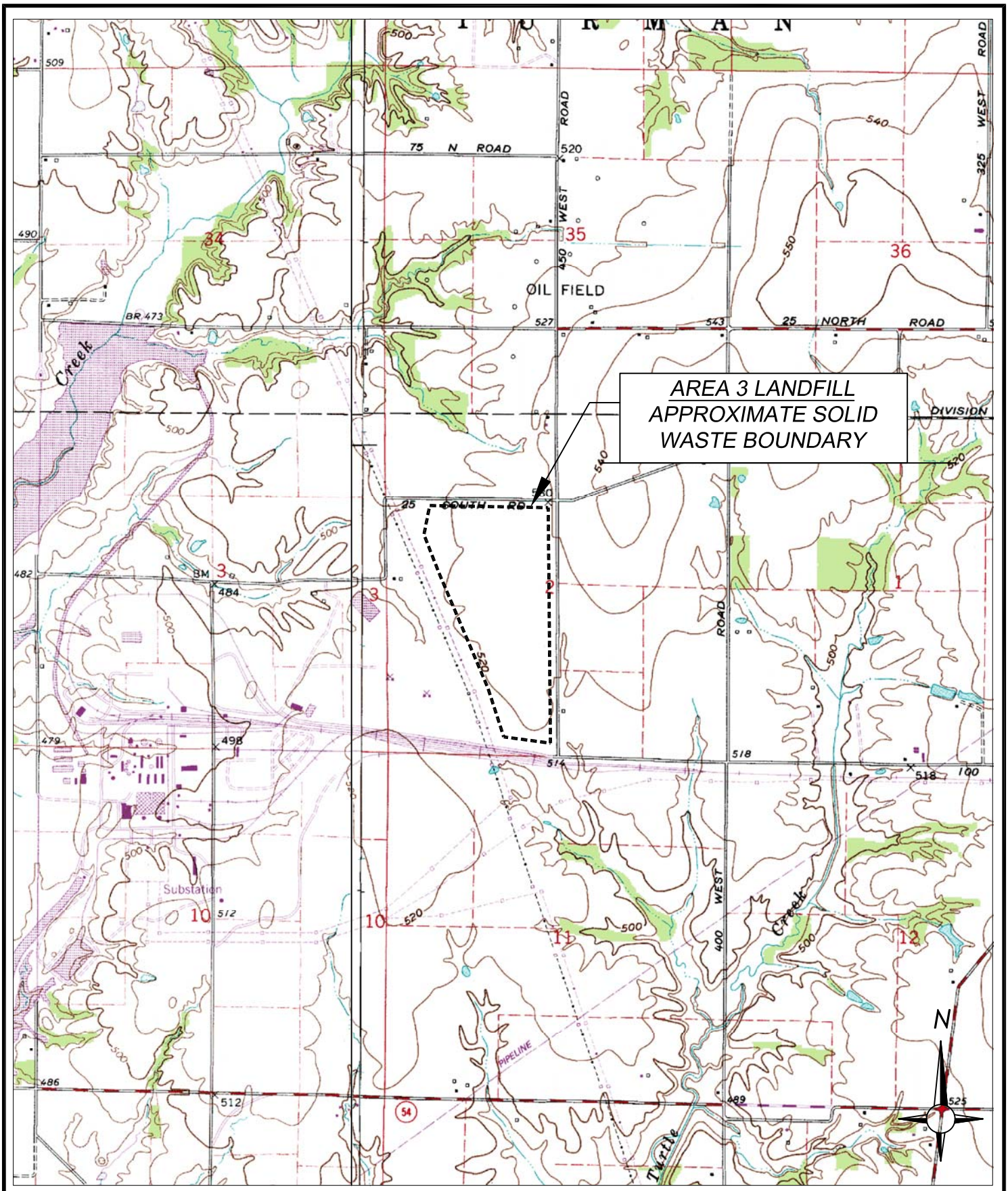
Analytical Data Summary for SWW-47

Constituents	Units	5/15/2018	11/15/2018
Boron	ug/L	414	655
Calcium	ug/L	44100	13900
Chloride	mg/L	73.5	136.0
Fluoride	mg/L	1.1	1.8
pH field	SU	8.21	8.38
Sulfate	mg/L	14.0	8.3
Total dissolved solids	mg/L	1030	883

* - The displayed value is the arithmetic mean of multiple database matches.

FIGURES

Figure 1: Vicinity Map
Figure 2: Site Plan



VICINITY MAP

HOOSIER ENERGY
MEROM GENERATING STATION
AREA 3 LANDFILL
SULLIVAN COUNTY, INDIANA

Project Number: 170LF00147		Drn. By: PL
Drawing File: SEE LOWER LEFT		Ckd. By: MB
Date: 8/17	Scale: 1" = 2000'	App'd By:
ATC		Figure: 1

H:\2018\HOOSIER ENERGY\MEROM\170LF00147\170LF00147-VIC.DWG, VIC

H:\2018\HOOSIER ENERGY\MEROM\170LF00147\170LF00147-SITE-AERIAL.DWG, 11X17 300SC

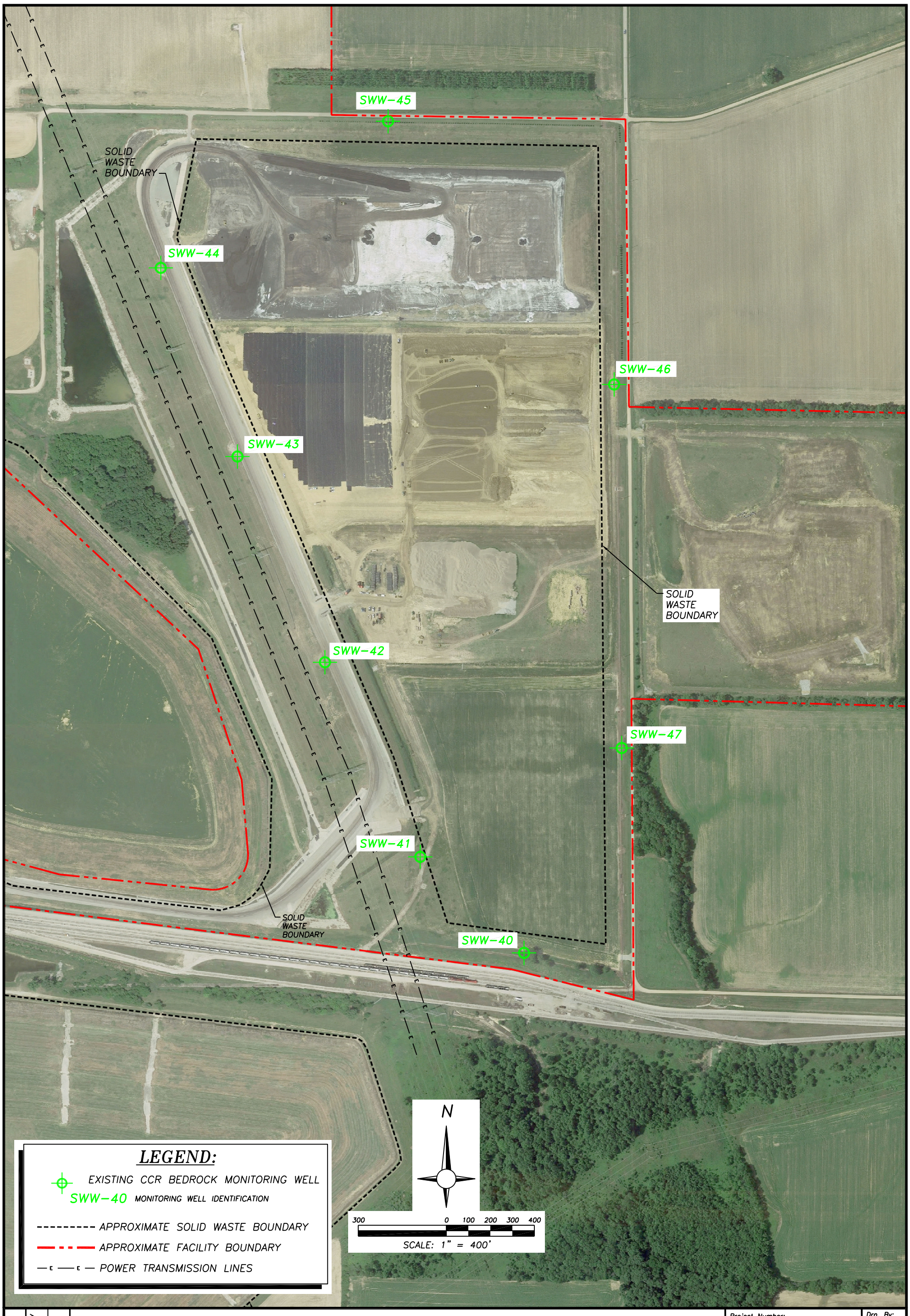


Figure: 2

Scale: AS SHOWN

Date: 1/19

SITE PLAN

HOOSIER ENERGY
MEROM GENERATING STATION
AREA 3 LANDFILL
SULLIVAN COUNTY, INDIANA

Project Number: 170LF00147	Drn. By: BH
Drawing File: SEE ABOVE	Ckd. By: MB
ATC	App'd By:
	Ckd. Date:

APPENDIX A

Laboratory Certificates of Analysis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

May 31, 2018

Mr. Mark Breting
ATC Group Services
7988 Centerpoint Drive
Suite 100
Indianapolis, IN 46256

RE: Project: Merom 3
Pace Project No.: 50197064

Dear Mr. Breting:
Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Chris Boyle for
Donna Spyker
donna.spyker@pacelabs.com
(317)228-3100
Project Manager

Enclosures

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Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project:	Merom 3
Pace Project No.:	50197064

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
Indiana Certification #: C-49-06
Kansas/NELAP Certification #:E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #:98019
Ohio VAP Certification #: CL-0065
Oklahoma Certification #: 2017-124
Texas Certification #: T104704355-18-12
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

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(317)228-3100

SAMPLE SUMMARY

Project: Merom 3
Pace Project No.: 50197064

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50197064001	**SWW-40**	Water	05/15/18 11:30	05/17/18 16:28
50197064002	**SWW-41**	Water	05/15/18 10:40	05/17/18 16:28
50197064003	**SWW-42**	Water	05/15/18 14:00	05/17/18 16:28
50197064004	**SWW-43**	Water	05/15/18 16:15	05/17/18 16:28
50197064005	**SWW-44**	Water	05/15/18 18:30	05/17/18 16:28
50197064006	**SWW-45**	Water	05/15/18 19:00	05/17/18 16:28
50197064007	**SWW-46**	Water	05/15/18 16:45	05/17/18 16:28
50197064008	**SWW-47**	Water	05/15/18 13:45	05/17/18 16:28
50197064009	**DUP**	Water	05/15/18 08:00	05/17/18 16:28
50197064010	**Field Blank**	Water	05/15/18 14:00	05/17/18 16:28
50197064011	**Trip Blank**	Water	05/15/18 08:00	05/17/18 16:28

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SAMPLE ANALYTE COUNT

Project: Merom 3
Pace Project No.: 50197064

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50197064001	**SWW-40**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064002	**SWW-41**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064003	**SWW-42**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064004	**SWW-43**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064005	**SWW-44**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064006	**SWW-45**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064007	**SWW-46**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064008	**SWW-47**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064009	**DUP**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064010	**Field Blank**	EPA 9056	CPH	3

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SAMPLE ANALYTE COUNT

Project: Merom 3
Pace Project No.: 50197064

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1
50197064011	**Trip Blank**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	EAA	1
		SM 4500-H+B	ZM	1

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Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: Merom 3
Pace Project No.: 50197064

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50197064001	**SWW-40**					
EPA 9056	Chloride	285	mg/L	25.0	05/26/18 03:05	
EPA 9056	Fluoride	4.3	mg/L	0.10	05/26/18 02:48	
EPA 9056	Sulfate	17.0	mg/L	0.25	05/26/18 02:48	
EPA 6010	Boron	890	ug/L	100	05/22/18 15:23	
EPA 6010	Calcium	4060	ug/L	1000	05/22/18 15:23	
SM 2540C	Total Dissolved Solids	1200	mg/L	10.0	05/21/18 12:23	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	05/18/18 16:25	H3
50197064002	**SWW-41**					
EPA 9056	Chloride	238	mg/L	25.0	05/26/18 04:15	
EPA 9056	Fluoride	4.9	mg/L	0.10	05/26/18 03:57	
EPA 9056	Sulfate	2.0	mg/L	0.25	05/26/18 03:57	
EPA 6010	Boron	1120	ug/L	100	05/22/18 15:25	
EPA 6010	Calcium	4460	ug/L	1000	05/22/18 15:25	
SM 2540C	Total Dissolved Solids	1420	mg/L	10.0	05/21/18 12:23	
SM 4500-H+B	pH at 25 Degrees C	8.4	Std. Units	0.10	05/18/18 16:25	H3
50197064003	**SWW-42**					
EPA 9056	Chloride	285	mg/L	25.0	05/26/18 04:49	
EPA 9056	Fluoride	4.2	mg/L	0.10	05/26/18 04:32	
EPA 9056	Sulfate	1.6	mg/L	0.25	05/26/18 04:32	
EPA 6010	Boron	1160	ug/L	100	05/22/18 15:27	
EPA 6010	Calcium	2820	ug/L	1000	05/22/18 15:27	
SM 2540C	Total Dissolved Solids	1430	mg/L	10.0	05/21/18 12:24	
SM 4500-H+B	pH at 25 Degrees C	8.7	Std. Units	0.10	05/18/18 16:28	H3
50197064004	**SWW-43**					
EPA 9056	Chloride	280	mg/L	25.0	05/26/18 05:24	
EPA 9056	Fluoride	4.2	mg/L	0.10	05/26/18 05:07	
EPA 9056	Sulfate	1.4	mg/L	0.25	05/26/18 05:07	
EPA 6010	Boron	1050	ug/L	100	05/22/18 15:29	
EPA 6010	Calcium	5230	ug/L	1000	05/22/18 15:29	
SM 2540C	Total Dissolved Solids	1390	mg/L	10.0	05/21/18 12:24	
SM 4500-H+B	pH at 25 Degrees C	8.5	Std. Units	0.10	05/18/18 16:37	H3
50197064005	**SWW-44**					
EPA 9056	Chloride	389	mg/L	25.0	05/26/18 05:59	
EPA 9056	Fluoride	5.0	mg/L	1.0	05/27/18 11:39	
EPA 9056	Sulfate	4.2	mg/L	0.25	05/26/18 05:42	
EPA 6010	Boron	1100	ug/L	100	05/22/18 15:31	
EPA 6010	Calcium	3380	ug/L	1000	05/22/18 15:31	
SM 2540C	Total Dissolved Solids	1640	mg/L	10.0	05/21/18 12:24	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	05/18/18 16:39	H3
50197064006	**SWW-45**					
EPA 9056	Chloride	458	mg/L	25.0	05/26/18 07:43	
EPA 9056	Fluoride	4.9	mg/L	0.10	05/26/18 06:16	
EPA 9056	Sulfate	1.1	mg/L	0.25	05/26/18 06:16	
EPA 6010	Boron	1030	ug/L	100	05/22/18 15:34	

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Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: Merom 3
Pace Project No.: 50197064

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50197064006	**SWW-45**					
EPA 6010	Calcium	3530	ug/L	1000	05/22/18 15:34	
SM 2540C	Total Dissolved Solids	1740	mg/L	10.0	05/21/18 12:24	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	05/18/18 16:40	H3
50197064007	**SWW-46**					
EPA 9056	Chloride	316	mg/L	25.0	05/26/18 08:53	
EPA 9056	Fluoride	4.2	mg/L	0.10	05/26/18 08:35	
EPA 9056	Sulfate	5.2	mg/L	0.25	05/26/18 08:35	
EPA 6010	Boron	935	ug/L	100	05/22/18 15:48	
EPA 6010	Calcium	7600	ug/L	1000	05/22/18 15:48	
SM 2540C	Total Dissolved Solids	1680	mg/L	10.0	05/21/18 12:25	
SM 4500-H+B	pH at 25 Degrees C	8.5	Std. Units	0.10	05/18/18 16:37	H3
50197064008	**SWW-47**					
EPA 9056	Chloride	73.5	mg/L	2.5	05/26/18 09:27	
EPA 9056	Fluoride	1.1	mg/L	0.10	05/26/18 09:10	
EPA 9056	Sulfate	14.0	mg/L	0.25	05/26/18 09:10	
EPA 6010	Boron	414	ug/L	100	05/22/18 15:50	
EPA 6010	Calcium	44100	ug/L	1000	05/22/18 15:50	
SM 2540C	Total Dissolved Solids	1030	mg/L	100	05/21/18 12:25	
SM 4500-H+B	pH at 25 Degrees C	8.3	Std. Units	0.10	05/18/18 16:26	H3
50197064009	**DUP**					
EPA 9056	Chloride	68.5	mg/L	25.0	05/26/18 10:02	
EPA 9056	Fluoride	1.1	mg/L	0.10	05/26/18 09:45	
EPA 9056	Sulfate	14.6	mg/L	0.25	05/26/18 09:45	
EPA 6010	Boron	390	ug/L	100	05/22/18 15:52	
EPA 6010	Calcium	44100	ug/L	1000	05/22/18 15:52	
SM 2540C	Total Dissolved Solids	660	mg/L	100	05/21/18 12:25	
SM 4500-H+B	pH at 25 Degrees C	8.3	Std. Units	0.10	05/18/18 16:19	H3
50197064010	**Field Blank**					
SM 4500-H+B	pH at 25 Degrees C	5.8	Std. Units	0.10	05/18/18 16:36	H3
50197064011	**Trip Blank**					
SM 4500-H+B	pH at 25 Degrees C	5.2	Std. Units	0.10	05/18/18 16:23	H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-40 **Lab ID: 50197064001** Collected: 05/15/18 11:30 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**285**	mg/L	25.0	100		05/26/18 03:05	16887-00-6	
Fluoride	**4.3**	mg/L	0.10	1		05/26/18 02:48	16984-48-8	
Sulfate	**17.0**	mg/L	0.25	1		05/26/18 02:48	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**890**	ug/L	100	1	05/21/18 05:56	05/22/18 15:23	7440-42-8	
Calcium	**4060**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:23	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1200**	mg/L	10.0	1		05/21/18 12:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		05/18/18 16:25		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-41 **Lab ID: 50197064002** Collected: 05/15/18 10:40 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**238**	mg/L	25.0	100		05/26/18 04:15	16887-00-6	
Fluoride	**4.9**	mg/L	0.10	1		05/26/18 03:57	16984-48-8	
Sulfate	**2.0**	mg/L	0.25	1		05/26/18 03:57	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1120**	ug/L	100	1	05/21/18 05:56	05/22/18 15:25	7440-42-8	
Calcium	**4460**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:25	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1420**	mg/L	10.0	1		05/21/18 12:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.4**	Std. Units	0.10	1		05/18/18 16:25		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-42 **Lab ID: 50197064003** Collected: 05/15/18 14:00 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**285**	mg/L	25.0	100		05/26/18 04:49	16887-00-6	
Fluoride	**4.2**	mg/L	0.10	1		05/26/18 04:32	16984-48-8	
Sulfate	**1.6**	mg/L	0.25	1		05/26/18 04:32	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1160**	ug/L	100	1	05/21/18 05:56	05/22/18 15:27	7440-42-8	
Calcium	**2820**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:27	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1430**	mg/L	10.0	1		05/21/18 12:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.7**	Std. Units	0.10	1		05/18/18 16:28		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-43 **Lab ID: 50197064004** Collected: 05/15/18 16:15 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**280**	mg/L	25.0	100		05/26/18 05:24	16887-00-6	
Fluoride	**4.2**	mg/L	0.10	1		05/26/18 05:07	16984-48-8	
Sulfate	**1.4**	mg/L	0.25	1		05/26/18 05:07	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1050**	ug/L	100	1	05/21/18 05:56	05/22/18 15:29	7440-42-8	
Calcium	**5230**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:29	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1390**	mg/L	10.0	1		05/21/18 12:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.5**	Std. Units	0.10	1		05/18/18 16:37		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-44 **Lab ID: 50197064005** Collected: 05/15/18 18:30 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**389**	mg/L	25.0	100		05/26/18 05:59	16887-00-6	
Fluoride	**5.0**	mg/L	1.0	10		05/27/18 11:39	16984-48-8	
Sulfate	**4.2**	mg/L	0.25	1		05/26/18 05:42	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1100**	ug/L	100	1	05/21/18 05:56	05/22/18 15:31	7440-42-8	
Calcium	**3380**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:31	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1640**	mg/L	10.0	1		05/21/18 12:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		05/18/18 16:39		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-45 **Lab ID: 50197064006** Collected: 05/15/18 19:00 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**458**	mg/L	25.0	100		05/26/18 07:43	16887-00-6	
Fluoride	**4.9**	mg/L	0.10	1		05/26/18 06:16	16984-48-8	
Sulfate	**1.1**	mg/L	0.25	1		05/26/18 06:16	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1030**	ug/L	100	1	05/21/18 05:56	05/22/18 15:34	7440-42-8	
Calcium	**3530**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:34	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1740**	mg/L	10.0	1		05/21/18 12:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		05/18/18 16:40		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-46 **Lab ID: 50197064007** Collected: 05/15/18 16:45 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**316**	mg/L	25.0	100		05/26/18 08:53	16887-00-6	
Fluoride	**4.2**	mg/L	0.10	1		05/26/18 08:35	16984-48-8	
Sulfate	**5.2**	mg/L	0.25	1		05/26/18 08:35	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**935**	ug/L	100	1	05/21/18 05:56	05/22/18 15:48	7440-42-8	
Calcium	**7600**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:48	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1680**	mg/L	10.0	1		05/21/18 12:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.5**	Std. Units	0.10	1		05/18/18 16:37		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: SWW-47 **Lab ID: 50197064008** Collected: 05/15/18 13:45 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**73.5**	mg/L	2.5	10		05/26/18 09:27	16887-00-6	
Fluoride	**1.1**	mg/L	0.10	1		05/26/18 09:10	16984-48-8	
Sulfate	**14.0**	mg/L	0.25	1		05/26/18 09:10	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**414**	ug/L	100	1	05/21/18 05:56	05/22/18 15:50	7440-42-8	
Calcium	**44100**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:50	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1030**	mg/L	100	1		05/21/18 12:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.3**	Std. Units	0.10	1		05/18/18 16:26		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: DUP **Lab ID: 50197064009** Collected: 05/15/18 08:00 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**68.5**	mg/L	25.0	100		05/26/18 10:02	16887-00-6	
Fluoride	**1.1**	mg/L	0.10	1		05/26/18 09:45	16984-48-8	
Sulfate	**14.6**	mg/L	0.25	1		05/26/18 09:45	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**390**	ug/L	100	1	05/21/18 05:56	05/22/18 15:52	7440-42-8	
Calcium	**44100**	ug/L	1000	1	05/21/18 05:56	05/22/18 15:52	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**660**	mg/L	100	1		05/21/18 12:25		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.3**	Std. Units	0.10	1		05/18/18 16:19		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: Field Blank **Lab ID: 50197064010** Collected: 05/15/18 14:00 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	ND	mg/L	0.25	1		05/26/18 10:54	16887-00-6	
Fluoride	ND	mg/L	0.10	1		05/26/18 10:54	16984-48-8	
Sulfate	ND	mg/L	0.25	1		05/26/18 10:54	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	ND	ug/L	100	1	05/21/18 05:56	05/22/18 15:54	7440-42-8	
Calcium	ND	ug/L	1000	1	05/21/18 05:56	05/22/18 15:54	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	1		05/21/18 12:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**5.8**	Std. Units	0.10	1		05/18/18 16:36		H3

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ANALYTICAL RESULTS

Project: Merom 3
Pace Project No.: 50197064

Sample: Trip Blank **Lab ID: 50197064011** Collected: 05/15/18 08:00 Received: 05/17/18 16:28 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	ND	mg/L	0.25	1		05/26/18 11:12	16887-00-6	
Fluoride	ND	mg/L	0.10	1		05/26/18 11:12	16984-48-8	
Sulfate	ND	mg/L	0.25	1		05/26/18 11:12	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	ND	ug/L	100	1	05/21/18 05:56	05/22/18 15:57	7440-42-8	
Calcium	ND	ug/L	1000	1	05/21/18 05:56	05/22/18 15:57	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	1		05/21/18 12:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**5.2**	Std. Units	0.10	1		05/18/18 16:23		H3

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QUALITY CONTROL DATA

Project: Merom 3
Pace Project No.: 50197064

QC Batch: 444628 | Analysis Method: EPA 9056
QC Batch Method: EPA 9056 | Analysis Description: 9056 IC Anions
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

METHOD BLANK: 2055322 | Matrix: Water
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	05/26/18 02:13	
Fluoride	mg/L	ND	0.10	05/26/18 02:13	
Sulfate	mg/L	ND	0.25	05/26/18 02:13	

LABORATORY CONTROL SAMPLE: 2055323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	92	80-120	
Fluoride	mg/L	.5	0.50	100	80-120	
Sulfate	mg/L	2.5	2.4	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2055324 2055325

Parameter	Units	50197064006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	458	125	125	579	584	97	101	80-120	1	15	
Fluoride	mg/L	4.9	.5	.5	5.2	5.4	69	105	80-120	3	15	E,M0
Sulfate	mg/L	1.1	2.5	2.5	2.6	3.6	59	101	80-120	34	15	M0,R1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Merom 3
Pace Project No.: 50197064

QC Batch: 443399 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

METHOD BLANK: 2049669 | Matrix: Water
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	100	05/22/18 15:19	
Calcium	ug/L	ND	1000	05/22/18 15:19	

LABORATORY CONTROL SAMPLE: 2049670

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1010	101	80-120	
Calcium	ug/L	10000	10100	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2049671 2049672

Parameter	Units	50197064006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	1030	1000	1000	2080	2090	105	106	75-125	0	20	
Calcium	ug/L	3530	10000	10000	13600	13500	101	100	75-125	0	20	

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QUALITY CONTROL DATA

Project: Merom 3
Pace Project No.: 50197064

QC Batch: 443568 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

METHOD BLANK: 2050161 | Matrix: Water
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	05/21/18 12:22	

LABORATORY CONTROL SAMPLE: 2050162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	299	100	80-120	

SAMPLE DUPLICATE: 2050163

Parameter	Units	50197064001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	1220	2	10	

SAMPLE DUPLICATE: 2050164

Parameter	Units	50197064006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1740	1770	1	10	

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QUALITY CONTROL DATA

Project: Merom 3
Pace Project No.: 50197064

QC Batch: 443329 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 50197064001, 50197064002, 50197064003, 50197064004, 50197064005, 50197064006, 50197064007, 50197064008, 50197064009, 50197064010, 50197064011

SAMPLE DUPLICATE: 2049390

Parameter	Units	50197148001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.4	0	2	H3

SAMPLE DUPLICATE: 2049391

Parameter	Units	50197064006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.6	8.6	0	2	H3

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QUALIFIERS

Project: Merom 3
Pace Project No.: 50197064

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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 decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1	RPD value was outside control limits.

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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Merom 3
Pace Project No.: 50197064

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50197064001	**SWW-40**	EPA 9056	444628		
50197064002	**SWW-41**	EPA 9056	444628		
50197064003	**SWW-42**	EPA 9056	444628		
50197064004	**SWW-43**	EPA 9056	444628		
50197064005	**SWW-44**	EPA 9056	444628		
50197064006	**SWW-45**	EPA 9056	444628		
50197064007	**SWW-46**	EPA 9056	444628		
50197064008	**SWW-47**	EPA 9056	444628		
50197064009	**DUP**	EPA 9056	444628		
50197064010	**Field Blank**	EPA 9056	444628		
50197064011	**Trip Blank**	EPA 9056	444628		
50197064001	**SWW-40**	EPA 3010	443399	EPA 6010	443780
50197064002	**SWW-41**	EPA 3010	443399	EPA 6010	443780
50197064003	**SWW-42**	EPA 3010	443399	EPA 6010	443780
50197064004	**SWW-43**	EPA 3010	443399	EPA 6010	443780
50197064005	**SWW-44**	EPA 3010	443399	EPA 6010	443780
50197064006	**SWW-45**	EPA 3010	443399	EPA 6010	443780
50197064007	**SWW-46**	EPA 3010	443399	EPA 6010	443780
50197064008	**SWW-47**	EPA 3010	443399	EPA 6010	443780
50197064009	**DUP**	EPA 3010	443399	EPA 6010	443780
50197064010	**Field Blank**	EPA 3010	443399	EPA 6010	443780
50197064011	**Trip Blank**	EPA 3010	443399	EPA 6010	443780
50197064001	**SWW-40**	SM 2540C	443568		
50197064002	**SWW-41**	SM 2540C	443568		
50197064003	**SWW-42**	SM 2540C	443568		
50197064004	**SWW-43**	SM 2540C	443568		
50197064005	**SWW-44**	SM 2540C	443568		
50197064006	**SWW-45**	SM 2540C	443568		
50197064007	**SWW-46**	SM 2540C	443568		
50197064008	**SWW-47**	SM 2540C	443568		
50197064009	**DUP**	SM 2540C	443568		
50197064010	**Field Blank**	SM 2540C	443568		
50197064011	**Trip Blank**	SM 2540C	443568		
50197064001	**SWW-40**	SM 4500-H+B	443329		
50197064002	**SWW-41**	SM 4500-H+B	443329		
50197064003	**SWW-42**	SM 4500-H+B	443329		
50197064004	**SWW-43**	SM 4500-H+B	443329		
50197064005	**SWW-44**	SM 4500-H+B	443329		
50197064006	**SWW-45**	SM 4500-H+B	443329		
50197064007	**SWW-46**	SM 4500-H+B	443329		
50197064008	**SWW-47**	SM 4500-H+B	443329		
50197064009	**DUP**	SM 4500-H+B	443329		
50197064010	**Field Blank**	SM 4500-H+B	443329		
50197064011	**Trip Blank**	SM 4500-H+B	443329		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: | of |

2186180

Section A Required Client Information:

Company: ATC
Address: 7888 Centerpoint Dr. Ste. 100 Indianapolis, IN
Email To: Mark.Breting@ATCLS.com
Phone: Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Mark Breting
Copy To:
Purchase Order No.:
Project Name: Meron 3 CCR (EVS)
Project Number: 170LF00518

Section C Invoice Information:

Attention:
Company Name: Same
Address:
Pace Quote Reference:
Pace Project Manager: Chris Boyle
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IN

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): 9056 IC Anions	6010 Metals, ICP	6010 Metals, ICPMS	7470 Mercury	8260 VOC TDS	4500 pH	Radium 226/228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SWW-40	wt	G			5/15	1130		4	/		/						/	/	/	/	/	/	/		001
2	SWW-41	wt	G			5/15	1040		4	/		/						/	/	/	/	/	/	/		002
3	SWW-42	wt	G			5/15	1400		4	/		/						/	/	/	/	/	/	/		003
4	SWW-43	wt	G			5/15	1615		4	/		/						/	/	/	/	/	/	/		004
5	SWW-44	wt	G			5/15	1830		4	/		/						/	/	/	/	/	/	/		005
6	SWW-45 (MS/MSD)	wt	G			5/15	1900		12	/		/						/	/	/	/	/	/	/		006
7	SWW-46	wt	G			5/15	1645		4	/		/						/	/	/	/	/	/	/		007
8	SWW-47	wt	G			5/15	1345		4	/		/						/	/	/	/	/	/	/		008
9	DUP	wt	G			5/15	0000		4	/		/						/	/	/	/	/	/	/		009
10	Field Blank	wt	G			5/15	1400		4	/		/						/	/	/	/	/	/	/		010
11	Trip Blank	wt	G			LAB	LAB		4	/		/						/	/	/	/	/	/	/		011
12																										

Pace Project No./ Lab I.D.: 5019706 4

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level II QB/QC	[signature] / ATC	5/17/18	2:30	Dan Lutz / ATC			2.0°C			
run appendix III	Dan Lutz / ATC	5/17/18	1628	Marcia Bennett / Pace	5/17/18	1628	1.3°C			
per Mark 5/18/18							0.7°C	Y	N	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Jalen Jones
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 05/15/2018

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Project #: 5019 7064

Date/Time and Initials of person examining contents: AB 5/17/18 1823

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☑ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer: 1 2 3 4 5 6 A B C D (E) F Ice Type: ☑ Wet ☐ Blue ☐ None | Samples collected today and on ice: ☐ Yes ☐ No ☑ N/A

Cooler Temperature: 1.7°C/2.0°C, 1.0°C/1.3°C, 0.4°C/0.7°C Ice Visible in Sample Containers?: ☐ Yes ☑ No ☐ N/A

(Initial/Corrected) Temp should be above freezing to 6°C If temp. is Over 6°C or under 0°C, was the PM Notified?: ☐ Yes ☐ No ☑ N/A

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
Are samples from West Virginia? Document any containers out of temp.		✓	All containers needing acid/base pres. Have been checked?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Circle: (HNO3) H2SO4 NaOH NaOH/ZnAc	✓		
USDA Regulated Soils? (ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓				
Chain of Custody Present:	✓					
Chain of Custody Filled Out:	✓		Dissolved Metals field filtered?:			✓
Short Hold Time Analysis (<72hr)?: Analysis:		✓	Headspace Wisconsin Sulfide			✓
Time 5035A TC placed in Freezer or Short Holds To Lab:				Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
			Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Rush TAT Requested:		✓	Headspace in VOA Vials (>6mm):			✓
Containers Intact?:	✓		Trip Blank Present?:	✓		
Sample Labels Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Custody Seals?:	✓		

Comments:

Sample Container Count

CLIENT: ATC

COC PAGE 1 of 1
COC ID# 2186180

Project # 5019 7064

Sample Line Item	DG9H VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	Bulk SBS DI Kit R	BPIN			Matrix SI/Wt/NAL (Soil/Water/Non-Aqueous Liquid)	pH <2	pH >9	pH>12
1									1					1				2			WT	✓		
2									↓					↓				↓			↓	↓		
3									↓					↓				↓			↓	↓		
4									↓					↓				↓			↓	↓		
5									↓					↓				↓			↓	↓		
6									3					3				6			↓	↓		
7									1					1				2			↓	↓		
8									↓					↓				↓			↓	↓		
9									↓					↓				↓			↓	↓		
10									↓					↓				↓			↓	↓		
11									↓					↓				↓			↓	↓		
12																								

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGAU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		

F-IN-Q-270-rev.10,31Aug2017

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

December 06, 2018

Mr. Mark Breting
ATC Group Services
7988 Centerpoint Drive
Suite 100
Indianapolis, IN 46256

RE: Project: Merom Area 3 CCR
Pace Project No.: 50210542

Dear Mr. Breting:
Enclosed are the analytical results for sample(s) received by the laboratory on November 16, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Donna S. Spyker

Donna Spyker
donna.spyker@pacelabs.com
(317)228-3100
Project Manager

Enclosures

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CERTIFICATIONS

Project:	Merom Area 3 CCR
Pace Project No.:	50210542

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
Indiana Certification #: C-49-06
Kansas/NELAP Certification #:E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #:98019
Ohio VAP Certification #: CL0065
Oklahoma Certification #: 2018-101
Texas Certification #: T104704355-18-12
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

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SAMPLE SUMMARY

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50210542001	**SWW-40**	Water	11/15/18 11:50	11/16/18 15:20
50210542002	**SWW-41**	Water	11/15/18 13:30	11/16/18 15:20
50210542003	**SWW-42**	Water	11/15/18 15:35	11/16/18 15:20
50210542004	**SWW-43**	Water	11/15/18 17:00	11/16/18 15:20
50210542005	**SWW-44**	Water	11/15/18 16:20	11/16/18 15:20
50210542006	**SWW-45**	Water	11/15/18 14:55	11/16/18 15:20
50210542007	**SWW-46**	Water	11/15/18 13:15	11/16/18 15:20
50210542008	**SWW-47**	Water	11/15/18 11:25	11/16/18 15:20
50210542009	**Dup-1**	Water	11/15/18 08:00	11/16/18 15:20
50210542010	**Trip Blank**	Water	11/15/18 08:00	11/16/18 15:20

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SAMPLE ANALYTE COUNT

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50210542001	**SWW-40**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542002	**SWW-41**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542003	**SWW-42**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542004	**SWW-43**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542005	**SWW-44**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542006	**SWW-45**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542007	**SWW-46**	EPA 9056	CPH	3
		EPA 6010	MJC	2
		SM 2540C	CDR	1
		SM 4500-H+B	TPD	1
50210542008	**SWW-47**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542009	**Dup-1**	EPA 9056	CPH	3
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1
50210542010	**Trip Blank**	EPA 9056	CPH	3

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SAMPLE ANALYTE COUNT

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 6010	KJE	2
		SM 2540C	RNP	1
		SM 4500-H+B	MMS	1

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SUMMARY OF DETECTION

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50210542001	**SWW-40**					
EPA 9056	Chloride	229	mg/L	5.0	11/30/18 02:33	
EPA 9056	Fluoride	3.9	mg/L	0.10	12/01/18 08:59	
EPA 9056	Sulfate	16.0	mg/L	0.25	12/01/18 08:59	
EPA 6010	Boron	912	ug/L	100	11/27/18 18:39	
EPA 6010	Calcium	7080	ug/L	1000	11/27/18 18:39	
SM 2540C	Total Dissolved Solids	1200	mg/L	10.0	11/20/18 11:01	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	11/16/18 17:57	H3
50210542002	**SWW-41**					
EPA 9056	Chloride	255	mg/L	25.0	12/02/18 21:58	
EPA 9056	Fluoride	5.0	mg/L	0.10	12/02/18 16:38	
EPA 9056	Sulfate	2.0	mg/L	0.25	12/02/18 16:38	
EPA 6010	Boron	1080	ug/L	100	11/27/18 18:42	
EPA 6010	Calcium	2910	ug/L	1000	11/27/18 18:42	
SM 2540C	Total Dissolved Solids	1460	mg/L	10.0	11/20/18 11:01	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	11/16/18 17:59	H3
50210542003	**SWW-42**					
EPA 9056	Chloride	288	mg/L	25.0	11/30/18 04:45	
EPA 9056	Fluoride	3.7	mg/L	0.10	12/01/18 19:19	
EPA 9056	Sulfate	1.7	mg/L	0.25	12/01/18 19:19	
EPA 6010	Boron	1200	ug/L	100	11/27/18 18:44	
EPA 6010	Calcium	2710	ug/L	1000	11/27/18 18:44	
SM 2540C	Total Dissolved Solids	1420	mg/L	10.0	11/20/18 11:02	
SM 4500-H+B	pH at 25 Degrees C	8.7	Std. Units	0.10	11/16/18 18:00	H3
50210542004	**SWW-43**					
EPA 9056	Chloride	374	mg/L	25.0	11/30/18 05:04	
EPA 9056	Fluoride	4.0	mg/L	0.10	12/01/18 19:36	
EPA 9056	Sulfate	1.7	mg/L	0.25	12/01/18 19:36	
EPA 6010	Boron	1160	ug/L	100	11/27/18 18:46	
EPA 6010	Calcium	4470	ug/L	1000	11/27/18 18:46	
SM 2540C	Total Dissolved Solids	1410	mg/L	10.0	11/20/18 11:02	
SM 4500-H+B	pH at 25 Degrees C	8.8	Std. Units	0.10	11/16/18 18:02	H3
50210542005	**SWW-44**					
EPA 9056	Chloride	318	mg/L	25.0	11/30/18 05:22	
EPA 9056	Fluoride	4.8	mg/L	0.10	12/01/18 19:53	
EPA 9056	Sulfate	3.8	mg/L	0.25	12/01/18 19:53	
EPA 6010	Boron	1100	ug/L	100	11/27/18 18:49	
EPA 6010	Calcium	2760	ug/L	1000	11/27/18 18:49	
SM 2540C	Total Dissolved Solids	1640	mg/L	10.0	11/20/18 15:48	
SM 4500-H+B	pH at 25 Degrees C	8.7	Std. Units	0.10	11/16/18 18:04	H3
50210542006	**SWW-45**					
EPA 9056	Chloride	475	mg/L	25.0	11/30/18 05:40	
EPA 9056	Fluoride	4.4	mg/L	0.10	12/01/18 20:11	
EPA 9056	Sulfate	0.96	mg/L	0.25	12/01/18 20:11	
EPA 6010	Boron	1050	ug/L	100	11/27/18 18:51	

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SUMMARY OF DETECTION

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50210542006	**SWW-45**					
EPA 6010	Calcium	3210	ug/L	1000	11/27/18 18:51	
SM 2540C	Total Dissolved Solids	1740	mg/L	10.0	11/20/18 15:49	
SM 4500-H+B	pH at 25 Degrees C	8.6	Std. Units	0.10	11/16/18 18:05	H3
50210542007	**SWW-46**					
EPA 9056	Chloride	302	mg/L	25.0	11/30/18 05:59	
EPA 9056	Fluoride	4.3	mg/L	0.10	12/01/18 20:28	
EPA 9056	Sulfate	22.2	mg/L	0.25	12/01/18 20:28	
EPA 6010	Boron	1220	ug/L	100	11/26/18 13:28	
EPA 6010	Calcium	39600	ug/L	1000	11/26/18 13:28	
SM 2540C	Total Dissolved Solids	2800	mg/L	500	11/21/18 14:26	
SM 4500-H+B	pH at 25 Degrees C	8.7	Std. Units	0.10	11/20/18 11:45	H3
50210542008	**SWW-47**					
EPA 9056	Chloride	136	mg/L	5.0	11/30/18 03:48	
EPA 9056	Fluoride	1.8	mg/L	0.10	12/01/18 09:17	
EPA 9056	Sulfate	8.3	mg/L	0.25	12/01/18 09:17	
EPA 6010	Boron	655	ug/L	100	11/27/18 18:53	
EPA 6010	Calcium	13900	ug/L	1000	11/27/18 18:53	
SM 2540C	Total Dissolved Solids	883	mg/L	33.3	11/20/18 15:49	
SM 4500-H+B	pH at 25 Degrees C	8.3	Std. Units	0.10	11/16/18 18:09	H3
50210542009	**Dup-1**					
EPA 9056	Chloride	342	mg/L	100	12/03/18 22:03	
EPA 9056	Fluoride	3.9	mg/L	0.10	12/01/18 18:10	
EPA 9056	Sulfate	1.7	mg/L	0.25	12/01/18 18:10	
EPA 6010	Boron	1200	ug/L	100	11/27/18 18:56	
EPA 6010	Calcium	4840	ug/L	1000	11/27/18 18:56	
SM 2540C	Total Dissolved Solids	1440	mg/L	10.0	11/20/18 15:50	
SM 4500-H+B	pH at 25 Degrees C	8.8	Std. Units	0.10	11/16/18 18:11	H3
50210542010	**Trip Blank**					
EPA 9056	Chloride	0.80	mg/L	0.25	12/03/18 22:22	
EPA 9056	Sulfate	6.1	mg/L	0.25	12/03/18 22:22	
SM 4500-H+B	pH at 25 Degrees C	6.4	Std. Units	0.10	11/16/18 18:20	H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-40 **Lab ID: 50210542001** Collected: 11/15/18 11:50 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**229**	mg/L	5.0	20		11/30/18 02:33	16887-00-6	
Fluoride	**3.9**	mg/L	0.10	1		12/01/18 08:59	16984-48-8	
Sulfate	**16.0**	mg/L	0.25	1		12/01/18 08:59	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**912**	ug/L	100	1	11/21/18 06:08	11/27/18 18:39	7440-42-8	
Calcium	**7080**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:39	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1200**	mg/L	10.0	1		11/20/18 11:01		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		11/16/18 17:57		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-41 **Lab ID: 50210542002** Collected: 11/15/18 13:30 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**255**	mg/L	25.0	100		12/02/18 21:58	16887-00-6	
Fluoride	**5.0**	mg/L	0.10	1		12/02/18 16:38	16984-48-8	
Sulfate	**2.0**	mg/L	0.25	1		12/02/18 16:38	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1080**	ug/L	100	1	11/21/18 06:08	11/27/18 18:42	7440-42-8	
Calcium	**2910**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:42	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1460**	mg/L	10.0	1		11/20/18 11:01		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		11/16/18 17:59		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-42 **Lab ID: 50210542003** Collected: 11/15/18 15:35 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**288**	mg/L	25.0	100		11/30/18 04:45	16887-00-6	
Fluoride	**3.7**	mg/L	0.10	1		12/01/18 19:19	16984-48-8	
Sulfate	**1.7**	mg/L	0.25	1		12/01/18 19:19	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1200**	ug/L	100	1	11/21/18 06:08	11/27/18 18:44	7440-42-8	
Calcium	**2710**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:44	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1420**	mg/L	10.0	1		11/20/18 11:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.7**	Std. Units	0.10	1		11/16/18 18:00		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-43 **Lab ID: 50210542004** Collected: 11/15/18 17:00 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**374**	mg/L	25.0	100		11/30/18 05:04	16887-00-6	
Fluoride	**4.0**	mg/L	0.10	1		12/01/18 19:36	16984-48-8	
Sulfate	**1.7**	mg/L	0.25	1		12/01/18 19:36	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1160**	ug/L	100	1	11/21/18 06:08	11/27/18 18:46	7440-42-8	
Calcium	**4470**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:46	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1410**	mg/L	10.0	1		11/20/18 11:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.8**	Std. Units	0.10	1		11/16/18 18:02		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-44 **Lab ID: 50210542005** Collected: 11/15/18 16:20 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**318**	mg/L	25.0	100		11/30/18 05:22	16887-00-6	
Fluoride	**4.8**	mg/L	0.10	1		12/01/18 19:53	16984-48-8	
Sulfate	**3.8**	mg/L	0.25	1		12/01/18 19:53	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1100**	ug/L	100	1	11/21/18 06:08	11/27/18 18:49	7440-42-8	
Calcium	**2760**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:49	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1640**	mg/L	10.0	1		11/20/18 15:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.7**	Std. Units	0.10	1		11/16/18 18:04		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-45 **Lab ID: 50210542006** Collected: 11/15/18 14:55 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**475**	mg/L	25.0	100		11/30/18 05:40	16887-00-6	
Fluoride	**4.4**	mg/L	0.10	1		12/01/18 20:11	16984-48-8	
Sulfate	**0.96**	mg/L	0.25	1		12/01/18 20:11	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1050**	ug/L	100	1	11/21/18 06:08	11/27/18 18:51	7440-42-8	
Calcium	**3210**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:51	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1740**	mg/L	10.0	1		11/20/18 15:49		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.6**	Std. Units	0.10	1		11/16/18 18:05		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-46 **Lab ID: 50210542007** Collected: 11/15/18 13:15 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**302**	mg/L	25.0	100		11/30/18 05:59	16887-00-6	
Fluoride	**4.3**	mg/L	0.10	1		12/01/18 20:28	16984-48-8	
Sulfate	**22.2**	mg/L	0.25	1		12/01/18 20:28	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1220**	ug/L	100	1	11/23/18 21:36	11/26/18 13:28	7440-42-8	
Calcium	**39600**	ug/L	1000	1	11/23/18 21:36	11/26/18 13:28	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2800**	mg/L	500	1		11/21/18 14:26		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.7**	Std. Units	0.10	1		11/20/18 11:45		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: SWW-47 **Lab ID: 50210542008** Collected: 11/15/18 11:25 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**136**	mg/L	5.0	20		11/30/18 03:48	16887-00-6	
Fluoride	**1.8**	mg/L	0.10	1		12/01/18 09:17	16984-48-8	
Sulfate	**8.3**	mg/L	0.25	1		12/01/18 09:17	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**655**	ug/L	100	1	11/21/18 06:08	11/27/18 18:53	7440-42-8	
Calcium	**13900**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:53	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**883**	mg/L	33.3	1		11/20/18 15:49		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.3**	Std. Units	0.10	1		11/16/18 18:09		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: Dup-1 **Lab ID: 50210542009** Collected: 11/15/18 08:00 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**342**	mg/L	100	400		12/03/18 22:03	16887-00-6	
Fluoride	**3.9**	mg/L	0.10	1		12/01/18 18:10	16984-48-8	
Sulfate	**1.7**	mg/L	0.25	1		12/01/18 18:10	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**1200**	ug/L	100	1	11/21/18 06:08	11/27/18 18:56	7440-42-8	
Calcium	**4840**	ug/L	1000	1	11/21/18 06:08	11/27/18 18:56	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1440**	mg/L	10.0	1		11/20/18 15:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**8.8**	Std. Units	0.10	1		11/16/18 18:11		H3

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ANALYTICAL RESULTS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Sample: Trip Blank **Lab ID: 50210542010** Collected: 11/15/18 08:00 Received: 11/16/18 15:20 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056							
Chloride	**0.80**	mg/L	0.25	1		12/03/18 22:22	16887-00-6	
Fluoride	ND	mg/L	0.10	1		12/03/18 22:22	16984-48-8	
Sulfate	**6.1**	mg/L	0.25	1		12/03/18 22:22	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	ND	ug/L	100	1	11/21/18 06:08	11/27/18 18:58	7440-42-8	
Calcium	ND	ug/L	1000	1	11/21/18 06:08	11/27/18 18:58	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	10.0	1		11/20/18 15:50		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**6.4**	Std. Units	0.10	1		11/16/18 18:20		H3

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 473843 | Analysis Method: EPA 9056
QC Batch Method: EPA 9056 | Analysis Description: 9056 IC Anions
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004, 50210542005, 50210542006, 50210542007, 50210542008, 50210542009, 50210542010

METHOD BLANK: 2186446 | Matrix: Water
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004, 50210542005, 50210542006, 50210542007, 50210542008, 50210542009, 50210542010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	11/30/18 01:56	
Fluoride	mg/L	ND	0.10	11/30/18 19:08	
Sulfate	mg/L	ND	0.25	11/30/18 01:56	

LABORATORY CONTROL SAMPLE: 2186447

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	95	80-120	
Fluoride	mg/L	.5	0.42	84	80-120	
Sulfate	mg/L	2.5	2.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2186448 2186449

Parameter	Units	50210542007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	302	125	125	438	437	109	108	80-120	0	15	
Fluoride	mg/L	4.3	.5	.5	4.9	4.7	117	87	80-120	3	15	
Sulfate	mg/L	22.2	2.5	2.5	24.9	24.7	108	102	80-120	1	15	

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472504 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004, 50210542005, 50210542006, 50210542008, 50210542009, 50210542010

METHOD BLANK: 2180575 | Matrix: Water
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004, 50210542005, 50210542006, 50210542008, 50210542009, 50210542010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	100	11/27/18 18:30	
Calcium	ug/L	ND	1000	11/27/18 18:30	

LABORATORY CONTROL SAMPLE: 2180576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1070	107	80-120	
Calcium	ug/L	10000	9710	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2180577 2180578

Parameter	Units	50210376003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	178	1000	1000	1220	1230	105	105	75-125	0	20	
Calcium	ug/L	491000	10000	10000	483000	491000	-85	0	75-125	2	20	E,P6

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472602 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Associated Lab Samples: 50210542007

METHOD BLANK: 2180987 | Matrix: Water
Associated Lab Samples: 50210542007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	ND	100	11/26/18 09:03	
Calcium	ug/L	ND	1000	11/26/18 09:03	

LABORATORY CONTROL SAMPLE: 2180988

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	80-120	
Calcium	ug/L	10000	9630	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2180989 2180990

Parameter	Units	50210542007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	1220	1000	1000	2070	2070	86	85	75-125	0	20	
Calcium	ug/L	39600	10000	10000	45900	47600	63	80	75-125	4	20	M0

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472573 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004

METHOD BLANK: 2180785 | Matrix: Water
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/20/18 10:57	

LABORATORY CONTROL SAMPLE: 2180786

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	263	88	80-120	

SAMPLE DUPLICATE: 2180787

Parameter	Units	50210542001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	1160	3	10	

SAMPLE DUPLICATE: 2180788

Parameter	Units	50210542002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1460	1440	1	10	

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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472667 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 50210542005, 50210542006, 50210542008, 50210542009, 50210542010

METHOD BLANK: 2181314 | Matrix: Water
Associated Lab Samples: 50210542005, 50210542006, 50210542008, 50210542009, 50210542010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/20/18 15:48	

LABORATORY CONTROL SAMPLE: 2181315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	270	90	80-120	

SAMPLE DUPLICATE: 2181317

Parameter	Units	50210607003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	308	301	2	10	

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472841 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 50210542007

METHOD BLANK: 2182072 | Matrix: Water
Associated Lab Samples: 50210542007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	11/21/18 14:19	

LABORATORY CONTROL SAMPLE: 2182073

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	291	97	80-120	

SAMPLE DUPLICATE: 2182074

Parameter	Units	50210845001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1380	1370	1	10	

SAMPLE DUPLICATE: 2182247

Parameter	Units	50210542007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2800	2850	2	10	

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472122 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 50210542001, 50210542002, 50210542003, 50210542004, 50210542005, 50210542006, 50210542008, 50210542009, 50210542010

SAMPLE DUPLICATE: 2178678

Parameter	Units	50210517001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	7.9	1	2	H3

SAMPLE DUPLICATE: 2179061

Parameter	Units	50210533002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.4	1	2	H3

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QUALITY CONTROL DATA

Project: Merom Area 3 CCR
Pace Project No.: 50210542

QC Batch: 472527
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 50210542007

SAMPLE DUPLICATE: 2180632

Parameter	Units	50210617001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	2	H3

SAMPLE DUPLICATE: 2180854

Parameter	Units	50210542007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.7	8.8	0	2	H3

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QUALIFIERS

Project: Merom Area 3 CCR
Pace Project No.: 50210542

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Merom Area 3 CCR
Pace Project No.: 50210542

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50210542001	**SWW-40**	EPA 9056	473843		
50210542002	**SWW-41**	EPA 9056	473843		
50210542003	**SWW-42**	EPA 9056	473843		
50210542004	**SWW-43**	EPA 9056	473843		
50210542005	**SWW-44**	EPA 9056	473843		
50210542006	**SWW-45**	EPA 9056	473843		
50210542007	**SWW-46**	EPA 9056	473843		
50210542008	**SWW-47**	EPA 9056	473843		
50210542009	**Dup-1**	EPA 9056	473843		
50210542010	**Trip Blank**	EPA 9056	473843		
50210542001	**SWW-40**	EPA 3010	472504	EPA 6010	473286
50210542002	**SWW-41**	EPA 3010	472504	EPA 6010	473286
50210542003	**SWW-42**	EPA 3010	472504	EPA 6010	473286
50210542004	**SWW-43**	EPA 3010	472504	EPA 6010	473286
50210542005	**SWW-44**	EPA 3010	472504	EPA 6010	473286
50210542006	**SWW-45**	EPA 3010	472504	EPA 6010	473286
50210542007	**SWW-46**	EPA 3010	472602	EPA 6010	473027
50210542008	**SWW-47**	EPA 3010	472504	EPA 6010	473286
50210542009	**Dup-1**	EPA 3010	472504	EPA 6010	473286
50210542010	**Trip Blank**	EPA 3010	472504	EPA 6010	473286
50210542001	**SWW-40**	SM 2540C	472573		
50210542002	**SWW-41**	SM 2540C	472573		
50210542003	**SWW-42**	SM 2540C	472573		
50210542004	**SWW-43**	SM 2540C	472573		
50210542005	**SWW-44**	SM 2540C	472667		
50210542006	**SWW-45**	SM 2540C	472667		
50210542007	**SWW-46**	SM 2540C	472841		
50210542008	**SWW-47**	SM 2540C	472667		
50210542009	**Dup-1**	SM 2540C	472667		
50210542010	**Trip Blank**	SM 2540C	472667		
50210542001	**SWW-40**	SM 4500-H+B	472122		
50210542002	**SWW-41**	SM 4500-H+B	472122		
50210542003	**SWW-42**	SM 4500-H+B	472122		
50210542004	**SWW-43**	SM 4500-H+B	472122		
50210542005	**SWW-44**	SM 4500-H+B	472122		
50210542006	**SWW-45**	SM 4500-H+B	472122		
50210542007	**SWW-46**	SM 4500-H+B	472527		
50210542008	**SWW-47**	SM 4500-H+B	472122		
50210542009	**Dup-1**	SM 4500-H+B	472122		
50210542010	**Trip Blank**	SM 4500-H+B	472122		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	ATC Group Services
Address:	7988 Centerpoint Drive
	Indianapolis, IN 46256
Email:	mark.breting@atcassociates.com
Phone:	Fax:
Requested Due Date:	standard

Section B
Required Project Information:

Report To:	Mark Breting
Copy To:	
Purchase Order #:	
Project Name:	Merom Area 3 CCR
Project #:	

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	donna.spyker@pacelabs.com,
Pace Profile #:	6246/4

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): IN Metals, Total	IN Chloride, Fluoride, Sulfate	IN TDS/pH	Residual Chlorine (Y/N)	50210542
1	GWW-40					11-15-18	1150		3	X		X						X	X	X		001
2	GWW-41					11-15-18	1330		3	X		X						X	X	X		002
3	GWW-42					11-15-18	1535		3	X		X						X	X	X		003
4	GWW-43					11-15-18	17:00		3	X		X						X	X	X		004
5	GWW-44					11-15-18	16:20		3	X		X						X	X	X		005
6	GWW-45					11-15-18	14:55		3	X		X						X	X	X		006
7	GWW-46 MS/MSD					11-15-18	13:15		9	X		X						X	X	X		007
8	GWW-47					11-15-18	11:25		3	X		X						X	X	X		008
9	Dup-1					~~[illegible]~~			3	X		X						X	X	X		009
10	~~Rinse Blank~~					11-15-18			1													
11	Trip Blank					Lab	Lab		1									X	X	X		010
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Hold Samples from GWW-46 including MS/MSD	Andy Tashowiak	11/16/18	1430	Zeh Thompson Pace	11/16/18	1430
	Zeh Thompson Pace	11/16/18	1520	JCSON [illegible]	11-16	1520

SAMPLE CONDITIONS

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
013	Y	N	X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Andrew Tashowiak

SIGNATURE of SAMPLER: [signature]

DATE Signed: 11-16-18

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Project #: 50210542

Date/Time and Initials of person examining contents: JH 11-16 1611

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No **Seals Intact:** ☐ Yes ☒ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer: 1 2 3 4 5 6 (A) B C D E F Ice Type: ☒ Wet ☐ Blue ☐ None | Samples collected today and on ice: ☐ Yes ☐ No ☒ N/A

Cooler Temperature: 0.1/0.3 Ice Visible in Sample Containers?: ☐ Yes ☒ No ☐ N/A

(Initial/Corrected) Temp should be above freezing to 6°C If temp. is Over 6°C or under 0°C, was the PM Notified?: ☐ Yes ☐ No ☒ N/A

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
Are samples from West Virginia? Document any containers out of temp.		X	All containers needing acid/base pres. Have been checked?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Circle: (HNO3) H2SO4 NaOH NaOH/ZnAc	X		
USDA Regulated Soils? (ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		X				
Chain of Custody Present:	X					
Chain of Custody Filled Out:	X		Dissolved Metals field filtered?:			X
Short Hold Time Analysis (<72hr)?: Analysis:		X	Headspace Wisconsin Sulfide			X
Time 5035A TC placed in Freezer or Short Holds To Lab:				Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			X
			Residual Chlorine Check (Total/Amenable/Free Cyanide)			X
Rush TAT Requested:		X	Headspace in VOA Vials (>6mm):			X
Containers Intact?:	X		Trip Blank Present?:	X	X JH 11-6	
Sample Labels Match COC?: Except TCs, which only require sample ID	X		Trip Blank Custody Seals?:	X		

Comments: Mark Breting Run analyses for sample SWW-46. dss 112018

Sample Container Count

WO# : 50210542

50210542

CLIENT: ATC

COC PAGE 1 of 1

COC ID#

Project # 50210542

Sample Line Item	DG9H VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	SBS Bulk Kit R				Matrix Si/\ (Soil/Wate Aqueous l	pH <2	pH >9	pH>12
1												1		1		1					wt	f		
2												1		1		1								
3												1		1		1								
4												1		1		1								
5												1		1		1								
6												1		1		1								
7												3		3		3								
8												1		1		1								
9												1		1		1								
10												1		1		1								
11												1		1		1								
12																								

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGKU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		