

SCS ENGINEERS

February 22, 2018
File No. 25216069.00

Mr. Jim Jakubiak
Edgewater Generating Station
3739 Lakeshore Drive
Sheboygan, WI 53081-7233

Subject: Revised 2017 Annual Monitoring and Corrective Action Report
I-43 Ash Disposal Facility

Dear Mr. Jakubiak:

This letter documents revisions to the 2017 Annual Monitoring and Corrective Action Report for the Wisconsin Power and Light (WPL) Edgewater Generating Station I-43 Ash Disposal Facility (ADF). Two laboratory reports were inadvertently omitted from the original version of this report and have been added to Appendix A in the revised version. The additional lab reports also necessitated additional revisions to Table 1 and Section 2.5.1. The specific revisions include:

- Updated Table 1 and report Appendix A to include missing information for the October 2016 sampling event. The October 2016 laboratory report was inserted as Appendix A4 and the remaining sections of Appendix A were renumbered accordingly. No additional report revisions were necessary for this addition.
- Updated report Appendix A5 to include a missing laboratory report associated with the December 2016 sampling event. The missing report was for a Total Dissolved Solids (TDS) resampling event from January 2017. The following related text changes were included in the attached revised report:
 - Page 3, Section 2.5.1:
Description of Any Problems Encountered. *For the fifth background sampling event, conducted in December 2016, the laboratory flagged the TDS sample results for MW-301 through MW-304 because they were analyzed outside the recognized method holding time.*

 - Discussion of Actions to Resolve the Problems.** *To correct for the holding time error, SCS resampled monitoring wells MW-301 through MW-304 and resubmitted the samples for TDS analysis in January 2017.*



Mr. Jim Jakubiak
February 22, 2018
Page 2

Sincerely,



Sherren C. Clark
Project Director
SCS ENGINEERS



Thomas J. Karwoski
Senior Project Manager
SCS ENGINEERS

Attachment: Revised 2017 Annual Monitoring and Corrective Action Report

TK/lmh/SCC

cc: Eric Sandvig, Edgewater Generating Station
Jeff Maxted, Alliant Energy

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2017 Annual Groundwater Monitoring
and Corrective Action Report

**Edgewater Generating Station
I-43 Ash Disposal Facility
Town of Wilson
Sheboygan County, Wisconsin**

Prepared for:



Prepared by:

SCS ENGINEERS
2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

January 31, 2018
(Revised February 22, 2018)
File No. 25216069.17

2017 Annual Groundwater Monitoring and Corrective Action Report

**Edgewater Generating Station
I-43 Ash Disposal Facility
Town of Wilson
Sheboygan County, Wisconsin**

Prepared for:

Alliant Energy

Prepared by:

SCS ENGINEERS
2830 Dairy Drive
Madison, Wisconsin 53718-6751
(608) 224-2830

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Table of Contents

Section	Page
1.0 Introduction.....	1
2.0 §257.90(e) Annual Report Requirements.....	1
2.1 §257.90(e)(1) Site Map	2
2.2 §257.90(e)(2) Monitoring System Changes.....	2
2.3 §257.90(e)(3) Summary of Sampling Events.....	2
2.4 §257.90(e)(4) Monitoring Transition Narrative.....	3
2.5 §257.90(e)(5) Other Requirements	3
2.5.1 §257.90(e) General Requirements	3
2.5.2 §257.94(d) Alternative Detection Monitoring Frequency	4
2.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring.....	4
2.5.4 §257.95(c) Alternative Assessment Monitoring Frequency	4
2.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards	5
2.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring ..	5
2.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment.....	5

Table

- 1 CCR Rule Groundwater Samples Summary

Figure

- 1 Site Plan and Monitoring Well Locations

Appendix A – Analytical Laboratory Reports

- A1 Round 1 Background Sampling, Analytical Laboratory Report
- A2 Round 2 Background Sampling, Analytical Laboratory Report
- A3 Round 3 Background Sampling, Analytical Laboratory Report
- A4 Round 4 Background Sampling, Analytical Laboratory Report
- A5 Round 5 Background Sampling, Analytical Laboratory Report
- A6 Round 6 Background Sampling, Analytical Laboratory Report
- A7 Round 7 Background Sampling, Analytical Laboratory Report
- A8 Round 8 Background Sampling, Analytical Laboratory Report
- A9 Round 9 Background Sampling, Analytical Laboratory Report
- A10 Round 10 Background Sampling, Analytical Laboratory Report
- A11 Fall 2017 Detection Sampling, Analytical Laboratory Report

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1.0 INTRODUCTION

This 2017 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” published by the U.S. Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015). Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2017 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

This report covers the period of groundwater monitoring from April 26, 2016, through December 31, 2017. April 26, 2016, is the date of the first background sampling round. All future annual reports will cover the period from January 1 through December 31 of the previous year. This report was revised on February 22, 2018, to include information that was inadvertently omitted in the original version. The revisions to **Table 1**, **Appendix A**, and **Section 2.5.1** are described in a separate cover letter.

The groundwater monitoring system at the I-43 Ash Disposal Facility (ADF) is a multiunit system. The I-43 ADF is a landfill and consists of three existing CCR units that are contiguous:

- Phase 3, Module 1 (existing CCR Landfill)
- Phase 3, Module 2 (existing CCR Landfill)
- Phase 4, Module 1 (existing CCR Landfill)

The multiunit system is designed to detect monitored constituents at the waste boundary of the I-43 ADF as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two background wells and three downgradient monitoring wells.

2.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

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

2.1 § 257.90(E)(1) SITE MAP

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;

A map with an aerial image showing the I-43 Landfill and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 1**.

2.2 § 257.90(E)(2) MONITORING SYSTEM CHANGES

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 and no wells were decommissioned as part of the groundwater monitoring program for the I-43 Landfill in 2017. The list below outlines the dates of well installations for monitoring wells within the monitoring well network.

- 12/3/2015 through 1/15/2016: MW-301, MW-302, MW-303
- 1/26/2016: MW-304
- 2/2/2017: MW-305

2.3 § 257.90(E)(3) SUMMARY OF SAMPLING EVENTS

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;

Nine groundwater samples were collected from each CCR monitoring well for the establishment of background, with exception of MW-305. Four groundwater samples were collected from MW-305 to supplement upgradient background data. Background sampling began in April 2016 and concluded in August 2017. Background samples were analyzed for both Appendix III and Appendix IV constituents. 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 is included in **Table 1**. The results of the analytical laboratory analyses are provided in the laboratory reports in **Appendices A1** through **A9**.

Detection monitoring was initiated at the site on October 17, 2017. The date of sample collection, field measurements, and the analytical results of the analytical laboratory analyses are provided in **Appendix A10**.

Assessment monitoring has not been initiated for the CCR Units at the I-43 Landfill.

2.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

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);

Following completion of nine background groundwater monitoring events, detection monitoring was initiated as described in **Section 2.3** in October 2017. There were no transitions between monitoring programs or statistically significant increase (SSI) determinations completed in 2017.

2.5 § 257.90(E)(5) OTHER REQUIREMENTS

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

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in *italics*, followed by applicable information relative to the 2017 Annual Groundwater Monitoring and Corrective Action Report for the I-43 Landfill.

2.5.1 § 257.90(e) General Requirements

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.

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program is currently in detection monitoring.

Summary of Key Actions Completed. Collection of background groundwater quality data was completed, and the initial detection monitoring sampling and analysis event was completed.

Description of Any Problems Encountered. For the fifth background sampling event, conducted in December 2016, the laboratory flagged the TDS sample results for MW-301 through MW-304 because they were analyzed outside the recognized method holding time.

Discussion of Actions to Resolve the Problems. To correct for the holding time error, SCS resampled monitoring wells MW-301 through MW-304 and resubmitted the samples for TDS analysis in January 2017.

Projection of Key Activities for the Upcoming Year (2018):

- Statistical evaluation and determination of any SSIs for October 2017 monitoring event (by 1/15/18)
- If an SSI is determined, then within 90 days either
 - Complete alternative source demonstration (if applicable), or
 - Establish an assessment monitoring program
- Two semi-annual groundwater sampling and analysis events (April and October 2018)

2.5.2 §257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. No alternative detection monitoring frequency has been proposed.

2.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. No alternative source demonstration was completed in 2017.

2.5.4 §257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. Assessment monitoring has not been initiated and no alternative assessment monitoring frequency has been proposed.

2.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. Assessment monitoring was not performed in 2017.

2.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. Assessment monitoring has not been initiated and no alternative source demonstration for assessment monitoring was completed in 2017.

2.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. Corrective measures assessment has not been initiated.

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TABLE 1

CCR Rule Groundwater Samples Summary

Table 1. CCR Rule Groundwater Samples Summary
Edgewater Generating Station I-43 Landfill
SCS Engineers Project #25216069

Sample Dates	Downgradient Wells			Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305
4/26/2016	B	B	B	B	--
6/21/2016	B	B	B	B	--
8/9-10/2016	B	B	B	B	--
10/19/2016	B	B	B	B	--
12/19/2016- 1/5/2017	B	B	B	B	--
1/23/2017	B	B	B	B	--
2/23/2017	B	B	B	B	B
4/6-7/2017	B	B	B	B	B
6/6/2017	B	B	B	B	B
8/1/2017	B	B	B	B	B
10/23/2017	D	D	D	D	D
Total Samples	11	11	11	11	5

Abbreviations:

B = Background Sample

D = Required by Detection Monitoring Program

-- = Not Sampled

Notes:

MW-305 was installed in February 2017.

Created by:	<u>NDK</u>	Date:	<u>1/4/2018</u>
Last revision by:	<u>NDK</u>	Date:	<u>2/9/2018</u>
Checked by:	<u>JD</u>	Date:	<u>2/9/2018</u>

I:\25216069.00\Reports\2017 Annual Report\[GW_Samples_Summary_Table 1_I-43.xlsx]GW Summary

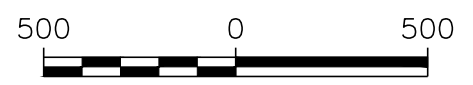
FIGURE 1

Site Plan and Monitoring Well Locations



LEGEND	
---	APPROXIMATE PROPERTY LINE
- - - - -	LIMITS OF WASTE
- - - - -	MODULE LIMITS
---	GRADE (2' CONTOUR)
---	GRADE (10' CONTOUR)
---	EDGE OF WATER
---	SWALE
---	CULVERT
○ MH	MANHOLE
---	CONTACT WATER TRANSFER PIPE
---	ABANDONED 3" DIA. HDPE PIPE
---	TREELINE/TREES
---	PAVED ROAD
---	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
- x - x - x - x -	FENCE
○ *	UTILITY/LIGHT POLE
●	MONITORING WELL
⊕	PIEZOMETER
■	PRIVATE WATER SUPPLY WELL
⊕	CCR RULE PIEZOMETER

- NOTE:
- MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
 - MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
 - MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.



SCALE: 1" = 500'



PROJECT NO.	25216069.00	DRAWN BY:	AHB/JMO
DRAWN:	02/12/16	CHECKED BY:	KK
REVISED:	09/22/17	APPROVED BY:	

SCS ENGINEERS
 2830 DAIRY DRIVE MADISON, WI 53718-6751
 PHONE: (608) 224-2830

CLIENT **ALLIANT ENERGY**
 ALLIANT ENERGY WISCONSIN POWER AND LIGHT COMPANY

SITE
 WISCONSIN POWER AND LIGHT
 EDGEWATER GENERATING STATION
 1-43 LANDFILL
 TOWN OF WILSON, WISCONSIN

MONITORING WELL LOCATION MAP

FIGURE
 1

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APPENDIX A

- A1 Round 1 Background Sampling, Analytical Laboratory Report
- A2 Round 2 Background Sampling, Analytical Laboratory Report
- A3 Round 3 Background Sampling, Analytical Laboratory Report
- A4 Round 4 Background Sampling, Analytical Laboratory Report
- A5 Round 5 Background Sampling, Analytical Laboratory Report
- A6 Round 6 Background Sampling, Analytical Laboratory Report
- A7 Round 7 Background Sampling, Analytical Laboratory Report
- A8 Round 8 Background Sampling, Analytical Laboratory Report
- A9 Round 9 Background Sampling, Analytical Laboratory Report
- A10 Round 10 Background Sampling, Analytical Laboratory Report
- A11 Fall 2017 Detection Sampling, Analytical Laboratory Report

A1 Round 1 Background Sampling, Analytical Laboratory Report

January 25, 2018

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2016. 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.

Revision 1 - This report replaces the May 20, 2016 report. This report has been reissued on January 25, 2018. In 2017, the process for calculating Total Radium concentration using results from individual Ra-226 and Ra-228 analyses was standardized. At the client's request, this project from 2016 has been revised to include a Total Radium concentration using the standardized method.

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

Sincerely,



Tod Noltemeyer for
Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS

Kyle Kramer, SCS ENGINEERS



REPORT OF LABORATORY ANALYSIS

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January 25, 2018
Page 2

cc: Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40131465001	MW 301	Water	04/26/16 13:05	04/28/16 09:45
40131465002	MW 302	Water	04/26/16 11:35	04/28/16 09:45
40131465003	MW 303	Water	04/26/16 10:10	04/28/16 09:45
40131465004	MW 304	Water	04/26/16 13:50	04/28/16 09:45
40131465005	FIELD BLANK	Water	04/26/16 14:00	04/28/16 09:45

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40131465001	MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40131465002	MW 302	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40131465003	MW 303			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40131465004	MW 304	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40131465005	FIELD BLANK			EPA 6020	SDW

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: MW 301 **Lab ID: 40131465001** Collected: 04/26/16 13:05 Received: 04/28/16 09:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.98J	ug/L	5.0	0.36	5	05/05/16 08:03	05/06/16 03:09	7440-36-0	D3
Arsenic	20.8	ug/L	5.0	0.50	5	05/05/16 08:03	05/06/16 03:09	7440-38-2	
Barium	596	ug/L	5.0	0.31	5	05/05/16 08:03	05/06/16 03:09	7440-39-3	
Beryllium	3.9J	ug/L	5.0	0.63	5	05/05/16 08:03	05/06/16 03:09	7440-41-7	D3
Boron	298	ug/L	50.0	10	5	05/05/16 08:03	05/06/16 03:09	7440-42-8	
Cadmium	0.47J	ug/L	5.0	0.44	5	05/05/16 08:03	05/06/16 03:09	7440-43-9	D3
Calcium	389000	ug/L	1250	368	5	05/05/16 08:03	05/06/16 03:09	7440-70-2	
Chromium	133	ug/L	5.0	2.0	5	05/05/16 08:03	05/06/16 03:09	7440-47-3	
Cobalt	36.3	ug/L	5.0	0.18	5	05/05/16 08:03	05/06/16 03:09	7440-48-4	
Lead	35.9	ug/L	5.0	0.20	5	05/05/16 08:03	05/06/16 03:09	7439-92-1	
Lithium	137	ug/L	5.0	0.54	5	05/05/16 08:03	05/06/16 03:09	7439-93-2	
Molybdenum	12.2	ug/L	5.0	0.35	5	05/05/16 08:03	05/06/16 03:09	7439-98-7	
Selenium	12.2	ug/L	5.0	1.0	5	05/05/16 08:03	05/06/16 03:09	7782-49-2	
Thallium	0.88J	ug/L	5.0	0.71	5	05/05/16 08:03	05/06/16 03:09	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.18	ug/L	0.60	0.18	1	05/03/16 11:10	05/04/16 08:42	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.24	Std. Units			1		04/26/16 13:05		
Field Specific Conductance	401	umhos/cm			1		04/26/16 13:05		
Oxygen, Dissolved	1.1	mg/L			1		04/26/16 13:05	7782-44-7	
REDOX	-94	mV			1		04/26/16 13:05		
Turbidity	340.1	NTU			1		04/26/16 13:05		
Static Water Level	653.54	feet			1		04/26/16 13:05		
Temperature, Water (C)	8.7	deg C			1		04/26/16 13:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	343	mg/L	35.7	15.5	1		05/03/16 15:00		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		04/29/16 09:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	28.5J	mg/L	40.0	20.0	10		05/09/16 12:40	16887-00-6	D3
Fluoride	<2.0	mg/L	4.0	2.0	10		05/09/16 12:40	16984-48-8	D3
Sulfate	25.9J	mg/L	40.0	20.0	10		05/09/16 12:40	14808-79-8	D3

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: MW 302 **Lab ID: 40131465002** Collected: 04/26/16 11:35 Received: 04/28/16 09:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	4.5J	ug/L	5.0	0.36	5	05/05/16 08:03	05/06/16 03:16	7440-36-0	D3
Arsenic	26.7	ug/L	5.0	0.50	5	05/05/16 08:03	05/06/16 03:16	7440-38-2	
Barium	309	ug/L	5.0	0.31	5	05/05/16 08:03	05/06/16 03:16	7440-39-3	
Beryllium	3.8J	ug/L	5.0	0.63	5	05/05/16 08:03	05/06/16 03:16	7440-41-7	D3
Boron	198	ug/L	50.0	10	5	05/05/16 08:03	05/06/16 03:16	7440-42-8	
Cadmium	0.85J	ug/L	5.0	0.44	5	05/05/16 08:03	05/06/16 03:16	7440-43-9	D3
Calcium	254000	ug/L	1250	368	5	05/05/16 08:03	05/06/16 03:16	7440-70-2	
Chromium	49.8	ug/L	5.0	2.0	5	05/05/16 08:03	05/06/16 03:16	7440-47-3	
Cobalt	14.6	ug/L	5.0	0.18	5	05/05/16 08:03	05/06/16 03:16	7440-48-4	
Lead	55.0	ug/L	5.0	0.20	5	05/05/16 08:03	05/06/16 03:16	7439-92-1	
Lithium	79.9	ug/L	5.0	0.54	5	05/05/16 08:03	05/06/16 03:16	7439-93-2	
Molybdenum	24.4	ug/L	5.0	0.35	5	05/05/16 08:03	05/06/16 03:16	7439-98-7	
Selenium	21.6	ug/L	5.0	1.0	5	05/05/16 08:03	05/06/16 03:16	7782-49-2	
Thallium	<0.71	ug/L	5.0	0.71	5	05/05/16 08:03	05/06/16 03:16	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.18	ug/L	0.60	0.18	1	05/03/16 11:10	05/04/16 08:49	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.33	Std. Units			1		04/26/16 11:35		
Field Specific Conductance	648	umhos/cm			1		04/26/16 11:35		
Oxygen, Dissolved	2.4	mg/L			1		04/26/16 11:35	7782-44-7	
REDOX	52	mV			1		04/26/16 11:35		
Turbidity	961.9	NTU			1		04/26/16 11:35		
Static Water Level	653.56	feet			1		04/26/16 11:35		
Temperature, Water (C)	8.8	deg C			1		04/26/16 11:35		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	543	mg/L	71.4	31.0	1		05/03/16 15:01		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		04/29/16 09:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	19.5J	mg/L	20.0	10.0	5		05/09/16 12:52	16887-00-6	D3
Fluoride	1.1J	mg/L	2.0	1.0	5		05/09/16 12:52	16984-48-8	D3
Sulfate	81.5	mg/L	20.0	10.0	5		05/09/16 12:52	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: MW 303 **Lab ID: 40131465003** Collected: 04/26/16 10:10 Received: 04/28/16 09:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.66J	ug/L	1.0	0.073	1	05/05/16 08:03	05/06/16 03:23	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.099	1	05/05/16 08:03	05/06/16 03:23	7440-38-2	
Barium	134	ug/L	1.0	0.062	1	05/05/16 08:03	05/06/16 03:23	7440-39-3	
Beryllium	0.18J	ug/L	1.0	0.13	1	05/05/16 08:03	05/06/16 03:23	7440-41-7	
Boron	86.4	ug/L	10.0	2.0	1	05/05/16 08:03	05/06/16 03:23	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	05/05/16 08:03	05/06/16 03:23	7440-43-9	
Calcium	48300	ug/L	250	73.6	1	05/05/16 08:03	05/06/16 03:23	7440-70-2	
Chromium	8.1	ug/L	1.0	0.39	1	05/05/16 08:03	05/06/16 03:23	7440-47-3	
Cobalt	2.2	ug/L	1.0	0.036	1	05/05/16 08:03	05/06/16 03:23	7440-48-4	
Lead	1.9	ug/L	1.0	0.040	1	05/05/16 08:03	05/06/16 03:23	7439-92-1	
Lithium	19.3	ug/L	1.0	0.11	1	05/05/16 08:03	05/06/16 03:23	7439-93-2	
Molybdenum	45.4	ug/L	1.0	0.070	1	05/05/16 08:03	05/06/16 03:23	7439-98-7	
Selenium	0.66J	ug/L	1.0	0.21	1	05/05/16 08:03	05/06/16 03:23	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/05/16 08:03	05/06/16 03:23	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.18	ug/L	0.60	0.18	1	05/03/16 11:10	05/04/16 08:51	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.96	Std. Units			1		04/26/16 10:10		
Field Specific Conductance	586	umhos/cm			1		04/26/16 10:10		
Oxygen, Dissolved	1.1	mg/L			1		04/26/16 10:10	7782-44-7	
REDOX	178	mV			1		04/26/16 10:10		
Turbidity	107.6	NTU			1		04/26/16 10:10		
Static Water Level	653.59	feet			1		04/26/16 10:10		
Temperature, Water (C)	8.6	deg C			1		04/26/16 10:10		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	468	mg/L	20.0	8.7	1		05/03/16 15:02		
9040 pH		Analytical Method: EPA 9040							
pH	7.6	Std. Units	0.10	0.010	1		04/29/16 09:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	15.5	mg/L	4.0	2.0	1		05/09/16 13:04	16887-00-6	
Fluoride	0.55	mg/L	0.40	0.20	1		05/09/16 13:04	16984-48-8	
Sulfate	131	mg/L	20.0	10.0	5		05/10/16 01:23	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: MW 304 **Lab ID: 40131465004** Collected: 04/26/16 13:50 Received: 04/28/16 09:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.11J	ug/L	1.0	0.073	1	05/05/16 08:03	05/06/16 03:30	7440-36-0	
Arsenic	8.8	ug/L	1.0	0.099	1	05/05/16 08:03	05/06/16 03:30	7440-38-2	
Barium	77.6	ug/L	1.0	0.062	1	05/05/16 08:03	05/06/16 03:30	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	05/05/16 08:03	05/06/16 03:30	7440-41-7	
Boron	92.1	ug/L	10.0	2.0	1	05/05/16 08:03	05/06/16 03:30	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	05/05/16 08:03	05/06/16 03:30	7440-43-9	
Calcium	24500	ug/L	250	73.6	1	05/05/16 08:03	05/06/16 03:30	7440-70-2	
Chromium	0.75J	ug/L	1.0	0.39	1	05/05/16 08:03	05/06/16 03:30	7440-47-3	
Cobalt	0.26J	ug/L	1.0	0.036	1	05/05/16 08:03	05/06/16 03:30	7440-48-4	
Lead	0.36J	ug/L	1.0	0.040	1	05/05/16 08:03	05/06/16 03:30	7439-92-1	
Lithium	9.1	ug/L	1.0	0.11	1	05/05/16 08:03	05/06/16 03:30	7439-93-2	
Molybdenum	4.6	ug/L	1.0	0.070	1	05/05/16 08:03	05/06/16 03:30	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	05/05/16 08:03	05/06/16 03:30	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/05/16 08:03	05/06/16 03:30	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.18	ug/L	0.60	0.18	1	05/03/16 11:10	05/04/16 08:53	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.16	Std. Units			1		04/26/16 13:50		
Field Specific Conductance	4.9	umhos/cm			1		04/26/16 13:50		
Oxygen, Dissolved	0.8	mg/L			1		04/26/16 13:50	7782-44-7	
REDOX	-57	mV			1		04/26/16 13:50		
Turbidity	22.36	NTU			1		04/26/16 13:50		
Static Water Level	655.90	feet			1		04/26/16 13:50		
Temperature, Water (C)	8.9	deg C			1		04/26/16 13:50		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	222	mg/L	20.0	8.7	1		05/03/16 15:02		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		04/29/16 09:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.8J	mg/L	4.0	2.0	1		05/09/16 13:16	16887-00-6	
Fluoride	0.49	mg/L	0.40	0.20	1		05/09/16 13:16	16984-48-8	
Sulfate	13.8	mg/L	4.0	2.0	1		05/09/16 13:16	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: FIELD BLANK **Lab ID: 40131465005** Collected: 04/26/16 14:00 Received: 04/28/16 09:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	05/05/16 08:03	05/06/16 01:28	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	05/05/16 08:03	05/06/16 01:28	7440-38-2	
Barium	0.36J	ug/L	1.0	0.062	1	05/05/16 08:03	05/06/16 01:28	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	05/05/16 08:03	05/06/16 01:28	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	05/05/16 08:03	05/06/16 01:28	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	05/05/16 08:03	05/06/16 01:28	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	05/05/16 08:03	05/06/16 01:28	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	05/05/16 08:03	05/06/16 01:28	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	05/05/16 08:03	05/06/16 01:28	7440-48-4	
Lead	<0.040	ug/L	1.0	0.040	1	05/05/16 08:03	05/06/16 01:28	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	05/05/16 08:03	05/06/16 01:28	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	05/05/16 08:03	05/06/16 01:28	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	05/05/16 08:03	05/06/16 01:28	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	05/05/16 08:03	05/06/16 01:28	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.18	ug/L	0.60	0.18	1	05/03/16 11:10	05/04/16 08:56	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		05/03/16 15:03		
9040 pH		Analytical Method: EPA 9040							
pH	5.9	Std. Units	0.10	0.010	1		04/29/16 09:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<2.0	mg/L	4.0	2.0	1		05/09/16 13:28	16887-00-6	
Fluoride	<0.20	mg/L	0.40	0.20	1		05/09/16 13:28	16984-48-8	
Sulfate	<2.0	mg/L	4.0	2.0	1		05/09/16 13:28	14808-79-8	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

QC Batch: 223557 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

METHOD BLANK: 1329198 Matrix: Water
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.18	0.60	05/04/16 07:53	

LABORATORY CONTROL SAMPLE: 1329199

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1329200 1329201

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40131273002 Result	Spike Conc.	Spike Conc.	Result						
Mercury	ug/L	<0.18	5	5	5.4	5.2	109	104	85-115	4	20

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

QC Batch: 223796 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

METHOD BLANK: 1330391 Matrix: Water
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	05/06/16 01:21	
Arsenic	ug/L	<0.099	1.0	05/06/16 01:21	
Barium	ug/L	<0.062	1.0	05/06/16 01:21	
Beryllium	ug/L	<0.13	1.0	05/06/16 01:21	
Boron	ug/L	<2.0	10.0	05/06/16 01:21	
Cadmium	ug/L	<0.089	1.0	05/06/16 01:21	
Calcium	ug/L	<73.6	250	05/06/16 01:21	
Chromium	ug/L	<0.39	1.0	05/06/16 01:21	
Cobalt	ug/L	<0.036	1.0	05/06/16 01:21	
Lead	ug/L	<0.040	1.0	05/06/16 01:21	
Lithium	ug/L	<0.11	1.0	05/06/16 01:21	
Molybdenum	ug/L	<0.070	1.0	05/06/16 01:21	
Selenium	ug/L	<0.21	1.0	05/06/16 01:21	
Thallium	ug/L	<0.14	1.0	05/06/16 01:21	

LABORATORY CONTROL SAMPLE: 1330392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	498	100	80-120	
Arsenic	ug/L	500	495	99	80-120	
Barium	ug/L	500	479	96	80-120	
Beryllium	ug/L	500	490	98	80-120	
Boron	ug/L	500	467	93	80-120	
Cadmium	ug/L	500	480	96	80-120	
Calcium	ug/L	5000	4840	97	80-120	
Chromium	ug/L	500	484	97	80-120	
Cobalt	ug/L	500	472	94	80-120	
Lead	ug/L	500	454	91	80-120	
Lithium	ug/L	500	465	93	80-120	
Molybdenum	ug/L	500	503	101	80-120	
Selenium	ug/L	500	500	100	80-120	
Thallium	ug/L	500	448	90	80-120	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1330393		1330394		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		40131705001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Antimony	ug/L	0.00035J mg/L	500	500	497	479	99	96	75-125	4	20		
Arsenic	ug/L	0.00056J mg/L	500	500	492	476	98	95	75-125	3	20		
Barium	ug/L	0.00025J mg/L	500	500	488	467	98	93	75-125	5	20		
Beryllium	ug/L	0.00013U mg/L	500	500	432	420	86	84	75-125	3	20		
Boron	ug/L	842	500	500	1260	1250	84	81	75-125	1	20		
Cadmium	ug/L	0.00011J mg/L	500	500	456	440	91	88	75-125	4	20		
Calcium	ug/L	0.074U mg/L	5000	5000	4880	4290	97	85	75-125	13	20		
Chromium	ug/L	0.00039U mg/L	500	500	463	447	93	89	75-125	4	20		
Cobalt	ug/L	0.00017J mg/L	500	500	447	431	89	86	75-125	4	20		
Lead	ug/L	0.0031 mg/L	500	500	440	416	87	82	75-125	6	20		
Lithium	ug/L	105	500	500	530	510	85	81	75-125	4	20		
Molybdenum	ug/L	4.9	500	500	499	480	99	95	75-125	4	20		
Selenium	ug/L	0.00034J mg/L	500	500	491	472	98	94	75-125	4	20		
Thallium	ug/L	0.00030J mg/L	500	500	426	408	85	82	75-125	4	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

QC Batch: 223588 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

METHOD BLANK: 1329484 Matrix: Water
Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	05/03/16 14:54	

LABORATORY CONTROL SAMPLE: 1329485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	597	536	90	80-120	

SAMPLE DUPLICATE: 1329486

Parameter	Units	40131431004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	174	182	4	5	

SAMPLE DUPLICATE: 1329487

Parameter	Units	40131448001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	226	220	3	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

QC Batch: 223723 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

METHOD BLANK: 1330099 Matrix: Water
 Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<2.0	4.0	05/09/16 09:51	
Fluoride	mg/L	<0.20	0.40	05/09/16 09:51	
Sulfate	mg/L	<2.0	4.0	05/09/16 09:51	

LABORATORY CONTROL SAMPLE: 1330100

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.5	93	90-110	
Fluoride	mg/L	2	1.9	96	90-110	
Sulfate	mg/L	20	18.5	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1330101 1330102

Parameter	Units	40131705001		MSD		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MSD Result	MSD Result	% Rec	% Rec						
Chloride	mg/L	166	400	400	547	551	95	96	90-110	1	20				
Fluoride	mg/L	4.0U	40	40	41.1	41.9	103	105	90-110	2	20				
Sulfate	mg/L	389	400	400	797	808	102	105	90-110	1	20				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1330103 1330104

Parameter	Units	40131478006		MSD		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MSD Result	MSD Result	% Rec	% Rec						
Chloride	mg/L	194	100	100	298	296	104	102	90-110	1	20				
Fluoride	mg/L	<1.0	10	10	10.1	10.2	101	102	90-110	1	20				
Sulfate	mg/L	24.2	100	100	116	116	91	92	90-110	0	20				

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: MW 301		Lab ID: 40131465001	Collected: 04/26/16 13:05	Received: 04/28/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.90 ± 0.973 (0.880) C:NA T:94%	pCi/L	05/19/16 21:44	13982-63-3	
Radium-228	EPA 904.0	3.54 ± 0.944 (0.947) C:81% T:57%	pCi/L	05/18/16 12:10	15262-20-1	
Total Radium	Total Radium Calculation	5.44 ± 1.92 (1.83)	pCi/L	05/20/16 13:30	7440-14-4	

Sample: MW 302		Lab ID: 40131465002	Collected: 04/26/16 11:35	Received: 04/28/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	4.55 ± 1.64 (1.11) C:NA T:80%	pCi/L	05/19/16 21:58	13982-63-3	
Radium-228	EPA 904.0	3.00 ± 1.36 (2.25) C:82% T:25%	pCi/L	05/18/16 12:10	15262-20-1	
Total Radium	Total Radium Calculation	7.55 ± 3.00 (3.36)	pCi/L	05/20/16 13:30	7440-14-4	

Sample: MW 303		Lab ID: 40131465003	Collected: 04/26/16 10:10	Received: 04/28/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.000 ± 0.756 (1.34) C:NA T:85%	pCi/L	05/19/16 23:04	13982-63-3	
Radium-228	EPA 904.0	0.392 ± 0.381 (0.779) C:80% T:72%	pCi/L	05/18/16 12:11	15262-20-1	
Total Radium	Total Radium Calculation	0.392 ± 1.14 (2.12)	pCi/L	05/20/16 13:30	7440-14-4	

Sample: MW 304		Lab ID: 40131465004	Collected: 04/26/16 13:50	Received: 04/28/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.215 ± 0.666 (1.29) C:NA T:90%	pCi/L	05/19/16 21:37	13982-63-3	
Radium-228	EPA 904.0	0.687 ± 0.364 (0.651) C:85% T:89%	pCi/L	05/18/16 12:11	15262-20-1	
Total Radium	Total Radium Calculation	0.687 ± 1.03 (1.94)	pCi/L	05/20/16 11:37	7440-14-4	

Sample: FIELD BLANK		Lab ID: 40131465005	Collected: 04/26/16 14:00	Received: 04/28/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.441 ± 1.22 (2.07) C:NA T:88%	pCi/L	05/19/16 21:18	13982-63-3	
Radium-228	EPA 904.0	0.207 ± 0.367 (0.801) C:87% T:77%	pCi/L	05/18/16 12:11	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

Sample: FIELD BLANK **Lab ID: 40131465005** Collected: 04/26/16 14:00 Received: 04/28/16 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.207 ± 1.59 (2.87)	pCi/L	05/20/16 11:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40131465

QC Batch: 218852 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

METHOD BLANK: 1070011 Matrix: Water

Associated Lab Samples: 40131465001, 40131465002, 40131465003, 40131465004, 40131465005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0826 ± 0.377 (0.608) C:NA T:88%	pCi/L	05/19/16 21:19	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40131465

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40131465001	MW 301	EPA 3010	223796	EPA 6020	223882
40131465002	MW 302	EPA 3010	223796	EPA 6020	223882
40131465003	MW 303	EPA 3010	223796	EPA 6020	223882
40131465004	MW 304	EPA 3010	223796	EPA 6020	223882
40131465005	FIELD BLANK	EPA 3010	223796	EPA 6020	223882
40131465001	MW 301	EPA 7470	223557	EPA 7470	223594
40131465002	MW 302	EPA 7470	223557	EPA 7470	223594
40131465003	MW 303	EPA 7470	223557	EPA 7470	223594
40131465004	MW 304	EPA 7470	223557	EPA 7470	223594
40131465005	FIELD BLANK	EPA 7470	223557	EPA 7470	223594
40131465001	MW 301				
40131465002	MW 302				
40131465003	MW 303				
40131465004	MW 304				
40131465001	MW 301	EPA 903.1	218852		
40131465002	MW 302	EPA 903.1	218852		
40131465003	MW 303	EPA 903.1	218852		
40131465004	MW 304	EPA 903.1	218852		
40131465005	FIELD BLANK	EPA 903.1	218852		
40131465001	MW 301	EPA 904.0	218871		
40131465002	MW 302	EPA 904.0	218871		
40131465003	MW 303	EPA 904.0	218871		
40131465004	MW 304	EPA 904.0	218871		
40131465005	FIELD BLANK	EPA 904.0	218871		
40131465001	MW 301	Total Radium Calculation	220465		
40131465002	MW 302	Total Radium Calculation	220465		
40131465003	MW 303	Total Radium Calculation	220465		
40131465004	MW 304	Total Radium Calculation	285975		
40131465005	FIELD BLANK	Total Radium Calculation	285975		
40131465001	MW 301	SM 2540C	223588		
40131465002	MW 302	SM 2540C	223588		
40131465003	MW 303	SM 2540C	223588		
40131465004	MW 304	SM 2540C	223588		
40131465005	FIELD BLANK	SM 2540C	223588		
40131465001	MW 301	EPA 9040	223349		
40131465002	MW 302	EPA 9040	223349		
40131465003	MW 303	EPA 9040	223349		
40131465004	MW 304	EPA 9040	223349		
40131465005	FIELD BLANK	EPA 9040	223349		
40131465001	MW 301	EPA 300.0	223723		
40131465002	MW 302	EPA 300.0	223723		
40131465003	MW 303	EPA 300.0	223723		
40131465004	MW 304	EPA 300.0	223723		
40131465005	FIELD BLANK	EPA 300.0	223723		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Bodge #1**
 Phone: **608-214-7362**
 Project Number: **25216069.00**
 Project Name: **Edgewater I43 CER**
 Project State: **WI**
 Sampled By (Print): **Gary Stokel**
 Sampled By (Sign): *Gary Stokel*
 PO #: _____
 Regulatory Program: _____



CHAIN OF CUSTODY

ANone B=HCL C=H2SO4 D=HNO3 E=D1 Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

FILTERED?
(YES/NO)
PRESERVATION
(CODE)

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX	Analyses Requested	
					Y/N	Pick Label
001	MW 301	4/26/16	1305	GW	X	TDS CI F SO4
002	MW 302	4/26/16	1135	GW	X	B, Ca, Sb, Ar, Ba Be, Cd, Cr, Co Pb, Li, Mn, Se, Ti
003	MW 303	4/26/16	1610	GW	X	Mercury
004	MW 304	4/26/16	1350	GW	X	Radium 226
005	Field Bank	4/26/16	1400	W	X	Radium 228 pH

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: **Tom Karwowski**
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Dairy Dr
Madison WI 53718**
 Invoice To Phone: _____

CLIENT COMMENTS: **2-500mlp**
 LAB COMMENTS (Lab Use Only): **4-250mlp ADD**
 Profile #: _____

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Relinquished By: *Conrad Stokel* Date/Time: **4/27/16 0800**
 Relinquished By: *Mary Forman* Date/Time: **4/27/16 1315**
 Relinquished By: *ES Logistics* Date/Time: **4/28/16 0945**

Received By: *Mary Forman* Date/Time: **4/28/16 11:20**
 Received By: *Pat Stokel* Date/Time: **4/28/16 0945**

Receipt Temp = **ROT** °C
 Sample Receipt pH **OK / Adjusted**
 Cooler Custody Seal **Present / Not Present**
 Intact / Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Client Name: SCS Engineers

Project #:

WO#: **40131465**

Courier: Fed Ex UPS Client Pace Other: CS Logistics



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT /Corr: Biological Tissue is Frozen: yes no

Temp Blank Present: yes no no

Person examining contents:
Date: 4/28/16
Initials: BJ

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input 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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
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 type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input 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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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. (Non-Compliance noted in 13.)	<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. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>BJ</u> Lab Std #ID of preservative: <u> </u> Date/Time: <u> </u>
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: empty Date/Time:

Comments/ Resolution: Client returned 2-11ug^A, 2-50mlp^D, 2-250mlp^D, 2-250mlp^A BJ 4/28/16

Project Manager Review:

WJ for DU

Date: 4-28-16

A2 Round 2 Background Sampling, Analytical Laboratory Report

January 25, 2018

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40134242

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2016. 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.

Revision 1 - This report replaces the July 18, 2016 report. This report has been reissued on January 25, 2018. In 2017, the process for calculating Total Radium concentration using results from individual Ra-226 and Ra-228 analyses was standardized. At the client's request, this project from 2016 has been revised to include a Total Radium concentration using the standardized method.

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

Sincerely,



Tod Noltemeyer for
Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Kyle Kramer, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY

Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40134242001	I-43 MW301	Water	06/21/16 09:45	06/22/16 16:17
40134242002	I-43 MW302	Water	06/21/16 10:40	06/22/16 16:17
40134242003	I-43 MW303	Water	06/21/16 11:35	06/22/16 16:17
40134242004	I-43 MW304	Water	06/21/16 16:05	06/22/16 16:17
40134242005	FIELD BLANK	Water	06/21/16 11:45	06/22/16 16:17

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40134242001	I-43 MW301	EPA 6020	DS1	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40134242002	I-43 MW302	EPA 6020	DS1
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40134242003	I-43 MW303			EPA 6020	DS1
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40134242004	I-43 MW304	EPA 6020	DS1
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40134242005	FIELD BLANK			EPA 6020	DS1

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: I-43 MW301 **Lab ID: 40134242001** Collected: 06/21/16 09:45 Received: 06/22/16 16:17 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.58J	ug/L	5.0	0.36	5	06/27/16 08:52	06/28/16 03:32	7440-36-0	D3
Arsenic	8.1	ug/L	5.0	0.50	5	06/27/16 08:52	06/28/16 03:32	7440-38-2	
Barium	236	ug/L	5.0	0.31	5	06/27/16 08:52	06/28/16 03:32	7440-39-3	
Beryllium	1.1J	ug/L	5.0	0.63	5	06/27/16 08:52	06/28/16 03:32	7440-41-7	D3
Boron	157	ug/L	50.0	10	5	06/27/16 08:52	06/28/16 03:32	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	06/27/16 08:52	06/28/16 03:32	7440-43-9	D3
Calcium	148000	ug/L	1250	368	5	06/27/16 08:52	06/28/16 03:32	7440-70-2	
Chromium	37.7	ug/L	5.0	2.0	5	06/27/16 08:52	06/28/16 03:32	7440-47-3	
Cobalt	10.6	ug/L	5.0	0.18	5	06/27/16 08:52	06/28/16 03:32	7440-48-4	
Lead	11.3	ug/L	5.0	0.20	5	06/27/16 08:52	06/28/16 03:32	7439-92-1	
Lithium	49.2	ug/L	5.0	0.54	5	06/27/16 08:52	06/28/16 03:32	7439-93-2	
Molybdenum	11.5	ug/L	5.0	0.35	5	06/27/16 08:52	06/28/16 03:32	7439-98-7	
Selenium	2.6J	ug/L	5.0	1.0	5	06/27/16 08:52	06/28/16 03:32	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	06/27/16 08:52	06/28/16 03:32	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/30/16 13:30	07/01/16 09:16	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.01	Std. Units			1		06/21/16 09:45		
Field Specific Conductance	394	umhos/cm			1		06/21/16 09:45		
Oxygen, Dissolved	0.9	mg/L			1		06/21/16 09:45	7782-44-7	
REDOX	-178	mV			1		06/21/16 09:45		
Turbidity	916.9	NTU			1		06/21/16 09:45		
Static Water Level	652.01	feet			1		06/21/16 09:45		
Temperature, Water (C)	10.9	deg C			1		06/21/16 09:45		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	290	mg/L	20.0	8.7	1		06/28/16 14:26		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		06/27/16 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	18.0J	mg/L	20.0	10.0	5		07/05/16 13:51	16887-00-6	B,D3
Fluoride	1.1J	mg/L	2.0	1.0	5		07/05/16 13:51	16984-48-8	D3
Sulfate	15.9J	mg/L	20.0	10.0	5		07/05/16 13:51	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: I-43 MW302 **Lab ID: 40134242002** Collected: 06/21/16 10:40 Received: 06/22/16 16:17 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.73J	ug/L	2.0	0.15	2	06/27/16 08:52	06/28/16 03:46	7440-36-0	D3
Arsenic	7.8	ug/L	2.0	0.20	2	06/27/16 08:52	06/28/16 03:46	7440-38-2	
Barium	100	ug/L	2.0	0.12	2	06/27/16 08:52	06/28/16 03:46	7440-39-3	
Beryllium	0.69J	ug/L	2.0	0.25	2	06/27/16 08:52	06/28/16 03:46	7440-41-7	D3
Boron	121	ug/L	20.0	4.0	2	06/27/16 08:52	06/28/16 03:46	7440-42-8	
Cadmium	<0.18	ug/L	2.0	0.18	2	06/27/16 08:52	06/28/16 03:46	7440-43-9	D3
Calcium	49000	ug/L	500	147	2	06/27/16 08:52	06/28/16 03:46	7440-70-2	
Chromium	5.2	ug/L	2.0	0.79	2	06/27/16 08:52	06/28/16 03:46	7440-47-3	
Cobalt	1.8J	ug/L	2.0	0.073	2	06/27/16 08:52	06/28/16 03:46	7440-48-4	D3
Lead	7.1	ug/L	2.0	0.081	2	06/27/16 08:52	06/28/16 03:46	7439-92-1	
Lithium	19.2	ug/L	2.0	0.21	2	06/27/16 08:52	06/28/16 03:46	7439-93-2	
Molybdenum	11.8	ug/L	2.0	0.14	2	06/27/16 08:52	06/28/16 03:46	7439-98-7	
Selenium	2.3	ug/L	2.0	0.42	2	06/27/16 08:52	06/28/16 03:46	7782-49-2	
Thallium	<0.29	ug/L	2.0	0.29	2	06/27/16 08:52	06/28/16 03:46	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/30/16 13:30	07/01/16 09:18	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.05	Std. Units			1		06/21/16 10:40		
Field Specific Conductance	508	umhos/cm			1		06/21/16 10:40		
Oxygen, Dissolved	0.5	mg/L			1		06/21/16 10:40	7782-44-7	
REDOX	-108	mV			1		06/21/16 10:40		
Turbidity	248.2	NTU			1		06/21/16 10:40		
Static Water Level	651.89	feet			1		06/21/16 10:40		
Temperature, Water (C)	10.1	deg C			1		06/21/16 10:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	346	mg/L	20.0	8.7	1		06/28/16 14:27		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		06/27/16 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.9	mg/L	4.0	2.0	1		07/05/16 14:03	16887-00-6	B
Fluoride	0.74	mg/L	0.40	0.20	1		07/05/16 14:03	16984-48-8	
Sulfate	36.4	mg/L	4.0	2.0	1		07/05/16 14:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: I-43 MW303 **Lab ID: 40134242003** Collected: 06/21/16 11:35 Received: 06/22/16 16:17 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.10J	ug/L	1.0	0.073	1	06/27/16 08:52	06/28/16 02:52	7440-36-0	
Arsenic	5.3	ug/L	1.0	0.099	1	06/27/16 08:52	06/28/16 02:52	7440-38-2	
Barium	80.2	ug/L	1.0	0.062	1	06/27/16 08:52	06/28/16 02:52	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	06/27/16 08:52	06/28/16 02:52	7440-41-7	
Boron	85.0	ug/L	10.0	2.0	1	06/27/16 08:52	06/28/16 02:52	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	06/27/16 08:52	06/28/16 02:52	7440-43-9	
Calcium	36900	ug/L	2500	736	10	06/27/16 08:52	06/28/16 02:25	7440-70-2	P6
Chromium	1.0	ug/L	1.0	0.39	1	06/27/16 08:52	06/28/16 02:52	7440-47-3	
Cobalt	0.50J	ug/L	1.0	0.036	1	06/27/16 08:52	06/28/16 02:52	7440-48-4	
Lead	0.26J	ug/L	1.0	0.040	1	06/27/16 08:52	06/28/16 02:52	7439-92-1	
Lithium	10.2	ug/L	1.0	0.11	1	06/27/16 08:52	06/28/16 02:52	7439-93-2	
Molybdenum	12.7	ug/L	1.0	0.070	1	06/27/16 08:52	06/28/16 02:52	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	06/27/16 08:52	06/28/16 02:52	7782-49-2	
Thallium	0.17J	ug/L	1.0	0.14	1	06/27/16 08:52	06/28/16 02:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/30/16 13:30	07/01/16 09:21	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.98	Std. Units			1		06/21/16 11:35		
Field Specific Conductance	589	umhos/cm			1		06/21/16 11:35		
Oxygen, Dissolved	0.8	mg/L			1		06/21/16 11:35	7782-44-7	
REDOX	-174	mV			1		06/21/16 11:35		
Turbidity	21.88	NTU			1		06/21/16 11:35		
Static Water Level	651.8	feet			1		06/21/16 11:35		
Temperature, Water (C)	10.2	deg C			1		06/21/16 11:35		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	314	mg/L	20.0	8.7	1		06/28/16 14:28		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		06/27/16 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.9	mg/L	4.0	2.0	1		07/05/16 14:14	16887-00-6	B
Fluoride	0.59	mg/L	0.40	0.20	1		07/05/16 14:14	16984-48-8	
Sulfate	45.2	mg/L	4.0	2.0	1		07/05/16 14:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: I-43 MW304 **Lab ID: 40134242004** Collected: 06/21/16 16:05 Received: 06/22/16 16:17 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.52J	ug/L	1.0	0.073	1	06/27/16 08:52	06/28/16 03:53	7440-36-0	
Arsenic	10	ug/L	1.0	0.099	1	06/27/16 08:52	06/28/16 03:53	7440-38-2	
Barium	74.7	ug/L	1.0	0.062	1	06/27/16 08:52	06/28/16 03:53	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	06/27/16 08:52	06/28/16 03:53	7440-41-7	
Boron	90.9	ug/L	10.0	2.0	1	06/27/16 08:52	06/28/16 03:53	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	06/27/16 08:52	06/28/16 03:53	7440-43-9	
Calcium	25400	ug/L	250	73.6	1	06/27/16 08:52	06/28/16 03:53	7440-70-2	
Chromium	0.94J	ug/L	1.0	0.39	1	06/27/16 08:52	06/28/16 03:53	7440-47-3	
Cobalt	0.23J	ug/L	1.0	0.036	1	06/27/16 08:52	06/28/16 03:53	7440-48-4	
Lead	0.52J	ug/L	1.0	0.040	1	06/27/16 08:52	06/28/16 03:53	7439-92-1	
Lithium	9.1	ug/L	1.0	0.11	1	06/27/16 08:52	06/28/16 03:53	7439-93-2	
Molybdenum	4.0	ug/L	1.0	0.070	1	06/27/16 08:52	06/28/16 03:53	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	06/27/16 08:52	06/28/16 03:53	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/27/16 08:52	06/28/16 03:53	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/30/16 13:30	07/01/16 09:28	7439-97-6	
Field Data		Analytical Method:							
Field pH	8	Std. Units			1		06/21/16 16:05		
Field Specific Conductance	402	umhos/cm			1		06/21/16 16:05		
Oxygen, Dissolved	0.5	mg/L			1		06/21/16 16:05	7782-44-7	
REDOX	-129	mV			1		06/21/16 16:05		
Turbidity	17.46	NTU			1		06/21/16 16:05		
Static Water Level	653.79	feet			1		06/21/16 16:05		
Temperature, Water (C)	11.02	deg C			1		06/21/16 16:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	234	mg/L	20.0	8.7	1		06/28/16 14:28		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		06/27/16 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	3.9J	mg/L	4.0	2.0	1		07/05/16 14:26	16887-00-6	B
Fluoride	0.55	mg/L	0.40	0.20	1		07/05/16 14:26	16984-48-8	
Sulfate	14.2	mg/L	4.0	2.0	1		07/05/16 14:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: FIELD BLANK **Lab ID: 40134242005** Collected: 06/21/16 11:45 Received: 06/22/16 16:17 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	06/27/16 08:52	06/28/16 03:59	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	06/27/16 08:52	06/28/16 03:59	7440-38-2	
Barium	<0.062	ug/L	1.0	0.062	1	06/27/16 08:52	06/28/16 03:59	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	06/27/16 08:52	06/28/16 03:59	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	06/27/16 08:52	06/28/16 03:59	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	06/27/16 08:52	06/28/16 03:59	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	06/27/16 08:52	06/28/16 03:59	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	06/27/16 08:52	06/28/16 03:59	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	06/27/16 08:52	06/28/16 03:59	7440-48-4	
Lead	0.051J	ug/L	1.0	0.040	1	06/27/16 08:52	06/28/16 03:59	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	06/27/16 08:52	06/28/16 03:59	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	06/27/16 08:52	06/28/16 03:59	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	06/27/16 08:52	06/28/16 03:59	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/27/16 08:52	06/28/16 03:59	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/30/16 13:30	07/01/16 09:30	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		06/28/16 14:29		
9040 pH		Analytical Method: EPA 9040							
pH	5.2	Std. Units	0.10	0.010	1		06/27/16 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<2.0	mg/L	4.0	2.0	1		07/05/16 14:37	16887-00-6	
Fluoride	<0.20	mg/L	0.40	0.20	1		07/05/16 14:37	16984-48-8	
Sulfate	<2.0	mg/L	4.0	2.0	1		07/05/16 14:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

QC Batch: 228745 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1357931 Matrix: Water
 Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	07/01/16 08:39	

LABORATORY CONTROL SAMPLE: 1357932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1357933 1357934

Parameter	Units	40134131001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.13	5	5	4.6	4.8	91	97	85-115	6	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

QC Batch: 228244 Analysis Method: EPA 6020
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET
 Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1355563 Matrix: Water
 Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	06/28/16 02:11	
Arsenic	ug/L	<0.099	1.0	06/28/16 02:11	
Barium	ug/L	<0.062	1.0	06/28/16 02:11	
Beryllium	ug/L	<0.13	1.0	06/28/16 02:11	
Boron	ug/L	<2.0	10.0	06/28/16 02:11	
Cadmium	ug/L	<0.089	1.0	06/28/16 02:11	
Calcium	ug/L	<73.6	250	06/28/16 02:11	
Chromium	ug/L	<0.39	1.0	06/28/16 02:11	
Cobalt	ug/L	<0.036	1.0	06/28/16 02:11	
Lead	ug/L	<0.040	1.0	06/28/16 02:11	
Lithium	ug/L	<0.11	1.0	06/28/16 02:11	
Molybdenum	ug/L	0.16J	1.0	06/28/16 02:11	
Selenium	ug/L	<0.21	1.0	06/28/16 02:11	
Thallium	ug/L	<0.14	1.0	06/28/16 02:11	

LABORATORY CONTROL SAMPLE: 1355564

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	488	98	80-120	
Arsenic	ug/L	500	466	93	80-120	
Barium	ug/L	500	451	90	80-120	
Beryllium	ug/L	500	456	91	80-120	
Boron	ug/L	500	444	89	80-120	
Cadmium	ug/L	500	459	92	80-120	
Calcium	ug/L	5000	4960	99	80-120	
Chromium	ug/L	500	455	91	80-120	
Cobalt	ug/L	500	442	88	80-120	
Lead	ug/L	500	446	89	80-120	
Lithium	ug/L	500	443	89	80-120	
Molybdenum	ug/L	500	481	96	80-120	
Selenium	ug/L	500	480	96	80-120	
Thallium	ug/L	500	405	81	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1355565 1355566

Parameter	Units	MS Result	MSD Spike Conc.	MS Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Antimony	ug/L	0.10J	500	500	499	497	100	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Parameter	Units	40134242003		1355565		1355566		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Arsenic	ug/L	5.3	500	500	475	478	94	95	75-125	1	20		
Barium	ug/L	80.2	500	500	538	544	92	93	75-125	1	20		
Beryllium	ug/L	<0.13	500	500	473	475	95	95	75-125	0	20		
Boron	ug/L	85.0	500	500	550	554	93	94	75-125	1	20		
Cadmium	ug/L	<0.089	500	500	456	458	91	92	75-125	0	20		
Calcium	ug/L	36900	5000	5000	44000	40600	144	76	75-125	8	20	P6	
Chromium	ug/L	1.0	500	500	452	458	90	91	75-125	1	20		
Cobalt	ug/L	0.50J	500	500	439	446	88	89	75-125	2	20		
Lead	ug/L	0.26J	500	500	450	461	90	92	75-125	2	20		
Lithium	ug/L	10.2	500	500	469	476	92	93	75-125	1	20		
Molybdenum	ug/L	12.7	500	500	498	504	97	98	75-125	1	20		
Selenium	ug/L	<0.21	500	500	476	480	95	96	75-125	1	20		
Thallium	ug/L	0.17J	500	500	410	425	82	85	75-125	3	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

QC Batch: 228460

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1356465

Matrix: Water

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	06/28/16 14:24	

LABORATORY CONTROL SAMPLE: 1356466

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	566	97	80-120	

SAMPLE DUPLICATE: 1356467

Parameter	Units	40134150001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	314	314	0	5	

SAMPLE DUPLICATE: 1356468

Parameter	Units	40134242001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	290	288	1	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40134242

QC Batch: 228566 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1356985 Matrix: Water
Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	2.6J	4.0	07/05/16 10:58	
Fluoride	mg/L	<0.20	0.40	07/05/16 10:58	
Sulfate	mg/L	<2.0	4.0	07/05/16 10:58	

LABORATORY CONTROL SAMPLE: 1356986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.2	96	90-110	
Fluoride	mg/L	2	2.0	100	90-110	
Sulfate	mg/L	20	19.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1356987 1356988

Parameter	Units	40133857001 Result	MS Spike Conc.	MSD Spike Conc.	1356987		1356988		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	8.0	20	20	26.3	26.7	92	93	90-110	1	20	
Fluoride	mg/L	0.29J	2	2	2.2	2.2	95	97	90-110	2	20	
Sulfate	mg/L	61.1	100	100	157	159	96	98	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1356989 1356990

Parameter	Units	40134253001 Result	MS Spike Conc.	MSD Spike Conc.	1356989		1356990		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	10200	10000	10000	20600	20500	103	103	90-110	0	20	
Fluoride	mg/L	<20.0	200	200	215	219	101	103	90-110	2	20	
Sulfate	mg/L	223J	2000	2000	2010	2030	90	90	90-110	1	20	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: I-43 MW301		Lab ID: 40134242001	Collected: 06/21/16 09:45	Received: 06/22/16 16:17	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.29 ± 0.851 (0.970) C:NA T:85%	pCi/L	07/16/16 00:16	13982-63-3	
Radium-228	EPA 904.0	0.349 ± 0.486 (1.04) C:76% T:59%	pCi/L	07/14/16 16:35	15262-20-1	
Total Radium	Total Radium Calculation	1.64 ± 1.34 (2.01)	pCi/L	07/18/16 13:59	7440-14-4	

Sample: I-43 MW302		Lab ID: 40134242002	Collected: 06/21/16 10:40	Received: 06/22/16 16:17	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.73 ± 0.838 (0.729) C:NA T:86%	pCi/L	07/15/16 23:48	13982-63-3	
Radium-228	EPA 904.0	1.84 ± 0.673 (1.02) C:72% T:73%	pCi/L	07/14/16 16:35	15262-20-1	
Total Radium	Total Radium Calculation	3.57 ± 1.51 (1.75)	pCi/L	07/18/16 13:59	7440-14-4	

Sample: I-43 MW303		Lab ID: 40134242003	Collected: 06/21/16 11:35	Received: 06/22/16 16:17	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.721 ± 0.759 (0.968) C:NA T:98%	pCi/L	07/15/16 23:40	13982-63-3	
Radium-228	EPA 904.0	0.338 ± 0.519 (1.12) C:53% T:79%	pCi/L	07/14/16 16:35	15262-20-1	
Total Radium	Total Radium Calculation	1.06 ± 1.28 (2.09)	pCi/L	07/18/16 13:59	7440-14-4	

Sample: I-43 MW304		Lab ID: 40134242004	Collected: 06/21/16 16:05	Received: 06/22/16 16:17	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.511 ± 0.626 (0.876) C:NA T:97%	pCi/L	07/15/16 23:41	13982-63-3	
Radium-228	EPA 904.0	0.288 ± 0.332 (0.699) C:85% T:84%	pCi/L	07/14/16 16:35	15262-20-1	
Total Radium	Total Radium Calculation	0.799 ± 0.958 (1.58)	pCi/L	07/18/16 13:59	7440-14-4	

Sample: FIELD BLANK		Lab ID: 40134242005	Collected: 06/21/16 11:45	Received: 06/22/16 16:17	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.107 ± 0.534 (0.953) C:NA T:98%	pCi/L	07/16/16 00:34	13982-63-3	
Radium-228	EPA 904.0	0.496 ± 0.362 (0.707) C:81% T:88%	pCi/L	07/14/16 20:10	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

Sample: FIELD BLANK **Lab ID: 40134242005** Collected: 06/21/16 11:45 Received: 06/22/16 16:17 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.496 ± 0.896 (1.66)	pCi/L	07/18/16 11:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

QC Batch: 225562 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1104851 Matrix: Water

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.873 ± 0.460 (0.817) C:76% T:78%	pCi/L	07/14/16 12:36	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40134242

QC Batch: 225547 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

METHOD BLANK: 1104831 Matrix: Water

Associated Lab Samples: 40134242001, 40134242002, 40134242003, 40134242004, 40134242005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.142 ± 0.326 (0.524) C:NA T:108%	pCi/L	07/16/16 00:07	

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40134242

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

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: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40134242

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40134242001	I-43 MW301	EPA 3010	228244	EPA 6020	228332
40134242002	I-43 MW302	EPA 3010	228244	EPA 6020	228332
40134242003	I-43 MW303	EPA 3010	228244	EPA 6020	228332
40134242004	I-43 MW304	EPA 3010	228244	EPA 6020	228332
40134242005	FIELD BLANK	EPA 3010	228244	EPA 6020	228332
40134242001	I-43 MW301	EPA 7470	228745	EPA 7470	228775
40134242002	I-43 MW302	EPA 7470	228745	EPA 7470	228775
40134242003	I-43 MW303	EPA 7470	228745	EPA 7470	228775
40134242004	I-43 MW304	EPA 7470	228745	EPA 7470	228775
40134242005	FIELD BLANK	EPA 7470	228745	EPA 7470	228775
40134242001	I-43 MW301				
40134242002	I-43 MW302				
40134242003	I-43 MW303				
40134242004	I-43 MW304				
40134242001	I-43 MW301	EPA 903.1	225547		
40134242002	I-43 MW302	EPA 903.1	225547		
40134242003	I-43 MW303	EPA 903.1	225547		
40134242004	I-43 MW304	EPA 903.1	225547		
40134242005	FIELD BLANK	EPA 903.1	225547		
40134242001	I-43 MW301	EPA 904.0	225562		
40134242002	I-43 MW302	EPA 904.0	225562		
40134242003	I-43 MW303	EPA 904.0	225562		
40134242004	I-43 MW304	EPA 904.0	225562		
40134242005	FIELD BLANK	EPA 904.0	225562		
40134242001	I-43 MW301	Total Radium Calculation	226620		
40134242002	I-43 MW302	Total Radium Calculation	226620		
40134242003	I-43 MW303	Total Radium Calculation	226620		
40134242004	I-43 MW304	Total Radium Calculation	226620		
40134242005	FIELD BLANK	Total Radium Calculation	285975		
40134242001	I-43 MW301	SM 2540C	228460		
40134242002	I-43 MW302	SM 2540C	228460		
40134242003	I-43 MW303	SM 2540C	228460		
40134242004	I-43 MW304	SM 2540C	228460		
40134242005	FIELD BLANK	SM 2540C	228460		
40134242001	I-43 MW301	EPA 9040	228306		
40134242002	I-43 MW302	EPA 9040	228306		
40134242003	I-43 MW303	EPA 9040	228306		
40134242004	I-43 MW304	EPA 9040	228306		
40134242005	FIELD BLANK	EPA 9040	228306		
40134242001	I-43 MW301	EPA 300.0	228566		
40134242002	I-43 MW302	EPA 300.0	228566		
40134242003	I-43 MW303	EPA 300.0	228566		
40134242004	I-43 MW304	EPA 300.0	228566		
40134242005	FIELD BLANK	EPA 300.0	228566		

REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY

A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?
 (YES/NO)
 PRESERVATION
 (CODE)*

(Please Print Clearly)

Company Name: **SCS Engineers**

Branch/Location: **Madison, WI**

Project Contact: **Meg Blockett**

Phone: **608-216-7362**

Project Number: **25216069.00**

Project Name: **WPA Edgewater I-43**

Project State: **WI**

Sampled By (Print): **Gary Stokel**

Sampled By (Sign): *Gary Stokel*

PO #: _____

Regulatory Program: _____

Date Package Options

(billable)

EPA Level III

EPA Level IV

MS/MSD

On your sample (billable)

NOT needed on your sample

Matrix Codes

A = Air
B = Biotia
C = Charcoal
O = Oil
S = Soil
SI = Sludge
W = Water
DW = Drinking Water
GW = Ground Water
SW = Surface Water
WW = Waste Water
WP = Waste

PAGE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	ANALYSES REQUESTED	V/I	PICK LETTER
		DATE	TIME				
001	I-43 MW301	6/21/16	0945	GW	Chloride Fluoride Sulfate TDS	X	A
002	I-43 MW302	6/21/16	1040	GW	pH	X	A
003	I-43 MW303	6/21/16	1135	GW	Radium 226	X	A
004	I-43 MW304	6/20/16	1605	GW	B,Cd Sb As Ba Be Ca Cr Co Pb Li Mo Si Ti	X	A
005	Field Blank	6/21/16	1145	W	Mercury	X	A
					Radium 226	X	A

ANALYSES REQUESTED	V/I	PICK LETTER
Chloride Fluoride Sulfate TDS	X	A
pH	X	A
Radium 226	X	A
B,Cd Sb As Ba Be Ca Cr Co Pb Li Mo Si Ti	X	A
Mercury	X	A
Radium 226	X	A

Quote #: _____

Mail To Contact: _____

Mail To Company: _____

Mail To Address: _____

Invoice To Contact: _____

Invoice To Company: **SCS Engineers**

Invoice To Address: **2830 Dairy Dr Madison, WI 53718**

Invoice To Phone: _____

CLIENT COMMENTS: **2-500ml/pd 3-250ml/pd AAD**

LAB COMMENTS (Lab Use Only): _____

Profile #: _____

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)

Date Needed: _____

Transmit Prelim Rush Results by (complete what you want): _____

Email #1: _____

Email #2: _____

Telephone: _____

Fax: _____

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: *Gary Stokel* Date/Time: **6/22/16 0800**

Relinquished By: *Mary Jo Farnin* Date/Time: **6/23/16 1220**

Relinquished By: *Melissa Annunzio* Date/Time: **6/22/16 1017**

Received By: *Mary Jo Farnin* Date/Time: **6/23/16 1136**

Received By: *Melissa Annunzio* Date/Time: **6/23/16 1220**

Received By: *Joan Rae* Date/Time: **6/23/16 1017**

PAGE Project No. **40134242**

Receipt Temp = **PO1** °C

Sample Receipt pH **OK / Adjusted**

Cooler Custody Seal Present / Not Present **Intact / Not Intact**

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #: **WO# : 40134242**

Client Name: SCS



Courier: Fed Ex UPS Client Pace Other: _____

Tracking #: _____

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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr: _____ Biological Tissue is Frozen: yes

Temp Blank Present: yes no no

Person examining contents:
Date: 6/23/16
Initials: TL

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

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 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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>001-004 no I-43 before any ID</u>
-Includes date/time/ID/Analysis Matrix: <u>W</u>		<u>6/23/16</u>
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12) exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Initial when completed	<u>12</u>	Lab Std #ID of preservative
Date/Time:		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
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:

Person Contacted: _____ Date/Time: _____

If checked, see attached form for additional comments

Comments/ Resolution:

Client returned 2-500mlp, 3-250mlp used unused 6/23/16

Project Manager Review: _____

JJ from DM

Date: 6-23-16

A3 Round 3 Background Sampling, Analytical Laboratory Report

September 09, 2016

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2016. 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.

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

Sincerely,



Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
Virginia VELAP ID: 460263
North Dakota Certification #: R-150

South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Virginia VELAP Certification ID: 460263
Virginia VELAP ID: 460263
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40136691001	I43 MW 301	Water	08/10/16 09:30	08/12/16 10:00
40136691002	I43 MW 302	Water	08/09/16 16:00	08/12/16 10:00
40136691003	I43 MW 303	Water	08/09/16 15:05	08/12/16 10:00
40136691004	I43 MW 304	Water	08/09/16 14:20	08/12/16 10:00
40136691005	FIELD BLANK	Water	08/10/16 09:45	08/12/16 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40136691001	I43 MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	AB1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40136691002	I43 MW 302	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	AB1			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	RMK			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40136691003	I43 MW 303			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	AB1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40136691004	I43 MW 304	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	AB1			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	RMK			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40136691005	FIELD BLANK			EPA 6020	SDW

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	AB1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Sample Project No.: 40136691

Sample: I43 MW 301 **Lab ID: 40136691001** Collected: 08/10/16 09:30 Received: 08/12/16 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.12J	ug/L	1.0	0.073	1	08/22/16 09:44	08/23/16 10:20	7440-36-0	
Arsenic	5.8	ug/L	1.0	0.099	1	08/22/16 09:44	08/23/16 10:20	7440-38-2	
Barium	177	ug/L	1.0	0.062	1	08/22/16 09:44	08/23/16 10:20	7440-39-3	
Beryllium	0.54J	ug/L	1.0	0.13	1	08/22/16 09:44	08/23/16 10:20	7440-41-7	
Boron	151	ug/L	10.0	2.0	1	08/22/16 09:44	08/25/16 00:15	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	08/22/16 09:44	08/23/16 10:20	7440-43-9	
Calcium	94900	ug/L	250	73.6	1	08/22/16 09:44	08/23/16 10:20	7440-70-2	
Chromium	20.8	ug/L	1.0	0.39	1	08/22/16 09:44	08/23/16 10:20	7440-47-3	
Cobalt	5.4	ug/L	1.0	0.036	1	08/22/16 09:44	08/23/16 10:20	7440-48-4	
Lead	6.1	ug/L	1.0	0.040	1	08/22/16 09:44	08/23/16 10:20	7439-92-1	
Lithium	29.0	ug/L	1.0	0.11	1	08/22/16 09:44	08/23/16 10:20	7439-93-2	
Molybdenum	10.8	ug/L	1.0	0.070	1	08/22/16 09:44	08/23/16 10:20	7439-98-7	
Selenium	1.1	ug/L	1.0	0.21	1	08/22/16 09:44	08/23/16 10:20	7782-49-2	4q
Thallium	<0.14	ug/L	1.0	0.14	1	08/22/16 09:44	08/23/16 10:20	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/16/16 13:00	08/17/16 10:58	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.08	Std. Units			1		08/10/16 09:30		
Field Specific Conductance	387	umhos/cm			1		08/10/16 09:30		
Oxygen, Dissolved	0.1	mg/L			1		08/10/16 09:30	7782-44-7	
REDOX	-155	mV			1		08/10/16 09:30		
Turbidity	739.9	NTU			1		08/10/16 09:30		
Static Water Level	649.68	feet			1		08/10/16 09:30		
Temperature, Water (C)	10.9	deg C			1		08/10/16 09:30		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	306	mg/L	20.0	8.7	1		08/17/16 17:59		
9040 pH		Analytical Method: EPA 9040							
pH	7.6	Std. Units	0.10	0.010	1		08/16/16 10:30		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.2	mg/L	4.0	2.0	1		08/25/16 15:34	16887-00-6	
Fluoride	0.62	mg/L	0.40	0.20	1		08/25/16 15:34	16984-48-8	
Sulfate	7.4	mg/L	4.0	2.0	1		08/25/16 15:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Project No.: 40136691

Sample: I43 MW 302 **Lab ID: 40136691002** Collected: 08/09/16 16:00 Received: 08/12/16 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.28J	ug/L	1.0	0.073	1	08/22/16 09:44	08/23/16 10:27	7440-36-0	
Arsenic	6.2	ug/L	1.0	0.099	1	08/22/16 09:44	08/23/16 10:27	7440-38-2	
Barium	80.1	ug/L	1.0	0.062	1	08/22/16 09:44	08/23/16 10:27	7440-39-3	
Beryllium	0.22J	ug/L	1.0	0.13	1	08/22/16 09:44	08/23/16 10:27	7440-41-7	
Boron	131	ug/L	10.0	2.0	1	08/22/16 09:44	08/25/16 00:35	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	08/22/16 09:44	08/23/16 10:27	7440-43-9	
Calcium	36500	ug/L	250	73.6	1	08/22/16 09:44	08/23/16 10:27	7440-70-2	
Chromium	2.0	ug/L	1.0	0.39	1	08/22/16 09:44	08/23/16 10:27	7440-47-3	
Cobalt	0.65J	ug/L	1.0	0.036	1	08/22/16 09:44	08/23/16 10:27	7440-48-4	
Lead	2.3	ug/L	1.0	0.040	1	08/22/16 09:44	08/23/16 10:27	7439-92-1	
Lithium	14.4	ug/L	1.0	0.11	1	08/22/16 09:44	08/23/16 10:27	7439-93-2	
Molybdenum	11.5	ug/L	1.0	0.070	1	08/22/16 09:44	08/23/16 10:27	7439-98-7	
Selenium	0.64J	ug/L	1.0	0.21	1	08/22/16 09:44	08/23/16 10:27	7782-49-2	4q
Thallium	<0.14	ug/L	1.0	0.14	1	08/22/16 09:44	08/23/16 10:27	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/16/16 13:00	08/17/16 11:05	7439-97-6	
Field Data		Analytical Method:							
Field pH	6.24	Std. Units			1		08/09/16 16:00		
Field Specific Conductance	507	umhos/cm			1		08/09/16 16:00		
Oxygen, Dissolved	0.5	mg/L			1		08/09/16 16:00	7782-44-7	
REDOX	-95	mV			1		08/09/16 16:00		
Turbidity	85.43	NTU			1		08/09/16 16:00		
Static Water Level	649.30	feet			1		08/09/16 16:00		
Temperature, Water (C)	11.3	deg C			1		08/09/16 16:00		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	308	mg/L	20.0	8.7	1		08/16/16 16:19		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		08/16/16 10:30		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.1	mg/L	4.0	2.0	1		08/25/16 15:45	16887-00-6	
Fluoride	0.75	mg/L	0.40	0.20	1		08/25/16 15:45	16984-48-8	
Sulfate	35.0	mg/L	4.0	2.0	1		08/25/16 15:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Project No.: 40136691

Sample: I43 MW 303 **Lab ID: 40136691003** Collected: 08/09/16 15:05 Received: 08/12/16 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.077J	ug/L	1.0	0.073	1	08/22/16 09:44	08/23/16 10:33	7440-36-0	
Arsenic	4.4	ug/L	1.0	0.099	1	08/22/16 09:44	08/23/16 10:33	7440-38-2	
Barium	91.2	ug/L	1.0	0.062	1	08/22/16 09:44	08/23/16 10:33	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	08/22/16 09:44	08/23/16 10:33	7440-41-7	
Boron	96.0	ug/L	10.0	2.0	1	08/22/16 09:44	08/25/16 00:42	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	08/22/16 09:44	08/23/16 10:33	7440-43-9	
Calcium	36700	ug/L	250	73.6	1	08/22/16 09:44	08/23/16 10:33	7440-70-2	
Chromium	0.93J	ug/L	1.0	0.39	1	08/22/16 09:44	08/23/16 10:33	7440-47-3	
Cobalt	0.40J	ug/L	1.0	0.036	1	08/22/16 09:44	08/23/16 10:33	7440-48-4	1q
Lead	0.091J	ug/L	1.0	0.040	1	08/22/16 09:44	08/23/16 10:33	7439-92-1	2q
Lithium	13.1	ug/L	1.0	0.11	1	08/22/16 09:44	08/23/16 10:33	7439-93-2	
Molybdenum	23.0	ug/L	1.0	0.070	1	08/22/16 09:44	08/23/16 10:33	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	08/22/16 09:44	08/23/16 10:33	7782-49-2	4q
Thallium	<0.14	ug/L	1.0	0.14	1	08/22/16 09:44	08/23/16 10:33	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/16/16 13:00	08/17/16 11:07	7439-97-6	
Field Data		Analytical Method:							
Field pH	6.24	Std. Units			1		08/09/16 15:05		
Field Specific Conductance	756	umhos/cm			1		08/09/16 15:05		
Oxygen, Dissolved	0.4	mg/L			1		08/09/16 15:05	7782-44-7	
REDOX	-138	mV			1		08/09/16 15:05		
Turbidity	13.48	NTU			1		08/09/16 15:05		
Static Water Level	649.37	feet			1		08/09/16 15:05		
Temperature, Water (C)	11.3	deg C			1		08/09/16 15:05		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	378	mg/L	20.0	8.7	1		08/16/16 16:20		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		08/16/16 10:30		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.8	mg/L	4.0	2.0	1		08/25/16 15:57	16887-00-6	
Fluoride	0.59	mg/L	0.40	0.20	1		08/25/16 15:57	16984-48-8	
Sulfate	70.1	mg/L	20.0	10.0	5		08/26/16 03:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43
Project No.: 40136691

Sample: I43 MW 304 **Lab ID: 40136691004** Collected: 08/09/16 14:20 Received: 08/12/16 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.36J	ug/L	1.0	0.073	1	08/22/16 09:44	08/23/16 10:40	7440-36-0	
Arsenic	11.2	ug/L	1.0	0.099	1	08/22/16 09:44	08/23/16 10:40	7440-38-2	
Barium	81.5	ug/L	1.0	0.062	1	08/22/16 09:44	08/23/16 10:40	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	08/22/16 09:44	08/23/16 10:40	7440-41-7	
Boron	102	ug/L	10.0	2.0	1	08/22/16 09:44	08/25/16 00:49	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	08/22/16 09:44	08/23/16 10:40	7440-43-9	
Calcium	26700	ug/L	250	73.6	1	08/22/16 09:44	08/23/16 10:40	7440-70-2	
Chromium	0.78J	ug/L	1.0	0.39	1	08/22/16 09:44	08/23/16 10:40	7440-47-3	
Cobalt	0.12J	ug/L	1.0	0.036	1	08/22/16 09:44	08/23/16 10:40	7440-48-4	1q
Lead	0.24J	ug/L	1.0	0.040	1	08/22/16 09:44	08/23/16 10:40	7439-92-1	2q
Lithium	9.4	ug/L	1.0	0.11	1	08/22/16 09:44	08/23/16 10:40	7439-93-2	
Molybdenum	3.9	ug/L	1.0	0.070	1	08/22/16 09:44	08/23/16 10:40	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	08/22/16 09:44	08/23/16 10:40	7782-49-2	4q
Thallium	<0.14	ug/L	1.0	0.14	1	08/22/16 09:44	08/23/16 10:40	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/16/16 13:00	08/17/16 11:10	7439-97-6	
Field Data		Analytical Method:							
Field pH	6.29	Std. Units			1		08/09/16 14:20		
Field Specific Conductance	399	umhos/cm			1		08/09/16 14:20		
Oxygen, Dissolved	0.1	mg/L			1		08/09/16 14:20	7782-44-7	
REDOX	-127	mV			1		08/09/16 14:20		
Turbidity	7.38	NTU			1		08/09/16 14:20		
Static Water Level	651.55	feet			1		08/09/16 14:20		
Temperature, Water (C)	12.0	deg C			1		08/09/16 14:20		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	244	mg/L	20.0	8.7	1		08/16/16 16:20		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		08/16/16 10:30		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.7J	mg/L	4.0	2.0	1		08/25/16 16:08	16887-00-6	
Fluoride	0.51	mg/L	0.40	0.20	1		08/25/16 16:08	16984-48-8	
Sulfate	13.2	mg/L	4.0	2.0	1		08/25/16 16:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Sample: FIELD BLANK **Lab ID: 40136691005** Collected: 08/10/16 09:45 Received: 08/12/16 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	08/22/16 09:44	08/23/16 07:23	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	08/22/16 09:44	08/23/16 07:23	7440-38-2	3q
Barium	<0.062	ug/L	1.0	0.062	1	08/22/16 09:44	08/23/16 07:23	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	08/22/16 09:44	08/23/16 07:23	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	08/22/16 09:44	08/24/16 22:06	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	08/22/16 09:44	08/23/16 07:23	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	08/22/16 09:44	08/23/16 07:23	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	08/22/16 09:44	08/23/16 07:23	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	08/22/16 09:44	08/23/16 07:23	7440-48-4	1q
Lead	<0.040	ug/L	1.0	0.040	1	08/22/16 09:44	08/23/16 07:23	7439-92-1	2q
Lithium	<0.11	ug/L	1.0	0.11	1	08/22/16 09:44	08/23/16 07:23	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	08/22/16 09:44	08/23/16 07:23	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	08/22/16 09:44	08/23/16 07:23	7782-49-2	4q
Thallium	<0.14	ug/L	1.0	0.14	1	08/22/16 09:44	08/23/16 07:23	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/16/16 13:00	08/17/16 11:12	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		08/17/16 17:59		
9040 pH		Analytical Method: EPA 9040							
pH	6.1	Std. Units	0.10	0.010	1		08/16/16 10:30		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<2.0	mg/L	4.0	2.0	1		08/25/16 16:20	16887-00-6	
Fluoride	<0.20	mg/L	0.40	0.20	1		08/25/16 16:20	16984-48-8	
Sulfate	<2.0	mg/L	4.0	2.0	1		08/25/16 16:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

QC Batch: 232431 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

METHOD BLANK: 1378105 Matrix: Water
 Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	08/17/16 10:21	

LABORATORY CONTROL SAMPLE: 1378106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1378107 1378108

Parameter	Units	MS		MSD		% Rec		% Rec	% Rec	% Rec Limits	Max		Qual
		40136688001 Result	Spike Conc.	Spike Conc.	Result	Result	RPD				RPD		
Mercury	ug/L	<0.20	5	5	4.8	5.2	93	103	85-115	9	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

QC Batch: 232930 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

METHOD BLANK: 1380803 Matrix: Water
Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	08/23/16 07:10	
Arsenic	ug/L	<0.099	1.0	08/23/16 07:10	
Barium	ug/L	<0.062	1.0	08/23/16 07:10	
Beryllium	ug/L	<0.13	1.0	08/23/16 07:10	
Boron	ug/L	<2.0	10.0	08/24/16 21:53	
Cadmium	ug/L	<0.089	1.0	08/23/16 07:10	
Calcium	ug/L	<73.6	250	08/23/16 07:10	
Chromium	ug/L	<0.39	1.0	08/23/16 07:10	
Cobalt	ug/L	<0.036	1.0	08/23/16 07:10	
Lead	ug/L	<0.040	1.0	08/23/16 07:10	
Lithium	ug/L	<0.11	1.0	08/23/16 07:10	
Molybdenum	ug/L	<0.070	1.0	08/23/16 07:10	
Selenium	ug/L	<0.21	1.0	08/23/16 07:10	
Thallium	ug/L	<0.14	1.0	08/23/16 07:10	

LABORATORY CONTROL SAMPLE: 1380804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	513	103	80-120	
Arsenic	ug/L	500	509	102	80-120	
Barium	ug/L	500	501	100	80-120	
Beryllium	ug/L	500	521	104	80-120	
Boron	ug/L	500	500	100	80-120	
Cadmium	ug/L	500	528	106	80-120	
Calcium	ug/L	5000	5490	110	80-120	
Chromium	ug/L	500	500	100	80-120	
Cobalt	ug/L	500	484	97	80-120	
Lead	ug/L	500	478	96	80-120	
Lithium	ug/L	500	494	99	80-120	
Molybdenum	ug/L	500	522	104	80-120	
Selenium	ug/L	500	537	107	80-120	
Thallium	ug/L	500	465	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1380805 1380806

Parameter	Units	40136543001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.073	500	522	524	104	105	75-125	0	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Parameter	Units	1380805		1380806		MS % Rec	MSD % Rec	% Rec	Limits	RPD	Max RPD	Qual
		40136543001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Arsenic	ug/L	0.12J	500	500	512	517	102	103	75-125	1	20	
Barium	ug/L	45.7	500	500	555	560	102	103	75-125	1	20	
Beryllium	ug/L	0.19J	500	500	535	540	107	108	75-125	1	20	
Boron	ug/L	12.3	500	500	517	518	101	101	75-125	0	20	
Cadmium	ug/L	<0.089	500	500	533	537	107	107	75-125	1	20	
Calcium	ug/L	21000	5000	5000	24900	25300	77	85	75-125	2	20	
Chromium	ug/L	0.54J	500	500	506	511	101	102	75-125	1	20	
Cobalt	ug/L	0.14J	500	500	488	494	98	99	75-125	1	20	
Lead	ug/L	0.048J	500	500	478	481	96	96	75-125	1	20	
Lithium	ug/L	0.80J	500	500	508	512	101	102	75-125	1	20	
Molybdenum	ug/L	0.59J	500	500	527	532	105	106	75-125	1	20	
Selenium	ug/L	<0.21	500	500	535	540	107	108	75-125	1	20	
Thallium	ug/L	0.62J	500	500	466	471	93	94	75-125	1	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

QC Batch: 232503

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40136691002, 40136691003, 40136691004

METHOD BLANK: 1378385

Matrix: Water

Associated Lab Samples: 40136691002, 40136691003, 40136691004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	08/16/16 16:12	

LABORATORY CONTROL SAMPLE: 1378386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	596	102	80-120	

SAMPLE DUPLICATE: 1378387

Parameter	Units	40136558002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	912	920	1	5	

SAMPLE DUPLICATE: 1378388

Parameter	Units	40136690002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	862	876	2	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

QC Batch: 232646 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40136691001, 40136691005

METHOD BLANK: 1379083 Matrix: Water
Associated Lab Samples: 40136691001, 40136691005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	08/17/16 17:58	

LABORATORY CONTROL SAMPLE: 1379084

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	570	97	80-120	

SAMPLE DUPLICATE: 1379085

Parameter	Units	40136640001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2270	2340	3	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

QC Batch: 232455 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

SAMPLE DUPLICATE: 1378257

Parameter	Units	40136623001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.7	6.8	1	20	H6

SAMPLE DUPLICATE: 1378258

Parameter	Units	40136691001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.6	7.6	1	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

QC Batch: 232782 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

METHOD BLANK: 1379892 Matrix: Water
Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<2.0	4.0	08/25/16 13:27	
Fluoride	mg/L	<0.20	0.40	08/25/16 13:27	
Sulfate	mg/L	<2.0	4.0	08/25/16 13:27	

LABORATORY CONTROL SAMPLE: 1379893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.7	94	90-110	
Fluoride	mg/L	2	2.2	108	90-110	
Sulfate	mg/L	20	19.2	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1379896 1379897

Parameter	Units	40136770001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Chloride	mg/L	344	400	400	400	756	751	103	102	90-110	1	20
Fluoride	mg/L	<4.0	40	40	40	44.9	45.3	112	113	90-110	1	20 M0
Sulfate	mg/L	176	400	400	400	571	570	99	99	90-110	0	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1380979 1380980

Parameter	Units	40136837001		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Chloride	mg/L	126	200	200	200	323	323	98	98	90-110	0	20
Fluoride	mg/L	<2.0	20	20	20	22.3	22.5	108	109	90-110	1	20
Sulfate	mg/L	129	200	200	200	330	329	100	100	90-110	0	20

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 301		Lab ID: 40136691001	Collected: 08/10/16 09:30	Received: 08/12/16 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	-0.088 ± 0.832 (1.40)	pCi/L	09/06/16 23:43	13982-63-3		
Radium-228	EPA 904.0	0.462 ± 0.704 (1.51)	pCi/L	09/02/16 16:03	15262-20-1		
Total Radium	Total Radium Calculation	0.462 ± 1.54 (2.91)	pCi/L	09/08/16 12:34	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 302		Lab ID: 40136691002	Collected: 08/09/16 16:00	Received: 08/12/16 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	0.0816 ± 0.456 (0.758)	pCi/L	09/06/16 23:22	13982-63-3		
Radium-228	EPA 904.0	1.24 ± 0.558 (0.938)	pCi/L	09/02/16 16:03	15262-20-1		
Total Radium	Total Radium Calculation	1.32 ± 1.01 (1.70)	pCi/L	09/08/16 12:34	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 303		Lab ID: 40136691003	Collected: 08/09/16 15:05	Received: 08/12/16 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	0.000 ± 0.620 (1.10)	pCi/L	09/06/16 23:25	13982-63-3		
Radium-228	EPA 904.0	0.426 ± 0.447 (0.920)	pCi/L	09/02/16 16:03	15262-20-1		
Total Radium	Total Radium Calculation	0.426 ± 1.07 (2.02)	pCi/L	09/08/16 12:34	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 304		Lab ID: 40136691004	Collected: 08/09/16 14:20	Received: 08/12/16 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	0.161 ± 0.803 (1.27)	pCi/L	09/06/16 23:24	13982-63-3		
Radium-228	EPA 904.0	0.137 ± 0.473 (1.05)	pCi/L	09/02/16 16:03	15262-20-1		
Total Radium	Total Radium Calculation	0.298 ± 1.28 (2.32)	pCi/L	09/08/16 12:34	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK		Lab ID: 40136691005	Collected: 08/10/16 09:45	Received: 08/12/16 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	-0.184 ± 0.722 (1.30)	pCi/L	09/06/16 23:55	13982-63-3		
Radium-228	EPA 904.0	-0.238 ± 0.436 (1.05)	pCi/L	09/02/16 16:03	15262-20-1		

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Sample: FIELD BLANK **Lab ID: 40136691005** Collected: 08/10/16 09:45 Received: 08/12/16 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.000 ± 1.16 (2.35)	pCi/L	09/08/16 12:34	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

QC Batch:	231295	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	40136691001, 40136691002, 40136691003, 40136691004, 40136691005		

METHOD BLANK:	1133690	Matrix:	Water
Associated Lab Samples:	40136691001, 40136691002, 40136691003, 40136691004, 40136691005		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0980 ± 0.192 (0.303) C:NA T:85%	pCi/L	09/06/16 23:01	

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 - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

QC Batch: 231296 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

METHOD BLANK: 1133691 Matrix: Water

Associated Lab Samples: 40136691001, 40136691002, 40136691003, 40136691004, 40136691005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.131 ± 0.325 (0.717) C:76% T:75%	pCi/L	09/02/16 12:26	

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1q Analyte was measured in the associated method blank at -0.053 ug/L.
2q Analyte was measured in the associated method blank at -0.061 ug/L.
3q Analyte was measured in the associated method blank at -0.166 ug/L.
4q Analyte was measured in the associated method blank at -0.218 ug/L.
H6 Analysis initiated outside of the 15 minute EPA required holding time.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40136691

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40136691001	I43 MW 301	EPA 3010	232930	EPA 6020	233007
40136691002	I43 MW 302	EPA 3010	232930	EPA 6020	233007
40136691003	I43 MW 303	EPA 3010	232930	EPA 6020	233007
40136691004	I43 MW 304	EPA 3010	232930	EPA 6020	233007
40136691005	FIELD BLANK	EPA 3010	232930	EPA 6020	233007
40136691001	I43 MW 301	EPA 7470	232431	EPA 7470	232500
40136691002	I43 MW 302	EPA 7470	232431	EPA 7470	232500
40136691003	I43 MW 303	EPA 7470	232431	EPA 7470	232500
40136691004	I43 MW 304	EPA 7470	232431	EPA 7470	232500
40136691005	FIELD BLANK	EPA 7470	232431	EPA 7470	232500
40136691001	I43 MW 301				
40136691002	I43 MW 302				
40136691003	I43 MW 303				
40136691004	I43 MW 304				
40136691001	I43 MW 301	EPA 903.1	231295		
40136691002	I43 MW 302	EPA 903.1	231295		
40136691003	I43 MW 303	EPA 903.1	231295		
40136691004	I43 MW 304	EPA 903.1	231295		
40136691005	FIELD BLANK	EPA 903.1	231295		
40136691001	I43 MW 301	EPA 904.0	231296		
40136691002	I43 MW 302	EPA 904.0	231296		
40136691003	I43 MW 303	EPA 904.0	231296		
40136691004	I43 MW 304	EPA 904.0	231296		
40136691005	FIELD BLANK	EPA 904.0	231296		
40136691001	I43 MW 301	Total Radium Calculation	232528		
40136691002	I43 MW 302	Total Radium Calculation	232528		
40136691003	I43 MW 303	Total Radium Calculation	232528		
40136691004	I43 MW 304	Total Radium Calculation	232528		
40136691005	FIELD BLANK	Total Radium Calculation	232528		
40136691001	I43 MW 301	SM 2540C	232646		
40136691002	I43 MW 302	SM 2540C	232503		
40136691003	I43 MW 303	SM 2540C	232503		
40136691004	I43 MW 304	SM 2540C	232503		
40136691005	FIELD BLANK	SM 2540C	232646		
40136691001	I43 MW 301	EPA 9040	232455		
40136691002	I43 MW 302	EPA 9040	232455		
40136691003	I43 MW 303	EPA 9040	232455		
40136691004	I43 MW 304	EPA 9040	232455		
40136691005	FIELD BLANK	EPA 9040	232455		
40136691001	I43 MW 301	EPA 300.0	232782		
40136691002	I43 MW 302	EPA 300.0	232782		
40136691003	I43 MW 303	EPA 300.0	232782		
40136691004	I43 MW 304	EPA 300.0	232782		
40136691005	FIELD BLANK	EPA 300.0	232782		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40136691

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
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REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Blodgett**
 Phone: **608-216-7362**
 Project Number: **25216069.00**
 Project Name: **WPL Edgewater T43**
 Project State: **WI**
 Sampled By (Print): **Gary Stokel**
 Sampled By (Sign): *Gary Stokel*
 PO #: _____
 Regulatory Program: _____



CHAIN OF CUSTODY

www.faceanals.com
 A=None B=HCL C=H2SO4 D=HNO3 E=D1 Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

REGULATORY PRESERVATION (YES/NO) (CODE)

Y/N	Pick Letter	Analyses Requested
N	A	Chloride Fluoride Sulfate TDS
N	A	pH
N	D	Radium 226
N	D	Radium 228
N	D	B, Cd, Sn, Pb, Ba, Be, Ca, Cr
N	D	Co, Pb, Li, Mo, Si, Ti
N	D	Mercury

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX	Data Package Options (billable)		MSMSD (billable)		Regulatory Program
					<input type="checkbox"/> EPA Level III	<input type="checkbox"/> EPA Level IV	<input type="checkbox"/> On your sample	<input type="checkbox"/> NOT needed on your sample	
001	T43 MW 301	8/16/16	0930	GW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
002	T43 MW 302	8/19/16	1600	GW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
003	T43 MW 303	8/19/16	1505	GW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
004	T43 MW 304	8/19/16	1420	GW	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
005	Field Bank	8/10/16	0945	W	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Relinquished By:	Date/Time:	Received By:	Date/Time:
<i>Gary Stokel</i>	8/11/16 0900	<i>Mary Fawcett</i>	8/11/16 925
<i>Mary Fawcett</i>	8/11/16 1700	<i>Pat Szwed</i>	8/11/16 1000

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____

Invoice To Contact: **SCS Engineers**
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Barry Dr Madison, WI 53718**

Invoice To Phone: _____

CLIENT COMMENTS: **a-scompd 4-25comp A-D**

LAB COMMENTS (Lab Use Only): _____
 Profile #: _____

Receipt Temp = **20.5°C**
 Sample Receipt pH **4.03**
 Cooler Custody Seal **Intact/ Not Intact**

Version 6.0 08/17/06

401300091

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #:

WO#: 40136691



Client Name: SCS Engineers
 Courier: Fed Ex UPS Client Pace Other: CS Logistics
 Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no
 Custody Seal on Samples Present: yes no Seals intact: yes no
 Packing Material: Bubble Wrap Bubble Bags None Other _____
 Thermometer Used: NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun
 Cooler Temperature: Uncorr: R65 /Corr: _____ Biological Tissue is Frozen: yes no
 Temp Blank Present: yes no

Person examining contents:
 Date: 8/12/16
 Initials: BH

Temp should be above freezing to 6°C for all sample except Biota.
 Frozen Biota Samples should be received ≤ 0°C.

Comments:

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 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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input checked="" 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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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:	<u>W</u>	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" 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. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>BH</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: _____ If checked, see attached form for additional comments
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: Client returned 4-500mlp 4-250mlp 4-250mlp BH 8/12/16

Project Manager Review: Wtr DM Date: 8-12-16

A4 Round 4 Background Sampling, Analytical Laboratory Report

November 18, 2016

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2016. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40140697001	I43 MW 301	Water	10/19/16 14:16	10/22/16 07:30
40140697002	I43 MW 302	Water	10/19/16 13:21	10/22/16 07:30
40140697003	I43 MW 303	Water	10/19/16 14:59	10/22/16 07:30
40140697004	I43 MW 304	Water	10/19/16 11:56	10/22/16 07:30
40140697005	FIELD BLANK	Water	10/19/16 13:00	10/22/16 07:30

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40140697001	I43 MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	JMN	3	PASI-G
		40140697002	I43 MW 302	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			6	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	JMN			3	PASI-G
40140697003	I43 MW 303			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	JMN	3	PASI-G
		40140697004	I43 MW 304	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			6	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	JMN			3	PASI-G
40140697005	FIELD BLANK			EPA 6020	SDW

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	JMN	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Sample: I43 MW 301 **Lab ID: 40140697001** Collected: 10/19/16 14:16 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.36	ug/L	5.0	0.36	5	11/01/16 09:52	11/02/16 21:49	7440-36-0	D3
Arsenic	4.6J	ug/L	5.0	0.50	5	11/01/16 09:52	11/02/16 21:49	7440-38-2	D3
Barium	141	ug/L	5.0	0.31	5	11/01/16 09:52	11/02/16 21:49	7440-39-3	
Beryllium	<0.63	ug/L	5.0	0.63	5	11/01/16 09:52	11/02/16 21:49	7440-41-7	D3
Boron	148	ug/L	50.0	10	5	11/01/16 09:52	11/02/16 21:49	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	11/01/16 09:52	11/02/16 21:49	7440-43-9	D3
Calcium	77800	ug/L	1250	368	5	11/01/16 09:52	11/02/16 21:49	7440-70-2	
Chromium	16.0	ug/L	5.0	2.0	5	11/01/16 09:52	11/02/16 21:49	7440-47-3	
Cobalt	4.2J	ug/L	5.0	0.18	5	11/01/16 09:52	11/02/16 21:49	7440-48-4	D3
Lead	5.1	ug/L	5.0	0.20	5	11/01/16 09:52	11/02/16 21:49	7439-92-1	
Lithium	24.8	ug/L	5.0	0.54	5	11/01/16 09:52	11/02/16 21:49	7439-93-2	
Molybdenum	9.4	ug/L	5.0	0.35	5	11/01/16 09:52	11/02/16 21:49	7439-98-7	
Selenium	<1.0	ug/L	5.0	1.0	5	11/01/16 09:52	11/02/16 21:49	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	11/01/16 09:52	11/02/16 21:49	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	10/26/16 13:25	10/27/16 09:55	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.0	Std. Units			1		10/19/16 14:16		
Field Specific Conductance	367	umhos/cm			1		10/19/16 14:16		
Oxygen, Dissolved	0.1	mg/L			1		10/19/16 14:16	7782-44-7	
REDOX	-135	mV			1		10/19/16 14:16		
Turbidity	452.6	NTU			1		10/19/16 14:16		
Static Water Level	652.32	feet			1		10/19/16 14:16		
Temperature, Water (C)	11.3	deg C			1		10/19/16 14:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	312	mg/L	20.0	8.7	1		10/25/16 15:35		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		10/25/16 12:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.4J	mg/L	10.0	2.5	5		11/14/16 16:32	16887-00-6	D3
Fluoride	0.65J	mg/L	1.5	0.50	5		11/14/16 16:32	16984-48-8	D3
Sulfate	9.5J	mg/L	15.0	5.0	5		11/14/16 16:32	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Sample: I43 MW 302 **Lab ID: 40140697002** Collected: 10/19/16 13:21 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.37J	ug/L	1.0	0.073	1	11/01/16 09:52	11/02/16 22:10	7440-36-0	
Arsenic	4.5	ug/L	1.0	0.099	1	11/01/16 09:52	11/02/16 22:10	7440-38-2	
Barium	60.4	ug/L	1.0	0.062	1	11/01/16 09:52	11/02/16 22:10	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	11/01/16 09:52	11/02/16 22:10	7440-41-7	
Boron	126	ug/L	10.0	2.0	1	11/01/16 09:52	11/03/16 11:14	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	11/01/16 09:52	11/02/16 22:10	7440-43-9	
Calcium	30900	ug/L	250	73.6	1	11/01/16 09:52	11/02/16 22:10	7440-70-2	
Chromium	0.81J	ug/L	1.0	0.39	1	11/01/16 09:52	11/02/16 22:10	7440-47-3	
Cobalt	0.36J	ug/L	1.0	0.036	1	11/01/16 09:52	11/02/16 22:10	7440-48-4	
Lead	0.92J	ug/L	1.0	0.040	1	11/01/16 09:52	11/02/16 22:10	7439-92-1	
Lithium	14.0	ug/L	1.0	0.11	1	11/01/16 09:52	11/02/16 22:10	7439-93-2	
Molybdenum	12.7	ug/L	1.0	0.070	1	11/01/16 09:52	11/02/16 22:10	7439-98-7	
Selenium	0.39J	ug/L	1.0	0.21	1	11/01/16 09:52	11/02/16 22:10	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/16 09:52	11/02/16 22:10	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	10/26/16 13:25	10/27/16 10:02	7439-97-6	
Field Data		Analytical Method:							
Field pH	12.2	Std. Units			1		10/19/16 13:21		
Field Specific Conductance	510	umhos/cm			1		10/19/16 13:21		
REDOX	-107	mV			1		10/19/16 13:21		
Turbidity	32.08	NTU			1		10/19/16 13:21		
Static Water Level	652.38	feet			1		10/19/16 13:21		
Temperature, Water (C)	12.2	deg C			1		10/19/16 13:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	298	mg/L	20.0	8.7	1		10/25/16 15:36		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		10/25/16 12:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.6	mg/L	2.0	0.50	1		11/14/16 16:44	16887-00-6	
Fluoride	0.69	mg/L	0.30	0.10	1		11/14/16 16:44	16984-48-8	
Sulfate	42.6	mg/L	3.0	1.0	1		11/14/16 16:44	14808-79-8	

Sample: I43 MW 303 **Lab ID: 40140697003** Collected: 10/19/16 14:59 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.077J	ug/L	1.0	0.073	1	11/01/16 09:52	11/02/16 22:17	7440-36-0	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

Sample: 143 MW 303 **Lab ID: 40140697003** Collected: 10/19/16 14:59 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	2.7	ug/L	1.0	0.099	1	11/01/16 09:52	11/02/16 22:17	7440-38-2	
Barium	81.6	ug/L	1.0	0.062	1	11/01/16 09:52	11/02/16 22:17	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	11/01/16 09:52	11/02/16 22:17	7440-41-7	
Boron	90.8	ug/L	10.0	2.0	1	11/01/16 09:52	11/03/16 11:20	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	11/01/16 09:52	11/02/16 22:17	7440-43-9	
Calcium	31600	ug/L	250	73.6	1	11/01/16 09:52	11/02/16 22:17	7440-70-2	
Chromium	0.41J	ug/L	1.0	0.39	1	11/01/16 09:52	11/02/16 22:17	7440-47-3	
Cobalt	0.32J	ug/L	1.0	0.036	1	11/01/16 09:52	11/02/16 22:17	7440-48-4	
Lead	0.16J	ug/L	1.0	0.040	1	11/01/16 09:52	11/02/16 22:17	7439-92-1	
Lithium	14.8	ug/L	1.0	0.11	1	11/01/16 09:52	11/02/16 22:17	7439-93-2	
Molybdenum	34.0	ug/L	1.0	0.070	1	11/01/16 09:52	11/02/16 22:17	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	11/01/16 09:52	11/02/16 22:17	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/16 09:52	11/02/16 22:17	7440-28-0	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	<0.13	ug/L	0.42	0.13	1	10/26/16 13:25	10/27/16 10:04	7439-97-6	

Field Data Analytical Method:									
Field pH	8.03	Std. Units			1		10/19/16 14:59		
Field Specific Conductance	567	umhos/cm			1		10/19/16 14:59		
Oxygen, Dissolved	2.2	mg/L			1		10/19/16 14:59	7782-44-7	
REDOX	-185	mV			1		10/19/16 14:59		
Turbidity	8.9	NTU			1		10/19/16 14:59		
Static Water Level	652.18	feet			1		10/19/16 14:59		
Temperature, Water (C)	11.3	deg C			1		10/19/16 14:59		

2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	458	mg/L	20.0	8.7	1		10/25/16 15:36		

9040 pH Analytical Method: EPA 9040									
pH	7.9	Std. Units	0.10	0.010	1		10/25/16 12:45		H6

300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	6.8	mg/L	2.0	0.50	1		11/14/16 16:57	16887-00-6	
Fluoride	0.60	mg/L	0.30	0.10	1		11/14/16 16:57	16984-48-8	
Sulfate	137	mg/L	15.0	5.0	5		11/14/16 17:47	14808-79-8	

Sample: 143 MW 304 **Lab ID: 40140697004** Collected: 10/19/16 11:56 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<0.073	ug/L	1.0	0.073	1	11/01/16 09:52	11/02/16 22:23	7440-36-0	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Sample: I43 MW 304 **Lab ID: 40140697004** Collected: 10/19/16 11:56 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	10.7	ug/L	1.0	0.099	1	11/01/16 09:52	11/02/16 22:23	7440-38-2	
Barium	73.4	ug/L	1.0	0.062	1	11/01/16 09:52	11/02/16 22:23	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	11/01/16 09:52	11/02/16 22:23	7440-41-7	
Boron	106	ug/L	10.0	2.0	1	11/01/16 09:52	11/03/16 11:27	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	11/01/16 09:52	11/02/16 22:23	7440-43-9	
Calcium	23000	ug/L	250	73.6	1	11/01/16 09:52	11/02/16 22:23	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	11/01/16 09:52	11/02/16 22:23	7440-47-3	
Cobalt	0.078J	ug/L	1.0	0.036	1	11/01/16 09:52	11/02/16 22:23	7440-48-4	
Lead	0.12J	ug/L	1.0	0.040	1	11/01/16 09:52	11/02/16 22:23	7439-92-1	
Lithium	9.1	ug/L	1.0	0.11	1	11/01/16 09:52	11/02/16 22:23	7439-93-2	
Molybdenum	3.8	ug/L	1.0	0.070	1	11/01/16 09:52	11/02/16 22:23	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	11/01/16 09:52	11/02/16 22:23	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/16 09:52	11/02/16 22:23	7440-28-0	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	<0.13	ug/L	0.42	0.13	1	10/26/16 13:25	10/27/16 10:06	7439-97-6	

Field Data Analytical Method:									
Field pH	8.17	Std. Units			1		10/19/16 11:56		
Field Specific Conductance	397	umhos/cm			1		10/19/16 11:56		
REDOX	-84	mV			1		10/19/16 11:56		
Turbidity	6.77	NTU			1		10/19/16 11:56		
Static Water Level	654.00	feet			1		10/19/16 11:56		
Temperature, Water (C)	11.1	deg C			1		10/19/16 11:56		

2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	232	mg/L	20.0	8.7	1		10/25/16 15:37		

9040 pH Analytical Method: EPA 9040									
pH	7.8	Std. Units	0.10	0.010	1		10/25/16 12:45		H6

300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	1.8J	mg/L	2.0	0.50	1		11/14/16 18:00	16887-00-6	
Fluoride	0.45	mg/L	0.30	0.10	1		11/14/16 18:00	16984-48-8	
Sulfate	13.5	mg/L	3.0	1.0	1		11/14/16 18:00	14808-79-8	

Sample: FIELD BLANK **Lab ID: 40140697005** Collected: 10/19/16 13:00 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<0.073	ug/L	1.0	0.073	1	11/01/16 09:52	11/02/16 19:41	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	11/01/16 09:52	11/02/16 19:41	7440-38-2	1q

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Sample: FIELD BLANK **Lab ID: 40140697005** Collected: 10/19/16 13:00 Received: 10/22/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Barium	0.30J	ug/L	1.0	0.062	1	11/01/16 09:52	11/02/16 19:41	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	11/01/16 09:52	11/02/16 19:41	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	11/01/16 09:52	11/02/16 19:41	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	11/01/16 09:52	11/02/16 19:41	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	11/01/16 09:52	11/02/16 19:41	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	11/01/16 09:52	11/02/16 19:41	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	11/01/16 09:52	11/02/16 19:41	7440-48-4	
Lead	<0.040	ug/L	1.0	0.040	1	11/01/16 09:52	11/02/16 19:41	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	11/01/16 09:52	11/02/16 19:41	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	11/01/16 09:52	11/02/16 19:41	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	11/01/16 09:52	11/02/16 19:41	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/16 09:52	11/02/16 19:41	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	10/26/16 13:25	10/27/16 10:09	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		10/25/16 15:37		
9040 pH		Analytical Method: EPA 9040							
pH	6.7	Std. Units	0.10	0.010	1		10/25/16 13:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		11/14/16 18:12	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		11/14/16 18:12	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		11/14/16 18:12	14808-79-8	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

QC Batch: 239379 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1418208 Matrix: Water
 Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	10/27/16 09:50	

LABORATORY CONTROL SAMPLE: 1418209

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1418210 1418211

Parameter	Units	1418210		1418211		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		40140697001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Mercury	ug/L	<0.13	5	5	5.4	5.2	107	104	85-115	3	20		

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

QC Batch: 239895 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1421008 Matrix: Water
Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	11/02/16 19:27	
Arsenic	ug/L	<0.099	1.0	11/02/16 19:27	
Barium	ug/L	<0.062	1.0	11/02/16 19:27	
Beryllium	ug/L	<0.13	1.0	11/02/16 19:27	
Boron	ug/L	<2.0	10.0	11/02/16 19:27	
Cadmium	ug/L	<0.089	1.0	11/02/16 19:27	
Calcium	ug/L	<73.6	250	11/02/16 19:27	
Chromium	ug/L	<0.39	1.0	11/02/16 19:27	
Cobalt	ug/L	<0.036	1.0	11/02/16 19:27	
Lead	ug/L	<0.040	1.0	11/02/16 19:27	
Lithium	ug/L	<0.11	1.0	11/02/16 19:27	
Molybdenum	ug/L	<0.070	1.0	11/02/16 19:27	
Selenium	ug/L	<0.21	1.0	11/02/16 19:27	
Thallium	ug/L	<0.14	1.0	11/02/16 19:27	

LABORATORY CONTROL SAMPLE: 1421009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	512	102	80-120	
Arsenic	ug/L	500	487	97	80-120	
Barium	ug/L	500	487	97	80-120	
Beryllium	ug/L	500	477	95	80-120	
Boron	ug/L	500	444	89	80-120	
Cadmium	ug/L	500	508	102	80-120	
Calcium	ug/L	5000	5280	106	80-120	
Chromium	ug/L	500	488	98	80-120	
Cobalt	ug/L	500	485	97	80-120	
Lead	ug/L	500	491	98	80-120	
Lithium	ug/L	500	438	88	80-120	
Molybdenum	ug/L	500	508	102	80-120	
Selenium	ug/L	500	512	102	80-120	
Thallium	ug/L	500	477	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1421010 1421011

Parameter	Units	40140684001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	0.078J	500	515	526	103	105	75-125	2	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Parameter	Units	40140684001		1421010		1421011		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Arsenic	ug/L	1.3	500	500	506	512	101	102	75-125	1	20			
Barium	ug/L	78.9	500	500	586	586	102	101	75-125	0	20			
Beryllium	ug/L	<0.13	500	500	481	487	96	97	75-125	1	20			
Boron	ug/L	828	500	500	1330	1280	100	90	75-125	4	20			
Cadmium	ug/L	<0.089	500	500	502	507	100	101	75-125	1	20			
Calcium	ug/L	137000	5000	5000	142000	142000	92	86	75-125	0	20			
Chromium	ug/L	0.46J	500	500	492	489	98	98	75-125	1	20			
Cobalt	ug/L	0.37J	500	500	487	483	97	97	75-125	1	20			
Lead	ug/L	0.42J	500	500	497	492	99	98	75-125	1	20			
Lithium	ug/L	37.4	500	500	501	497	93	92	75-125	1	20			
Molybdenum	ug/L	15.0	500	500	546	553	106	108	75-125	1	20			
Selenium	ug/L	<0.21	500	500	515	527	103	105	75-125	2	20			
Thallium	ug/L	<0.14	500	500	488	483	98	97	75-125	1	20			

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

QC Batch: 239240

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1417442

Matrix: Water

Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/25/16 15:33	

LABORATORY CONTROL SAMPLE: 1417443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	640	580	91	80-120	

SAMPLE DUPLICATE: 1417444

Parameter	Units	40140654002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	288	280	3	5	

SAMPLE DUPLICATE: 1417445

Parameter	Units	40140697001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	312	308	1	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

QC Batch: 239247 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

SAMPLE DUPLICATE: 1417459

Parameter	Units	40140688003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.7	7.8	1	20	H6

SAMPLE DUPLICATE: 1417460

Parameter	Units	40140219017 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.5	7.5	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

QC Batch: 241194 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1430237 Matrix: Water
Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	11/14/16 12:21	
Fluoride	mg/L	<0.10	0.30	11/14/16 12:21	
Sulfate	mg/L	<1.0	3.0	11/14/16 12:21	

LABORATORY CONTROL SAMPLE: 1430238

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.5	102	90-110	
Fluoride	mg/L	2	2.0	98	90-110	
Sulfate	mg/L	20	19.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1430239 1430240

Parameter	Units	40140602017		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	79.0	100	100	100	188	188	109	109	90-110	0	15		
Fluoride	mg/L	<1.5	10	10	10	9.7	9.8	97	98	90-110	0	15		
Sulfate	mg/L	72.8	100	100	100	179	179	106	106	90-110	0	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1430241 1430242

Parameter	Units	40140694016		MS		MSD		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result							
Chloride	mg/L	36.9	20	20	20	57.6	56.7	104	99	90-110	2	15		
Fluoride	mg/L	<0.10	2	2	2	2.1	2.1	101	101	90-110	0	15		
Sulfate	mg/L	32.4	20	20	20	54.2	53.1	109	104	90-110	2	15		

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43 CCR

Project No.: 40140697

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 301 Lab ID: 40140697001 Collected: 10/19/16 14:16 Received: 10/22/16 07:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	-0.595 ± 1.03 (2.60) C:NA T:81%	pCi/L	11/16/16 13:33	13982-63-3	
Radium-228	EPA 904.0	1.58 ± 0.970 (1.81) C:46% T:77%	pCi/L	11/17/16 12:04	15262-20-1	
Total Radium	Total Radium Calculation	1.58 ± 2.00 (4.41)	pCi/L	11/18/16 10:27	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 302 Lab ID: 40140697002 Collected: 10/19/16 13:21 Received: 10/22/16 07:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	0.000 ± 0.940 (1.52) C:NA T:78%	pCi/L	11/16/16 13:57	13982-63-3	
Radium-228	EPA 904.0	1.12 ± 0.613 (1.10) C:63% T:85%	pCi/L	11/17/16 11:49	15262-20-1	
Total Radium	Total Radium Calculation	1.12 ± 1.55 (2.62)	pCi/L	11/18/16 10:27	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 303 Lab ID: 40140697003 Collected: 10/19/16 14:59 Received: 10/22/16 07:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	0.000 ± 0.970 (2.10) C:NA T:95%	pCi/L	11/16/16 13:58	13982-63-3	
Radium-228	EPA 904.0	0.921 ± 0.643 (1.25) C:63% T:81%	pCi/L	11/17/16 11:48	15262-20-1	
Total Radium	Total Radium Calculation	0.921 ± 1.61 (3.35)	pCi/L	11/18/16 10:27	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: I43 MW 304 Lab ID: 40140697004 Collected: 10/19/16 11:56 Received: 10/22/16 07:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	-0.369 ± 0.843 (1.99) C:NA T:83%	pCi/L	11/16/16 13:58	13982-63-3	
Radium-228	EPA 904.0	0.625 ± 0.597 (1.22) C:55% T:84%	pCi/L	11/17/16 11:48	15262-20-1	
Total Radium	Total Radium Calculation	0.625 ± 1.44 (3.21)	pCi/L	11/18/16 10:27	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK Lab ID: 40140697005 Collected: 10/19/16 13:00 Received: 10/22/16 07:30 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	0.000 ± 0.821 (1.32) C:NA T:88%	pCi/L	11/16/16 13:59	13982-63-3	
Radium-228	EPA 904.0	1.11 ± 0.664 (1.20) C:55% T:76%	pCi/L	11/17/16 11:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

Sample: FIELD BLANK **Lab ID: 40140697005** Collected: 10/19/16 13:00 Received: 10/22/16 07:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	1.11 ± 1.49 (2.52)	pCi/L	11/18/16 10:27	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

QC Batch: 239382 Analysis Method: EPA 903.1
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
 Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1176589 Matrix: Water
 Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.348 (0.780) C:NA T:88%	pCi/L	11/16/16 12:50	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43 CCR

Pace Project No.: 40140697

QC Batch: 239383

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

METHOD BLANK: 1176592

Matrix: Water

Associated Lab Samples: 40140697001, 40140697002, 40140697003, 40140697004, 40140697005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.884 ± 0.508 (0.925) C:62% T:84%	pCi/L	11/17/16 11:51	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1q Analyte was measured in the associated method blank at -0.102 ug/L.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I-43 CCR
Pace Project No.: 40140697

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40140697001	I43 MW 301	EPA 3010	239895	EPA 6020	239983
40140697002	I43 MW 302	EPA 3010	239895	EPA 6020	239983
40140697003	I43 MW 303	EPA 3010	239895	EPA 6020	239983
40140697004	I43 MW 304	EPA 3010	239895	EPA 6020	239983
40140697005	FIELD BLANK	EPA 3010	239895	EPA 6020	239983
40140697001	I43 MW 301	EPA 7470	239379	EPA 7470	239408
40140697002	I43 MW 302	EPA 7470	239379	EPA 7470	239408
40140697003	I43 MW 303	EPA 7470	239379	EPA 7470	239408
40140697004	I43 MW 304	EPA 7470	239379	EPA 7470	239408
40140697005	FIELD BLANK	EPA 7470	239379	EPA 7470	239408
40140697001	I43 MW 301				
40140697002	I43 MW 302				
40140697003	I43 MW 303				
40140697004	I43 MW 304				
40140697001	I43 MW 301	EPA 903.1	239382		
40140697002	I43 MW 302	EPA 903.1	239382		
40140697003	I43 MW 303	EPA 903.1	239382		
40140697004	I43 MW 304	EPA 903.1	239382		
40140697005	FIELD BLANK	EPA 903.1	239382		
40140697001	I43 MW 301	EPA 904.0	239383		
40140697002	I43 MW 302	EPA 904.0	239383		
40140697003	I43 MW 303	EPA 904.0	239383		
40140697004	I43 MW 304	EPA 904.0	239383		
40140697005	FIELD BLANK	EPA 904.0	239383		
40140697001	I43 MW 301	Total Radium Calculation	240796		
40140697002	I43 MW 302	Total Radium Calculation	240796		
40140697003	I43 MW 303	Total Radium Calculation	240796		
40140697004	I43 MW 304	Total Radium Calculation	240796		
40140697005	FIELD BLANK	Total Radium Calculation	240796		
40140697001	I43 MW 301	SM 2540C	239240		
40140697002	I43 MW 302	SM 2540C	239240		
40140697003	I43 MW 303	SM 2540C	239240		
40140697004	I43 MW 304	SM 2540C	239240		
40140697005	FIELD BLANK	SM 2540C	239240		
40140697001	I43 MW 301	EPA 9040	239247		
40140697002	I43 MW 302	EPA 9040	239247		
40140697003	I43 MW 303	EPA 9040	239247		
40140697004	I43 MW 304	EPA 9040	239247		
40140697005	FIELD BLANK	EPA 9040	239247		
40140697001	I43 MW 301	EPA 300.0	241194		
40140697002	I43 MW 302	EPA 300.0	241194		
40140697003	I43 MW 303	EPA 300.0	241194		
40140697004	I43 MW 304	EPA 300.0	241194		
40140697005	FIELD BLANK	EPA 300.0	241194		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

UPPER MIDWEST REGION

MIN: 612-607-1700 WI: 920-469-2436

Page 1 of



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CHAIN OF CUSTODY

40140097

Page 23 of 24

A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other
 Preservation Codes

Y/N	Filter	Preservation Code
N	A	Chloride
N	A	Fluoride
N	D	Sulfate
N	D	TDS
N	D	pH
N	D	Radium 226
N	D	Radium 228
N	D	B, Cd, Si, As, Ba, Be, Ca, Cr
N	D	Co, Pb, Li, Mo
N	D	Si, Ti
N	D	Mercury

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Riedger**
 Phone: **608-216-7362**
 Project Number: **25216089, 00**
 Project Name: **Edgewater T43**
 Project State: **WI**
 Sampled By (Print): **Gary Stokel**
 Sampled By (Sign): *Gary Stokel*
 PO #: _____
 Regulatory Program: _____

Data Package Options (checkboxes)
 EPA Level III
 EPA Level IV
 On your sample (billable)
 NOT needed on your sample

Matrix Codes	Matrix Codes
A = Air	W = Water
B = Biosol	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipes

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX
001	T43 MW 301	10/14/16	1416	W
002	T43 MW 302	10/14/16	1321	W
003	T43 MW 303	10/14/16	1459	W
004	T43 MW 304	10/14/16	1156	W
005	Field Blank	10/14/16	1300	W

Relinquished By:	Date/Time:	Received By:	Date/Time:
<i>Gary Stokel</i>	10/21/16 8:45	<i>Mary Farnin</i>	10/21/16 8:45
<i>Mary Farnin</i>	10/21/16 1530	<i>Mary Farnin</i>	10/21/16 1530
<i>S LOGISTICS</i>	10/21/16 0730	<i>S LOGISTICS</i>	10/21/16 0730

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: _____
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Prairie Dr
Madison WI 53718**
 Invoice To Phone: _____
 CLIENT COMMENTS: **a-scomp 4-25comp ADD**
 LAB COMMENTS (Lab Use Only): _____
 Profile #: _____
 Receipt Temp = **ROTC**
 Sample Receipt pH (OK) Adjusted
 Cooler Custody Seal Present/Not Present Intact/Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical

Client Name: SCS

Project # **WO# : 40140697**

Courier: Fed Ex UPS Client Pace Other: CS Logistics
Tracking #: _____



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr: _____ Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
Date: 10/22/16
Initials: BA

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>not done 10/22/16</u>
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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: <u>W</u>		
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>BA</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: Person Contacted: _____ Date/Time: _____ If checked, see attached form for additional comments
Comments/ Resolution: _____

Project Manager Review: AMH for DM Date: 10/22/16

A5 Round 5 Background Sampling, Analytical Laboratory Report

January 26, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on December 23, 2016. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40143858001	I43 MW301	Water	12/19/16 11:51	12/23/16 11:25
40143858002	I43 MW302	Water	12/19/16 12:26	12/23/16 11:25
40143858003	I43 MW303	Water	12/19/16 13:11	12/23/16 11:25
40143858004	I43 MW304	Water	12/19/16 10:11	12/23/16 11:25
40143858005	FIELD BLANK	Water	12/19/16 11:30	12/23/16 11:25

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40143858001	I43 MW301	EPA 6020	DS1, SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			JLJ	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40143858002	I43 MW302	EPA 6020	DS1, SDW
EPA 7470	AJT			1	PASI-G
	JLJ			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40143858003	I43 MW303			EPA 6020	DS1, SDW
		EPA 7470	AJT	1	PASI-G
			JLJ	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40143858004	I43 MW304	EPA 6020	DS1, SDW
EPA 7470	AJT			1	PASI-G
	JLJ			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40143858005	FIELD BLANK			EPA 6020	DS1, SDW

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Sample: I43 MW301 **Lab ID: 40143858001** Collected: 12/19/16 11:51 Received: 12/23/16 11:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	1.0J	ug/L	2.0	0.15	2	12/28/16 08:27	01/03/17 18:42	7440-36-0	D3
Arsenic	7.3	ug/L	2.0	0.20	2	12/28/16 08:27	01/03/17 18:42	7440-38-2	
Barium	195	ug/L	2.0	0.12	2	12/28/16 08:27	01/03/17 18:42	7440-39-3	
Beryllium	1.1J	ug/L	2.0	0.25	2	12/28/16 08:27	01/03/17 18:42	7440-41-7	D3
Boron	174	ug/L	20.0	4.0	2	12/28/16 08:27	01/03/17 18:42	7440-42-8	
Cadmium	0.97J	ug/L	2.0	0.18	2	12/28/16 08:27	01/03/17 18:42	7440-43-9	D3
Calcium	127000	ug/L	500	147	2	12/28/16 08:27	01/05/17 20:04	7440-70-2	
Chromium	27.7	ug/L	2.0	0.79	2	12/28/16 08:27	01/03/17 18:42	7440-47-3	
Cobalt	8.4	ug/L	2.0	0.073	2	12/28/16 08:27	01/04/17 13:09	7440-48-4	
Lead	9.6	ug/L	2.0	0.081	2	12/28/16 08:27	01/03/17 18:42	7439-92-1	
Lithium	42.2	ug/L	2.0	0.21	2	12/28/16 08:27	01/03/17 18:42	7439-93-2	
Molybdenum	11.0	ug/L	2.0	0.14	2	12/28/16 08:27	01/03/17 18:42	7439-98-7	
Selenium	2.5	ug/L	2.0	0.42	2	12/28/16 08:27	01/03/17 18:42	7782-49-2	
Thallium	1.2J	ug/L	2.0	0.29	2	12/28/16 08:27	01/03/17 18:42	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	12/29/16 11:20	12/30/16 09:55	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.36	Std. Units			1		12/19/16 11:51		
Field Specific Conductance	384	umhos/cm			1		12/19/16 11:51		
Oxygen, Dissolved	0.09	mg/L			1		12/19/16 11:51	7782-44-7	
REDOX	-143	mV			1		12/19/16 11:51		
Turbidity	895.1	NTU			1		12/19/16 11:51		
Static Water Level	652.85	feet			1		12/19/16 11:51		
Temperature, Water (C)	7.5	deg C			1		12/19/16 11:51		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	264	mg/L	20.0	8.7	1		12/27/16 15:01		H1
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		12/27/16 10:50		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.9J	mg/L	10.0	2.5	5		01/06/17 16:00	16887-00-6	D3
Fluoride	0.86J	mg/L	1.5	0.50	5		01/06/17 16:00	16984-48-8	D3
Sulfate	9.6J	mg/L	15.0	5.0	5		01/06/17 16:00	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Sample: I43 MW302 **Lab ID: 40143858002** Collected: 12/19/16 12:26 Received: 12/23/16 11:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.97J	ug/L	1.0	0.073	1	12/28/16 08:27	01/03/17 19:36	7440-36-0	
Arsenic	6.5	ug/L	1.0	0.099	1	12/28/16 08:27	01/03/17 19:36	7440-38-2	
Barium	77.5	ug/L	1.0	0.062	1	12/28/16 08:27	01/03/17 19:36	7440-39-3	
Beryllium	0.35J	ug/L	1.0	0.13	1	12/28/16 08:27	01/03/17 19:36	7440-41-7	
Boron	127	ug/L	10.0	2.0	1	12/28/16 08:27	01/03/17 19:36	7440-42-8	
Cadmium	0.60J	ug/L	1.0	0.089	1	12/28/16 08:27	01/03/17 19:36	7440-43-9	
Calcium	42600	ug/L	250	73.6	1	12/28/16 08:27	01/05/17 20:17	7440-70-2	
Chromium	3.0	ug/L	1.0	0.39	1	12/28/16 08:27	01/03/17 19:36	7440-47-3	
Cobalt	1.1	ug/L	1.0	0.036	1	12/28/16 08:27	01/04/17 13:22	7440-48-4	
Lead	3.6	ug/L	1.0	0.040	1	12/28/16 08:27	01/03/17 19:36	7439-92-1	
Lithium	15.8	ug/L	1.0	0.11	1	12/28/16 08:27	01/03/17 19:36	7439-93-2	
Molybdenum	10.7	ug/L	1.0	0.070	1	12/28/16 08:27	01/03/17 19:36	7439-98-7	
Selenium	1.4	ug/L	1.0	0.21	1	12/28/16 08:27	01/03/17 19:36	7782-49-2	
Thallium	0.68J	ug/L	1.0	0.14	1	12/28/16 08:27	01/03/17 19:36	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	12/29/16 11:20	12/30/16 09:58	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.31	Std. Units			1		12/19/16 12:26		
Field Specific Conductance	497	umhos/cm			1		12/19/16 12:26		
Oxygen, Dissolved	0	mg/L			1		12/19/16 12:26	7782-44-7	
REDOX	-73	mV			1		12/19/16 12:26		
Turbidity	190.8	NTU			1		12/19/16 12:26		
Static Water Level	652.79	feet			1		12/19/16 12:26		
Temperature, Water (C)	8.1	deg C			1		12/19/16 12:26		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	302	mg/L	20.0	8.7	1		12/27/16 15:02		H1
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		12/27/16 10:50		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	10.0	mg/L	10.0	2.5	5		01/06/17 16:12	16887-00-6	
Fluoride	0.94J	mg/L	1.5	0.50	5		01/06/17 16:12	16984-48-8	D3
Sulfate	36.4	mg/L	15.0	5.0	5		01/06/17 16:12	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Sample: I43 MW303 **Lab ID: 40143858003** Collected: 12/19/16 13:11 Received: 12/23/16 11:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	2.3	ug/L	1.0	0.073	1	12/28/16 08:27	01/03/17 18:55	7440-36-0	
Arsenic	3.2	ug/L	1.0	0.099	1	12/28/16 08:27	01/03/17 18:55	7440-38-2	
Barium	90.3	ug/L	1.0	0.062	1	12/28/16 08:27	01/03/17 18:55	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	12/28/16 08:27	01/03/17 18:55	7440-41-7	
Boron	81.6	ug/L	10.0	2.0	1	12/28/16 08:27	01/03/17 18:55	7440-42-8	
Cadmium	0.22J	ug/L	1.0	0.089	1	12/28/16 08:27	01/03/17 18:55	7440-43-9	
Calcium	50500	ug/L	2500	736	10	12/28/16 08:27	01/05/17 19:23	7440-70-2	P6
Chromium	1.3	ug/L	1.0	0.39	1	12/28/16 08:27	01/03/17 18:55	7440-47-3	
Cobalt	0.63J	ug/L	1.0	0.036	1	12/28/16 08:27	01/04/17 12:29	7440-48-4	
Lead	0.30J	ug/L	1.0	0.040	1	12/28/16 08:27	01/03/17 18:55	7439-92-1	
Lithium	10.3	ug/L	1.0	0.11	1	12/28/16 08:27	01/03/17 18:55	7439-93-2	
Molybdenum	9.4	ug/L	1.0	0.070	1	12/28/16 08:27	01/03/17 18:55	7439-98-7	
Selenium	0.26J	ug/L	1.0	0.21	1	12/28/16 08:27	01/03/17 18:55	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/28/16 08:27	01/03/17 18:55	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	12/29/16 11:20	12/30/16 10:00	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.32	Std. Units			1		12/19/16 13:11		
Field Specific Conductance	582	umhos/cm			1		12/19/16 13:11		
Oxygen, Dissolved	0	mg/L			1		12/19/16 13:11	7782-44-7	
REDOX	-156	mV			1		12/19/16 13:11		
Turbidity	30.04	NTU			1		12/19/16 13:11		
Static Water Level	652.82	feet			1		12/19/16 13:11		
Temperature, Water (C)	4.4	deg C			1		12/19/16 13:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	312	mg/L	20.0	8.7	1		12/27/16 15:02		H1
9040 pH		Analytical Method: EPA 9040							
pH	7.7	Std. Units	0.10	0.010	1		12/27/16 10:50		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	22.9	mg/L	2.0	0.50	1		01/06/17 16:24	16887-00-6	
Fluoride	0.63	mg/L	0.30	0.10	1		01/06/17 16:24	16984-48-8	
Sulfate	38.2	mg/L	3.0	1.0	1		01/06/17 16:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

Sample: I43 MW304 **Lab ID: 40143858004** Collected: 12/19/16 10:11 Received: 12/23/16 11:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.23J	ug/L	1.0	0.073	1	12/28/16 08:27	01/03/17 19:43	7440-36-0	
Arsenic	11.4	ug/L	1.0	0.099	1	12/28/16 08:27	01/03/17 19:43	7440-38-2	
Barium	71.0	ug/L	1.0	0.062	1	12/28/16 08:27	01/03/17 19:43	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	12/28/16 08:27	01/03/17 19:43	7440-41-7	
Boron	102	ug/L	10.0	2.0	1	12/28/16 08:27	01/03/17 19:43	7440-42-8	
Cadmium	0.17J	ug/L	1.0	0.089	1	12/28/16 08:27	01/03/17 19:43	7440-43-9	
Calcium	24800	ug/L	250	73.6	1	12/28/16 08:27	01/05/17 20:24	7440-70-2	
Chromium	0.70J	ug/L	1.0	0.39	1	12/28/16 08:27	01/03/17 19:43	7440-47-3	
Cobalt	0.18J	ug/L	1.0	0.036	1	12/28/16 08:27	01/04/17 13:29	7440-48-4	
Lead	0.44J	ug/L	1.0	0.040	1	12/28/16 08:27	01/03/17 19:43	7439-92-1	
Lithium	10.1	ug/L	1.0	0.11	1	12/28/16 08:27	01/03/17 19:43	7439-93-2	
Molybdenum	3.7	ug/L	1.0	0.070	1	12/28/16 08:27	01/03/17 19:43	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	12/28/16 08:27	01/03/17 19:43	7782-49-2	
Thallium	0.19J	ug/L	1.0	0.14	1	12/28/16 08:27	01/03/17 19:43	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	12/29/16 11:20	12/30/16 10:02	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.29	Std. Units			1		12/19/16 10:11		
Field Specific Conductance	394	umhos/cm			1		12/19/16 10:11		
Oxygen, Dissolved	0.3	mg/L			1		12/19/16 10:11	7782-44-7	
REDOX	-3	mV			1		12/19/16 10:11		
Turbidity	8.88	NTU			1		12/19/16 10:11		
Static Water Level	654.26	feet			1		12/19/16 10:11		
Temperature, Water (C)	7.6	deg C			1		12/19/16 10:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	198	mg/L	20.0	8.7	1		12/27/16 15:03		H1
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		12/27/16 10:50		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.2	mg/L	2.0	0.50	1		01/06/17 16:37	16887-00-6	
Fluoride	0.59	mg/L	0.30	0.10	1		01/06/17 16:37	16984-48-8	
Sulfate	14.6	mg/L	3.0	1.0	1		01/06/17 16:37	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Sample: FIELD BLANK **Lab ID: 40143858005** Collected: 12/19/16 11:30 Received: 12/23/16 11:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	12/28/16 08:27	01/03/17 18:02	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	12/28/16 08:27	01/03/17 18:02	7440-38-2	
Barium	<0.062	ug/L	1.0	0.062	1	12/28/16 08:27	01/03/17 18:02	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	12/28/16 08:27	01/03/17 18:02	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	12/28/16 08:27	01/03/17 18:02	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	12/28/16 08:27	01/03/17 18:02	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	12/28/16 08:27	01/05/17 19:09	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	12/28/16 08:27	01/03/17 18:02	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	12/28/16 08:27	01/04/17 13:36	7440-48-4	
Lead	<0.040	ug/L	1.0	0.040	1	12/28/16 08:27	01/03/17 18:02	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	12/28/16 08:27	01/03/17 18:02	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	12/28/16 08:27	01/03/17 18:02	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	12/28/16 08:27	01/03/17 18:02	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	12/28/16 08:27	01/03/17 18:02	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	12/29/16 11:20	12/30/16 10:04	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		12/27/16 15:03		H1
9040 pH		Analytical Method: EPA 9040							
pH	6.4	Std. Units	0.10	0.010	1		12/27/16 11:10		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		01/06/17 16:49	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		01/06/17 16:49	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		01/06/17 16:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

QC Batch: 245388 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

METHOD BLANK: 1452249 Matrix: Water
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	12/30/16 09:35	

LABORATORY CONTROL SAMPLE: 1452250

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.4	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1452251 1452252

Parameter	Units	40143944001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.13	5	5	6.9	6.8	138	135	85-115	2	20	M0

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

QC Batch: 245217 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

METHOD BLANK: 1451540 Matrix: Water
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	01/03/17 17:55	
Arsenic	ug/L	<0.099	1.0	01/03/17 17:55	
Barium	ug/L	<0.062	1.0	01/03/17 17:55	
Beryllium	ug/L	<0.13	1.0	01/03/17 17:55	
Boron	ug/L	<2.0	10.0	01/03/17 17:55	
Cadmium	ug/L	<0.089	1.0	01/03/17 17:55	
Calcium	ug/L	<73.6	250	01/05/17 19:03	
Chromium	ug/L	<0.39	1.0	01/03/17 17:55	
Cobalt	ug/L	<0.036	1.0	01/04/17 11:48	
Lead	ug/L	<0.040	1.0	01/03/17 17:55	
Lithium	ug/L	<0.11	1.0	01/03/17 17:55	
Molybdenum	ug/L	0.24J	1.0	01/03/17 17:55	
Selenium	ug/L	<0.21	1.0	01/03/17 17:55	
Thallium	ug/L	<0.14	1.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE: 1451541

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	513	103	80-120	
Arsenic	ug/L	500	518	104	80-120	
Barium	ug/L	500	519	104	80-120	
Beryllium	ug/L	500	506	101	80-120	
Boron	ug/L	500	484	97	80-120	
Cadmium	ug/L	500	549	110	80-120	
Calcium	ug/L	5000	5200	104	80-120	
Chromium	ug/L	500	526	105	80-120	
Cobalt	ug/L	500	516	103	80-120	
Lead	ug/L	500	514	103	80-120	
Lithium	ug/L	500	523	105	80-120	
Molybdenum	ug/L	500	557	111	80-120	
Selenium	ug/L	500	553	111	80-120	
Thallium	ug/L	500	513	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1451542 1451543

Parameter	Units	40143858003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Antimony	ug/L	2.3	500	500	546	539	109	107	75-125	1	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Parameter	Units	40143858003		1451542		1451543		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Arsenic	ug/L	3.2	500	500	527	518	105	103	75-125	2	20			
Barium	ug/L	90.3	500	500	644	632	111	108	75-125	2	20			
Beryllium	ug/L	<0.13	500	500	545	538	109	108	75-125	1	20			
Boron	ug/L	81.6	500	500	604	594	105	103	75-125	2	20			
Cadmium	ug/L	0.22J	500	500	580	572	116	114	75-125	1	20			
Calcium	ug/L	50500	5000	5000	57400	56400	137	117	75-125	2	20	P6		
Chromium	ug/L	1.3	500	500	518	513	103	102	75-125	1	20			
Cobalt	ug/L	0.63J	500	500	594	589	119	118	75-125	1	20			
Lead	ug/L	0.30J	500	500	521	515	104	103	75-125	1	20			
Lithium	ug/L	10.3	500	500	583	568	114	112	75-125	2	20			
Molybdenum	ug/L	9.4	500	500	566	565	111	111	75-125	0	20			
Selenium	ug/L	0.26J	500	500	558	549	112	110	75-125	2	20			
Thallium	ug/L	<0.14	500	500	522	519	104	104	75-125	1	20			

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

QC Batch: 245169

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

METHOD BLANK: 1451411

Matrix: Water

Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	12/27/16 14:56	

LABORATORY CONTROL SAMPLE: 1451412

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	534	91	80-120	

SAMPLE DUPLICATE: 1451413

Parameter	Units	40143838001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	74.0	84.0	13	5	R1

SAMPLE DUPLICATE: 1451414

Parameter	Units	40143858001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	264	270	2	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

QC Batch: 245166 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

SAMPLE DUPLICATE: 1451404

Parameter	Units	40143679003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.5	7.6	1	20	H6

SAMPLE DUPLICATE: 1451405

Parameter	Units	40143772002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	9.2	9.2	1	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

QC Batch: 245585 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

METHOD BLANK: 1453187 Matrix: Water
Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	01/06/17 13:12	
Fluoride	mg/L	<0.10	0.30	01/06/17 13:12	
Sulfate	mg/L	<1.0	3.0	01/06/17 13:12	

LABORATORY CONTROL SAMPLE: 1453188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.7	103	90-110	
Fluoride	mg/L	2	2.1	104	90-110	
Sulfate	mg/L	20	20.4	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1453189 1453190

Parameter	Units	40143812004 Result	MS Spike Conc.	MSD Spike Conc.	1453189		1453190		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	177	100	100	273	273	96	96	90-110	0	15	
Fluoride	mg/L	<0.50	10	10	10.8	11.0	105	108	90-110	2	15	
Sulfate	mg/L	11.4J	100	100	116	118	104	106	90-110	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1453191 1453192

Parameter	Units	40144011004 Result	MS Spike Conc.	MSD Spike Conc.	1453191		1453192		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	137	100	100	237	242	100	105	90-110	2	15	
Fluoride	mg/L	ND	10	10	5.9	6.1	59	61	90-110	3	15 M0	
Sulfate	mg/L	49.6	100	100	152	156	102	106	90-110	3	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER
Project No.: 40143858

Sample: I43 MW301		Lab ID: 40143858001	Collected: 12/19/16 11:51	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.446 ± 0.698 (1.01) C:NA T:47%	pCi/L	01/24/17 22:00	13982-63-3	
Radium-228	EPA 904.0	1.65 ± 0.787 (1.36) C:79% T:46%	pCi/L	01/24/17 16:36	15262-20-1	
Total Radium	Total Radium Calculation	2.09 ± 1.49 (2.37)	pCi/L	01/25/17 21:50	7440-14-4	

Sample: I43 MW302		Lab ID: 40143858002	Collected: 12/19/16 12:26	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.293 ± 0.306 (0.432) C:NA T:92%	pCi/L	01/24/17 22:02	13982-63-3	
Radium-228	EPA 904.0	0.574 ± 0.457 (0.916) C:78% T:74%	pCi/L	01/24/17 16:36	15262-20-1	
Total Radium	Total Radium Calculation	0.867 ± 0.763 (1.35)	pCi/L	01/25/17 21:50	7440-14-4	

Sample: I43 MW303		Lab ID: 40143858003	Collected: 12/19/16 13:11	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.367 ± 0.342 (0.450) C:NA T:87%	pCi/L	01/24/17 22:02	13982-63-3	
Radium-228	EPA 904.0	0.497 ± 0.395 (0.789) C:76% T:84%	pCi/L	01/24/17 16:36	15262-20-1	
Total Radium	Total Radium Calculation	0.864 ± 0.737 (1.24)	pCi/L	01/25/17 21:50	7440-14-4	

Sample: I43 MW304		Lab ID: 40143858004	Collected: 12/19/16 10:11	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.171 ± 0.403 (0.747) C:NA T:89%	pCi/L	01/24/17 22:02	13982-63-3	
Radium-228	EPA 904.0	-0.101 ± 0.318 (0.764) C:75% T:82%	pCi/L	01/24/17 16:36	15262-20-1	
Total Radium	Total Radium Calculation	0.171 ± 0.721 (1.51)	pCi/L	01/25/17 21:50	7440-14-4	

Sample: FIELD BLANK		Lab ID: 40143858005	Collected: 12/19/16 11:30	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.221 ± 0.307 (0.513) C:NA T:92%	pCi/L	01/24/17 22:02	13982-63-3	
Radium-228	EPA 904.0	0.158 ± 0.372 (0.827) C:76% T:76%	pCi/L	01/24/17 16:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Sample: FIELD BLANK		Lab ID: 40143858005	Collected: 12/19/16 11:30	Received: 12/23/16 11:25	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.379 ± 0.679 (1.34)	pCi/L	01/25/17 21:50	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

QC Batch:	246392	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	40143858001, 40143858002, 40143858003, 40143858004, 40143858005		

METHOD BLANK:	1211710	Matrix:	Water
Associated Lab Samples:	40143858001, 40143858002, 40143858003, 40143858004, 40143858005		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.621 ± 0.374 (0.685) C:75% T:82%	pCi/L	01/24/17 16:37	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

QC Batch: 246390 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

METHOD BLANK: 1211708 Matrix: Water

Associated Lab Samples: 40143858001, 40143858002, 40143858003, 40143858004, 40143858005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.173 ± 0.299 (0.535) C:NA T:89%	pCi/L	01/24/17 22:02	

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATER
Pace Project No.: 40143858

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H1 Analysis conducted outside the recognized method holding time.

H6 Analysis initiated outside of the 15 minute EPA required 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.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATER

Pace Project No.: 40143858

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40143858001	I43 MW301	EPA 3010	245217	EPA 6020	245314
40143858002	I43 MW302	EPA 3010	245217	EPA 6020	245314
40143858003	I43 MW303	EPA 3010	245217	EPA 6020	245314
40143858004	I43 MW304	EPA 3010	245217	EPA 6020	245314
40143858005	FIELD BLANK	EPA 3010	245217	EPA 6020	245314
40143858001	I43 MW301	EPA 7470	245388	EPA 7470	245455
40143858002	I43 MW302	EPA 7470	245388	EPA 7470	245455
40143858003	I43 MW303	EPA 7470	245388	EPA 7470	245455
40143858004	I43 MW304	EPA 7470	245388	EPA 7470	245455
40143858005	FIELD BLANK	EPA 7470	245388	EPA 7470	245455
40143858001	I43 MW301				
40143858002	I43 MW302				
40143858003	I43 MW303				
40143858004	I43 MW304				
40143858001	I43 MW301	EPA 903.1	246390		
40143858002	I43 MW302	EPA 903.1	246390		
40143858003	I43 MW303	EPA 903.1	246390		
40143858004	I43 MW304	EPA 903.1	246390		
40143858005	FIELD BLANK	EPA 903.1	246390		
40143858001	I43 MW301	EPA 904.0	246392		
40143858002	I43 MW302	EPA 904.0	246392		
40143858003	I43 MW303	EPA 904.0	246392		
40143858004	I43 MW304	EPA 904.0	246392		
40143858005	FIELD BLANK	EPA 904.0	246392		
40143858001	I43 MW301	Total Radium Calculation	247506		
40143858002	I43 MW302	Total Radium Calculation	247506		
40143858003	I43 MW303	Total Radium Calculation	247506		
40143858004	I43 MW304	Total Radium Calculation	247506		
40143858005	FIELD BLANK	Total Radium Calculation	247506		
40143858001	I43 MW301	SM 2540C	245169		
40143858002	I43 MW302	SM 2540C	245169		
40143858003	I43 MW303	SM 2540C	245169		
40143858004	I43 MW304	SM 2540C	245169		
40143858005	FIELD BLANK	SM 2540C	245169		
40143858001	I43 MW301	EPA 9040	245166		
40143858002	I43 MW302	EPA 9040	245166		
40143858003	I43 MW303	EPA 9040	245166		
40143858004	I43 MW304	EPA 9040	245166		
40143858005	FIELD BLANK	EPA 9040	245166		
40143858001	I43 MW301	EPA 300.0	245585		
40143858002	I43 MW302	EPA 300.0	245585		
40143858003	I43 MW303	EPA 300.0	245585		
40143858004	I43 MW304	EPA 300.0	245585		
40143858005	FIELD BLANK	EPA 300.0	245585		

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Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Mrs. Blodgett**
 Phone: **608-216-7362**
 Project Number: **25216069.00**
 Project Name: **WPL Edgewater T43**
 Project State: **WI**
 Sampled By (Print): **Gary Storkel**
 Sampled By (Sign): *Gary Storkel*
 PO #: _____
 Regulatory Program: _____



CHAIN OF CUSTODY

Preservation Codes:
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

Y/N	Filter	Matrix
N	A	Water
N	A	Drinking Water
N	D	Ground Water
N	D	Surface Water
N	D	Waste Water
N	D	Sludge

Y/N	Filter	Matrix	Analysis Requested
N	A	Water	Chloride Fluoride Sulfate TDS
N	A	Water	PH
N	D	Ground Water	Radium 226
N	D	Ground Water	Radium 228
N	D	Ground Water	B, Cd, Sb, As, Ba, Be, Ca, Cr
N	D	Ground Water	Co, Pb, Li, Mo, Si, Ti
N	D	Ground Water	Mercury

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: **SCS Engineers**
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Paring Pt Madison, WI 53718**
 Invoice To Phone: _____
 CLIENT COMMENTS: **2-14p, 3-250mlp MAD**
 LAB COMMENTS (Lab Use Only): _____
 Profile #: _____

40143858

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____
 Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____
 Samples on HOLD are subject to special pricing and release of liability

Relinquished By: *Gary Storkel* Date/Time: **12/21/16 0800**
 Relinquished By: *Mrs. Blodgett* Date/Time: **12/22/16 1530**
 Relinquished By: *Stephanie* Date/Time: **12-23-16 1135**

Received By: *Mrs. Blodgett* Date/Time: **12/21/16 13:35**
 Received By: *Stephanie* Date/Time: **12-23-16 1135**

PACE Project No. **40143858**
 Receipt Temp = **ROT**
 Sample Receipt pH **OK**
 Cooler Custody Seal Present / Not Present **Intact / Not Intact**

Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #: **WO# : 40143858**

Client Name: SCS Engineers
Courier: Fed Ex UPS Client Pace Other: CS Logistics
Tracking #: _____



Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No
Custody Seal on Samples Present: Yes No Seals intact: Yes No
Packing Material: Bubble Wrap Bubble Bags None Other
Thermometer Used: N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun
Cooler Temperature: Uncorr: ROT ICorr: _____ Biological Tissue is Frozen: Yes No
Temp Blank Present: Yes No

Person examining contents:
Date: 12-23-16
Initials: SKW

		Comments:
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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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:	<u>W</u>	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" 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	
(HNO3, H2SO4 ≤2, NaOH+ZnAct ≥9, NaOH ≥12)		<input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>SKW</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: _____
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____
If checked, see attached form for additional comments

Project Manager Review: [Signature] Date: 12-23-16

January 13, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 ALLIANT EDGEWATER
Pace Project No.: 40144268

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on January 07, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40144268001	MW 301	Water	01/05/17 11:11	01/07/17 08:00
40144268002	MW 302	Water	01/05/17 11:58	01/07/17 08:00
40144268003	MW 303	Water	01/05/17 12:46	01/07/17 08:00
40144268004	MW 304	Water	01/05/17 10:26	01/07/17 08:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40144268001	MW 301	SM 2540C	TMK	1
40144268002	MW 302	SM 2540C	TMK	1
40144268003	MW 303	SM 2540C	TMK	1
40144268004	MW 304	SM 2540C	TMK	1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

Sample: MW 301 **Lab ID: 40144268001** Collected: 01/05/17 11:11 Received: 01/07/17 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	-----	-----	----	----------	----------	---------	------

2540C Total Dissolved Solids Analytical Method: SM 2540C

Total Dissolved Solids	194	mg/L	20.0	8.7	1		01/10/17 19:27		
------------------------	------------	------	------	-----	---	--	----------------	--	--

Sample: MW 302 **Lab ID: 40144268002** Collected: 01/05/17 11:58 Received: 01/07/17 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	-----	-----	----	----------	----------	---------	------

2540C Total Dissolved Solids Analytical Method: SM 2540C

Total Dissolved Solids	280	mg/L	20.0	8.7	1		01/10/17 19:27		
------------------------	------------	------	------	-----	---	--	----------------	--	--

Sample: MW 303 **Lab ID: 40144268003** Collected: 01/05/17 12:46 Received: 01/07/17 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	-----	-----	----	----------	----------	---------	------

2540C Total Dissolved Solids Analytical Method: SM 2540C

Total Dissolved Solids	310	mg/L	20.0	8.7	1		01/10/17 19:27		
------------------------	------------	------	------	-----	---	--	----------------	--	--

Sample: MW 304 **Lab ID: 40144268004** Collected: 01/05/17 10:26 Received: 01/07/17 08:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
------------	---------	-------	-----	-----	----	----------	----------	---------	------

2540C Total Dissolved Solids Analytical Method: SM 2540C

Total Dissolved Solids	212	mg/L	20.0	8.7	1		01/10/17 19:27		
------------------------	------------	------	------	-----	---	--	----------------	--	--

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

QC Batch: 246081

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40144268001, 40144268002, 40144268003, 40144268004

METHOD BLANK: 1455314

Matrix: Water

Associated Lab Samples: 40144268001, 40144268002, 40144268003, 40144268004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	01/10/17 19:21	

LABORATORY CONTROL SAMPLE: 1455315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	576	98	80-120	

SAMPLE DUPLICATE: 1455316

Parameter	Units	40144158001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2380	2310	3	5	

SAMPLE DUPLICATE: 1455317

Parameter	Units	40144160001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	940	938	0	5	

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 ALLIANT EDGEWATER

Pace Project No.: 40144268

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40144268001	MW 301	SM 2540C	246081		
40144268002	MW 302	SM 2540C	246081		
40144268003	MW 303	SM 2540C	246081		
40144268004	MW 304	SM 2540C	246081		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers

Branch/Location: Madison WI

Project Contact: Meg Blodgett

Phone: 608-216-7362

Project Number: 252-16069.00

Project Name: Allist Edwards EYS

Project State: WI

Sampled By (Print): Gary Stake

Sampled By (Sign): Gary Stake

PO #: Regulatory Program:

Data Package Options (billable)

- EPA Level III
- EPA Level IV
- On your sample (billable)
- NOT needed on your sample

Matrix Codes
 A = Air
 B = Bioa
 C = Charcoal
 O = Oil
 S = Soil
 SI = Sludge
 W = Water
 DW = Drinking Water
 GW = Ground Water
 SW = Surface Water
 WM = Waste Water
 WP = Wipe

PAGE LAB # CLIENT FIELD ID DATE TIME MATRIX

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX
001	MW 301	1/5/17	1111	GW
002	MW 302	1/5/17	1158	GW
003	MW 303	1/5/17	1246	GW
004	MW 304	1/5/17	1026	GW

Analyses Requested

Filtered? (YES/NO)
 Preservation (CODE)*

Preparation Codes
 A=Nitrate B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

CHAIN OF CUSTODY



UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

Page 1 of 10

40144268

Page 9 of 10

Quote #:

Mail To Contact:

Mail To Company:

Mail To Address:

Invoice To Contact:

Invoice To Company:

Invoice To Address:

Invoice To Phone:

CLIENT COMMENTS

LAB COMMENTS (Lab Use Only)

Profile #

SCS Engineers

SCS Engineers

2830 Dairy Dr

Madison WI 53718

1-500ml PA



Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:

Email #2:

Telephone:

Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: Gary Stake
 Date/Time: 1/6/17 0800

Relinquished By: Megan Farnum
 Date/Time: 1/6/17 1415

Relinquished By: CS Logistics
 Date/Time: 1/11/17 0800

Relinquished By: [Signature]
 Date/Time: [Signature]

Relinquished By: [Signature]
 Date/Time: [Signature]

Received By: Megan Farnum
 Date/Time: 1/11/17 16:00

Received By: [Signature]
 Date/Time: [Signature]

Received By: Scott Oberlander
 Date/Time: 1/11/17 0800

Received By: [Signature]
 Date/Time: [Signature]

Received By: [Signature]
 Date/Time: [Signature]

PAGE Project No.

40144268

Receipt Temp = 20.1 °C

Sample Receipt pH

OK / Adjusted

Cooler Custody Seal

Present / Not Present

Intact / Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Client Name: SCS

Project #:

WO#: **40144268**



40144268

Courier: Fed Ex UPS Client Pace Other: CB Logistics

Tracking #:

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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: NA Type of Ice: Wet Blue Dry None

Cooler Temperature: Uncorr: _____ /Corr: ROI Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Person examining contents:
Date: 1/7/17
Initials: KT

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" 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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11/7/17
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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:	<u>(W)</u>	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	initial when completed
		Lab Std #ID of preservative
		Date/Time:
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 1-7-17

A6 Round 6 Background Sampling, Analytical Laboratory Report

February 20, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2017. 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,



Tod Noltemeyer for
Dan Milewsky
dan.milewsky@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40144901001	I43 MW 301	Water	01/23/17 11:26	01/26/17 10:00
40144901002	I43 MW 302	Water	01/23/17 12:21	01/26/17 10:00
40144901003	I43 MW 303	Water	01/23/17 13:52	01/26/17 10:00
40144901004	I43 MW 304	Water	01/23/17 10:26	01/26/17 10:00
40144901005	FIELD BLANK	Water	01/23/17 13:30	01/26/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40144901001	I43 MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			JLJ	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40144901002	I43 MW 302	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	JLJ			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40144901003	I43 MW 303			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			JLJ	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40144901004	I43 MW 304	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	JLJ			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40144901005	FIELD BLANK			EPA 6020	SDW

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: I43 MW 301 **Lab ID: 40144901001** Collected: 01/23/17 11:26 Received: 01/26/17 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.36	ug/L	5.0	0.36	5	01/31/17 08:20	02/01/17 04:44	7440-36-0	D3
Arsenic	6.8	ug/L	5.0	0.50	5	01/31/17 08:20	02/01/17 04:44	7440-38-2	
Barium	219	ug/L	5.0	0.31	5	01/31/17 08:20	02/01/17 04:44	7440-39-3	
Beryllium	1.1J	ug/L	5.0	0.63	5	01/31/17 08:20	02/01/17 04:44	7440-41-7	D3
Boron	177	ug/L	50.0	10	5	01/31/17 08:20	02/01/17 12:42	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	01/31/17 08:20	02/01/17 04:44	7440-43-9	D3
Calcium	105000	ug/L	1250	368	5	01/31/17 08:20	02/01/17 04:44	7440-70-2	
Chromium	28.6	ug/L	5.0	2.0	5	01/31/17 08:20	02/01/17 04:44	7440-47-3	
Cobalt	7.6	ug/L	5.0	0.18	5	01/31/17 08:20	02/01/17 04:44	7440-48-4	
Lead	8.1	ug/L	5.0	0.20	5	01/31/17 08:20	02/01/17 04:44	7439-92-1	
Lithium	38.6	ug/L	5.0	0.54	5	01/31/17 08:20	02/01/17 04:44	7439-93-2	
Molybdenum	10.9	ug/L	5.0	0.35	5	01/31/17 08:20	02/01/17 04:44	7439-98-7	
Selenium	<1.0	ug/L	5.0	1.0	5	01/31/17 08:20	02/01/17 12:42	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	01/31/17 08:20	02/01/17 04:44	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	02/07/17 10:10	02/08/17 09:55	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.21	Std. Units			1		01/23/17 11:26		
Field Specific Conductance	382	umhos/cm			1		01/23/17 11:26		
Oxygen, Dissolved	0.1	mg/L			1		01/23/17 11:26	7782-44-7	
REDOX	-141	mV			1		01/23/17 11:26		
Turbidity	650.8	NTU			1		01/23/17 11:26		
Static Water Level	652.98	feet			1		01/23/17 11:26		
Temperature, Water (C)	8.5	deg C			1		01/23/17 11:26		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	254	mg/L	20.0	8.7	1		01/26/17 15:14		
9040 pH		Analytical Method: EPA 9040							
pH	8.1	Std. Units	0.10	0.010	1		01/30/17 10:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.2J	mg/L	10.0	2.5	5		02/07/17 11:48	16887-00-6	D3
Fluoride	0.77J	mg/L	1.5	0.50	5		02/07/17 11:48	16984-48-8	D3
Sulfate	9.3J	mg/L	15.0	5.0	5		02/07/17 11:48	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: I43 MW 302 **Lab ID: 40144901002** Collected: 01/23/17 12:21 Received: 01/26/17 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.75J	ug/L	5.0	0.36	5	01/31/17 08:20	02/01/17 04:51	7440-36-0	D3
Arsenic	9.0	ug/L	5.0	0.50	5	01/31/17 08:20	02/01/17 04:51	7440-38-2	
Barium	119	ug/L	5.0	0.31	5	01/31/17 08:20	02/01/17 04:51	7440-39-3	
Beryllium	1.0J	ug/L	5.0	0.63	5	01/31/17 08:20	02/01/17 04:51	7440-41-7	D3
Boron	151	ug/L	50.0	10	5	01/31/17 08:20	02/01/17 12:49	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	01/31/17 08:20	02/01/17 04:51	7440-43-9	D3
Calcium	59300	ug/L	1250	368	5	01/31/17 08:20	02/01/17 04:51	7440-70-2	
Chromium	7.0	ug/L	5.0	2.0	5	01/31/17 08:20	02/01/17 04:51	7440-47-3	
Cobalt	2.5J	ug/L	5.0	0.18	5	01/31/17 08:20	02/01/17 04:51	7440-48-4	D3
Lead	8.8	ug/L	5.0	0.20	5	01/31/17 08:20	02/01/17 04:51	7439-92-1	
Lithium	22.8	ug/L	5.0	0.54	5	01/31/17 08:20	02/01/17 04:51	7439-93-2	
Molybdenum	11.6	ug/L	5.0	0.35	5	01/31/17 08:20	02/01/17 04:51	7439-98-7	
Selenium	2.1J	ug/L	5.0	1.0	5	01/31/17 08:20	02/01/17 12:49	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	01/31/17 08:20	02/01/17 04:51	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	02/07/17 10:10	02/08/17 09:58	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.16	Std. Units			1		01/23/17 12:21		
Field Specific Conductance	486	umhos/cm			1		01/23/17 12:21		
Oxygen, Dissolved	0.4	mg/L			1		01/23/17 12:21	7782-44-7	
REDOX	-79	mV			1		01/23/17 12:21		
Turbidity	372.8	NTU			1		01/23/17 12:21		
Static Water Level	664.97	feet			1		01/23/17 12:21		
Temperature, Water (C)	8.6	deg C			1		01/23/17 12:21		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	324	mg/L	20.0	8.7	1		01/26/17 15:14		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		01/30/17 10:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.9J	mg/L	10.0	2.5	5		02/07/17 12:00	16887-00-6	D3
Fluoride	0.85J	mg/L	1.5	0.50	5		02/07/17 12:00	16984-48-8	D3
Sulfate	30.4	mg/L	15.0	5.0	5		02/07/17 12:00	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: I43 MW 303 **Lab ID: 40144901003** Collected: 01/23/17 13:52 Received: 01/26/17 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.59J	ug/L	1.0	0.073	1	01/31/17 08:20	02/01/17 04:57	7440-36-0	
Arsenic	3.8	ug/L	1.0	0.099	1	01/31/17 08:20	02/01/17 04:57	7440-38-2	
Barium	120	ug/L	1.0	0.062	1	01/31/17 08:20	02/01/17 04:57	7440-39-3	
Beryllium	0.13J	ug/L	1.0	0.13	1	01/31/17 08:20	02/01/17 04:57	7440-41-7	
Boron	99.8	ug/L	10.0	2.0	1	01/31/17 08:20	02/01/17 12:56	7440-42-8	
Cadmium	0.098J	ug/L	1.0	0.089	1	01/31/17 08:20	02/01/17 04:57	7440-43-9	
Calcium	46700	ug/L	250	73.6	1	01/31/17 08:20	02/01/17 04:57	7440-70-2	
Chromium	8.6	ug/L	1.0	0.39	1	01/31/17 08:20	02/01/17 04:57	7440-47-3	
Cobalt	2.0	ug/L	1.0	0.036	1	01/31/17 08:20	02/01/17 04:57	7440-48-4	
Lead	2.1	ug/L	1.0	0.040	1	01/31/17 08:20	02/01/17 04:57	7439-92-1	
Lithium	20.1	ug/L	1.0	0.11	1	01/31/17 08:20	02/01/17 04:57	7439-93-2	
Molybdenum	30.5	ug/L	1.0	0.070	1	01/31/17 08:20	02/01/17 04:57	7439-98-7	
Selenium	0.29J	ug/L	1.0	0.21	1	01/31/17 08:20	02/01/17 12:56	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	01/31/17 08:20	02/01/17 04:57	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	02/07/17 10:10	02/08/17 10:00	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.23	Std. Units			1		01/23/17 13:52		
Field Specific Conductance	681	umhos/cm			1		01/23/17 13:52		
Oxygen, Dissolved	0.9	mg/L			1		01/23/17 13:52	7782-44-7	
REDOX	-168	mV			1		01/23/17 13:52		
Turbidity	103.3	NTU			1		01/23/17 13:52		
Static Water Level	652.92	feet			1		01/23/17 13:52		
Temperature, Water (C)	8.8	deg C			1		01/23/17 13:52		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	400	mg/L	20.0	8.7	1		01/26/17 15:15		
9040 pH		Analytical Method: EPA 9040							
pH	8.1	Std. Units	0.10	0.010	1		01/30/17 10:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	8.8J	mg/L	10.0	2.5	5		02/07/17 12:12	16887-00-6	D3
Fluoride	0.80J	mg/L	1.5	0.50	5		02/07/17 12:12	16984-48-8	D3
Sulfate	113	mg/L	15.0	5.0	5		02/07/17 12:12	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: I43 MW 304 **Lab ID: 40144901004** Collected: 01/23/17 10:26 Received: 01/26/17 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.30J	ug/L	1.0	0.073	1	01/31/17 08:20	02/01/17 05:04	7440-36-0	
Arsenic	12.2	ug/L	1.0	0.099	1	01/31/17 08:20	02/01/17 05:04	7440-38-2	
Barium	81.1	ug/L	1.0	0.062	1	01/31/17 08:20	02/01/17 05:04	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	01/31/17 08:20	02/01/17 05:04	7440-41-7	
Boron	101	ug/L	10.0	2.0	1	01/31/17 08:20	02/01/17 13:16	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	01/31/17 08:20	02/01/17 05:04	7440-43-9	
Calcium	24300	ug/L	250	73.6	1	01/31/17 08:20	02/01/17 05:04	7440-70-2	
Chromium	0.80J	ug/L	1.0	0.39	1	01/31/17 08:20	02/01/17 05:04	7440-47-3	
Cobalt	0.17J	ug/L	1.0	0.036	1	01/31/17 08:20	02/01/17 05:04	7440-48-4	
Lead	0.54J	ug/L	1.0	0.040	1	01/31/17 08:20	02/01/17 05:04	7439-92-1	
Lithium	9.5	ug/L	1.0	0.11	1	01/31/17 08:20	02/01/17 05:04	7439-93-2	
Molybdenum	3.8	ug/L	1.0	0.070	1	01/31/17 08:20	02/01/17 05:04	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	01/31/17 08:20	02/01/17 13:16	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	01/31/17 08:20	02/01/17 05:04	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	02/07/17 10:10	02/08/17 10:02	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.14	Std. Units			1		01/23/17 10:26		
Field Specific Conductance	393	umhos/cm			1		01/23/17 10:26		
Oxygen, Dissolved	0.0	mg/L			1		01/23/17 10:26	7782-44-7	
REDOX	-98	mV			1		01/23/17 10:26		
Turbidity	10.78	NTU			1		01/23/17 10:26		
Static Water Level	654.37	feet			1		01/23/17 10:26		
Temperature, Water (C)	8.6	deg C			1		01/23/17 10:26		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	214	mg/L	20.0	8.7	1		01/26/17 15:15		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		01/30/17 10:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.1	mg/L	2.0	0.50	1		02/07/17 12:24	16887-00-6	
Fluoride	0.50	mg/L	0.30	0.10	1		02/07/17 12:24	16984-48-8	
Sulfate	14.3	mg/L	3.0	1.0	1		02/07/17 12:24	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: FIELD BLANK **Lab ID: 40144901005** Collected: 01/23/17 13:30 Received: 01/26/17 10:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	01/31/17 08:20	02/01/17 02:55	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	01/31/17 08:20	02/01/17 02:55	7440-38-2	
Barium	<0.062	ug/L	1.0	0.062	1	01/31/17 08:20	02/01/17 02:55	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	01/31/17 08:20	02/01/17 02:55	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	01/31/17 08:20	02/01/17 11:20	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	01/31/17 08:20	02/01/17 02:55	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	01/31/17 08:20	02/01/17 02:55	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	01/31/17 08:20	02/01/17 02:55	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	01/31/17 08:20	02/01/17 02:55	7440-48-4	
Lead	<0.040	ug/L	1.0	0.040	1	01/31/17 08:20	02/01/17 02:55	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	01/31/17 08:20	02/01/17 02:55	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	01/31/17 08:20	02/01/17 02:55	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	01/31/17 08:20	02/01/17 11:20	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	01/31/17 08:20	02/01/17 02:55	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	02/07/17 10:10	02/08/17 10:05	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		01/26/17 15:16		
9040 pH		Analytical Method: EPA 9040							
pH	6.8	Std. Units	0.10	0.010	1		01/30/17 10:45		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	0.78J	mg/L	2.0	0.50	1		02/07/17 12:36	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		02/07/17 12:36	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		02/07/17 12:36	14808-79-8	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

QC Batch: 247782 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1464492 Matrix: Water
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	02/08/17 09:34	

LABORATORY CONTROL SAMPLE: 1464493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1464494 1464495

Parameter	Units	40144847001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Mercury	ug/L	<0.13	5	5	4.6	4.7	93	93	85-115	0	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

QC Batch: 247370 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1461749 Matrix: Water
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	02/01/17 02:42	
Arsenic	ug/L	<0.099	1.0	02/01/17 02:42	
Barium	ug/L	<0.062	1.0	02/01/17 02:42	
Beryllium	ug/L	<0.13	1.0	02/01/17 02:42	
Boron	ug/L	<2.0	10.0	02/01/17 11:06	
Cadmium	ug/L	<0.089	1.0	02/01/17 02:42	
Calcium	ug/L	<73.6	250	02/01/17 02:42	
Chromium	ug/L	<0.39	1.0	02/01/17 02:42	
Cobalt	ug/L	<0.036	1.0	02/01/17 02:42	
Lead	ug/L	<0.040	1.0	02/01/17 02:42	
Lithium	ug/L	<0.11	1.0	02/01/17 02:42	
Molybdenum	ug/L	<0.070	1.0	02/01/17 02:42	
Selenium	ug/L	<0.21	1.0	02/01/17 11:06	
Thallium	ug/L	<0.14	1.0	02/01/17 02:42	

LABORATORY CONTROL SAMPLE: 1461750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	533	107	80-120	
Arsenic	ug/L	500	509	102	80-120	
Barium	ug/L	500	534	107	80-120	
Beryllium	ug/L	500	523	105	80-120	
Boron	ug/L	500	522	104	80-120	
Cadmium	ug/L	500	514	103	80-120	
Calcium	ug/L	5000	5050	101	80-120	
Chromium	ug/L	500	509	102	80-120	
Cobalt	ug/L	500	504	101	80-120	
Lead	ug/L	500	528	106	80-120	
Lithium	ug/L	500	510	102	80-120	
Molybdenum	ug/L	500	529	106	80-120	
Selenium	ug/L	500	550	110	80-120	
Thallium	ug/L	500	512	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1461751 1461752

Parameter	Units	40144902005 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	0.20J	500	548	547	110	109	75-125	0	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Parameter	Units	40144902005		1461751		1461752		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	ug/L	1.8	500	500	535	534	107	107	75-125	0	20		
Barium	ug/L	32.2	500	500	586	592	111	112	75-125	1	20		
Beryllium	ug/L	0.28J	500	500	478	490	95	98	75-125	3	20		
Boron	ug/L	9280	500	500	9490	9990	41	141	75-125	5	20	P6	
Cadmium	ug/L	0.17J	500	500	510	512	102	102	75-125	0	20		
Calcium	ug/L	89200	5000	5000	90000	95700	16	131	75-125	6	20	P6	
Chromium	ug/L	1.1	500	500	500	508	100	101	75-125	2	20		
Cobalt	ug/L	0.24J	500	500	495	503	99	101	75-125	2	20		
Lead	ug/L	0.47J	500	500	507	498	101	100	75-125	2	20		
Lithium	ug/L	16.3	500	500	498	510	96	99	75-125	2	20		
Molybdenum	ug/L	2210	500	500	2680	2790	93	116	75-125	4	20		
Selenium	ug/L	<0.21	500	500	560	552	112	110	75-125	1	20		
Thallium	ug/L	0.22J	500	500	502	493	100	99	75-125	2	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

QC Batch: 247165

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1460906

Matrix: Water

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	01/26/17 15:10	

LABORATORY CONTROL SAMPLE: 1460907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	586	562	96	80-120	

SAMPLE DUPLICATE: 1460908

Parameter	Units	40144884001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	572	578	1	5	

SAMPLE DUPLICATE: 1460909

Parameter	Units	40144901001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	254	254	0	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

QC Batch: 247324 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

SAMPLE DUPLICATE: 1461625

Parameter	Units	40144884001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	10.7	10.8	0	20	H6

SAMPLE DUPLICATE: 1461626

Parameter	Units	40144814001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.0	8.0	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

QC Batch: 247277 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1461484 Matrix: Water
Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	02/07/17 10:48	
Fluoride	mg/L	<0.10	0.30	02/07/17 10:48	
Sulfate	mg/L	<1.0	3.0	02/07/17 10:48	

LABORATORY CONTROL SAMPLE: 1461485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	18.5	93	90-110	
Fluoride	mg/L	2	1.9	93	90-110	
Sulfate	mg/L	20	18.4	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1461486 1461487

Parameter	Units	40144902003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Chloride	mg/L	201	200	200	200	421	423	110	111	90-110	0	15 M0
Fluoride	mg/L	<0.10	2	2	2	2.2	2.1	107	102	90-110	5	15
Sulfate	mg/L	23.9	20	20	20	46.4	44.6	112	103	90-110	4	15 M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1464216 1464217

Parameter	Units	40145002012		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Chloride	mg/L	1.7J	20	20	20	21.9	22.3	101	103	90-110	2	15
Fluoride	mg/L	0.15J	2	2	2	2.2	2.2	102	105	90-110	2	15
Sulfate	mg/L	8.2	20	20	20	29.0	29.5	104	107	90-110	2	15

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: I43 MW 301		Lab ID: 40144901001	Collected: 01/23/17 11:26	Received: 01/26/17 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.432 ± 0.450 (0.635) C:NA T:68%	pCi/L	02/17/17 21:00	13982-63-3	
Radium-228	EPA 904.0	0.563 ± 1.19 (2.63) C:73% T:23%	pCi/L	02/17/17 11:54	15262-20-1	
Total Radium	Total Radium Calculation	0.995 ± 1.64 (3.27)	pCi/L	02/17/17 21:58	7440-14-4	

Sample: I43 MW 302		Lab ID: 40144901002	Collected: 01/23/17 12:21	Received: 01/26/17 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.325 ± 0.452 (0.754) C:NA T:70%	pCi/L	02/17/17 21:00	13982-63-3	
Radium-228	EPA 904.0	2.40 ± 0.749 (0.895) C:66% T:64%	pCi/L	02/17/17 11:54	15262-20-1	
Total Radium	Total Radium Calculation	2.73 ± 1.20 (1.65)	pCi/L	02/17/17 21:58	7440-14-4	

Sample: I43 MW 303		Lab ID: 40144901003	Collected: 01/23/17 13:52	Received: 01/26/17 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.066 ± 0.344 (0.796) C:NA T:86%	pCi/L	02/17/17 21:00	13982-63-3	
Radium-228	EPA 904.0	0.236 ± 0.816 (1.85) C:66% T:34%	pCi/L	02/17/17 11:55	15262-20-1	
Total Radium	Total Radium Calculation	0.236 ± 1.16 (2.65)	pCi/L	02/17/17 21:58	7440-14-4	

Sample: I43 MW 304		Lab ID: 40144901004	Collected: 01/23/17 10:26	Received: 01/26/17 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.181 ± 0.277 (0.445) C:NA T:94%	pCi/L	02/17/17 21:00	13982-63-3	
Radium-228	EPA 904.0	0.0180 ± 0.307 (0.716) C:73% T:81%	pCi/L	02/17/17 11:55	15262-20-1	
Total Radium	Total Radium Calculation	0.199 ± 0.584 (1.16)	pCi/L	02/17/17 21:58	7440-14-4	

Sample: FIELD BLANK		Lab ID: 40144901005	Collected: 01/23/17 13:30	Received: 01/26/17 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.0585 ± 0.304 (0.630) C:NA T:91%	pCi/L	02/17/17 21:43	13982-63-3	
Radium-228	EPA 904.0	-0.117 ± 0.273 (0.672) C:74% T:83%	pCi/L	02/17/17 11:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

Sample: FIELD BLANK **Lab ID: 40144901005** Collected: 01/23/17 13:30 Received: 01/26/17 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.0580 ± 0.577 (1.30)	pCi/L	02/17/17 21:58	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

QC Batch: 248472 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1222215 Matrix: Water

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.634 ± 0.383 (0.683) C:67% T:77%	pCi/L	02/17/17 11:55	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I43

Pace Project No.: 40144901

QC Batch: 248471 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

METHOD BLANK: 1222214 Matrix: Water

Associated Lab Samples: 40144901001, 40144901002, 40144901003, 40144901004, 40144901005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.118 ± 0.269 (0.633) C:NA T:103%	pCi/L	02/17/17 20:10	

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATER I43
Pace Project No.: 40144901

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40144901001	I43 MW 301	EPA 3010	247370	EPA 6020	247419
40144901002	I43 MW 302	EPA 3010	247370	EPA 6020	247419
40144901003	I43 MW 303	EPA 3010	247370	EPA 6020	247419
40144901004	I43 MW 304	EPA 3010	247370	EPA 6020	247419
40144901005	FIELD BLANK	EPA 3010	247370	EPA 6020	247419
40144901001	I43 MW 301	EPA 7470	247782	EPA 7470	247816
40144901002	I43 MW 302	EPA 7470	247782	EPA 7470	247816
40144901003	I43 MW 303	EPA 7470	247782	EPA 7470	247816
40144901004	I43 MW 304	EPA 7470	247782	EPA 7470	247816
40144901005	FIELD BLANK	EPA 7470	247782	EPA 7470	247816
40144901001	I43 MW 301				
40144901002	I43 MW 302				
40144901003	I43 MW 303				
40144901004	I43 MW 304				
40144901001	I43 MW 301	EPA 903.1	248471		
40144901002	I43 MW 302	EPA 903.1	248471		
40144901003	I43 MW 303	EPA 903.1	248471		
40144901004	I43 MW 304	EPA 903.1	248471		
40144901005	FIELD BLANK	EPA 903.1	248471		
40144901001	I43 MW 301	EPA 904.0	248472		
40144901002	I43 MW 302	EPA 904.0	248472		
40144901003	I43 MW 303	EPA 904.0	248472		
40144901004	I43 MW 304	EPA 904.0	248472		
40144901005	FIELD BLANK	EPA 904.0	248472		
40144901001	I43 MW 301	Total Radium Calculation	249710		
40144901002	I43 MW 302	Total Radium Calculation	249710		
40144901003	I43 MW 303	Total Radium Calculation	249710		
40144901004	I43 MW 304	Total Radium Calculation	249710		
40144901005	FIELD BLANK	Total Radium Calculation	249710		
40144901001	I43 MW 301	SM 2540C	247165		
40144901002	I43 MW 302	SM 2540C	247165		
40144901003	I43 MW 303	SM 2540C	247165		
40144901004	I43 MW 304	SM 2540C	247165		
40144901005	FIELD BLANK	SM 2540C	247165		
40144901001	I43 MW 301	EPA 9040	247324		
40144901002	I43 MW 302	EPA 9040	247324		
40144901003	I43 MW 303	EPA 9040	247324		
40144901004	I43 MW 304	EPA 9040	247324		
40144901005	FIELD BLANK	EPA 9040	247324		
40144901001	I43 MW 301	EPA 300.0	247277		
40144901002	I43 MW 302	EPA 300.0	247277		
40144901003	I43 MW 303	EPA 300.0	247277		
40144901004	I43 MW 304	EPA 300.0	247277		
40144901005	FIELD BLANK	EPA 300.0	247277		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Blodgett**
 Phone: **608-216-7362**
 Project Number: **25216069.00**
 Project Name: **WPL Edwards F43**
 Project State: **WI**
 Sampled By (Print): **Gary Stokel**
 Sampled By (Sign): **Gary Stokel**
 PO #: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MS/MSD (billable)
 On your sample
 NOT needed on your sample

Matrix Codes
 A = Air B = Biota
 C = Charcoal D = Drinking Water
 O = Oil GW = Ground Water
 S = Soil SW = Surface Water
 SI = Sludge WP = Waste Water
 W = Water

CLIENT FIELD ID

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX
001	F43 MW 301	1/31/12	1224	GW
002	F43 MW 302	1/31/12	1224	GW
003	F43 MW 303	1/31/12	1352	GW
004	F43 MW 304	1/31/12	1326	GW
005	F43 Field Blank	1/31/12	1330	W

Regulatory Program: _____

CHAIN OF CUSTODY



AS=None B=HCL C=H2SO4 D=HNO3 E=D1 Water F=Methanol G=NaOH
 H= Sodium Bisulfate Solution I= Sodium Thiosulfate J= Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

Page 1 of

FILTERED? (YES/NO)
 PRESENTATION (CODE)*

Y/N	Pick Label	Chloride Sulfate	Fluoride TDS	pH	Radium 226	Radium 228	B, Cd, Sb, As, Bq, Be, Ca, Cr	Co, Pb, Li, Mo, SLTI	Mercury
N	A	X	X	X	X	X	X	X	X
N	A	X	X	X	X	X	X	X	X
N	D	X	X	X	X	X	X	X	X
N	D	X	X	X	X	X	X	X	X
N	D	X	X	X	X	X	X	X	X
N	D	X	X	X	X	X	X	X	X

Quote #: _____

Mail To Contact: _____

Mail To Company: _____

Mail To Address: _____

Invoice To Contact: SCS Engineers

Invoice To Company: SCS Engineers

Invoice To Address: 2830 Dairy Dr. Madison, WI 53718

Invoice To Phone: _____

CLIENT COMMENTS (Lab Use Only)
 3-250ml PARAD 4-500ml PD

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: Gary Stokel
 Date/Time: 1/31/12 0800

Relinquished By: Meg Blodgett
 Date/Time: 1/31/12 1430

Relinquished By: _____
 Date/Time: _____

Relinquished By: _____
 Date/Time: _____

Received By: Meg Blodgett
 Date/Time: 1/31/12 1115

Received By: _____
 Date/Time: _____

Received By: _____
 Date/Time: _____

Received By: _____
 Date/Time: _____

PAGE Project No. 40144901

Receipt Temp = 20.1 °C

Sample Receipt pH (OK) Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #: **WO# : 40144901**

Client Name: SCS
Courier: Fed Ex UPS Client Pace Other: CS Logistics
Tracking #: _____



Custody Seal on Cooler/Box Present: yes no Seals intact: yes no
Custody Seal on Samples Present: yes no Seals intact: yes no
Packing Material: Bubble Wrap Bubble Bags None Other
Thermometer Used: NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: _____ /Corr: RO1 Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
Date: 1/26/17
Initials: RT

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

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: - VOA Samples frozen upon receipt	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time:
Short Hold Time Analysis (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>TDS</u> <u>Ref 1/26/17</u>
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: -Pace Containers Used: -Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9.
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. <u>1-26-17 MW</u>
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <u>W</u>	12. <u>003 out time on sample is 1028, 001-004 no "I43" on label. 1-26-17 MW</u>
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>RT</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: [Signature] Date: 1-26-17

A7 Round 7 Background Sampling, Analytical Laboratory Report

March 22, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on February 24, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40146113001	I-43 MW 301	Water	02/23/17 11:06	02/24/17 14:55
40146113002	I-43 MW 302	Water	02/23/17 11:56	02/24/17 14:55
40146113003	I-43 MW 303	Water	02/23/17 12:01	02/24/17 14:55
40146113004	I-43 MW 304	Water	02/23/17 09:56	02/24/17 14:55
40146113005	I-43 MW 305	Water	02/23/17 14:11	02/24/17 14:55
40146120001	FIELD BLANK	Water	02/23/17 14:30	02/24/17 14:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40146113001	I-43 MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40146113002	I-43 MW 302	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JJY			1	PASI-PA
Total Radium Calculation	RMK			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40146113003	I-43 MW 303			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40146113004	I-43 MW 304	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AMH			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	JJY			1	PASI-PA
Total Radium Calculation	RMK			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40146113005	I-43 MW 305			EPA 6020	SDW

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	AJT	1	PASI-G
			AMH	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40146120001	FIELD BLANK	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 301 **Lab ID: 40146113001** Collected: 02/23/17 11:06 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	2.7J	ug/L	5.0	0.36	5	03/07/17 08:00	03/07/17 23:41	7440-36-0	D3
Arsenic	5.6	ug/L	5.0	0.50	5	03/07/17 08:00	03/07/17 23:41	7440-38-2	
Barium	128	ug/L	5.0	0.31	5	03/07/17 08:00	03/07/17 23:41	7440-39-3	
Beryllium	4.1J	ug/L	5.0	0.63	5	03/07/17 08:00	03/07/17 23:41	7440-41-7	D3
Boron	181	ug/L	50.0	10	5	03/07/17 08:00	03/07/17 23:41	7440-42-8	
Cadmium	2.1J	ug/L	5.0	0.44	5	03/07/17 08:00	03/07/17 23:41	7440-43-9	D3
Calcium	51400	ug/L	1250	368	5	03/07/17 08:00	03/07/17 23:41	7440-70-2	
Chromium	14.2	ug/L	5.0	2.0	5	03/07/17 08:00	03/07/17 23:41	7440-47-3	
Cobalt	5.2	ug/L	5.0	0.18	5	03/07/17 08:00	03/07/17 23:41	7440-48-4	
Lead	5.6	ug/L	5.0	0.20	5	03/07/17 08:00	03/07/17 23:41	7439-92-1	
Lithium	25.1	ug/L	5.0	0.54	5	03/07/17 08:00	03/07/17 23:41	7439-93-2	
Molybdenum	13.3	ug/L	5.0	0.35	5	03/07/17 08:00	03/07/17 23:41	7439-98-7	
Selenium	3.4J	ug/L	5.0	1.0	5	03/07/17 08:00	03/07/17 23:41	7782-49-2	D3
Thallium	2.6J	ug/L	5.0	0.71	5	03/07/17 08:00	03/07/17 23:41	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:41	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.14	Std. Units			1		02/23/17 11:06		
Field Specific Conductance	371	umhos/cm			1		02/23/17 11:06		
Oxygen, Dissolved	1.5	mg/L			1		02/23/17 11:06	7782-44-7	
REDOX	33	mV			1		02/23/17 11:06		
Turbidity	264.3	NTU			1		02/23/17 11:06		
Static Water Level	653.14	feet			1		02/23/17 11:06		
Temperature, Water (C)	9.0	deg C			1		02/23/17 11:06		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	276	mg/L	20.0	8.7	1		03/01/17 15:49		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.3	mg/L	2.0	0.50	1		03/02/17 23:43	16887-00-6	
Fluoride	0.64	mg/L	0.30	0.10	1		03/02/17 23:43	16984-48-8	
Sulfate	9.1	mg/L	3.0	1.0	1		03/02/17 23:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 302 **Lab ID: 40146113002** Collected: 02/23/17 11:56 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.96J	ug/L	5.0	0.36	5	03/07/17 08:00	03/07/17 23:55	7440-36-0	D3
Arsenic	8.5	ug/L	5.0	0.50	5	03/07/17 08:00	03/07/17 23:55	7440-38-2	
Barium	103	ug/L	5.0	0.31	5	03/07/17 08:00	03/07/17 23:55	7440-39-3	
Beryllium	0.80J	ug/L	5.0	0.63	5	03/07/17 08:00	03/07/17 23:55	7440-41-7	D3
Boron	149	ug/L	50.0	10	5	03/07/17 08:00	03/07/17 23:55	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	03/07/17 08:00	03/07/17 23:55	7440-43-9	D3
Calcium	41900	ug/L	1250	368	5	03/07/17 08:00	03/07/17 23:55	7440-70-2	
Chromium	5.5	ug/L	5.0	2.0	5	03/07/17 08:00	03/07/17 23:55	7440-47-3	
Cobalt	2.1J	ug/L	5.0	0.18	5	03/07/17 08:00	03/07/17 23:55	7440-48-4	D3
Lead	6.5	ug/L	5.0	0.20	5	03/07/17 08:00	03/07/17 23:55	7439-92-1	
Lithium	19.6	ug/L	5.0	0.54	5	03/07/17 08:00	03/07/17 23:55	7439-93-2	
Molybdenum	9.8	ug/L	5.0	0.35	5	03/07/17 08:00	03/07/17 23:55	7439-98-7	
Selenium	2.7J	ug/L	5.0	1.0	5	03/07/17 08:00	03/07/17 23:55	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	03/07/17 08:00	03/07/17 23:55	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:43	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.16	Std. Units			1		02/23/17 11:56		
Field Specific Conductance	470	umhos/cm			1		02/23/17 11:56		
Oxygen, Dissolved	1.0	mg/L			1		02/23/17 11:56	7782-44-7	
REDOX	25	mV			1		02/23/17 11:56		
Turbidity	296.2	NTU			1		02/23/17 11:56		
Static Water Level	653.10	feet			1		02/23/17 11:56		
Temperature, Water (C)	9.1	deg C			1		02/23/17 11:56		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	344	mg/L	20.0	8.7	1		03/01/17 15:49		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.9	mg/L	2.0	0.50	1		03/02/17 23:55	16887-00-6	
Fluoride	0.67	mg/L	0.30	0.10	1		03/02/17 23:55	16984-48-8	
Sulfate	27.9	mg/L	3.0	1.0	1		03/02/17 23:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

Sample: I-43 MW 303 **Lab ID: 40146113003** Collected: 02/23/17 12:01 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.081J	ug/L	1.0	0.073	1	03/07/17 08:00	03/08/17 00:02	7440-36-0	
Arsenic	5.5	ug/L	1.0	0.099	1	03/07/17 08:00	03/08/17 00:02	7440-38-2	
Barium	81.1	ug/L	1.0	0.062	1	03/07/17 08:00	03/08/17 00:02	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	03/07/17 08:00	03/08/17 00:02	7440-41-7	
Boron	93.9	ug/L	10.0	2.0	1	03/07/17 08:00	03/08/17 00:02	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	03/07/17 08:00	03/08/17 00:02	7440-43-9	
Calcium	32600	ug/L	250	73.6	1	03/07/17 08:00	03/08/17 00:02	7440-70-2	
Chromium	2.1	ug/L	1.0	0.39	1	03/07/17 08:00	03/08/17 00:02	7440-47-3	
Cobalt	0.75J	ug/L	1.0	0.036	1	03/07/17 08:00	03/08/17 00:02	7440-48-4	
Lead	0.52J	ug/L	1.0	0.040	1	03/07/17 08:00	03/08/17 00:02	7439-92-1	
Lithium	11.9	ug/L	1.0	0.11	1	03/07/17 08:00	03/08/17 00:02	7439-93-2	
Molybdenum	11.0	ug/L	1.0	0.070	1	03/07/17 08:00	03/08/17 00:02	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	03/07/17 08:00	03/08/17 00:02	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	03/07/17 08:00	03/08/17 00:02	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:45	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.24	Std. Units			1		02/23/17 12:01		
Field Specific Conductance	558	umhos/cm			1		02/23/17 12:01		
Oxygen, Dissolved	0.1	mg/L			1		02/23/17 12:01	7782-44-7	
REDOX	-119	mV			1		02/23/17 12:01		
Turbidity	51.76	NTU			1		02/23/17 12:01		
Static Water Level	653.10	feet			1		02/23/17 12:01		
Temperature, Water (C)	8.9	deg C			1		02/23/17 12:01		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	300	mg/L	20.0	8.7	1		03/01/17 15:49		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.3	mg/L	2.0	0.50	1		03/03/17 00:07	16887-00-6	
Fluoride	0.55	mg/L	0.30	0.10	1		03/03/17 00:07	16984-48-8	
Sulfate	46.1	mg/L	3.0	1.0	1		03/03/17 00:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 304 **Lab ID: 40146113004** Collected: 02/23/17 09:56 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.63J	ug/L	1.0	0.073	1	03/07/17 08:00	03/07/17 23:00	7440-36-0	
Arsenic	12.2	ug/L	1.0	0.099	1	03/07/17 08:00	03/07/17 23:00	7440-38-2	
Barium	73.5	ug/L	1.0	0.062	1	03/07/17 08:00	03/07/17 23:00	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	03/07/17 08:00	03/07/17 23:00	7440-41-7	
Boron	99.8	ug/L	10.0	2.0	1	03/07/17 08:00	03/07/17 23:00	7440-42-8	
Cadmium	0.45J	ug/L	1.0	0.089	1	03/07/17 08:00	03/07/17 23:00	7440-43-9	
Calcium	24500	ug/L	2500	736	10	03/07/17 08:00	03/07/17 22:33	7440-70-2	
Chromium	1.0	ug/L	1.0	0.39	1	03/07/17 08:00	03/07/17 23:00	7440-47-3	
Cobalt	0.53J	ug/L	1.0	0.036	1	03/07/17 08:00	03/07/17 23:00	7440-48-4	
Lead	0.78J	ug/L	1.0	0.040	1	03/07/17 08:00	03/07/17 23:00	7439-92-1	
Lithium	8.9	ug/L	1.0	0.11	1	03/07/17 08:00	03/07/17 23:00	7439-93-2	
Molybdenum	4.1	ug/L	1.0	0.070	1	03/07/17 08:00	03/07/17 23:00	7439-98-7	
Selenium	0.32J	ug/L	1.0	0.21	1	03/07/17 08:00	03/07/17 23:00	7782-49-2	
Thallium	0.59J	ug/L	1.0	0.14	1	03/07/17 08:00	03/07/17 23:00	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:48	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.22	Std. Units			1		02/23/17 09:56		
Field Specific Conductance	382	umhos/cm			1		02/23/17 09:56		
Oxygen, Dissolved	1.1	mg/L			1		02/23/17 09:56	7782-44-7	
REDOX	14	mV			1		02/23/17 09:56		
Turbidity	5.06	NTU			1		02/23/17 09:56		
Static Water Level	654.49	feet			1		02/23/17 09:56		
Temperature, Water (C)	8.8	deg C			1		02/23/17 09:56		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	206	mg/L	20.0	8.7	1		03/01/17 15:49		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.3	mg/L	2.0	0.50	1		03/03/17 00:19	16887-00-6	
Fluoride	0.50	mg/L	0.30	0.10	1		03/03/17 00:19	16984-48-8	
Sulfate	14.6	mg/L	3.0	1.0	1		03/03/17 00:19	14808-79-8	M0

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 305 **Lab ID: 40146113005** Collected: 02/23/17 14:11 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.21J	ug/L	1.0	0.073	1	03/07/17 08:00	03/08/17 00:08	7440-36-0	
Arsenic	3.0	ug/L	1.0	0.099	1	03/07/17 08:00	03/08/17 00:08	7440-38-2	
Barium	230	ug/L	1.0	0.062	1	03/07/17 08:00	03/08/17 00:08	7440-39-3	
Beryllium	0.21J	ug/L	1.0	0.13	1	03/07/17 08:00	03/08/17 00:08	7440-41-7	
Boron	94.4	ug/L	10.0	2.0	1	03/07/17 08:00	03/08/17 00:08	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	03/07/17 08:00	03/08/17 00:08	7440-43-9	
Calcium	93800	ug/L	250	73.6	1	03/07/17 08:00	03/08/17 00:08	7440-70-2	
Chromium	10.8	ug/L	1.0	0.39	1	03/07/17 08:00	03/08/17 00:08	7440-47-3	
Cobalt	2.6	ug/L	1.0	0.036	1	03/07/17 08:00	03/08/17 00:08	7440-48-4	
Lead	2.4	ug/L	1.0	0.040	1	03/07/17 08:00	03/08/17 00:08	7439-92-1	
Lithium	23.2	ug/L	1.0	0.11	1	03/07/17 08:00	03/08/17 00:08	7439-93-2	
Molybdenum	5.0	ug/L	1.0	0.070	1	03/07/17 08:00	03/08/17 00:08	7439-98-7	
Selenium	0.56J	ug/L	1.0	0.21	1	03/07/17 08:00	03/08/17 00:08	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	03/07/17 08:00	03/08/17 00:08	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:50	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.75	Std. Units			1		02/23/17 14:11		
Field Specific Conductance	856	umhos/cm			1		02/23/17 14:11		
Oxygen, Dissolved	1.2	mg/L			1		02/23/17 14:11	7782-44-7	
REDOX	-224	mV			1		02/23/17 14:11		
Turbidity	613.2	NTU			1		02/23/17 14:11		
Static Water Level	658.02	feet			1		02/23/17 14:11		
Temperature, Water (C)	7.9	deg C			1		02/23/17 14:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	576	mg/L	20.0	8.7	1		03/01/17 15:50		
9040 pH		Analytical Method: EPA 9040							
pH	7.6	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	20.8	mg/L	2.0	0.50	1		03/08/17 16:10	16887-00-6	
Fluoride	0.73	mg/L	0.30	0.10	1		03/08/17 16:10	16984-48-8	
Sulfate	127	mg/L	15.0	5.0	5		03/08/17 21:39	14808-79-8	

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: FIELD BLANK **Lab ID: 40146120001** Collected: 02/23/17 14:30 Received: 02/24/17 14:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	03/07/17 08:00	03/07/17 22:20	7440-36-0	
Arsenic	<0.099	ug/L	1.0	0.099	1	03/07/17 08:00	03/07/17 22:20	7440-38-2	
Barium	0.087J	ug/L	1.0	0.062	1	03/07/17 08:00	03/07/17 22:20	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	03/07/17 08:00	03/07/17 22:20	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	03/07/17 08:00	03/07/17 22:20	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	03/07/17 08:00	03/07/17 22:20	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	03/07/17 08:00	03/07/17 22:20	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	03/07/17 08:00	03/07/17 22:20	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	03/07/17 08:00	03/07/17 22:20	7440-48-4	
Lead	<0.040	ug/L	1.0	0.040	1	03/07/17 08:00	03/07/17 22:20	7439-92-1	
Lithium	<0.11	ug/L	1.0	0.11	1	03/07/17 08:00	03/07/17 22:20	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	03/07/17 08:00	03/07/17 22:20	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	03/07/17 08:00	03/07/17 22:20	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	03/07/17 08:00	03/07/17 22:20	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	03/02/17 10:05	03/03/17 09:52	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		03/01/17 15:50		
9040 pH		Analytical Method: EPA 9040							
pH	5.3	Std. Units	0.10	0.010	1		02/27/17 11:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		03/08/17 17:14	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		03/08/17 17:14	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		03/08/17 17:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

QC Batch: 249434 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

METHOD BLANK: 1472891 Matrix: Water
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	03/03/17 08:54	

LABORATORY CONTROL SAMPLE: 1472892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.4	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1472893 1472894

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		40146172001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Mercury	ug/L	<0.13	5	5	5.0	4.3	101	86	85-115	15	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

QC Batch: 249718 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

METHOD BLANK: 1474326 Matrix: Water
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	03/07/17 22:13	
Arsenic	ug/L	<0.099	1.0	03/07/17 22:13	
Barium	ug/L	<0.062	1.0	03/07/17 22:13	
Beryllium	ug/L	<0.13	1.0	03/07/17 22:13	
Boron	ug/L	<2.0	10.0	03/07/17 22:13	
Cadmium	ug/L	<0.089	1.0	03/07/17 22:13	
Calcium	ug/L	<73.6	250	03/07/17 22:13	
Chromium	ug/L	<0.39	1.0	03/07/17 22:13	
Cobalt	ug/L	<0.036	1.0	03/07/17 22:13	
Lead	ug/L	<0.040	1.0	03/07/17 22:13	
Lithium	ug/L	<0.11	1.0	03/07/17 22:13	
Molybdenum	ug/L	0.16J	1.0	03/07/17 22:13	
Selenium	ug/L	<0.21	1.0	03/07/17 22:13	
Thallium	ug/L	<0.14	1.0	03/07/17 22:13	

LABORATORY CONTROL SAMPLE: 1474327

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	523	105	80-120	
Arsenic	ug/L	500	519	104	80-120	
Barium	ug/L	500	522	104	80-120	
Beryllium	ug/L	500	525	105	80-120	
Boron	ug/L	500	508	102	80-120	
Cadmium	ug/L	500	541	108	80-120	
Calcium	ug/L	5000	5940	119	80-120	
Chromium	ug/L	500	542	108	80-120	
Cobalt	ug/L	500	536	107	80-120	
Lead	ug/L	500	500	100	80-120	
Lithium	ug/L	500	502	100	80-120	
Molybdenum	ug/L	500	536	107	80-120	
Selenium	ug/L	500	545	109	80-120	
Thallium	ug/L	500	515	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1474328 1474329

Parameter	Units	MS Result	MSD Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Antimony	ug/L	0.63J	500	500	522	515	104	103	75-125	1	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Parameter	Units	1474328		1474329		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Arsenic	ug/L	12.2	500	500	528	520	103	102	75-125	2	20	
Barium	ug/L	73.5	500	500	597	588	105	103	75-125	1	20	
Beryllium	ug/L	<0.13	500	500	516	513	103	103	75-125	1	20	
Boron	ug/L	99.8	500	500	596	592	99	98	75-125	1	20	
Cadmium	ug/L	0.45J	500	500	530	523	106	105	75-125	1	20	
Calcium	ug/L	24500	5000	5000	29700	29600	104	103	75-125	0	20	
Chromium	ug/L	1.0	500	500	532	523	106	104	75-125	2	20	
Cobalt	ug/L	0.53J	500	500	525	516	105	103	75-125	2	20	
Lead	ug/L	0.78J	500	500	502	491	100	98	75-125	2	20	
Lithium	ug/L	8.9	500	500	512	506	101	99	75-125	1	20	
Molybdenum	ug/L	4.1	500	500	532	524	106	104	75-125	1	20	
Selenium	ug/L	0.32J	500	500	544	537	109	107	75-125	1	20	
Thallium	ug/L	0.59J	500	500	519	508	104	102	75-125	2	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

QC Batch: 249393

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

METHOD BLANK: 1472720

Matrix: Water

Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	03/01/17 15:45	

LABORATORY CONTROL SAMPLE: 1472721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	557	582	104	80-120	

SAMPLE DUPLICATE: 1472722

Parameter	Units	40146050010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	598	598	0	5	

SAMPLE DUPLICATE: 1472723

Parameter	Units	40146185001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	448	438	2	5	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

QC Batch: 249136 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001

SAMPLE DUPLICATE: 1471791

Parameter	Units	40145911003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.7	8.7	0	20	H6

SAMPLE DUPLICATE: 1471792

Parameter	Units	40145960001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	11.3	11.3	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

QC Batch: 249288 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004

METHOD BLANK: 1472371 Matrix: Water
Associated Lab Samples: 40146113001, 40146113002, 40146113003, 40146113004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	03/02/17 21:30	
Fluoride	mg/L	<0.10	0.30	03/02/17 21:30	
Sulfate	mg/L	<1.0	3.0	03/02/17 21:30	

LABORATORY CONTROL SAMPLE: 1472372

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	21.2	106	90-110	
Fluoride	mg/L	2	2.1	104	90-110	
Sulfate	mg/L	20	21.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1472373 1472374

Parameter	Units	40146113004		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	2.3	20	20	23.4	23.7	106	107	90-110	1	15		
Fluoride	mg/L	0.50	2	2	2.6	2.7	106	108	90-110	1	15		
Sulfate	mg/L	14.6	20	20	36.7	37.1	111	112	90-110	1	15	M0	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40146113

QC Batch: 249569 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40146113005, 40146120001

METHOD BLANK: 1473729 Matrix: Water
Associated Lab Samples: 40146113005, 40146120001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	03/08/17 12:45	
Fluoride	mg/L	<0.10	0.30	03/08/17 12:45	
Sulfate	mg/L	<1.0	3.0	03/08/17 12:45	

LABORATORY CONTROL SAMPLE: 1473730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.1	101	90-110	
Fluoride	mg/L	2	2.0	99	90-110	
Sulfate	mg/L	20	20.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1473731 1473732

Parameter	Units	40146091001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	512	1000	1000	1490	1580	97	107	90-110	6	15	
Fluoride	mg/L	<5.0	100	100	98.7	108	99	108	90-110	9	15	
Sulfate	mg/L	127J	1000	1000	1090	1170	96	105	90-110	8	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1473733 1473734

Parameter	Units	40146165003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	516	1000	1000	1630	1630	111	112	90-110	0	15 M0	
Fluoride	mg/L	<5.0	100	100	108	108	108	108	90-110	0	15	
Sulfate	mg/L	114J	1000	1000	1170	1170	105	106	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 301		Lab ID: 40146113001	Collected: 02/23/17 11:06	Received: 02/24/17 14:55	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.546 ± 0.595 (0.936) C:NA T:91%	pCi/L	03/17/17 20:20	13982-63-3	
Radium-228	EPA 904.0	3.30 ± 1.35 (2.12) C:55% T:43%	pCi/L	03/18/17 19:07	15262-20-1	
Total Radium	Total Radium Calculation	3.85 ± 1.95 (3.06)	pCi/L	03/22/17 12:01	7440-14-4	

Sample: I-43 MW 302		Lab ID: 40146113002	Collected: 02/23/17 11:56	Received: 02/24/17 14:55	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.21 ± 0.644 (0.556) C:NA T:93%	pCi/L	03/17/17 20:20	13982-63-3	
Radium-228	EPA 904.0	2.64 ± 1.15 (1.90) C:41% T:77%	pCi/L	03/18/17 19:07	15262-20-1	
Total Radium	Total Radium Calculation	3.85 ± 1.79 (2.46)	pCi/L	03/22/17 12:01	7440-14-4	

Sample: I-43 MW 303		Lab ID: 40146113003	Collected: 02/23/17 12:01	Received: 02/24/17 14:55	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.233 ± 0.356 (0.572) C:NA T:90%	pCi/L	03/17/17 20:55	13982-63-3	
Radium-228	EPA 904.0	1.37 ± 0.742 (1.31) C:49% T:74%	pCi/L	03/18/17 19:07	15262-20-1	
Total Radium	Total Radium Calculation	1.60 ± 1.10 (1.88)	pCi/L	03/22/17 12:01	7440-14-4	

Sample: I-43 MW 304		Lab ID: 40146113004	Collected: 02/23/17 09:56	Received: 02/24/17 14:55	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.164 ± 0.455 (1.07) C:NA T:84%	pCi/L	03/17/17 20:55	13982-63-3	
Radium-228	EPA 904.0	1.50 ± 0.734 (1.26) C:47% T:91%	pCi/L	03/18/17 19:07	15262-20-1	
Total Radium	Total Radium Calculation	1.50 ± 1.19 (2.33)	pCi/L	03/22/17 12:01	7440-14-4	

Sample: I-43 MW 305		Lab ID: 40146113005	Collected: 02/23/17 14:11	Received: 02/24/17 14:55	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.350 ± 0.486 (0.812) C:NA T:88%	pCi/L	03/17/17 20:55	13982-63-3	
Radium-228	EPA 904.0	3.80 ± 1.82 (3.08) C:37% T:44%	pCi/L	03/18/17 19:07	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Sample: I-43 MW 305		Lab ID: 40146113005	Collected: 02/23/17 14:11	Received: 02/24/17 14:55	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	4.15 ± 2.31 (3.89)		pCi/L	03/22/17 12:01	7440-14-4	

Sample: FIELD BLANK		Lab ID: 40146120001	Collected: 02/23/17 14:30	Received: 02/24/17 14:55	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.083 ± 0.488 (1.09) C:NA T:95%		pCi/L	03/17/17 20:55	13982-63-3	
Radium-228	EPA 904.0	0.150 ± 0.564 (1.28) C:38% T:94%		pCi/L	03/18/17 15:55	15262-20-1	
Total Radium	Total Radium Calculation	0.150 ± 1.05 (2.37)		pCi/L	03/22/17 12:01	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

QC Batch:	251693	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001		

METHOD BLANK:	1238168	Matrix:	Water
Associated Lab Samples:	40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.108 ± 0.394 (0.894) C:53% T:105%	pCi/L	03/18/17 15:52	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

QC Batch:	251683	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001		

METHOD BLANK:	1238127	Matrix:	Water
Associated Lab Samples:	40146113001, 40146113002, 40146113003, 40146113004, 40146113005, 40146120001		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.328 ± 0.377 (0.223) C:NA T:89%	pCi/L	03/17/17 12:16	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40146113001	I-43 MW 301	EPA 3010	249718	EPA 6020	249782
40146113002	I-43 MW 302	EPA 3010	249718	EPA 6020	249782
40146113003	I-43 MW 303	EPA 3010	249718	EPA 6020	249782
40146113004	I-43 MW 304	EPA 3010	249718	EPA 6020	249782
40146113005	I-43 MW 305	EPA 3010	249718	EPA 6020	249782
40146120001	FIELD BLANK	EPA 3010	249718	EPA 6020	249782
40146113001	I-43 MW 301	EPA 7470	249434	EPA 7470	249498
40146113002	I-43 MW 302	EPA 7470	249434	EPA 7470	249498
40146113003	I-43 MW 303	EPA 7470	249434	EPA 7470	249498
40146113004	I-43 MW 304	EPA 7470	249434	EPA 7470	249498
40146113005	I-43 MW 305	EPA 7470	249434	EPA 7470	249498
40146120001	FIELD BLANK	EPA 7470	249434	EPA 7470	249498
40146113001	I-43 MW 301				
40146113002	I-43 MW 302				
40146113003	I-43 MW 303				
40146113004	I-43 MW 304				
40146113005	I-43 MW 305				
40146113001	I-43 MW 301	EPA 903.1	251683		
40146113002	I-43 MW 302	EPA 903.1	251683		
40146113003	I-43 MW 303	EPA 903.1	251683		
40146113004	I-43 MW 304	EPA 903.1	251683		
40146113005	I-43 MW 305	EPA 903.1	251683		
40146120001	FIELD BLANK	EPA 903.1	251683		
40146113001	I-43 MW 301	EPA 904.0	251693		
40146113002	I-43 MW 302	EPA 904.0	251693		
40146113003	I-43 MW 303	EPA 904.0	251693		
40146113004	I-43 MW 304	EPA 904.0	251693		
40146113005	I-43 MW 305	EPA 904.0	251693		
40146120001	FIELD BLANK	EPA 904.0	251693		
40146113001	I-43 MW 301	Total Radium Calculation	252926		
40146113002	I-43 MW 302	Total Radium Calculation	252926		
40146113003	I-43 MW 303	Total Radium Calculation	252926		
40146113004	I-43 MW 304	Total Radium Calculation	252926		
40146113005	I-43 MW 305	Total Radium Calculation	252926		
40146120001	FIELD BLANK	Total Radium Calculation	252925		
40146113001	I-43 MW 301	SM 2540C	249393		
40146113002	I-43 MW 302	SM 2540C	249393		
40146113003	I-43 MW 303	SM 2540C	249393		
40146113004	I-43 MW 304	SM 2540C	249393		
40146113005	I-43 MW 305	SM 2540C	249393		
40146120001	FIELD BLANK	SM 2540C	249393		
40146113001	I-43 MW 301	EPA 9040	249136		
40146113002	I-43 MW 302	EPA 9040	249136		
40146113003	I-43 MW 303	EPA 9040	249136		
40146113004	I-43 MW 304	EPA 9040	249136		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40146113

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40146113005	I-43 MW 305	EPA 9040	249136		
40146120001	FIELD BLANK	EPA 9040	249136		
40146113001	I-43 MW 301	EPA 300.0	249288		
40146113002	I-43 MW 302	EPA 300.0	249288		
40146113003	I-43 MW 303	EPA 300.0	249288		
40146113004	I-43 MW 304	EPA 300.0	249288		
40146113005	I-43 MW 305	EPA 300.0	249569		
40146120001	FIELD BLANK	EPA 300.0	249569		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)



CHAIN OF CUSTODY

A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H= Sodium Bisulfate Solution I= Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

40140113

Company Name: SCS Engineers
 Branch/Location: Madison WI
 Project Contact: Meg Blodgett
 Phone: 608-216-7362
 Project Number: 2521606900
 Project Name: Edgewater I-43
 Project State: WI
 Sampled By (Print): Gary Stokel
 Sampled By (Sign): Gary Stokel
 PO #: _____
 Regulatory Program: _____

Data Package Options
 EPA Level III
 EPA Level IV

MS/MSD (billable)
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air B = Biota C = Charcoal O = Oil S = Soil SI = Sludge
 W = Water DW = Drinking Water GW = Ground Water SW = Surface Water WW = Waste Water WP = Wipe

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX
001	I-43 MW 301	2/23/17	1106	GW
002	I-43 MW 302	2/23/17	1156	GW
003	I-43 MW 303	2/23/17	1201	GW
004	I-43 MW 304	2/23/17	0856	GW
005	I-43 MW 305	2/23/17	1411	GW

Y/N	Pick Letter	Analyses Requested		PRESERVATION (CODE)*
		Chloride	Fluoride	
N	A	Sulfate	TDS	
N	A	pH		
N	D	Radium 226		
N	D	Radium 228		
N	D	B, Cd, Sb, As, Ba, Be, Ca, Cr, Co, Pb, Li, Mo, Si, Ti		
N	D	Mercury		

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: _____
 Invoice To Company: _____
 Invoice To Address: _____
 Invoice To Phone: _____
 CLIENT COMMENTS: 2-16P 3-25comp AAD
 LAB COMMENTS (Lab Use Only): _____
 Profile #: _____

Received By: [Signature] Date/Time: 2/24/17 0800
 Relinquished By: [Signature] Date/Time: 2/24/17 1455
 Relinquished By: [Signature] Date/Time: 2/24/17 1052
 Relinquished By: [Signature] Date/Time: 2/24/17 1455

PACE Project No. 40140113
 Receipt Temp = ROI °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present (Not Present) Intact / Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #:

WO#: 40146113

Client Name: SCS Engineers



Courier: Fed Ex UPS Client Pace Other: _____
Tracking #: _____

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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: ROV Corr: _____ Biological Tissue is Frozen: yes

Temp Blank Present: yes no no

Person examining contents:
Date: 2/24/17
Initials: BA

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" 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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>003 collect time 1301</u> <u>all IDs dont have I-43 before it</u> <u>BA 2/24/17 usfz 12/17</u>
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>BA</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review:

W hr DM

Date: 2-24-17

A8 Round 8 Background Sampling, Analytical Laboratory Report

May 04, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 08, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069 CCR EDGEWATER 143

Pace Project No.: 40148006

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40148006001	FIELD BLANK	Water	04/07/17 10:30	04/08/17 08:15
40148006002	MW 301	Water	04/06/17 14:40	04/08/17 08:15
40148006003	MW 302	Water	04/06/17 15:30	04/08/17 08:15
40148006004	MW 303	Water	04/07/17 11:00	04/08/17 08:15
40148006005	MW 304	Water	04/07/17 12:25	04/08/17 08:15
40148006006	MW 305	Water	04/07/17 09:50	04/08/17 08:15

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SAMPLE ANALYTE COUNT

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40148006001	FIELD BLANK	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40148006002	MW 301	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
40148006003	MW 302	EPA 300.0	HMB	3	PASI-G
		EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
40148006004	MW 303	EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
40148006005	MW 304	SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G

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SAMPLE ANALYTE COUNT

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40148006006	MW 305		RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

Sample: FIELD BLANK **Lab ID: 40148006001** Collected: 04/07/17 10:30 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<0.073	ug/L	1.0	0.073	1	04/11/17 10:12	04/11/17 18:51	7440-36-0	3q
Arsenic	<0.099	ug/L	1.0	0.099	1	04/11/17 10:12	04/11/17 18:51	7440-38-2	
Barium	<0.062	ug/L	1.0	0.062	1	04/11/17 10:12	04/11/17 18:51	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	04/11/17 10:12	04/11/17 18:51	7440-41-7	
Boron	<2.0	ug/L	10.0	2.0	1	04/11/17 10:12	04/11/17 18:51	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	04/11/17 10:12	04/11/17 18:51	7440-43-9	
Calcium	<73.6	ug/L	250	73.6	1	04/11/17 10:12	04/11/17 18:51	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	04/11/17 10:12	04/11/17 18:51	7440-47-3	
Cobalt	<0.036	ug/L	1.0	0.036	1	04/11/17 10:12	04/11/17 18:51	7440-48-4	2q
Lead	<0.040	ug/L	1.0	0.040	1	04/11/17 10:12	04/11/17 18:51	7439-92-1	1q
Lithium	<0.11	ug/L	1.0	0.11	1	04/11/17 10:12	04/11/17 18:51	7439-93-2	
Molybdenum	<0.070	ug/L	1.0	0.070	1	04/11/17 10:12	04/11/17 18:51	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	04/11/17 10:12	04/11/17 18:51	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/11/17 10:12	04/11/17 18:51	7440-28-0	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:00	7439-97-6	
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		04/11/17 17:31		
9040 pH Analytical Method: EPA 9040									
pH	6.5	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	<0.50	mg/L	2.0	0.50	1		04/19/17 18:42	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		04/19/17 18:42	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		04/19/17 18:42	14808-79-8	

Sample: MW 301 **Lab ID: 40148006002** Collected: 04/06/17 14:40 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	1.4J	ug/L	2.0	0.15	2	04/11/17 10:12	04/11/17 20:19	7440-36-0	D3
Arsenic	4.7	ug/L	2.0	0.20	2	04/11/17 10:12	04/11/17 20:19	7440-38-2	
Barium	107	ug/L	2.0	0.12	2	04/11/17 10:12	04/11/17 20:19	7440-39-3	
Beryllium	0.49J	ug/L	2.0	0.25	2	04/11/17 10:12	04/11/17 20:19	7440-41-7	D3
Boron	144	ug/L	20.0	4.0	2	04/11/17 10:12	04/11/17 20:19	7440-42-8	
Cadmium	1.0J	ug/L	2.0	0.18	2	04/11/17 10:12	04/11/17 20:19	7440-43-9	D3
Calcium	45200	ug/L	500	147	2	04/11/17 10:12	04/11/17 20:19	7440-70-2	
Chromium	8.6	ug/L	2.0	0.79	2	04/11/17 10:12	04/11/17 20:19	7440-47-3	
Cobalt	2.9	ug/L	2.0	0.073	2	04/11/17 10:12	04/11/17 20:19	7440-48-4	
Lead	3.3	ug/L	2.0	0.081	2	04/11/17 10:12	04/11/17 20:19	7439-92-1	

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Sample: MW 301 Lab ID: 40148006002 Collected: 04/06/17 14:40 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Lithium	16.2	ug/L	2.0	0.21	2	04/11/17 10:12	04/11/17 20:19	7439-93-2	
Molybdenum	10.6	ug/L	2.0	0.14	2	04/11/17 10:12	04/11/17 20:19	7439-98-7	
Selenium	1.5J	ug/L	2.0	0.42	2	04/11/17 10:12	04/11/17 20:19	7782-49-2	D3
Thallium	1.3J	ug/L	2.0	0.29	2	04/11/17 10:12	04/11/17 20:19	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:03	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.12	Std. Units			1		04/06/17 14:40		
Field Specific Conductance	390	umhos/cm			1		04/06/17 14:40		
Oxygen, Dissolved	0.3	mg/L			1		04/06/17 14:40	7782-44-7	
REDOX	-53	mV			1		04/06/17 14:40		
Turbidity	207.4	NTU			1		04/06/17 14:40		
Static Water Level	654.43	feet			1		04/06/17 14:40		
Temperature, Water (C)	9.9	deg C			1		04/06/17 14:40		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	240	mg/L	20.0	8.7	1		04/11/17 17:31		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.6	mg/L	2.0	0.50	1		04/19/17 14:50	16887-00-6	
Fluoride	0.61	mg/L	0.30	0.10	1		04/19/17 14:50	16984-48-8	
Sulfate	9.1	mg/L	3.0	1.0	1		04/19/17 14:50	14808-79-8	

Sample: MW 302 Lab ID: 40148006003 Collected: 04/06/17 15:30 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.41J	ug/L	5.0	0.36	5	04/11/17 10:12	04/11/17 20:33	7440-36-0	3q,D3
Arsenic	5.7	ug/L	5.0	0.50	5	04/11/17 10:12	04/11/17 20:33	7440-38-2	
Barium	90.2	ug/L	5.0	0.31	5	04/11/17 10:12	04/11/17 20:33	7440-39-3	
Beryllium	<0.63	ug/L	5.0	0.63	5	04/11/17 10:12	04/11/17 20:33	7440-41-7	D3
Boron	132	ug/L	50.0	10	5	04/11/17 10:12	04/11/17 20:33	7440-42-8	
Cadmium	<0.44	ug/L	5.0	0.44	5	04/11/17 10:12	04/11/17 20:33	7440-43-9	D3
Calcium	40800	ug/L	1250	368	5	04/11/17 10:12	04/11/17 20:33	7440-70-2	
Chromium	3.6J	ug/L	5.0	2.0	5	04/11/17 10:12	04/11/17 20:33	7440-47-3	D3
Cobalt	1.1J	ug/L	5.0	0.18	5	04/11/17 10:12	04/11/17 20:33	7440-48-4	D3
Lead	3.5J	ug/L	5.0	0.20	5	04/11/17 10:12	04/11/17 20:33	7439-92-1	D3

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Sample: MW 302 Lab ID: 40148006003 Collected: 04/06/17 15:30 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Lithium	16.8	ug/L	5.0	0.54	5	04/11/17 10:12	04/11/17 20:33	7439-93-2	
Molybdenum	10.3	ug/L	5.0	0.35	5	04/11/17 10:12	04/11/17 20:33	7439-98-7	
Selenium	1.4J	ug/L	5.0	1.0	5	04/11/17 10:12	04/11/17 20:33	7782-49-2	D3
Thallium	<0.71	ug/L	5.0	0.71	5	04/11/17 10:12	04/11/17 20:33	7440-28-0	D3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:05	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.00	Std. Units			1		04/06/17 15:30		
Field Specific Conductance	491	umhos/cm			1		04/06/17 15:30		
Oxygen, Dissolved	0.0	mg/L			1		04/06/17 15:30	7782-44-7	
REDOX	-12	mV			1		04/06/17 15:30		
Turbidity	144.2	NTU			1		04/06/17 15:30		
Static Water Level	654.72	feet			1		04/06/17 15:30		
Temperature, Water (C)	9.7	deg C			1		04/06/17 15:30		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	322	mg/L	20.0	8.7	1		04/11/17 17:31		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.7	mg/L	2.0	0.50	1		04/19/17 15:00	16887-00-6	
Fluoride	0.68	mg/L	0.30	0.10	1		04/19/17 15:00	16984-48-8	
Sulfate	29.6	mg/L	3.0	1.0	1		04/19/17 15:00	14808-79-8	

Sample: MW 303 Lab ID: 40148006004 Collected: 04/07/17 11:00 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	04/11/17 10:12	04/11/17 20:39	7440-36-0	3q
Arsenic	2.8	ug/L	1.0	0.099	1	04/11/17 10:12	04/11/17 20:39	7440-38-2	
Barium	80.7	ug/L	1.0	0.062	1	04/11/17 10:12	04/11/17 20:39	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	04/11/17 10:12	04/11/17 20:39	7440-41-7	
Boron	89.8	ug/L	10.0	2.0	1	04/11/17 10:12	04/11/17 20:39	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	04/11/17 10:12	04/11/17 20:39	7440-43-9	
Calcium	33200	ug/L	250	73.6	1	04/11/17 10:12	04/11/17 20:39	7440-70-2	
Chromium	0.79J	ug/L	1.0	0.39	1	04/11/17 10:12	04/11/17 20:39	7440-47-3	
Cobalt	0.34J	ug/L	1.0	0.036	1	04/11/17 10:12	04/11/17 20:39	7440-48-4	2q
Lead	0.082J	ug/L	1.0	0.040	1	04/11/17 10:12	04/11/17 20:39	7439-92-1	1q

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Sample: MW 303 **Lab ID: 40148006004** Collected: 04/07/17 11:00 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Lithium	13.2	ug/L	1.0	0.11	1	04/11/17 10:12	04/11/17 20:39	7439-93-2	
Molybdenum	21.2	ug/L	1.0	0.070	1	04/11/17 10:12	04/11/17 20:39	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	04/11/17 10:12	04/11/17 20:39	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/11/17 10:12	04/11/17 20:39	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:07	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.15	Std. Units			1		04/07/17 11:00		
Field Specific Conductance	617	umhos/cm			1		04/07/17 11:00		
Oxygen, Dissolved	0.6	mg/L			1		04/07/17 11:00	7782-44-7	
REDOX	-93	mV			1		04/07/17 11:00		
Turbidity	9.79	NTU			1		04/07/17 11:00		
Static Water Level	654.55	feet			1		04/07/17 11:00		
Temperature, Water (C)	9.7	deg C			1		04/07/17 11:00		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	348	mg/L	20.0	8.7	1		04/11/17 17:31		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.2	mg/L	2.0	0.50	1		04/19/17 15:11	16887-00-6	
Fluoride	0.57	mg/L	0.30	0.10	1		04/19/17 15:11	16984-48-8	
Sulfate	79.2	mg/L	15.0	5.0	5		04/20/17 12:50	14808-79-8	

Sample: MW 304 **Lab ID: 40148006005** Collected: 04/07/17 12:25 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.073	ug/L	1.0	0.073	1	04/11/17 10:12	04/11/17 19:52	7440-36-0	3q
Arsenic	10.9	ug/L	1.0	0.099	1	04/11/17 10:12	04/11/17 19:52	7440-38-2	
Barium	73.7	ug/L	1.0	0.062	1	04/11/17 10:12	04/11/17 19:52	7440-39-3	
Beryllium	<0.13	ug/L	1.0	0.13	1	04/11/17 10:12	04/11/17 19:52	7440-41-7	
Boron	96.9	ug/L	10.0	2.0	1	04/11/17 10:12	04/11/17 19:52	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	04/11/17 10:12	04/11/17 19:52	7440-43-9	
Calcium	24800	ug/L	2500	736	10	04/11/17 10:12	04/11/17 19:11	7440-70-2	
Chromium	<0.39	ug/L	1.0	0.39	1	04/11/17 10:12	04/11/17 19:52	7440-47-3	
Cobalt	0.047J	ug/L	1.0	0.036	1	04/11/17 10:12	04/11/17 19:52	7440-48-4	2q
Lead	0.080J	ug/L	1.0	0.040	1	04/11/17 10:12	04/11/17 19:52	7439-92-1	1q

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

Sample: MW 304 Lab ID: 40148006005 Collected: 04/07/17 12:25 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Lithium	9.2	ug/L	1.0	0.11	1	04/11/17 10:12	04/11/17 19:52	7439-93-2	
Molybdenum	3.6	ug/L	1.0	0.070	1	04/11/17 10:12	04/11/17 19:52	7439-98-7	
Selenium	<0.21	ug/L	1.0	0.21	1	04/11/17 10:12	04/11/17 19:52	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/11/17 10:12	04/11/17 19:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:14	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.86	Std. Units			1		04/07/17 12:25		
Field Specific Conductance	399	umhos/cm			1		04/07/17 12:25		
Oxygen, Dissolved	2	mg/L			1		04/07/17 12:25	7782-44-7	
REDOX	-100	mV			1		04/07/17 12:25		
Turbidity	2.56	NTU			1		04/07/17 12:25		
Static Water Level	654.85	feet			1		04/07/17 12:25		
Temperature, Water (C)	12	deg C			1		04/07/17 12:25		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	224	mg/L	20.0	8.7	1		04/11/17 17:32		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.8J	mg/L	2.0	0.50	1		04/19/17 15:21	16887-00-6	
Fluoride	0.48	mg/L	0.30	0.10	1		04/19/17 15:21	16984-48-8	
Sulfate	14.5	mg/L	3.0	1.0	1		04/19/17 15:21	14808-79-8	

Sample: MW 305 Lab ID: 40148006006 Collected: 04/07/17 09:50 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.088J	ug/L	1.0	0.073	1	04/11/17 10:12	04/11/17 20:46	7440-36-0	3q
Arsenic	2.5	ug/L	1.0	0.099	1	04/11/17 10:12	04/11/17 20:46	7440-38-2	
Barium	220	ug/L	1.0	0.062	1	04/11/17 10:12	04/11/17 20:46	7440-39-3	
Beryllium	0.15J	ug/L	1.0	0.13	1	04/11/17 10:12	04/11/17 20:46	7440-41-7	
Boron	86.4	ug/L	10.0	2.0	1	04/11/17 10:12	04/11/17 20:46	7440-42-8	
Cadmium	<0.089	ug/L	1.0	0.089	1	04/11/17 10:12	04/11/17 20:46	7440-43-9	
Calcium	103000	ug/L	250	73.6	1	04/11/17 10:12	04/11/17 20:46	7440-70-2	
Chromium	6.8	ug/L	1.0	0.39	1	04/11/17 10:12	04/11/17 20:46	7440-47-3	
Cobalt	1.5	ug/L	1.0	0.036	1	04/11/17 10:12	04/11/17 20:46	7440-48-4	
Lead	1.6	ug/L	1.0	0.040	1	04/11/17 10:12	04/11/17 20:46	7439-92-1	

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ANALYTICAL RESULTS

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

Sample: MW 305 **Lab ID: 40148006006** Collected: 04/07/17 09:50 Received: 04/08/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Lithium	19.7	ug/L	1.0	0.11	1	04/11/17 10:12	04/11/17 20:46	7439-93-2	
Molybdenum	4.6	ug/L	1.0	0.070	1	04/11/17 10:12	04/11/17 20:46	7439-98-7	
Selenium	0.28J	ug/L	1.0	0.21	1	04/11/17 10:12	04/11/17 20:46	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/11/17 10:12	04/11/17 20:46	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	04/18/17 09:00	04/18/17 13:16	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.62	Std. Units			1		04/07/17 09:50		
Field Specific Conductance	922	umhos/cm			1		04/07/17 09:50		
Oxygen, Dissolved	0.7	mg/L			1		04/07/17 09:50	7782-44-7	
REDOX	-108	mV			1		04/07/17 09:50		
Turbidity	138	NTU			1		04/07/17 09:50		
Static Water Level	659.65	feet			1		04/07/17 09:50		
Temperature, Water (C)	9.2	deg C			1		04/07/17 09:50		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	576	mg/L	20.0	8.7	1		04/11/17 17:32		
9040 pH		Analytical Method: EPA 9040							
pH	7.6	Std. Units	0.10	0.010	1		04/11/17 10:00		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	20.4	mg/L	2.0	0.50	1		04/19/17 15:32	16887-00-6	
Fluoride	0.59	mg/L	0.30	0.10	1		04/19/17 15:32	16984-48-8	
Sulfate	131	mg/L	15.0	5.0	5		04/20/17 13:01	14808-79-8	

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

QC Batch: 252957

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1492612

Matrix: Water

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	04/18/17 12:44	

LABORATORY CONTROL SAMPLE: 1492613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1492614 1492615

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		40147923001	Result	Spike Conc.	Conc.	Result	Result	% Rec	% Rec				
Mercury	ug/L	<0.20		5	5	4.6	4.8	93	96	85-115	3	20	

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

QC Batch: 252358 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1489185 Matrix: Water
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.073	1.0	04/11/17 18:44	
Arsenic	ug/L	<0.099	1.0	04/11/17 18:44	
Barium	ug/L	<0.062	1.0	04/11/17 18:44	
Beryllium	ug/L	<0.13	1.0	04/11/17 18:44	
Boron	ug/L	<2.0	10.0	04/11/17 18:44	
Cadmium	ug/L	<0.089	1.0	04/11/17 18:44	
Calcium	ug/L	<73.6	250	04/11/17 18:44	
Chromium	ug/L	<0.39	1.0	04/11/17 18:44	
Cobalt	ug/L	<0.036	1.0	04/11/17 18:44	
Lead	ug/L	<0.040	1.0	04/11/17 18:44	
Lithium	ug/L	<0.11	1.0	04/11/17 18:44	
Molybdenum	ug/L	<0.070	1.0	04/11/17 18:44	
Selenium	ug/L	<0.21	1.0	04/11/17 18:44	
Thallium	ug/L	<0.14	1.0	04/11/17 18:44	

LABORATORY CONTROL SAMPLE: 1489186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	525	105	80-120	
Arsenic	ug/L	500	494	99	80-120	
Barium	ug/L	500	510	102	80-120	
Beryllium	ug/L	500	482	96	80-120	
Boron	ug/L	500	463	93	80-120	
Cadmium	ug/L	500	526	105	80-120	
Calcium	ug/L	5000	4850	97	80-120	
Chromium	ug/L	500	495	99	80-120	
Cobalt	ug/L	500	498	100	80-120	
Lead	ug/L	500	479	96	80-120	
Lithium	ug/L	500	477	95	80-120	
Molybdenum	ug/L	500	516	103	80-120	
Selenium	ug/L	500	533	107	80-120	
Thallium	ug/L	500	479	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1489187 1489188

Parameter	Units	40148006005 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.073	500	536	536	107	107	75-125	0	20	

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER 143

Pace Project No.: 40148006

Parameter	Units	40148006005		1489187		1489188		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Arsenic	ug/L	10.9	500	500	522	515	102	101	75-125	1	20			
Barium	ug/L	73.7	500	500	604	605	106	106	75-125	0	20			
Beryllium	ug/L	<0.13	500	500	533	543	107	109	75-125	2	20			
Boron	ug/L	96.9	500	500	618	641	104	109	75-125	4	20			
Cadmium	ug/L	<0.089	500	500	536	533	107	107	75-125	0	20			
Calcium	ug/L	24800	5000	5000	28700	30600	78	116	75-125	6	20			
Chromium	ug/L	<0.39	500	500	511	511	102	102	75-125	0	20			
Cobalt	ug/L	0.047J	500	500	510	509	102	102	75-125	0	20			
Lead	ug/L	0.080J	500	500	503	504	101	101	75-125	0	20			
Lithium	ug/L	9.2	500	500	544	556	107	109	75-125	2	20			
Molybdenum	ug/L	3.6	500	500	537	540	107	107	75-125	0	20			
Selenium	ug/L	<0.21	500	500	545	539	109	108	75-125	1	20			
Thallium	ug/L	<0.14	500	500	506	507	101	101	75-125	0	20			

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER I43
Pace Project No.: 40148006

QC Batch: 252449 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1489513 Matrix: Water
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/11/17 17:28	

LABORATORY CONTROL SAMPLE: 1489514

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	557	566	102	80-120	

SAMPLE DUPLICATE: 1489515

Parameter	Units	40148025001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3020	3090	2	5	

SAMPLE DUPLICATE: 1489516

Parameter	Units	40147971004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	446	462	4	5	

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

QC Batch: 252371 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

SAMPLE DUPLICATE: 1489216

Parameter	Units	40148025001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.9	6.9	0	20	H6

SAMPLE DUPLICATE: 1489217

Parameter	Units	40148002011 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.0	8.1	1	20	H6

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QUALITY CONTROL DATA

Project: 25216069 CCR EDGEWATER 143
Pace Project No.: 40148006

QC Batch: 252813 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1491644 Matrix: Water
Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	04/19/17 10:16	
Fluoride	mg/L	<0.10	0.30	04/19/17 10:16	
Sulfate	mg/L	<1.0	3.0	04/19/17 10:16	

LABORATORY CONTROL SAMPLE: 1491645

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.0	100	90-110	
Fluoride	mg/L	2	2.0	101	90-110	
Sulfate	mg/L	20	19.9	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1491646 1491647

Parameter	Units	40148107002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MS Result	MSD Result	% Rec	% Rec				
Chloride	mg/L	486	400	400	895	890	102	101	90-110	1	15		
Fluoride	mg/L	<2.0	40	40	42.1	42.6	105	106	90-110	1	15		
Sulfate	mg/L	73.2	400	400	489	490	104	104	90-110	0	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1491648 1491649

Parameter	Units	40148006006		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	MS Result	MSD Result	% Rec	% Rec				
Chloride	mg/L	20.4	20	20	41.0	41.2	103	104	90-110	1	15		
Fluoride	mg/L	0.59	2	2	2.6	2.6	102	102	90-110	0	15		
Sulfate	mg/L	131	100	100	234	235	104	104	90-110	0	15		

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Sample: FIELD BLANK		Lab ID: 40148006001	Collected: 04/07/17 10:30	Received: 04/08/17 08:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.243 ± 0.533 (0.963) C:NA T:93%	pCi/L	05/02/17 11:25	13982-63-3	
Radium-228	EPA 904.0	-0.208 ± 0.470 (1.11) C:75% T:81%	pCi/L	05/01/17 15:30	15262-20-1	
Total Radium	Total Radium Calculation	0.243 ± 1.00 (2.07)	pCi/L	05/04/17 13:21	7440-14-4	

Sample: MW 301		Lab ID: 40148006002	Collected: 04/06/17 14:40	Received: 04/08/17 08:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	-0.084 ± 0.303 (0.723) C:NA T:81%	pCi/L	05/02/17 11:25	13982-63-3	
Radium-228	EPA 904.0	0.486 ± 0.485 (1.01) C:69% T:82%	pCi/L	05/01/17 15:30	15262-20-1	
Total Radium	Total Radium Calculation	0.486 ± 0.788 (1.73)	pCi/L	05/04/17 13:21	7440-14-4	

Sample: MW 302		Lab ID: 40148006003	Collected: 04/06/17 15:30	Received: 04/08/17 08:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.49 ± 0.676 (0.202) C:NA T:77%	pCi/L	05/02/17 12:05	13982-63-3	
Radium-228	EPA 904.0	0.351 ± 0.690 (1.51) C:72% T:63%	pCi/L	05/01/17 15:30	15262-20-1	
Total Radium	Total Radium Calculation	1.84 ± 1.37 (1.71)	pCi/L	05/04/17 13:21	7440-14-4	

Sample: MW 303		Lab ID: 40148006004	Collected: 04/07/17 11:00	Received: 04/08/17 08:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.535 ± 0.419 (0.492) C:NA T:85%	pCi/L	05/02/17 12:05	13982-63-3	
Radium-228	EPA 904.0	0.336 ± 0.523 (1.13) C:68% T:80%	pCi/L	05/01/17 15:30	15262-20-1	
Total Radium	Total Radium Calculation	0.871 ± 0.942 (1.62)	pCi/L	05/04/17 13:21	7440-14-4	

Sample: MW 304		Lab ID: 40148006005	Collected: 04/07/17 12:25	Received: 04/08/17 08:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.326 ± 0.340 (0.480) C:NA T:89%	pCi/L	05/02/17 12:05	13982-63-3	
Radium-228	EPA 904.0	0.274 ± 0.423 (0.916) C:71% T:92%	pCi/L	05/01/17 15:30	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Sample: MW 304		Lab ID: 40148006005	Collected: 04/07/17 12:25	Received: 04/08/17 08:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	0.600 ± 0.763 (1.40)		pCi/L	05/04/17 13:21	7440-14-4	

Sample: MW 305		Lab ID: 40148006006	Collected: 04/07/17 09:50	Received: 04/08/17 08:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.0649 ± 0.555 (1.08)		pCi/L	05/02/17 12:05	13982-63-3	
		C:NA T:86%					
Radium-228	EPA 904.0	0.836 ± 0.518 (0.962)		pCi/L	05/01/17 17:46	15262-20-1	
		C:75% T:81%					
Total Radium	Total Radium Calculation	0.901 ± 1.07 (2.04)		pCi/L	05/04/17 13:21	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

QC Batch: 255880 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1260100 Matrix: Water

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.449 ± 0.337 (0.174) C:NA T:93%	pCi/L	05/02/17 11:25	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

QC Batch: 255881 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

METHOD BLANK: 1260101 Matrix: Water

Associated Lab Samples: 40148006001, 40148006002, 40148006003, 40148006004, 40148006005, 40148006006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.248 ± 0.382 (0.825) C:70% T:81%	pCi/L	05/01/17 15:23	

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QUALIFIERS

Project: 25216069 CCR EDGEWATER 143
Pace Project No.: 40148006

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

1q Analyte was measured in the associated method blank at -0.042 ug/L.

2q Analyte was measured in the associated method blank at -0.051 ug/L.

3q Analyte was measured in the associated method blank at -0.089 ug/L.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40148006001	FIELD BLANK	EPA 3010	252358	EPA 6020	252445
40148006002	MW 301	EPA 3010	252358	EPA 6020	252445
40148006003	MW 302	EPA 3010	252358	EPA 6020	252445
40148006004	MW 303	EPA 3010	252358	EPA 6020	252445
40148006005	MW 304	EPA 3010	252358	EPA 6020	252445
40148006006	MW 305	EPA 3010	252358	EPA 6020	252445
40148006001	FIELD BLANK	EPA 7470	252957	EPA 7470	253025
40148006002	MW 301	EPA 7470	252957	EPA 7470	253025
40148006003	MW 302	EPA 7470	252957	EPA 7470	253025
40148006004	MW 303	EPA 7470	252957	EPA 7470	253025
40148006005	MW 304	EPA 7470	252957	EPA 7470	253025
40148006006	MW 305	EPA 7470	252957	EPA 7470	253025
40148006002	MW 301				
40148006003	MW 302				
40148006004	MW 303				
40148006005	MW 304				
40148006006	MW 305				
40148006001	FIELD BLANK	EPA 903.1	255880		
40148006002	MW 301	EPA 903.1	255880		
40148006003	MW 302	EPA 903.1	255880		
40148006004	MW 303	EPA 903.1	255880		
40148006005	MW 304	EPA 903.1	255880		
40148006006	MW 305	EPA 903.1	255880		
40148006001	FIELD BLANK	EPA 904.0	255881		
40148006002	MW 301	EPA 904.0	255881		
40148006003	MW 302	EPA 904.0	255881		
40148006004	MW 303	EPA 904.0	255881		
40148006005	MW 304	EPA 904.0	255881		
40148006006	MW 305	EPA 904.0	255881		
40148006001	FIELD BLANK	Total Radium Calculation	257428		
40148006002	MW 301	Total Radium Calculation	257428		
40148006003	MW 302	Total Radium Calculation	257428		
40148006004	MW 303	Total Radium Calculation	257428		
40148006005	MW 304	Total Radium Calculation	257428		
40148006006	MW 305	Total Radium Calculation	257428		
40148006001	FIELD BLANK	SM 2540C	252449		
40148006002	MW 301	SM 2540C	252449		
40148006003	MW 302	SM 2540C	252449		
40148006004	MW 303	SM 2540C	252449		
40148006005	MW 304	SM 2540C	252449		
40148006006	MW 305	SM 2540C	252449		
40148006001	FIELD BLANK	EPA 9040	252371		
40148006002	MW 301	EPA 9040	252371		
40148006003	MW 302	EPA 9040	252371		
40148006004	MW 303	EPA 9040	252371		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069 CCR EDGEWATER I43

Pace Project No.: 40148006

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40148006005	MW 304	EPA 9040	252371		
40148006006	MW 305	EPA 9040	252371		
40148006001	FIELD BLANK	EPA 300.0	252813		
40148006002	MW 301	EPA 300.0	252813		
40148006003	MW 302	EPA 300.0	252813		
40148006004	MW 303	EPA 300.0	252813		
40148006005	MW 304	EPA 300.0	252813		
40148006006	MW 305	EPA 300.0	252813		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers
 Branch/Location: Madison WI
 Project Contact: Mr. Blodgett
 Phone: 608 216 7362
 Project Number: 25216069
 Project Name: Edgewater 143
 Project State: WI
 Sampled By (Print): ZACH WATSON
 Sampled By (Sign): [Signature]
 PO #: _____
 Regulatory Program: _____


Pace Analytical
 www.pacelabs.com
CHAIN OF CUSTODY
 Preservation Codes:
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX	Analyses Requested		Y/N	Pick Letter
					COLLECTION	DATE		
001	Field Blank	4/7	1030	600			X	
002	MW 301	4/6	1440				X	
003	MW 302	4/6	1530				X	
004	MW 303	4/7	1100				X	
005	MW 304	4/7	1225				X	
006	MW 305	4/7	950				X	

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Zach Watson	4/7/17 15:00	Zach Watson	4/8/17 08:15
CS Logistics	4/8/17	Zach Watson	4/8/17

Relinquished By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____

Invoice To Contact: _____
 Invoice To Company: _____
 Invoice To Address: _____
 Invoice To Phone: _____

CLIENT COMMENTS: 2-11p AD 4/8/17
 LAB COMMENTS (Lab Use Only): 4-250mlp AABD

PACE Project No. 40149006
 Receipt Temp = EO °C
 Sample Receipt pH OK / Adjusted
 Coffer Custody Seal Present / Not Present Intact / Not Intact



Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Project #: WO#: 40148006

Client Name: SCS Engineers

Courier: Fed Ex UPS Client Pace Other: CS Logistics
Tracking #: 232.040717



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: /Corr: ROI Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
Date: 4/8/17
Initials: [Signature]

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

Table with 15 rows for checklist items: Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, Headspace in VOA Vials (>6mm), Trip Blank Present, Pace Trip Blank Lot #.

Client Notification/ Resolution:

Person Contacted: Date/Time: If checked, see attached form for additional comments

Comments/ Resolution:

Project Manager Review: Rmw for DM

Date: 4/8/17

A9 Round 9 Background Sampling, Analytical Laboratory Report

June 28, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40151301001	MW-304	Water	06/06/17 09:16	06/08/17 14:56
40151301002	MW-305	Water	06/06/17 10:41	06/08/17 14:56
40151301003	MW-303	Water	06/06/17 10:46	06/08/17 14:56

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40151301001	MW-304	EPA 6020	DS1, SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40151301002	MW-305	EPA 6020	DS1, SDW
EPA 7470	AJT			1	PASI-G
	RMW			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40151301003	MW-303			EPA 6020	DS1, SDW
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Sample: MW-304 **Lab ID: 40151301001** Collected: 06/06/17 09:16 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 19:19	7440-36-0	
Arsenic	11.8	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 19:19	7440-38-2	
Barium	79.1	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 19:19	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 19:19	7440-41-7	
Boron	102	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 23:10	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 19:19	7440-43-9	
Calcium	23500	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 23:10	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 19:19	7440-47-3	
Cobalt	0.11J	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 19:19	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 19:19	7439-92-1	
Lithium	9.1	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:19	7439-93-2	
Molybdenum	4.7	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 19:19	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 19:19	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:19	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:35	7439-97-6	
Field Data		Analytical Method:							
Field pH	8.03	Std. Units			1		06/06/17 09:16		
Field Specific Conductance	391	umhos/cm			1		06/06/17 09:16		
Oxygen, Dissolved	0.5	mg/L			1		06/06/17 09:16	7782-44-7	
REDOX	-104	mV			1		06/06/17 09:16		
Turbidity	3	NTU			1		06/06/17 09:16		
Static Water Level	655.70	feet			1		06/06/17 09:16		
Temperature, Water (C)	11.2	deg C			1		06/06/17 09:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	218	mg/L	20.0	8.7	1		06/12/17 15:03		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		06/13/17 09:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	2.0	mg/L	2.0	0.50	1		06/20/17 19:21	16887-00-6	
Fluoride	0.60	mg/L	0.30	0.10	1		06/20/17 19:21	16984-48-8	
Sulfate	14.9	mg/L	3.0	1.0	1		06/20/17 19:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Sample: MW-305 **Lab ID: 40151301002** Collected: 06/06/17 10:41 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.59J	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 19:25	7440-36-0	
Arsenic	2.5	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 19:25	7440-38-2	
Barium	208	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 19:25	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 19:25	7440-41-7	
Boron	78.8	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 23:17	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 19:25	7440-43-9	
Calcium	102000	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 23:17	7440-70-2	
Chromium	4.0	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 19:25	7440-47-3	
Cobalt	0.80J	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 19:25	7440-48-4	
Lead	0.98J	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 19:25	7439-92-1	
Lithium	15.7	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:25	7439-93-2	
Molybdenum	3.3	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 19:25	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 19:25	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:25	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:37	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.52	Std. Units			1		06/06/17 10:41		
Field Specific Conductance	884	umhos/cm			1		06/06/17 10:41		
Oxygen, Dissolved	0.4	mg/L			1		06/06/17 10:41	7782-44-7	
REDOX	-167	mV			1		06/06/17 10:41		
Turbidity	140.6	NTU			1		06/06/17 10:41		
Static Water Level	659.70	feet			1		06/06/17 10:41		
Temperature, Water (C)	11.3	deg C			1		06/06/17 10:41		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	598	mg/L	20.0	8.7	1		06/12/17 15:03		
9040 pH		Analytical Method: EPA 9040							
pH	7.5	Std. Units	0.10	0.010	1		06/13/17 09:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	22.5	mg/L	2.0	0.50	1		06/20/17 19:31	16887-00-6	
Fluoride	0.72	mg/L	0.30	0.10	1		06/20/17 19:31	16984-48-8	
Sulfate	140	mg/L	30.0	10.0	10		06/20/17 23:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Sample: MW-303 **Lab ID: 40151301003** Collected: 06/06/17 10:46 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 17:24	7440-36-0	
Arsenic	4.0	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 17:24	7440-38-2	
Barium	80.6	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 17:24	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 17:24	7440-41-7	
Boron	89.1	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 21:41	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 17:24	7440-43-9	
Calcium	35500	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 21:41	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 17:24	7440-47-3	
Cobalt	0.40J	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 17:24	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 17:24	7439-92-1	
Lithium	11.4	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 17:24	7439-93-2	
Molybdenum	14.4	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 17:24	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 17:24	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 17:24	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:44	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.90	Std. Units			1		06/06/17 10:46		
Field Specific Conductance	486	umhos/cm			1		06/06/17 10:46		
Oxygen, Dissolved	0.4	mg/L			1		06/06/17 10:46	7782-44-7	
REDOX	-65	mV			1		06/06/17 10:46		
Turbidity	22.54	NTU			1		06/06/17 10:46		
Static Water Level	654.14	feet			1		06/06/17 10:46		
Temperature, Water (C)	11	deg C			1		06/06/17 10:46		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	314	mg/L	20.0	8.7	1		06/12/17 15:04		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		06/13/17 09:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.2	mg/L	2.0	0.50	1		06/20/17 19:42	16887-00-6	
Fluoride	0.69	mg/L	0.30	0.10	1		06/20/17 19:42	16984-48-8	
Sulfate	51.1	mg/L	3.0	1.0	1		06/20/17 19:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

QC Batch: 258909 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40151301001, 40151301002, 40151301003

METHOD BLANK: 1525800 Matrix: Water
Associated Lab Samples: 40151301001, 40151301002, 40151301003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	06/19/17 13:07	

LABORATORY CONTROL SAMPLE: 1525801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1525802 1525803

Parameter	Units	40151437001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Mercury	ug/L	<0.13	5	5	5	4.8	4.9	96	97	85-115	1	20			

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

QC Batch: 258263 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40151301001, 40151301002, 40151301003

METHOD BLANK: 1521787 Matrix: Water
Associated Lab Samples: 40151301001, 40151301002, 40151301003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	06/13/17 17:11	
Arsenic	ug/L	<0.28	1.0	06/13/17 17:11	
Barium	ug/L	<0.34	1.1	06/13/17 17:11	
Beryllium	ug/L	<0.18	1.0	06/13/17 17:11	
Boron	ug/L	<3.3	11.0	06/14/17 21:28	
Cadmium	ug/L	<0.081	1.0	06/13/17 17:11	
Calcium	ug/L	<69.8	250	06/14/17 21:28	
Chromium	ug/L	<1.0	3.4	06/13/17 17:11	
Cobalt	ug/L	<0.085	1.0	06/13/17 17:11	
Lead	ug/L	<0.20	1.0	06/13/17 17:11	
Lithium	ug/L	<0.14	1.0	06/13/17 17:11	
Molybdenum	ug/L	<0.44	1.5	06/13/17 17:11	
Selenium	ug/L	<0.32	1.1	06/13/17 17:11	
Thallium	ug/L	<0.14	1.0	06/13/17 17:11	

LABORATORY CONTROL SAMPLE: 1521788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	520	104	80-120	
Arsenic	ug/L	500	510	102	80-120	
Barium	ug/L	500	526	105	80-120	
Beryllium	ug/L	500	515	103	80-120	
Boron	ug/L	500	499	100	80-120	
Cadmium	ug/L	500	525	105	80-120	
Calcium	ug/L	5000	5150	103	80-120	
Chromium	ug/L	500	514	103	80-120	
Cobalt	ug/L	500	515	103	80-120	
Lead	ug/L	500	535	107	80-120	
Lithium	ug/L	500	521	104	80-120	
Molybdenum	ug/L	500	525	105	80-120	
Selenium	ug/L	500	551	110	80-120	
Thallium	ug/L	500	572	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1521789 1521790

Parameter	Units	40151280001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Antimony	ug/L	0.32J	500	500	518	505	103	101	75-125	2	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Parameter	Units	1521789		1521790		MS % Rec	MSD % Rec	% Rec	Limits	RPD	Max RPD	Qual
		40151280001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Arsenic	ug/L	25.2	500	500	551	545	105	104	75-125	1	20	
Barium	ug/L	143	500	500	673	666	106	105	75-125	1	20	
Beryllium	ug/L	0.33J	500	500	495	478	99	95	75-125	3	20	
Boron	ug/L	4570	500	500	5110	5090	107	103	75-125	0	20	
Cadmium	ug/L	0.17J	500	500	518	508	104	102	75-125	2	20	
Calcium	ug/L	154000	5000	5000	156000	158000	56	84	75-125	1	20	P6
Chromium	ug/L	2.1J	500	500	523	514	104	102	75-125	2	20	
Cobalt	ug/L	3.4	500	500	521	519	104	103	75-125	0	20	
Lead	ug/L	0.56J	500	500	536	525	107	105	75-125	2	20	
Lithium	ug/L	9.3	500	500	522	505	103	99	75-125	3	20	
Molybdenum	ug/L	4.5	500	500	541	531	107	105	75-125	2	20	
Selenium	ug/L	0.50J	500	500	571	561	114	112	75-125	2	20	
Thallium	ug/L	0.36J	500	500	578	561	115	112	75-125	3	20	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

QC Batch: 258309

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40151301001, 40151301002, 40151301003

METHOD BLANK: 1521898

Matrix: Water

Associated Lab Samples: 40151301001, 40151301002, 40151301003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	06/12/17 14:59	

LABORATORY CONTROL SAMPLE: 1521899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	585	580	99	80-120	

SAMPLE DUPLICATE: 1521900

Parameter	Units	40151159008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	492	496	1	5	

SAMPLE DUPLICATE: 1521901

Parameter	Units	40151149001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	280	8	5	R1

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

QC Batch: 258441 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40151301001, 40151301002, 40151301003

SAMPLE DUPLICATE: 1522424

Parameter	Units	40151299002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.5	7.6	1	20	H6

SAMPLE DUPLICATE: 1522425

Parameter	Units	40151395001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	4.3	4.4	2	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

QC Batch: 259103 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40151301001, 40151301002, 40151301003

METHOD BLANK: 1526431 Matrix: Water
Associated Lab Samples: 40151301001, 40151301002, 40151301003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	06/20/17 16:14	
Fluoride	mg/L	<0.10	0.30	06/20/17 16:14	
Sulfate	mg/L	<1.0	3.0	06/20/17 16:14	

LABORATORY CONTROL SAMPLE: 1526432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.5	97	90-110	
Fluoride	mg/L	2	1.9	96	90-110	
Sulfate	mg/L	20	19.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1526433 1526434

Parameter	Units	40151274002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	302	400	400	400	738	756	109	114	90-110	2	15	M0
Fluoride	mg/L	<2.0	40	40	40	42.5	45.1	106	113	90-110	6	15	M0
Sulfate	mg/L	40.9J	400	400	400	461	485	105	111	90-110	5	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1526435 1526436

Parameter	Units	40151013002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.6J	20	20	20	24.5	22.0	114	102	90-110	11	15	M0
Fluoride	mg/L	<0.10	2	2	2	2.3	2.1	116	104	90-110	11	15	M0
Sulfate	mg/L	31.5	20	20	20	55.2	49.3	118	89	90-110	11	15	M0

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.604 ± 0.478 (0.650) C:NA T:94%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	0.688 ± 0.563 (1.12) C:74% T:82%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	1.29 ± 1.04 (1.77)	pCi/L	06/28/17 14:21	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.510 ± 0.373 (0.417) C:NA T:94%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	0.555 ± 0.505 (1.02) C:75% T:82%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	1.07 ± 0.878 (1.44)	pCi/L	06/28/17 14:21	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.298 ± 0.389 (0.641) C:NA T:90%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	0.397 ± 0.420 (0.868) C:77% T:87%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	0.695 ± 0.809 (1.51)	pCi/L	06/28/17 14:21	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43
 Pace Project No.: 40151301

QC Batch: 261745	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
Associated Lab Samples: 40151301001, 40151301002, 40151301003	

METHOD BLANK: 1288791	Matrix: Water
Associated Lab Samples: 40151301001, 40151301002, 40151301003	

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.398 ± 0.404 (0.612) C:NA T:94%	pCi/L	06/22/17 11:01	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151301

QC Batch:	261765	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	40151301001, 40151301002, 40151301003		

METHOD BLANK: 1288847 Matrix: Water

Associated Lab Samples: 40151301001, 40151301002, 40151301003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.383 ± 0.440 (0.926) C:77% T:71%	pCi/L	06/26/17 15:45	

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QUALIFIERS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required 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.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151301

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40151301001	MW-304	EPA 3010	258263	EPA 6020	258358
40151301002	MW-305	EPA 3010	258263	EPA 6020	258358
40151301003	MW-303	EPA 3010	258263	EPA 6020	258358
40151301001	MW-304	EPA 7470	258909	EPA 7470	258932
40151301002	MW-305	EPA 7470	258909	EPA 7470	258932
40151301003	MW-303	EPA 7470	258909	EPA 7470	258932
40151301001	MW-304				
40151301002	MW-305				
40151301003	MW-303				
40151301001	MW-304	EPA 903.1	261745		
40151301002	MW-305	EPA 903.1	261745		
40151301003	MW-303	EPA 903.1	261745		
40151301001	MW-304	EPA 904.0	261765		
40151301002	MW-305	EPA 904.0	261765		
40151301003	MW-303	EPA 904.0	261765		
40151301001	MW-304	Total Radium Calculation	263482		
40151301002	MW-305	Total Radium Calculation	263482		
40151301003	MW-303	Total Radium Calculation	263482		
40151301001	MW-304	SM 2540C	258309		
40151301002	MW-305	SM 2540C	258309		
40151301003	MW-303	SM 2540C	258309		
40151301001	MW-304	EPA 9040	258441		
40151301002	MW-305	EPA 9040	258441		
40151301003	MW-303	EPA 9040	258441		
40151301001	MW-304	EPA 300.0	259103		
40151301002	MW-305	EPA 300.0	259103		
40151301003	MW-303	EPA 300.0	259103		

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CHAIN OF CUSTODY

A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

40151301

Company Name: SCS Engineers
 Branch/Location: Madison, WI
 Project Contact: Meg Blodgett
 Phone: (608) 216-7362
 Project Number: 25216069.00
 Project Name: Edge Water I-43
 Project State: WI
 Sampled By (Print): Charles Billis
 Sampled By (Sign): Charles Billis
 PO #: _____
 Regulatory Program: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV
 On your sample (billable)
 NOT needed on your sample

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX	ANALYSES REQUESTED	V/I	Pick Letter	PRESERVATION (CODE)*	FILTERED? (YES/NO)
001	I-43 MLD-304	6/6/17	0916	GW	Chloride, Fluoride Sulfate TDS	X	A	N	N
002	I-43 MW-305	6/6/17	1041	GW	pH	X	A	N	N
003	I-43 MW-303	6/6/17	1046	GW	Radium 226	X	D	N	N
					Radium 228	X	D	N	N
					B, Cd, Sb, As, Ba, Be, Ca, Cr	X	D	N	N
					Co, Pb, Li, Mo, Si, Ti	X	D	N	N
					Mercury	X	D	N	N

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____
 Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Relinquished By: Charles Billis Date/Time: 6/8/17 0800
 Relinquished By: Mary Farnini Date/Time: 6/8/17 1315
 Relinquished By: Michelle Anne Date/Time: 6/8/17 1450
 Relinquished By: _____ Date/Time: _____

Received By: Mary Farnini Date/Time: 6/8/17 835
 Received By: Rachel Laska Date/Time: 6/8/17 1315
 Received By: Michelle Anne Date/Time: 6/8/17 1450
 Received By: _____ Date/Time: _____

Samples on HOLD are subject to special pricing and release of liability

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: _____
 Invoice To Company: SCS Engineers
 Invoice To Address: 2830 Dairy Dr. Madison WI 53718
 Invoice To Phone: _____
 CLIENT COMMENTS: _____
 LAB COMMENTS (Lab Use Only): 3-250m LPHD-14PD
 Profile #: _____

PAGE Project No. 40151301
 Receipt Temp = 20 °C
 Sample Receipt pH OK Adjusted
 Cooler Custody Seal Present / Not Present Intact / Not Intact



Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Project #: **WO# : 40151301**

Client Name: SSS



Courier: Fed Ex UPS Client Pace Other: _____

Tracking #: _____

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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: _____ /Corr: RO1 Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
Date: 6/8/17
Initials: CS

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. ID does not have "I-43"
-Includes date/time/ID/Analysis Matrix: <u>W</u>		<u>6/8/17</u>
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>CS</u> Lab Std #ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: _____ If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: AL for DM Date: 6/8/17

June 28, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40151302001	MW-301	Water	06/06/17 11:51	06/08/17 14:56
40151302002	MW-302	Water	06/06/17 12:11	06/08/17 14:56
40151302003	FB	Water	06/06/17 12:20	06/08/17 14:56

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40151302001	MW-301	EPA 6020	DS1, SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40151302002	MW-302	EPA 6020	DS1, SDW
EPA 7470	AJT			1	PASI-G
	RMW			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40151302003	FB			EPA 6020	DS1, SDW
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

Sample: MW-301 **Lab ID: 40151302001** Collected: 06/06/17 11:51 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 19:32	7440-36-0	
Arsenic	3.7	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 19:32	7440-38-2	
Barium	125	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 19:32	7440-39-3	
Beryllium	0.18J	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 19:32	7440-41-7	
Boron	138	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 23:24	7440-42-8	
Cadmium	0.091J	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 19:32	7440-43-9	
Calcium	57600	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 23:24	7440-70-2	
Chromium	10.6	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 19:32	7440-47-3	
Cobalt	2.7	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 19:32	7440-48-4	
Lead	3.2	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 19:32	7439-92-1	
Lithium	18.1	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:32	7439-93-2	
Molybdenum	10.2	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 19:32	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 19:32	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:32	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:46	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.89	Std. Units			1		06/06/17 11:51		
Field Specific Conductance	374	umhos/cm			1		06/06/17 11:51		
Oxygen, Dissolved	0.2	mg/L			1		06/06/17 11:51	7782-44-7	
REDOX	-171	mV			1		06/06/17 11:51		
Turbidity	322.2	NTU			1		06/06/17 11:51		
Static Water Level	654.11	feet			1		06/06/17 11:51		
Temperature, Water (C)	11.1	deg C			1		06/06/17 11:51		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	264	mg/L	20.0	8.7	1		06/12/17 15:04		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		06/13/17 09:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	7.5J	mg/L	10.0	2.5	5		06/20/17 19:53	16887-00-6	D3
Fluoride	0.87J	mg/L	1.5	0.50	5		06/20/17 19:53	16984-48-8	D3
Sulfate	9.0J	mg/L	15.0	5.0	5		06/20/17 19:53	14808-79-8	D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

Sample: MW-302 **Lab ID: 40151302002** Collected: 06/06/17 12:11 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.40J	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 19:52	7440-36-0	
Arsenic	7.2	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 19:52	7440-38-2	
Barium	77.2	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 19:52	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 19:52	7440-41-7	
Boron	124	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 23:30	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 19:52	7440-43-9	
Calcium	38700	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 23:30	7440-70-2	
Chromium	1.6J	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 19:52	7440-47-3	
Cobalt	0.52J	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 19:52	7440-48-4	
Lead	1.4	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 19:52	7439-92-1	
Lithium	12.7	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:52	7439-93-2	
Molybdenum	10.7	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 19:52	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 19:52	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:52	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:49	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.95	Std. Units			1		06/06/17 12:11		
Field Specific Conductance	419	umhos/cm			1		06/06/17 12:11		
Oxygen, Dissolved	0.3	mg/L			1		06/06/17 12:11	7782-44-7	
REDOX	-14	mV			1		06/06/17 12:11		
Turbidity	84.5	NTU			1		06/06/17 12:11		
Static Water Level	654.12	feet			1		06/06/17 12:11		
Temperature, Water (C)	12.1	deg C			1		06/06/17 12:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	284	mg/L	20.0	8.7	1		06/12/17 15:04		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		06/13/17 09:05		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	6.9	mg/L	2.0	0.50	1		06/20/17 20:04	16887-00-6	
Fluoride	0.83	mg/L	0.30	0.10	1		06/20/17 20:04	16984-48-8	
Sulfate	32.2	mg/L	3.0	1.0	1		06/20/17 20:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

Sample: FB **Lab ID: 40151302003** Collected: 06/06/17 12:20 Received: 06/08/17 14:56 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	06/12/17 10:10	06/13/17 19:59	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	06/12/17 10:10	06/13/17 19:59	7440-38-2	
Barium	<0.34	ug/L	1.1	0.34	1	06/12/17 10:10	06/13/17 19:59	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	06/12/17 10:10	06/13/17 19:59	7440-41-7	
Boron	<3.3	ug/L	11.0	3.3	1	06/12/17 10:10	06/14/17 23:37	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	06/12/17 10:10	06/13/17 19:59	7440-43-9	
Calcium	<69.8	ug/L	250	69.8	1	06/12/17 10:10	06/14/17 23:37	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	06/12/17 10:10	06/13/17 19:59	7440-47-3	
Cobalt	<0.085	ug/L	1.0	0.085	1	06/12/17 10:10	06/13/17 19:59	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	06/12/17 10:10	06/13/17 19:59	7439-92-1	
Lithium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:59	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	06/12/17 10:10	06/13/17 19:59	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	06/12/17 10:10	06/13/17 19:59	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	06/12/17 10:10	06/13/17 19:59	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	06/19/17 07:40	06/19/17 13:51	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		06/12/17 15:04		
9040 pH		Analytical Method: EPA 9040							
pH	4.0	Std. Units	0.10	0.010	1		06/13/17 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		06/20/17 20:15	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		06/20/17 20:15	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		06/20/17 20:15	14808-79-8	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

QC Batch: 258909 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 40151302001, 40151302002, 40151302003

METHOD BLANK: 1525800 Matrix: Water
 Associated Lab Samples: 40151302001, 40151302002, 40151302003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	06/19/17 13:07	

LABORATORY CONTROL SAMPLE: 1525801

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1525802 1525803

Parameter	Units	1525802		1525803		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		40151437001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Mercury	ug/L	<0.13	5	5	4.8	4.9	96	97	85-115	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: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

QC Batch: 258263 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40151302001, 40151302002, 40151302003

METHOD BLANK: 1521787 Matrix: Water
Associated Lab Samples: 40151302001, 40151302002, 40151302003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	06/13/17 17:11	
Arsenic	ug/L	<0.28	1.0	06/13/17 17:11	
Barium	ug/L	<0.34	1.1	06/13/17 17:11	
Beryllium	ug/L	<0.18	1.0	06/13/17 17:11	
Boron	ug/L	<3.3	11.0	06/14/17 21:28	
Cadmium	ug/L	<0.081	1.0	06/13/17 17:11	
Calcium	ug/L	<69.8	250	06/14/17 21:28	
Chromium	ug/L	<1.0	3.4	06/13/17 17:11	
Cobalt	ug/L	<0.085	1.0	06/13/17 17:11	
Lead	ug/L	<0.20	1.0	06/13/17 17:11	
Lithium	ug/L	<0.14	1.0	06/13/17 17:11	
Molybdenum	ug/L	<0.44	1.5	06/13/17 17:11	
Selenium	ug/L	<0.32	1.1	06/13/17 17:11	
Thallium	ug/L	<0.14	1.0	06/13/17 17:11	

LABORATORY CONTROL SAMPLE: 1521788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	520	104	80-120	
Arsenic	ug/L	500	510	102	80-120	
Barium	ug/L	500	526	105	80-120	
Beryllium	ug/L	500	515	103	80-120	
Boron	ug/L	500	499	100	80-120	
Cadmium	ug/L	500	525	105	80-120	
Calcium	ug/L	5000	5150	103	80-120	
Chromium	ug/L	500	514	103	80-120	
Cobalt	ug/L	500	515	103	80-120	
Lead	ug/L	500	535	107	80-120	
Lithium	ug/L	500	521	104	80-120	
Molybdenum	ug/L	500	525	105	80-120	
Selenium	ug/L	500	551	110	80-120	
Thallium	ug/L	500	572	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1521789 1521790

Parameter	Units	40151280001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Antimony	ug/L	0.32J	500	518	505	103	101	75-125	2	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

Parameter	Units	40151280001		1521789		1521790		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Arsenic	ug/L	25.2	500	500	551	545	105	104	75-125	1	20			
Barium	ug/L	143	500	500	673	666	106	105	75-125	1	20			
Beryllium	ug/L	0.33J	500	500	495	478	99	95	75-125	3	20			
Boron	ug/L	4570	500	500	5110	5090	107	103	75-125	0	20			
Cadmium	ug/L	0.17J	500	500	518	508	104	102	75-125	2	20			
Calcium	ug/L	154000	5000	5000	156000	158000	56	84	75-125	1	20	P6		
Chromium	ug/L	2.1J	500	500	523	514	104	102	75-125	2	20			
Cobalt	ug/L	3.4	500	500	521	519	104	103	75-125	0	20			
Lead	ug/L	0.56J	500	500	536	525	107	105	75-125	2	20			
Lithium	ug/L	9.3	500	500	522	505	103	99	75-125	3	20			
Molybdenum	ug/L	4.5	500	500	541	531	107	105	75-125	2	20			
Selenium	ug/L	0.50J	500	500	571	561	114	112	75-125	2	20			
Thallium	ug/L	0.36J	500	500	578	561	115	112	75-125	3	20			

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

QC Batch: 258309

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40151302001, 40151302002, 40151302003

METHOD BLANK: 1521898

Matrix: Water

Associated Lab Samples: 40151302001, 40151302002, 40151302003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	06/12/17 14:59	

LABORATORY CONTROL SAMPLE: 1521899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	585	580	99	80-120	

SAMPLE DUPLICATE: 1521900

Parameter	Units	40151159008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	492	496	1	5	

SAMPLE DUPLICATE: 1521901

Parameter	Units	40151149001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	280	8	5	R1

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

QC Batch: 258441 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40151302001, 40151302002, 40151302003

SAMPLE DUPLICATE: 1522424

Parameter	Units	40151299002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.5	7.6	1	20	H6

SAMPLE DUPLICATE: 1522425

Parameter	Units	40151395001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	4.3	4.4	2	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

QC Batch: 259103 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40151302001, 40151302002, 40151302003

METHOD BLANK: 1526431 Matrix: Water
Associated Lab Samples: 40151302001, 40151302002, 40151302003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	06/20/17 16:14	
Fluoride	mg/L	<0.10	0.30	06/20/17 16:14	
Sulfate	mg/L	<1.0	3.0	06/20/17 16:14	

LABORATORY CONTROL SAMPLE: 1526432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	19.5	97	90-110	
Fluoride	mg/L	2	1.9	96	90-110	
Sulfate	mg/L	20	19.5	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1526433 1526434

Parameter	Units	40151274002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	302	400	400	400	738	756	109	114	90-110	2	15	M0
Fluoride	mg/L	<2.0	40	40	40	42.5	45.1	106	113	90-110	6	15	M0
Sulfate	mg/L	40.9J	400	400	400	461	485	105	111	90-110	5	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1526435 1526436

Parameter	Units	40151013002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	1.6J	20	20	20	24.5	22.0	114	102	90-110	11	15	M0
Fluoride	mg/L	<0.10	2	2	2	2.3	2.1	116	104	90-110	11	15	M0
Sulfate	mg/L	31.5	20	20	20	55.2	49.3	118	89	90-110	11	15	M0

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.408 ± 0.445 (0.700) C:NA T:89%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	1.20 ± 0.549 (0.918) C:81% T:91%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	1.61 ± 0.994 (1.62)	pCi/L	06/28/17 14:21	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.366 ± 0.296 (0.165) C:NA T:83%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	0.841 ± 0.479 (0.863) C:78% T:93%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	1.21 ± 0.775 (1.03)	pCi/L	06/28/17 14:21	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 903.1	0.000 ± 0.422 (0.863) C:NA T:94%	pCi/L	06/22/17 11:55	13982-63-3	
Radium-228		EPA 904.0	0.368 ± 0.426 (0.889) C:78% T:79%	pCi/L	06/26/17 18:49	15262-20-1	
Total Radium		Total Radium Calculation	0.368 ± 0.848 (1.75)	pCi/L	06/28/17 14:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43

Pace Project No.: 40151302

QC Batch:	261745	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	40151302001, 40151302002, 40151302003		

METHOD BLANK:	1288791	Matrix:	Water
Associated Lab Samples:	40151302001, 40151302002, 40151302003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.398 ± 0.404 (0.612) C:NA T:94%	pCi/L	06/22/17 11:01	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

QC Batch: 261765 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 40151302001, 40151302002, 40151302003

METHOD BLANK: 1288847 Matrix: Water
Associated Lab Samples: 40151302001, 40151302002, 40151302003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.383 ± 0.440 (0.926) C:77% T:71%	pCi/L	06/26/17 15:45	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H6 Analysis initiated outside of the 15 minute EPA required 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.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I-43
Pace Project No.: 40151302

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40151302001	MW-301	EPA 3010	258263	EPA 6020	258358
40151302002	MW-302	EPA 3010	258263	EPA 6020	258358
40151302003	FB	EPA 3010	258263	EPA 6020	258358
40151302001	MW-301	EPA 7470	258909	EPA 7470	258932
40151302002	MW-302	EPA 7470	258909	EPA 7470	258932
40151302003	FB	EPA 7470	258909	EPA 7470	258932
40151302001	MW-301				
40151302002	MW-302				
40151302001	MW-301	EPA 903.1	261745		
40151302002	MW-302	EPA 903.1	261745		
40151302003	FB	EPA 903.1	261745		
40151302001	MW-301	EPA 904.0	261765		
40151302002	MW-302	EPA 904.0	261765		
40151302003	FB	EPA 904.0	261765		
40151302001	MW-301	Total Radium Calculation	263482		
40151302002	MW-302	Total Radium Calculation	263482		
40151302003	FB	Total Radium Calculation	263482		
40151302001	MW-301	SM 2540C	258309		
40151302002	MW-302	SM 2540C	258309		
40151302003	FB	SM 2540C	258309		
40151302001	MW-301	EPA 9040	258441		
40151302002	MW-302	EPA 9040	258441		
40151302003	FB	EPA 9040	258441		
40151302001	MW-301	EPA 300.0	259103		
40151302002	MW-302	EPA 300.0	259103		
40151302003	FB	EPA 300.0	259103		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers
Branch/Location: Madison, WI
Project Contact: Meg Blodgett
Phone: (608) 216-7362
Project Number: 25216064, 00
Project Name: Edgewater I-43
Project State: WI
Sampled By (Print): Charles B. IIS
Sampled By (Sign): Charles B. IIS
PO #:
Regulatory Program:
Data Package Options (billable)
 EPA Level III
 EPA Level IV
MSMSD (billable)
 On your sample
 NOT needed on your sample
Matrix Codes
 A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe



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SCS

CHAIN OF CUSTODY

Preservation Codes
 A=None, B=HCL, C=H2SO4, D=HNO3, E=DI Water, F=Methanol, G=NaOH
 H= Sodium Bisulfate Solution, I= Sodium Thiosulfate, J=Other

FILTERED? (YES/NO)
PRESERVATION CODE?

Y/N	Pick Letter	Analyses Requested
N	A	Chloride, Fluoride Sulfate TDS
N	A	pH
N	D	Radium 226
N	D	Radium 228
N	D	Bi, cd, Sb, As, Ba, Be, Ca, Cr
N	D	Co, Pb, Li, Mo, SI TI
N	D	Mercury

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX	COLLECTION	
					DATE	TIME
001	I-43 MW-301	6/6/17	1151	GW		
002	I-43 MW-302	6/6/17	1211	GW		
003	I-43 FB	6/6/17	1220	GW		
004						

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
Date Needed:
 Relinquished By: *Charles B. IIS* Date/Time: 6/18/17 0800
 Relinquished By: *Mary Farnini* Date/Time: 6/18/17 1315
 Relinquished By: *Karen Wells* Date/Time: 6/18/17 1452

Received By: *Mary Farnini* Date/Time: 6/19/17 835
 Received By: *Karen Wells* Date/Time: 6/19/17 1315
 Received By: *Diana Klyde* Date/Time: 6/19/17 1442

PACE Project No. 40151302
 Receipt Temp = 120°C
 Sample Receipt pH OK/Adjusted
 Cooler Custody Seal Present/Not Present Intact/Not Intact

Relinquished By:	Date/Time:	Received By:	Date/Time:
<i>Charles B. IIS</i>	6/18/17 0800	<i>Mary Farnini</i>	6/19/17 835
<i>Mary Farnini</i>	6/18/17 1315	<i>Karen Wells</i>	6/19/17 1315
<i>Karen Wells</i>	6/18/17 1452	<i>Diana Klyde</i>	6/19/17 1442

CLIENT COMMENTS
 Invoice To Phone: 2-711-...
 Invoice To Company: SCS Engineers
 Invoice To Address: 2830 Darry Dr, Madison WI 53718
LAB COMMENTS (Lab Use Only)
 3-27-17
 440

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

40151302



Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
 1241 Bellevue Street, Suite 9
 Green Bay, WI 54302

Project # **WO# : 40151302**

Client Name: SCS

Courier: Fed Ex UPS Client Pace Other: _____
 Tracking #: _____



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT / Corr: _____ Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
 Date: 6-8-17
 Initials: SKU

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" 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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>No I43 in FD's.</u>
-Includes date/time/ID/Analysis Matrix:	<u>W</u>	<u>6-8-17 SKU</u>
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
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	
(HNO3, H2SO4 <2, NaOH+ZnAct ≥9, NaOH ≥12)		
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>SKU</u> Lab Std #/ID of preservative: _____ Date/Time: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: _____ If checked, see attached form for additional comments
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

Project Manager Review: Rover for DM Date: 6/8/17

A10 Round 10 Background Sampling, Analytical Laboratory Report

August 28, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 04, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATR 143

Pace Project No.: 40154473

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40154473001	MW 301-I43	Water	08/01/17 12:16	08/04/17 10:10
40154473002	MW 302-I43	Water	08/01/17 13:51	08/04/17 10:10
40154473003	MW 303-I43	Water	08/01/17 14:36	08/04/17 10:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40154473001	MW 301-I43	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AXL	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40154473002	MW 302-I43	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AXL			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40154473003	MW 303-I43			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
			AXL	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Sample: MW 301-I43 **Lab ID: 40154473001** Collected: 08/01/17 12:16 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 17:55	7440-36-0	
Arsenic	4.2	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 17:55	7440-38-2	
Barium	115	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 17:55	7440-39-3	
Beryllium	0.25J	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 17:55	7440-41-7	
Boron	145	ug/L	11.0	3.3	1	08/15/17 08:57	08/17/17 18:22	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 17:55	7440-43-9	
Calcium	59400	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 17:55	7440-70-2	
Chromium	8.6	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 17:55	7440-47-3	
Cobalt	2.3	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 17:55	7440-48-4	
Lead	3.0	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 17:55	7439-92-1	
Lithium	16.7	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 17:55	7439-93-2	
Molybdenum	9.7	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 17:55	7439-98-7	
Selenium	0.39J	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 17:55	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 17:55	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 08:50	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.99	Std. Units			1		08/01/17 12:16		
Field Specific Conductance	377	umhos/cm			1		08/01/17 12:16		
Oxygen, Dissolved	0	mg/L			1		08/01/17 12:16	7782-44-7	
REDOX	-161	mV			1		08/01/17 12:16		
Turbidity	349.1	NTU			1		08/01/17 12:16		
Elevation Water Level	652.64	feet			1		08/01/17 12:16		
Temperature, Water (C)	10.5	deg C			1		08/01/17 12:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	248	mg/L	20.0	8.7	1		08/08/17 17:17		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.2	mg/L	2.0	0.50	1		08/15/17 21:40	16887-00-6	
Fluoride	0.63	mg/L	0.30	0.10	1		08/15/17 21:40	16984-48-8	
Sulfate	8.2	mg/L	3.0	1.0	1		08/15/17 21:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Sample: MW 302-I43 **Lab ID: 40154473002** Collected: 08/01/17 13:51 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.21J	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 18:02	7440-36-0	
Arsenic	6.3	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 18:02	7440-38-2	
Barium	78.8	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 18:02	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 18:02	7440-41-7	
Boron	130	ug/L	11.0	3.3	1	08/15/17 08:57	08/17/17 18:29	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 18:02	7440-43-9	
Calcium	33900	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 18:02	7440-70-2	
Chromium	1.2J	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 18:02	7440-47-3	
Cobalt	0.47J	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 18:02	7440-48-4	
Lead	1.7	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 18:02	7439-92-1	
Lithium	11.2	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:02	7439-93-2	
Molybdenum	8.0	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 18:02	7439-98-7	
Selenium	0.44J	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 18:02	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:02	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 08:52	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.98	Std. Units			1		08/01/17 13:51		
Field Specific Conductance	435	umhos/cm			1		08/01/17 13:51		
Oxygen, Dissolved	0	mg/L			1		08/01/17 13:51	7782-44-7	
REDOX	-115	mV			1		08/01/17 13:51		
Turbidity	56.73	NTU			1		08/01/17 13:51		
Elevation Water Level	652.55	feet			1		08/01/17 13:51		
Temperature, Water (C)	10.7	deg C			1		08/01/17 13:51		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	262	mg/L	20.0	8.7	1		08/08/17 17:18		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.6	mg/L	2.0	0.50	1		08/15/17 21:51	16887-00-6	
Fluoride	0.74	mg/L	0.30	0.10	1		08/15/17 21:51	16984-48-8	
Sulfate	24.0	mg/L	3.0	1.0	1		08/15/17 21:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Sample: MW 303-I43 **Lab ID: 40154473003** Collected: 08/01/17 14:36 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 18:22	7440-36-0	
Arsenic	4.4	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 18:22	7440-38-2	
Barium	81.1	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 18:22	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 18:22	7440-41-7	
Boron	95.0	ug/L	11.0	3.3	1	08/15/17 08:57	08/17/17 18:50	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 18:22	7440-43-9	
Calcium	35900	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 18:22	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 18:22	7440-47-3	
Cobalt	0.44J	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 18:22	7440-48-4	
Lead	0.22J	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 18:22	7439-92-1	
Lithium	11.4	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:22	7439-93-2	
Molybdenum	12.4	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 18:22	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 18:22	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:22	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 08:54	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.91	Std. Units			1		08/01/17 14:36		
Field Specific Conductance	564	umhos/cm			1		08/01/17 14:36		
Oxygen, Dissolved	0	mg/L			1		08/01/17 14:36	7782-44-7	
REDOX	-157	mV			1		08/01/17 14:36		
Turbidity	16.29	NTU			1		08/01/17 14:36		
Elevation Water Level	652.50	feet			1		08/01/17 14:36		
Temperature, Water (C)	11.7	deg C			1		08/01/17 14:36		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	290	mg/L	20.0	8.7	1		08/08/17 17:19		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	5.7	mg/L	2.0	0.50	1		08/15/17 22:01	16887-00-6	
Fluoride	0.60	mg/L	0.30	0.10	1		08/15/17 22:01	16984-48-8	
Sulfate	40.5	mg/L	3.0	1.0	1		08/15/17 22:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

QC Batch: 264633 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1556920 Matrix: Water

Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	08/16/17 08:08	

LABORATORY CONTROL SAMPLE: 1556921

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1556922 1556923

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40154460008 Result	Spike Conc.	Spike Conc.	Result						
Mercury	ug/L	<0.13	5	5	4.5	4.6	89	91	85-115	2	20

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

QC Batch: 264594 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1556761 Matrix: Water
Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	08/16/17 15:53	
Arsenic	ug/L	<0.28	1.0	08/16/17 15:53	
Barium	ug/L	<0.34	1.1	08/16/17 15:53	
Beryllium	ug/L	<0.18	1.0	08/16/17 15:53	
Boron	ug/L	<3.3	11.0	08/16/17 15:53	
Cadmium	ug/L	<0.081	1.0	08/16/17 15:53	
Calcium	ug/L	<69.8	250	08/16/17 15:53	
Chromium	ug/L	<1.0	3.4	08/16/17 15:53	
Cobalt	ug/L	<0.085	1.0	08/16/17 15:53	
Lead	ug/L	<0.20	1.0	08/16/17 15:53	
Lithium	ug/L	<0.14	1.0	08/16/17 15:53	
Molybdenum	ug/L	<0.44	1.5	08/16/17 15:53	
Selenium	ug/L	<0.32	1.1	08/16/17 15:53	
Thallium	ug/L	<0.14	1.0	08/16/17 15:53	

LABORATORY CONTROL SAMPLE: 1556762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	520	104	80-120	
Arsenic	ug/L	500	505	101	80-120	
Barium	ug/L	500	517	103	80-120	
Beryllium	ug/L	500	524	105	80-120	
Boron	ug/L	500	499	100	80-120	
Cadmium	ug/L	500	530	106	80-120	
Calcium	ug/L	5000	5340	107	80-120	
Chromium	ug/L	500	502	100	80-120	
Cobalt	ug/L	500	505	101	80-120	
Lead	ug/L	500	500	100	80-120	
Lithium	ug/L	500	519	104	80-120	
Molybdenum	ug/L	500	519	104	80-120	
Selenium	ug/L	500	540	108	80-120	
Thallium	ug/L	500	493	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1556763 1556764

Parameter	Units	MS Result	MSD Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.15	500	500	518	523	104	105	75-125	1	20	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Parameter	Units	1556763		1556764		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Arsenic	ug/L	9.0	500	500	506	503	99	99	75-125	1	20		
Barium	ug/L	50.9	500	500	566	572	103	104	75-125	1	20		
Beryllium	ug/L	<0.18	500	500	516	519	103	104	75-125	0	20		
Boron	ug/L	1890	500	500	2350	2400	91	101	75-125	2	20		
Cadmium	ug/L	<0.081	500	500	519	524	104	105	75-125	1	20		
Calcium	ug/L	62600	5000	5000	71200	74000	171	228	75-125	4	20	P6	
Chromium	ug/L	1.1J	500	500	495	495	99	99	75-125	0	20		
Cobalt	ug/L	0.53J	500	500	487	489	97	98	75-125	0	20		
Lead	ug/L	0.44J	500	500	513	502	103	100	75-125	2	20		
Lithium	ug/L	52.2	500	500	571	579	104	105	75-125	1	20		
Molybdenum	ug/L	649	500	500	1160	1170	102	104	75-125	1	20		
Selenium	ug/L	<0.32	500	500	527	526	105	105	75-125	0	20		
Thallium	ug/L	<0.14	500	500	512	499	102	100	75-125	3	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

QC Batch: 263939 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1553281 Matrix: Water
Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	08/08/17 17:13	

LABORATORY CONTROL SAMPLE: 1553282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	553	582	105	80-120	

SAMPLE DUPLICATE: 1553283

Parameter	Units	40154446001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	220	214	3	5	

SAMPLE DUPLICATE: 1553284

Parameter	Units	40154514001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	454	462	2	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

QC Batch: 263876 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40154473001, 40154473002, 40154473003

SAMPLE DUPLICATE: 1552940

Parameter	Units	40154302001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.8	7.8	0	20	H6

SAMPLE DUPLICATE: 1552941

Parameter	Units	40154468001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.1	7.1	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

QC Batch: 264190 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1554662 Matrix: Water
Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	08/15/17 18:25	
Fluoride	mg/L	<0.10	0.30	08/15/17 18:25	
Sulfate	mg/L	<1.0	3.0	08/15/17 18:25	

LABORATORY CONTROL SAMPLE: 1554663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.8	104	90-110	
Fluoride	mg/L	2	2.1	103	90-110	
Sulfate	mg/L	20	20.7	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1554664 1554665

Parameter	Units	40154446008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	0.92J	20	20	21.5	21.7	103	104	90-110	1	15	
Fluoride	mg/L	0.23J	2	2	2.3	2.3	102	103	90-110	1	15	
Sulfate	mg/L	51.8	100	100	154	155	103	103	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1554666 1554667

Parameter	Units	40154680001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result						
Chloride	mg/L	249	400	400	661	662	103	103	90-110	0	15	
Fluoride	mg/L	<2.0	40	40	41.7	42.3	104	106	90-110	1	15	
Sulfate	mg/L	<20.0	400	400	417	421	104	105	90-110	1	15	

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.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW 301-I43 Lab ID: 40154473001 Collected: 08/01/17 12:16 Received: 08/04/17 10:10 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	0.539 ± 0.340 (0.146) C:NA T:94%	pCi/L	08/18/17 11:11	13982-63-3	
Radium-228	EPA 904.0	0.557 ± 0.487 (0.987) C:69% T:72%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium	Total Radium Calculation	1.16 ± 0.762 (1.13)	pCi/L	08/28/17 12:31	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW 302-I43 Lab ID: 40154473002 Collected: 08/01/17 13:51 Received: 08/04/17 10:10 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	1.10 ± 0.520 (0.404) C:NA T:99%	pCi/L	08/18/17 11:11	13982-63-3	
Radium-228	EPA 904.0	0.208 ± 0.337 (0.732) C:76% T:86%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium	Total Radium Calculation	0.844 ± 0.746 (1.17)	pCi/L	08/28/17 12:31	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW 303-I43 Lab ID: 40154473003 Collected: 08/01/17 14:36 Received: 08/04/17 10:10 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 903.1	0.198 ± 0.388 (0.709) C:NA T:79%	pCi/L	08/18/17 11:27	13982-63-3	
Radium-228	EPA 904.0	0.454 ± 0.304 (0.578) C:83% T:89%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium	Total Radium Calculation	0.603 ± 0.890 (1.67)	pCi/L	08/28/17 12:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

QC Batch: 267781 Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1317982 Matrix: Water

Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.056 ± 0.257 (0.607) C:NA T:95%	pCi/L	08/18/17 11:11	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

QC Batch: 267787 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40154473001, 40154473002, 40154473003

METHOD BLANK: 1317988 Matrix: Water

Associated Lab Samples: 40154473001, 40154473002, 40154473003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.273 ± 0.344 (0.731) C:82% T:81%	pCi/L	08/18/17 16:37	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATR I43
Pace Project No.: 40154473

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATR I43

Pace Project No.: 40154473

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40154473001	MW 301-I43	EPA 3010	264594	EPA 6020	264684
40154473002	MW 302-I43	EPA 3010	264594	EPA 6020	264684
40154473003	MW 303-I43	EPA 3010	264594	EPA 6020	264684
40154473001	MW 301-I43	EPA 7470	264633	EPA 7470	264662
40154473002	MW 302-I43	EPA 7470	264633	EPA 7470	264662
40154473003	MW 303-I43	EPA 7470	264633	EPA 7470	264662
40154473001	MW 301-I43				
40154473002	MW 302-I43				
40154473003	MW 303-I43				
40154473001	MW 301-I43	EPA 903.1	267781		
40154473002	MW 302-I43	EPA 903.1	267781		
40154473003	MW 303-I43	EPA 903.1	267781		
40154473001	MW 301-I43	EPA 904.0	267787		
40154473002	MW 302-I43	EPA 904.0	267787		
40154473003	MW 303-I43	EPA 904.0	267787		
40154473001	MW 301-I43	Total Radium Calculation	269753		
40154473002	MW 302-I43	Total Radium Calculation	269753		
40154473003	MW 303-I43	Total Radium Calculation	269753		
40154473001	MW 301-I43	SM 2540C	263939		
40154473002	MW 302-I43	SM 2540C	263939		
40154473003	MW 303-I43	SM 2540C	263939		
40154473001	MW 301-I43	EPA 9040	263876		
40154473002	MW 302-I43	EPA 9040	263876		
40154473003	MW 303-I43	EPA 9040	263876		
40154473001	MW 301-I43	EPA 300.0	264190		
40154473002	MW 302-I43	EPA 300.0	264190		
40154473003	MW 303-I43	EPA 300.0	264190		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Blodgett**
 Phone: **608-216-7362**
 Project Number: **25216069.00**
 Project Name: **WPL Edgewater I43**
 Project State: **WI**
 Sampled By (Print): **Gary Storkel**
 Sampled By (Sign): *Gary Storkel*
 PO #: _____
 Regulatory Program: _____



CHAIN OF CUSTODY

Preservation Codes:
 A=None B=HCl C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfite Solution I=Sodium Thiosulfate J=Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

40154473

Filtered? (YES/NO)	Preservation (CODE)*	V/I/N	Pick Letter
		N	A
		N	A
		N	D
		N	D
		N	D
		N	D
		N	D

Analyses Requested

Chloride	Fluoride	Sulfate	TDS
pH	Radium 226	Radium 228	B, Cd, Sb, As, Ba, Be, Cu, Cr
			Co, Pb, Li Mo
			SI, TI
			Mercury

FACE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX
001	MW 301- I43	8/17	1216	GW
002	MW 302 - I43	8/17	1351	GW
003	MW 303- I43	8/17	1456	GW

Relinquished By:	Date/Time:	Relinquished By:	Date/Time:
<i>Gary Storkel</i>	8/17 0800	<i>Mary Farnini</i>	8/17 1415
<i>Mary Farnini</i>	8/17 1010	<i>Sue Skovs</i>	8/17 1010

Received By:	Date/Time:	Received By:	Date/Time:
<i>Mary Farnini</i>	8/17 9:00	<i>Sue Skovs</i>	8/17 1010

Invoice To Contact: _____
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Dairy Dr
Madison WI 53718**
 Invoice To Phone: _____
 CLIENT COMMENTS: **2-1LP 3-250ml P**
 LAB COMMENTS (Lab Use Only): _____
 Profile # _____

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____
 Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Relinquished By: _____
 Date/Time: _____
 Relinquished By: _____
 Date/Time: _____
 Relinquished By: _____
 Date/Time: _____

Received By: _____
 Date/Time: _____
 Received By: _____
 Date/Time: _____
 Received By: _____
 Date/Time: _____

Receipt Temp = **18.1** °C
 Sample Receipt pH **OK/Adjusted**
 Cooler Custody Seal Presently Not Present
 Intact / Not Intact

Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Client Name: SCS Engineers

Project #:

WO#: **40154473**

Courier: Fed Ex UPS Client Pace Other: CS Logistics



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: N/A

Type of Ice: Wet Blue Dry None

Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: R01 /Corr:

Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:
Date: 8/4/17
Initials: AS

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>NO MS/MSD</u>
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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: <u>W</u>		
All containers needing preservation have been checked. (Non-Compliance noted in 13)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>AS</u> Lab Std #/ID of preservative: Date/Time:
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: Rmg for Dm

Date: 8/4/17

August 28, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 04, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40154476001	MW-304 I-43	Water	08/01/17 11:11	08/04/17 10:10
40154476002	MW-305 I-43	Water	08/01/17 09:48	08/04/17 10:10
40154476003	FIELD BLANK	Water	08/01/17 12:30	08/04/17 10:10

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SAMPLE ANALYTE COUNT

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40154476001	MW-304 I-43	EPA 6020	SDW	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			AXL	7	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40154476002	MW-305 I-43	EPA 6020	SDW
EPA 7470	AJT			1	PASI-G
	AXL			7	PASI-G
EPA 903.1	WRR			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
Total Radium Calculation	JAL			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G
40154476003	FIELD BLANK			EPA 6020	SDW
		EPA 7470	AJT	1	PASI-G
		EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Sample: MW-304 I-43 **Lab ID: 40154476001** Collected: 08/01/17 11:11 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 18:29	7440-36-0	
Arsenic	11.4	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 18:29	7440-38-2	
Barium	75.1	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 18:29	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 18:29	7440-41-7	
Boron	103	ug/L	11.0	3.3	1	08/15/17 08:57	08/17/17 18:56	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 18:29	7440-43-9	
Calcium	23000	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 18:29	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 18:29	7440-47-3	
Cobalt	0.088J	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 18:29	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 18:29	7439-92-1	
Lithium	9.2	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:29	7439-93-2	
Molybdenum	3.7	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 18:29	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 18:29	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:29	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 08:56	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.9	Std. Units			1		08/01/17 11:11		
Field Specific Conductance	382	umhos/cm			1		08/01/17 11:11		
Oxygen, Dissolved	0.4	mg/L			1		08/01/17 11:11	7782-44-7	
REDOX	-107	mV			1		08/01/17 11:11		
Turbidity	2.88	NTU			1		08/01/17 11:11		
Elevation Water Level	654.49	feet			1		08/01/17 11:11		
Temperature, Water (C)	14.3	deg C			1		08/01/17 11:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	222	mg/L	20.0	8.7	1		08/08/17 17:19		
9040 pH		Analytical Method: EPA 9040							
pH	8.0	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.8J	mg/L	2.0	0.50	1		08/15/17 22:12	16887-00-6	
Fluoride	0.53	mg/L	0.30	0.10	1		08/15/17 22:12	16984-48-8	
Sulfate	14.2	mg/L	3.0	1.0	1		08/15/17 22:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Sample: MW-305 I-43 **Lab ID: 40154476002** Collected: 08/01/17 09:48 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.53J	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 18:36	7440-36-0	
Arsenic	2.3	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 18:36	7440-38-2	
Barium	200	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 18:36	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 18:36	7440-41-7	
Boron	76.5	ug/L	11.0	3.3	1	08/15/17 08:57	08/17/17 19:03	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 18:36	7440-43-9	
Calcium	95900	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 18:36	7440-70-2	
Chromium	2.7J	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 18:36	7440-47-3	
Cobalt	0.56J	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 18:36	7440-48-4	
Lead	0.87J	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 18:36	7439-92-1	
Lithium	14.8	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:36	7439-93-2	
Molybdenum	3.6	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 18:36	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 18:36	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 18:36	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 09:03	7439-97-6	
Field Data		Analytical Method:							
Field pH	7.47	Std. Units			1		08/01/17 09:48		
Field Specific Conductance	901	umhos/cm			1		08/01/17 09:48		
Oxygen, Dissolved	0.74	mg/L			1		08/01/17 09:48	7782-44-7	
REDOX	-122	mV			1		08/01/17 09:48		
Turbidity	67.21	NTU			1		08/01/17 09:48		
Elevation Water Level	658.54	feet			1		08/01/17 09:48		
Temperature, Water (C)	12.4	deg C			1		08/01/17 09:48		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	570	mg/L	20.0	8.7	1		08/08/17 17:19		
9040 pH		Analytical Method: EPA 9040							
pH	7.5	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	21.3	mg/L	2.0	0.50	1		08/15/17 22:56	16887-00-6	
Fluoride	0.69	mg/L	0.30	0.10	1		08/15/17 22:56	16984-48-8	
Sulfate	130	mg/L	15.0	5.0	5		08/16/17 16:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Sample: FIELD BLANK **Lab ID: 40154476003** Collected: 08/01/17 12:30 Received: 08/04/17 10:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	08/15/17 08:57	08/16/17 16:06	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	08/15/17 08:57	08/16/17 16:06	7440-38-2	
Barium	<0.34	ug/L	1.1	0.34	1	08/15/17 08:57	08/16/17 16:06	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	08/15/17 08:57	08/16/17 16:06	7440-41-7	
Boron	<3.3	ug/L	11.0	3.3	1	08/15/17 08:57	08/16/17 16:06	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	08/15/17 08:57	08/16/17 16:06	7440-43-9	
Calcium	<69.8	ug/L	250	69.8	1	08/15/17 08:57	08/16/17 16:06	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	08/15/17 08:57	08/16/17 16:06	7440-47-3	
Cobalt	<0.085	ug/L	1.0	0.085	1	08/15/17 08:57	08/16/17 16:06	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	08/15/17 08:57	08/16/17 16:06	7439-92-1	
Lithium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 16:06	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	08/15/17 08:57	08/16/17 16:06	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	08/15/17 08:57	08/16/17 16:06	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	08/15/17 08:57	08/16/17 16:06	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	08/15/17 12:30	08/16/17 09:06	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		08/08/17 17:20		
9040 pH		Analytical Method: EPA 9040							
pH	5.8	Std. Units	0.10	0.010	1		08/08/17 10:25		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		08/15/17 23:06	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		08/15/17 23:06	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		08/15/17 23:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

QC Batch: 264633 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40154476001, 40154476002, 40154476003

METHOD BLANK: 1556920 Matrix: Water

Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	08/16/17 08:08	

LABORATORY CONTROL SAMPLE: 1556921

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1556922 1556923

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40154460008 Result	Spike Conc.	Spike Conc.	Result						
Mercury	ug/L	<0.13	5	5	4.5	4.6	89	91	85-115	2	20

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

QC Batch: 264594 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40154476001, 40154476002, 40154476003

METHOD BLANK: 1556761 Matrix: Water
Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	08/16/17 15:53	
Arsenic	ug/L	<0.28	1.0	08/16/17 15:53	
Barium	ug/L	<0.34	1.1	08/16/17 15:53	
Beryllium	ug/L	<0.18	1.0	08/16/17 15:53	
Boron	ug/L	<3.3	11.0	08/16/17 15:53	
Cadmium	ug/L	<0.081	1.0	08/16/17 15:53	
Calcium	ug/L	<69.8	250	08/16/17 15:53	
Chromium	ug/L	<1.0	3.4	08/16/17 15:53	
Cobalt	ug/L	<0.085	1.0	08/16/17 15:53	
Lead	ug/L	<0.20	1.0	08/16/17 15:53	
Lithium	ug/L	<0.14	1.0	08/16/17 15:53	
Molybdenum	ug/L	<0.44	1.5	08/16/17 15:53	
Selenium	ug/L	<0.32	1.1	08/16/17 15:53	
Thallium	ug/L	<0.14	1.0	08/16/17 15:53	

LABORATORY CONTROL SAMPLE: 1556762

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	520	104	80-120	
Arsenic	ug/L	500	505	101	80-120	
Barium	ug/L	500	517	103	80-120	
Beryllium	ug/L	500	524	105	80-120	
Boron	ug/L	500	499	100	80-120	
Cadmium	ug/L	500	530	106	80-120	
Calcium	ug/L	5000	5340	107	80-120	
Chromium	ug/L	500	502	100	80-120	
Cobalt	ug/L	500	505	101	80-120	
Lead	ug/L	500	500	100	80-120	
Lithium	ug/L	500	519	104	80-120	
Molybdenum	ug/L	500	519	104	80-120	
Selenium	ug/L	500	540	108	80-120	
Thallium	ug/L	500	493	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1556763 1556764

Parameter	Units	40154466001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Antimony	ug/L	<0.15	500	518	523	104	105	75-125	1	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1556763		1556764		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		40154466001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	ug/L	9.0	500	500	506	503	99	99	75-125	1	20		
Barium	ug/L	50.9	500	500	566	572	103	104	75-125	1	20		
Beryllium	ug/L	<0.18	500	500	516	519	103	104	75-125	0	20		
Boron	ug/L	1890	500	500	2350	2400	91	101	75-125	2	20		
Cadmium	ug/L	<0.081	500	500	519	524	104	105	75-125	1	20		
Calcium	ug/L	62600	5000	5000	71200	74000	171	228	75-125	4	20	P6	
Chromium	ug/L	1.1J	500	500	495	495	99	99	75-125	0	20		
Cobalt	ug/L	0.53J	500	500	487	489	97	98	75-125	0	20		
Lead	ug/L	0.44J	500	500	513	502	103	100	75-125	2	20		
Lithium	ug/L	52.2	500	500	571	579	104	105	75-125	1	20		
Molybdenum	ug/L	649	500	500	1160	1170	102	104	75-125	1	20		
Selenium	ug/L	<0.32	500	500	527	526	105	105	75-125	0	20		
Thallium	ug/L	<0.14	500	500	512	499	102	100	75-125	3	20		

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

QC Batch: 263939 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40154476001, 40154476002, 40154476003

METHOD BLANK: 1553281 Matrix: Water
Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	08/08/17 17:13	

LABORATORY CONTROL SAMPLE: 1553282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	553	582	105	80-120	

SAMPLE DUPLICATE: 1553283

Parameter	Units	40154446001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	220	214	3	5	

SAMPLE DUPLICATE: 1553284

Parameter	Units	40154514001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	454	462	2	5	

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

QC Batch: 263876 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40154476001, 40154476002, 40154476003

SAMPLE DUPLICATE: 1552940

Parameter	Units	40154302001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.8	7.8	0	20	H6

SAMPLE DUPLICATE: 1552941

Parameter	Units	40154468001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.1	7.1	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

QC Batch: 264190 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40154476001, 40154476002, 40154476003

METHOD BLANK: 1554662 Matrix: Water
Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	08/15/17 18:25	
Fluoride	mg/L	<0.10	0.30	08/15/17 18:25	
Sulfate	mg/L	<1.0	3.0	08/15/17 18:25	

LABORATORY CONTROL SAMPLE: 1554663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.8	104	90-110	
Fluoride	mg/L	2	2.1	103	90-110	
Sulfate	mg/L	20	20.7	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1554664 1554665

Parameter	Units	40154446008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Chloride	mg/L	0.92J	20	20	21.5	21.7	103	104	90-110	1	15	
Fluoride	mg/L	0.23J	2	2	2.3	2.3	102	103	90-110	1	15	
Sulfate	mg/L	51.8	100	100	154	155	103	103	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1554666 1554667

Parameter	Units	40154680001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Chloride	mg/L	249	400	400	661	662	103	103	90-110	0	15	
Fluoride	mg/L	<2.0	40	40	41.7	42.3	104	106	90-110	1	15	
Sulfate	mg/L	<20.0	400	400	417	421	104	105	90-110	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-304 I-43		Lab ID: 40154476001	Collected: 08/01/17 11:11	Received: 08/04/17 10:10	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 903.1	2.05 ± 0.807 (0.768) C:NA T:90%	pCi/L	08/18/17 11:27	13982-63-3	
Radium-228		EPA 904.0	0.0736 ± 0.296 (0.671) C:78% T:92%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium		Total Radium Calculation	1.10 ± 0.827 (1.13)	pCi/L	08/28/17 12:31	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW-305 I-43		Lab ID: 40154476002	Collected: 08/01/17 09:48	Received: 08/04/17 10:10	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 903.1	0.791 ± 0.440 (0.165) C:NA T:94%	pCi/L	08/18/17 11:27	13982-63-3	
Radium-228		EPA 904.0	0.878 ± 0.403 (0.669) C:75% T:86%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium		Total Radium Calculation	1.31 ± 0.857 (1.14)	pCi/L	08/28/17 12:31	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK		Lab ID: 40154476003	Collected: 08/01/17 12:30	Received: 08/04/17 10:10	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226		EPA 903.1	0.378 ± 0.464 (0.762) C:NA T:94%	pCi/L	08/18/17 11:27	13982-63-3	
Radium-228		EPA 904.0	0.680 ± 0.448 (0.856) C:77% T:74%	pCi/L	08/18/17 16:39	15262-20-1	
Total Radium		Total Radium Calculation	0.652 ± 0.692 (1.29)	pCi/L	08/28/17 12:31	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

QC Batch:	267781	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	40154476001, 40154476002, 40154476003		

METHOD BLANK: 1317982 Matrix: Water

Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.056 ± 0.257 (0.607) C:NA T:95%	pCi/L	08/18/17 11:11	

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 WPL EDGEWATER I-43

Pace Project No.: 40154476

QC Batch: 267787 Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40154476001, 40154476002, 40154476003

METHOD BLANK: 1317988 Matrix: Water

Associated Lab Samples: 40154476001, 40154476002, 40154476003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.273 ± 0.344 (0.731) C:82% T:81%	pCi/L	08/18/17 16:37	

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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA required holding time.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 WPL EDGEWATER I-43
Pace Project No.: 40154476

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40154476001	MW-304 I-43	EPA 3010	264594	EPA 6020	264684
40154476002	MW-305 I-43	EPA 3010	264594	EPA 6020	264684
40154476003	FIELD BLANK	EPA 3010	264594	EPA 6020	264684
40154476001	MW-304 I-43	EPA 7470	264633	EPA 7470	264662
40154476002	MW-305 I-43	EPA 7470	264633	EPA 7470	264662
40154476003	FIELD BLANK	EPA 7470	264633	EPA 7470	264662
40154476001	MW-304 I-43				
40154476002	MW-305 I-43				
40154476001	MW-304 I-43	EPA 903.1	267781		
40154476002	MW-305 I-43	EPA 903.1	267781		
40154476003	FIELD BLANK	EPA 903.1	267781		
40154476001	MW-304 I-43	EPA 904.0	267787		
40154476002	MW-305 I-43	EPA 904.0	267787		
40154476003	FIELD BLANK	EPA 904.0	267787		
40154476001	MW-304 I-43	Total Radium Calculation	269753		
40154476002	MW-305 I-43	Total Radium Calculation	269753		
40154476003	FIELD BLANK	Total Radium Calculation	269753		
40154476001	MW-304 I-43	SM 2540C	263939		
40154476002	MW-305 I-43	SM 2540C	263939		
40154476003	FIELD BLANK	SM 2540C	263939		
40154476001	MW-304 I-43	EPA 9040	263876		
40154476002	MW-305 I-43	EPA 9040	263876		
40154476003	FIELD BLANK	EPA 9040	263876		
40154476001	MW-304 I-43	EPA 300.0	264190		
40154476002	MW-305 I-43	EPA 300.0	264190		
40154476003	FIELD BLANK	EPA 300.0	264190		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers
 Branch/Location: Madison WI
 Project Contact: My Bloodgett
 Phone: 608-216-7362
 Project Number: 25216069.00
 Project Name: WOL Edgewater F-43
 Project State: WI
 Sampled By (Print): Gary Storkel
 Sampled By (Sign): Gary Storkel
 PO #:
 Regulatory Program:
 Data Package Options (billable):
 EPA Level III On your sample (billable)
 EPA Level IV NOT needed on your sample
 Matrix Codes:
 A = Air, B = Biot, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe
 Matrix Codes:
 W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe
 Matrix Codes:
 W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe



CHAIN OF CUSTODY

As=Name B=HCL C=H2SO4 D=HNO3 E=OI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other
 Preservation Codes

REGISTRATION (YES/NO)
 PRESERVATION (CODE)*

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX	Analyses Requested	V/I/N	
						Pick Letter	Letter
001	MW-304 F-43	8/17	111	GW	Chloride Fluoride Sulfate TDS	X	X
002	MW-305 F-43	8/17	0948	GW	pH	X	X
003	Field Blank	8/17	R30	GW	Radium 226	X	X
					Radium 226	X	X
					B, Cd, Sb, As, Ba, Be, Cu, Cr	X	X
					Co, Pb, Li, Mo, Si, Ti	X	X
					Mercury	X	X

Relinquished By: Gary Storkel Date/Time: 8/31/08 0800
 Relinquished By: My Bloodgett Date/Time: 8/31/08 1415
 Relinquished By: Gary Storkel Date/Time: 8/31/08 1010
 Relinquished By: My Bloodgett Date/Time: 8/31/08 1010
 Received By: My Bloodgett Date/Time: 8/31/08 900
 Received By: My Bloodgett Date/Time: 8/31/08 900
 Received By: My Bloodgett Date/Time: 8/31/08 1010
 Received By: My Bloodgett Date/Time: 8/31/08 1010

Quote #:
 Mail To Contact:
 Mail To Company:
 Mail To Address:
 Invoice To Contact:
 Invoice To Company:
 Invoice To Address:
 Invoice To Phone:
 CLIENT COMMENTS: 2-1LP 3-250mlp #40
 LAB COMMENTS (Lab Use Only):
 Profile #

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436
 Page 1 of 1
 40154476
 Page 19 of 20

Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302



Project #:

WO#: 40154476



Client Name: SCS Engineers

Courier: Fed Ex UPS Client Pace Other: CS Logistics

Tracking #:

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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used

N/A

Type of Ice: Wet Blue Dry None

Samples on ice, cooling process has begun

Cooler Temperature

Uncorr: 201 /Corr:

Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Person examining contents:

Date: 8/4/17

Initials: SL

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>NO MS/MSD</u> <u>8/4/17</u>
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	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>002 times 0848, 001 ID MW-304, 002 ID MW-305.</u>
-Includes date/time/ID/Analysis Matrix: <u>W</u>		<u>8-4-17 KR</u>
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: <u>SL</u> Lab Std #ID of preservative: Date/Time:
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ If checked, see attached form for additional comments

Comments/ Resolution: _____

Project Manager Review: Rmk for Dr

Date: 8/4/17

A11 Fall 2017 Detection Sampling, Analytical Laboratory Report

November 16, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Kyle Kramer, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150

Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40159478001	MW 305	Water	10/23/17 14:16	10/26/17 09:55
40159478002	FIELD BLANK	Water	10/23/17 14:30	10/26/17 09:55

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40159478001	MW 305	EPA 6020	DS1	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
		40159478002	FIELD BLANK	EPA 6020	DS1
EPA 7470	AJT			1	PASI-G
EPA 903.1	KAC			1	PASI-PA
EPA 904.0	JLW			1	PASI-PA
Total Radium Calculation	CMC			1	PASI-PA
SM 2540C	TMK			1	PASI-G
EPA 9040	ALY			1	PASI-G
EPA 300.0	HMB			3	PASI-G

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Sample: MW 305 **Lab ID: 40159478001** Collected: 10/23/17 14:16 Received: 10/26/17 09:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.23J	ug/L	1.0	0.15	1	11/01/17 07:05	11/06/17 22:30	7440-36-0	B
Arsenic	2.4	ug/L	1.0	0.28	1	11/01/17 07:05	11/06/17 22:30	7440-38-2	
Barium	195	ug/L	1.1	0.34	1	11/01/17 07:05	11/06/17 22:30	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	11/01/17 07:05	11/06/17 22:30	7440-41-7	
Boron	70.0	ug/L	11.0	3.3	1	11/01/17 07:05	11/06/17 22:30	7440-42-8	
Cadmium	0.10J	ug/L	1.0	0.081	1	11/01/17 07:05	11/06/17 22:30	7440-43-9	
Calcium	90700	ug/L	250	69.8	1	11/01/17 07:05	11/04/17 09:07	7440-70-2	
Chromium	1.8J	ug/L	3.4	1.0	1	11/01/17 07:05	11/04/17 09:07	7440-47-3	
Cobalt	0.50J	ug/L	1.0	0.085	1	11/01/17 07:05	11/04/17 09:07	7440-48-4	
Lead	0.44J	ug/L	1.0	0.20	1	11/01/17 07:05	11/06/17 22:30	7439-92-1	
Lithium	12.4	ug/L	1.0	0.14	1	11/01/17 07:05	11/06/17 22:30	7439-93-2	
Molybdenum	3.2	ug/L	1.5	0.44	1	11/01/17 07:05	11/06/17 22:30	7439-98-7	B
Selenium	<0.32	ug/L	1.1	0.32	1	11/01/17 07:05	11/06/17 22:30	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/17 07:05	11/06/17 22:30	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	11/03/17 10:45	11/06/17 08:59	7439-97-6	M0
Field Data		Analytical Method:							
Field pH	7.55	Std. Units			1		10/23/17 14:16		
Field Specific Conductance	886	umhos/cm			1		10/23/17 14:16		
Oxygen, Dissolved	0.2	mg/L			1		10/23/17 14:16	7782-44-7	
REDOX	-125	mV			1		10/23/17 14:16		
Turbidity	42.54	NTU			1		10/23/17 14:16		
Static Water Level	657.22	feet			1		10/23/17 14:16		
Temperature, Water (C)	10.3	deg C			1		10/23/17 14:16		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	540	mg/L	20.0	8.7	1		10/30/17 17:44		
9040 pH		Analytical Method: EPA 9040							
pH	7.7	Std. Units	0.10	0.010	1		10/31/17 10:10		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	21.5	mg/L	2.0	0.50	1		11/07/17 14:07	16887-00-6	
Fluoride	0.64	mg/L	0.30	0.10	1		11/07/17 14:07	16984-48-8	
Sulfate	134	mg/L	15.0	5.0	5		11/08/17 01:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Sample: FIELD BLANK **Lab ID: 40159478002** Collected: 10/23/17 14:30 Received: 10/26/17 09:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	11/01/17 07:05	11/06/17 21:00	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	11/01/17 07:05	11/06/17 21:00	7440-38-2	
Barium	<0.34	ug/L	1.1	0.34	1	11/01/17 07:05	11/06/17 21:00	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	11/01/17 07:05	11/06/17 21:00	7440-41-7	
Boron	<3.3	ug/L	11.0	3.3	1	11/01/17 07:05	11/06/17 21:00	7440-42-8	
Cadmium	<0.081	ug/L	1.0	0.081	1	11/01/17 07:05	11/06/17 21:00	7440-43-9	
Calcium	<69.8	ug/L	250	69.8	1	11/01/17 07:05	11/04/17 07:07	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	11/01/17 07:05	11/04/17 07:07	7440-47-3	
Cobalt	<0.085	ug/L	1.0	0.085	1	11/01/17 07:05	11/04/17 07:07	7440-48-4	
Lead	<0.20	ug/L	1.0	0.20	1	11/01/17 07:05	11/06/17 21:00	7439-92-1	
Lithium	<0.14	ug/L	1.0	0.14	1	11/01/17 07:05	11/06/17 21:00	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	11/01/17 07:05	11/06/17 21:00	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	11/01/17 07:05	11/06/17 21:00	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	11/01/17 07:05	11/06/17 21:00	7440-28-0	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<0.13	ug/L	0.42	0.13	1	11/03/17 10:45	11/06/17 09:06	7439-97-6	
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		10/30/17 17:44		
9040 pH		Analytical Method: EPA 9040							
pH	6.2	Std. Units	0.10	0.010	1		10/31/17 10:10		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		11/07/17 14:18	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		11/07/17 14:18	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		11/07/17 14:18	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

QC Batch: 272937 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1605932 Matrix: Water

Associated Lab Samples: 40159478001, 40159478002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.13	0.42	11/06/17 08:52	

LABORATORY CONTROL SAMPLE: 1605933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1605934 1605935

Parameter	Units	1605934		1605935		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40159478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	<0.13	5	5	5.9	5.8	119	116	85-115	2	20 M0

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

QC Batch: 272592 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1603396 Matrix: Water
Associated Lab Samples: 40159478001, 40159478002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	0.18J	1.0	11/06/17 20:53	
Arsenic	ug/L	<0.28	1.0	11/06/17 20:53	
Barium	ug/L	<0.34	1.1	11/06/17 20:53	
Beryllium	ug/L	<0.18	1.0	11/06/17 20:53	
Boron	ug/L	<3.3	11.0	11/06/17 20:53	
Cadmium	ug/L	<0.081	1.0	11/06/17 20:53	
Calcium	ug/L	<69.8	250	11/04/17 07:00	
Chromium	ug/L	<1.0	3.4	11/04/17 07:00	
Cobalt	ug/L	<0.085	1.0	11/04/17 07:00	
Lead	ug/L	<0.20	1.0	11/06/17 20:53	
Lithium	ug/L	<0.14	1.0	11/06/17 20:53	
Molybdenum	ug/L	0.46J	1.5	11/06/17 20:53	
Selenium	ug/L	<0.32	1.1	11/06/17 20:53	
Thallium	ug/L	<0.14	1.0	11/06/17 20:53	

LABORATORY CONTROL SAMPLE: 1603397

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	535	107	80-120	
Arsenic	ug/L	500	504	101	80-120	
Barium	ug/L	500	537	107	80-120	
Beryllium	ug/L	500	533	107	80-120	
Boron	ug/L	500	513	103	80-120	
Cadmium	ug/L	500	524	105	80-120	
Calcium	ug/L	5000	5090	102	80-120	
Chromium	ug/L	500	506	101	80-120	
Cobalt	ug/L	500	501	100	80-120	
Lead	ug/L	500	481	96	80-120	
Lithium	ug/L	500	516	103	80-120	
Molybdenum	ug/L	500	508	102	80-120	
Selenium	ug/L	500	530	106	80-120	
Thallium	ug/L	500	492	98	80-120	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Parameter	Units	40159682002		1603398		1603399		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Antimony	ug/L	0.00074J mg/L	500	500	530	519	106	104	75-125	2	20			
Arsenic	ug/L	0.0037 mg/L	500	500	481	484	95	96	75-125	1	20			
Barium	ug/L	0.091 mg/L	500	500	619	605	106	103	75-125	2	20			
Beryllium	ug/L	0.00037J mg/L	500	500	451	413	90	83	75-125	9	20			
Boron	ug/L	77.5	500	500	517	456	88	76	75-125	13	20			
Cadmium	ug/L	0.00059J mg/L	500	500	507	497	101	99	75-125	2	20			
Calcium	ug/L	79.9 mg/L	5000	5000	80800	79800	17	-1	75-125	1	20	P6		
Chromium	ug/L	0.0099 mg/L	500	500	494	483	97	95	75-125	2	20			
Cobalt	ug/L	0.0044 mg/L	500	500	480	472	95	93	75-125	2	20			
Lead	ug/L	0.0047 mg/L	500	500	473	465	94	92	75-125	2	20			
Lithium	ug/L	5.7	500	500	439	395	87	78	75-125	11	20			
Molybdenum	ug/L	6.0	500	500	482	472	95	93	75-125	2	20			
Selenium	ug/L	0.0035 mg/L	500	500	502	504	100	100	75-125	0	20			
Thallium	ug/L	0.00052J mg/L	500	500	484	471	97	94	75-125	3	20			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

QC Batch: 272411 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1602166 Matrix: Water
Associated Lab Samples: 40159478001, 40159478002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/30/17 17:43	

LABORATORY CONTROL SAMPLE: 1602167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	635	548	86	80-120	

SAMPLE DUPLICATE: 1602168

Parameter	Units	40159477001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	508	508	0	5	

SAMPLE DUPLICATE: 1602169

Parameter	Units	40159478001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	538	0	5	

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

QC Batch: 272521 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40159478001, 40159478002

SAMPLE DUPLICATE: 1602862

Parameter	Units	40159205001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.0	7.0	0	20	H6

SAMPLE DUPLICATE: 1602863

Parameter	Units	40159605001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.2	6.3	2	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

QC Batch: 273168 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1607421 Matrix: Water
Associated Lab Samples: 40159478001, 40159478002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	11/07/17 10:47	
Fluoride	mg/L	<0.10	0.30	11/07/17 10:47	
Sulfate	mg/L	<1.0	3.0	11/07/17 10:47	

LABORATORY CONTROL SAMPLE: 1607422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.5	102	90-110	
Fluoride	mg/L	2	2.0	101	90-110	
Sulfate	mg/L	20	20.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1607423 1607424

Parameter	Units	40159418001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	5.4	20	20	26.9	26.9	108	108	90-110	0	15	
Fluoride	mg/L	1.3	2	2	3.4	3.4	102	103	90-110	0	15	
Sulfate	mg/L	162	200	200	365	372	102	105	90-110	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1607425 1607426

Parameter	Units	40159487004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Chloride	mg/L	305	200	200	497	509	96	102	90-110	2	15	
Fluoride	mg/L	<0.10	2	2	2.0	2.0	100	100	90-110	0	15	
Sulfate	mg/L	29.3	20	20	50.3	50.2	105	104	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: MW 305		Lab ID: 40159478001	Collected: 10/23/17 14:16	Received: 10/26/17 09:55	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	0.277 ± 0.290 (0.408)	pCi/L	11/10/17 11:28	13982-63-3		
		C:NA T:89%					
Radium-228	EPA 904.0	0.969 ± 0.379 (0.555)	pCi/L	11/06/17 14:53	15262-20-1		
		C:81% T:84%					
Total Radium	Total Radium Calculation	1.25 ± 0.669 (0.963)	pCi/L	11/16/17 14:27	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: FIELD BLANK		Lab ID: 40159478002	Collected: 10/23/17 14:30	Received: 10/26/17 09:55	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	0.329 ± 0.306 (0.404)	pCi/L	11/10/17 11:28	13982-63-3		
		C:NA T:89%					
Radium-228	EPA 904.0	0.255 ± 0.300 (0.628)	pCi/L	11/06/17 14:53	15262-20-1		
		C:81% T:75%					
Total Radium	Total Radium Calculation	0.584 ± 0.606 (1.03)	pCi/L	11/16/17 14:27	7440-14-4		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

QC Batch: 277526

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1363872

Matrix: Water

Associated Lab Samples: 40159478001, 40159478002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.155 ± 0.236 (0.620) C:NA T:95%	pCi/L	11/10/17 10:57	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

QC Batch: 277532

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40159478001, 40159478002

METHOD BLANK: 1363892

Matrix: Water

Associated Lab Samples: 40159478001, 40159478002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0696 ± 0.247 (0.563) C:77% T:92%	pCi/L	11/06/17 11:30	

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QUALIFIERS

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159478

DEFINITIONS

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-PA Pace Analytical Services - Greensburg

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

H6 Analysis initiated outside of the 15 minute EPA required 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159478

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40159478001	MW 305	EPA 3010	272592	EPA 6020	272717
40159478002	FIELD BLANK	EPA 3010	272592	EPA 6020	272717
40159478001	MW 305	EPA 7470	272937	EPA 7470	273089
40159478002	FIELD BLANK	EPA 7470	272937	EPA 7470	273089
40159478001	MW 305				
40159478001	MW 305	EPA 903.1	277526		
40159478002	FIELD BLANK	EPA 903.1	277526		
40159478001	MW 305	EPA 904.0	277532		
40159478002	FIELD BLANK	EPA 904.0	277532		
40159478001	MW 305	Total Radium Calculation	279370		
40159478002	FIELD BLANK	Total Radium Calculation	279370		
40159478001	MW 305	SM 2540C	272411		
40159478002	FIELD BLANK	SM 2540C	272411		
40159478001	MW 305	EPA 9040	272521		
40159478002	FIELD BLANK	EPA 9040	272521		
40159478001	MW 305	EPA 300.0	273168		
40159478002	FIELD BLANK	EPA 300.0	273168		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers
 Branch/Location: Madison WI
 Project Contact: Meg Blodgett
 Phone: 608-216-7362
 Project Number: 25216069.00
 Project Name: Edgewater I43 Ash Fill
 Project State: WI
 Sampled By (Print): Gary Storkel
 Sampled By (Sign): Gary Storkel
 PO #: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MSMSD (billable)
 On your sample
 NOT needed on your sample

Matrix Codes
 A = Air
 B = Biolo
 C = Charcoal
 S = Soil
 Sl = Sludge
 W = Water
 DW = Drinking Water
 GW = Ground Water
 SW = Surface Water
 WP = Waste Water

Regulatory Program: _____

CLIENT FIELD ID
 001 MW 305
 002 Field Blank



CHAIN OF CUSTODY

Preservation Codes
 A=None B=HCL C=H2SO4 D=HNO3 E=D1 Water F=Methanol G=NaOH
 H= Sodium Bisulfate Solution I= Sodium Thiosulfate J= Other

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

ANALYSES REQUESTED	V/N	Pick Letter	Filtered? (YES/NO)	Preservation Code*
TDS	N	A		
Chloride Fluoride Sulfate	N	A		
pH	N	A		
Radium 226/226	N	D		
Mercury	N	D		
B, Ca, Sb, As, Ba Be, Cd, Cr, Co	N	D		
Pb, Li, Mo, Si, Ti	N	D		

DATE	TIME	MATRIX	RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	PROFILE #
10/25/17	0800	GLS	Gary Storkel	10/25/17 0800	Mary Fanni	10/25/17 9:10		4-250MLP #A00 2-1LP DD	
10/26/17	1320		Mary Fanni	10/26/17 1320	Kam Kojala	10/26/17 0955			
10/26/17	0955		OS Logistics	10/26/17 0955					

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephones: _____
 Fax: _____

Relinquished By: _____ Date/Time: _____
 Relinquished By: _____ Date/Time: _____
 Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____

Quote #:
 Mail To Contact:
 Mail To Company:
 Mail To Address:
 Invoice To Contact:
 Invoice To Company:
 Invoice To Address:
 Invoice To Phone:
 CLIENT COMMENTS
 LAB COMMENTS (Lab Use Only)
 Profile #

COOLER CUSTODY SEAL
 Present / Not Present
 Intact / Not Intact

Receipt Temp = 20.7 °C
 Sample Reading pH
 OK / Adjusted



Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Project **WO#: 40159478**

Client Name: SCS Eng.

Courier: Fed Ex UPS Client Pace Other: CS Logistics



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

Custody Seal on Samples Present: yes no Seals intact: yes no
Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used NA Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: R01 /Corr: _____ Biological Tissue is Frozen: yes no

Temp Blank Present: yes no
Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 10-26-17
Initials: KR

Comments:

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.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>No MS/MSD Vol.</u> <u>10-26-17 KR</u>
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR 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: <u>W</u>		
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <input checked="" type="checkbox"/> HNO3 <input type="checkbox"/> H2SO4 <input type="checkbox"/> NaOH <input type="checkbox"/> NaOH + ZnAct <u>001 1-1Lp^D pH=4 Lab added 10mLs</u> <u>HNO3 pH≤2.</u>
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>10-26-17 KR</u>
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>KR</u> Lab Std #/ID of preservative <u>175371</u> Date/Time: <u>10/26/17 1215</u>
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
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: _____
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____
If checked, see attached form for additional comments

Project Manager Review: RKR For PM Date: 10/26/17

November 08, 2017

Meghan Blodgett
SCS ENGINEERS
2830 Dairy Drive
Madison, WI 53718

RE: Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159479

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 26, 2017. 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,



Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Tom Karwoski, SCS ENGINEERS
Kyle Kramer, SCS ENGINEERS
Jeff Maxted, ALLIANT ENERGY
Marc Morandi, ALLIANT ENERGY



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40159479001	MW 301	Water	10/23/17 10:31	10/26/17 09:55
40159479002	MW 302	Water	10/23/17 11:11	10/26/17 09:55
40159479003	MW 303	Water	10/23/17 11:56	10/26/17 09:55
40159479004	MW 304	Water	10/23/17 12:46	10/26/17 09:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40159479001	MW 301	EPA 6020	DS1	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40159479002	MW 302	EPA 6020	DS1	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40159479003	MW 303	EPA 6020	DS1	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40159479004	MW 304	EPA 6020	DS1	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Sample: MW 301 **Lab ID: 40159479001** Collected: 10/23/17 10:31 Received: 10/26/17 09:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Boron	149	ug/L	11.0	3.3	1	10/31/17 10:40	11/04/17 03:43	7440-42-8	
Calcium	48700	ug/L	250	69.8	1	10/31/17 10:40	11/04/17 03:43	7440-70-2	
Field Data		Analytical Method:							
Field pH	7.82	Std. Units			1		10/23/17 10:31		
Field Specific Conductance	378	umhos/cm			1		10/23/17 10:31		
Oxygen, Dissolved	0.6	mg/L			1		10/23/17 10:31	7782-44-7	
REDOX	-46	mV			1		10/23/17 10:31		
Turbidity	150.6	NTU			1		10/23/17 10:31		
Static Water Level	652.03	feet			1		10/23/17 10:31		
Temperature, Water (C)	9.7	deg C			1		10/23/17 10:31		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	236	mg/L	20.0	8.7	1		10/30/17 17:45		
9040 pH		Analytical Method: EPA 9040							
pH	7.8	Std. Units	0.10	0.010	1		10/31/17 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	4.7	mg/L	2.0	0.50	1		11/07/17 14:28	16887-00-6	
Fluoride	0.62	mg/L	0.30	0.10	1		11/07/17 14:28	16984-48-8	
Sulfate	8.6	mg/L	3.0	1.0	1		11/07/17 14:28	14808-79-8	

Sample: MW 302 **Lab ID: 40159479002** Collected: 10/23/17 11:11 Received: 10/26/17 09:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Boron	128	ug/L	11.0	3.3	1	10/31/17 10:40	11/04/17 03:50	7440-42-8	
Calcium	31200	ug/L	250	69.8	1	10/31/17 10:40	11/04/17 03:50	7440-70-2	
Field Data		Analytical Method:							
Field pH	7.70	Std. Units			1		10/23/17 11:11		
Field Specific Conductance	455	umhos/cm			1		10/23/17 11:11		
Oxygen, Dissolved	0.7	mg/L			1		10/23/17 11:11	7782-44-7	
REDOX	70	mV			1		10/23/17 11:11		
Turbidity	33.56	NTU			1		10/23/17 11:11		
Static Water Level	652.05	feet			1		10/23/17 11:11		
Temperature, Water (C)	10.4	deg C			1		10/23/17 11:11		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	238	mg/L	20.0	8.7	1		10/30/17 17:45		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Sample: MW 302 Lab ID: 40159479002 Collected: 10/23/17 11:11 Received: 10/26/17 09:55 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
9040 pH Analytical Method: EPA 9040									
pH	7.9	Std. Units	0.10	0.010	1		10/31/17 10:40		H6
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	5.5	mg/L	2.0	0.50	1		11/07/17 14:39	16887-00-6	
Fluoride	0.71	mg/L	0.30	0.10	1		11/07/17 14:39	16984-48-8	
Sulfate	26.3	mg/L	3.0	1.0	1		11/07/17 14:39	14808-79-8	

Sample: MW 303 Lab ID: 40159479003 Collected: 10/23/17 11:56 Received: 10/26/17 09:55 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Boron	89.0	ug/L	11.0	3.3	1	10/31/17 10:40	11/04/17 03:58	7440-42-8	
Calcium	29100	ug/L	250	69.8	1	10/31/17 10:40	11/04/17 03:58	7440-70-2	
Field Data Analytical Method:									
Field pH	7.59	Std. Units			1		10/23/17 11:56		
Field Specific Conductance	557	umhos/cm			1		10/23/17 11:56		
Oxygen, Dissolved	1	mg/L			1		10/23/17 11:56	7782-44-7	
REDOX	88	mV			1		10/23/17 11:56		
Turbidity	3.06	NTU			1		10/23/17 11:56		
Static Water Level	652.03	feet			1		10/23/17 11:56		
Temperature, Water (C)	10.1	deg C			1		10/23/17 11:56		
2540C Total Dissolved Solids Analytical Method: SM 2540C									
Total Dissolved Solids	304	mg/L	20.0	8.7	1		10/30/17 17:45		
9040 pH Analytical Method: EPA 9040									
pH	7.9	Std. Units	0.10	0.010	1		10/31/17 10:40		H6
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Chloride	6.8	mg/L	2.0	0.50	1		11/07/17 15:21	16887-00-6	
Fluoride	0.66	mg/L	0.30	0.10	1		11/07/17 15:21	16984-48-8	
Sulfate	67.1	mg/L	15.0	5.0	5		11/08/17 01:22	14808-79-8	

Sample: MW 304 Lab ID: 40159479004 Collected: 10/23/17 12:46 Received: 10/26/17 09:55 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Boron	104	ug/L	11.0	3.3	1	10/31/17 10:40	11/04/17 04:05	7440-42-8	
Calcium	20100	ug/L	250	69.8	1	10/31/17 10:40	11/04/17 04:05	7440-70-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Sample: MW 304 **Lab ID: 40159479004** Collected: 10/23/17 12:46 Received: 10/26/17 09:55 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Field Data		Analytical Method:							
Field pH	7.74	Std. Units			1		10/23/17 12:46		
Field Specific Conductance	387	umhos/cm			1		10/23/17 12:46		
Oxygen, Dissolved	0.8	mg/L			1		10/23/17 12:46	7782-44-7	
REDOX	145	mV			1		10/23/17 12:46		
Turbidity	1.7	NTU			1		10/23/17 12:46		
Static Water Level	653.65	feet			1		10/23/17 12:46		
Temperature, Water (C)	10	deg C			1		10/23/17 12:46		
2540C Total Dissolved Solids		Analytical Method: SM 2540C							
Total Dissolved Solids	208	mg/L	20.0	8.7	1		10/30/17 17:45		
9040 pH		Analytical Method: EPA 9040							
pH	7.9	Std. Units	0.10	0.010	1		10/31/17 10:40		H6
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	1.7J	mg/L	2.0	0.50	1		11/07/17 15:31	16887-00-6	
Fluoride	0.54	mg/L	0.30	0.10	1		11/07/17 15:31	16984-48-8	
Sulfate	14.2	mg/L	3.0	1.0	1		11/07/17 15:31	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

QC Batch: 272475 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

METHOD BLANK: 1602625 Matrix: Water
Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.3	11.0	11/04/17 00:43	
Calcium	ug/L	<69.8	250	11/04/17 00:43	

LABORATORY CONTROL SAMPLE: 1602626

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	448	90	80-120	
Calcium	ug/L	5000	4680	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1602627 1602628

Parameter	Units	40159197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	159	500	500	620	625	92	93	75-125	1	20	
Calcium	ug/L	56200	5000	5000	55200	59100	-19	58	75-125	7	20	P6

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

QC Batch: 272411

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

METHOD BLANK: 1602166

Matrix: Water

Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/30/17 17:43	

LABORATORY CONTROL SAMPLE: 1602167

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	635	548	86	80-120	

SAMPLE DUPLICATE: 1602168

Parameter	Units	40159477001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	508	508	0	5	

SAMPLE DUPLICATE: 1602169

Parameter	Units	40159478001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	538	0	5	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

QC Batch: 272521 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40159479001, 40159479002

SAMPLE DUPLICATE: 1602862

Parameter	Units	40159205001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.0	7.0	0	20	H6

SAMPLE DUPLICATE: 1602863

Parameter	Units	40159605001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.2	6.3	2	20	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

QC Batch: 272530 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40159479003, 40159479004

SAMPLE DUPLICATE: 1602902

Parameter	Units	40159479003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.9	7.9	0	20	H6

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QUALITY CONTROL DATA

Project: 25216069.00 EDGEWATER I43 CCR
Pace Project No.: 40159479

QC Batch: 273168 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

METHOD BLANK: 1607421 Matrix: Water
Associated Lab Samples: 40159479001, 40159479002, 40159479003, 40159479004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	11/07/17 10:47	
Fluoride	mg/L	<0.10	0.30	11/07/17 10:47	
Sulfate	mg/L	<1.0	3.0	11/07/17 10:47	

LABORATORY CONTROL SAMPLE: 1607422

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.5	102	90-110	
Fluoride	mg/L	2	2.0	101	90-110	
Sulfate	mg/L	20	20.5	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1607423 1607424

Parameter	Units	40159418001 Result	MS Spike Conc.	MSD Spike Conc.	1607423		1607424		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	5.4	20	20	26.9	26.9	108	108	90-110	0	15	
Fluoride	mg/L	1.3	2	2	3.4	3.4	102	103	90-110	0	15	
Sulfate	mg/L	162	200	200	365	372	102	105	90-110	2	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1607425 1607426

Parameter	Units	40159487004 Result	MS Spike Conc.	MSD Spike Conc.	1607425		1607426		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	305	200	200	497	509	96	102	90-110	2	15	
Fluoride	mg/L	<0.10	2	2	2.0	2.0	100	100	90-110	0	15	
Sulfate	mg/L	29.3	20	20	50.3	50.2	105	104	90-110	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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 at or above the adjusted LOD.

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

H6 Analysis initiated outside of the 15 minute EPA required holding time.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069.00 EDGEWATER I43 CCR

Pace Project No.: 40159479

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40159479001	MW 301	EPA 3010	272475	EPA 6020	272659
40159479002	MW 302	EPA 3010	272475	EPA 6020	272659
40159479003	MW 303	EPA 3010	272475	EPA 6020	272659
40159479004	MW 304	EPA 3010	272475	EPA 6020	272659
40159479001	MW 301				
40159479002	MW 302				
40159479003	MW 303				
40159479004	MW 304				
40159479001	MW 301	SM 2540C	272411		
40159479002	MW 302	SM 2540C	272411		
40159479003	MW 303	SM 2540C	272411		
40159479004	MW 304	SM 2540C	272411		
40159479001	MW 301	EPA 9040	272521		
40159479002	MW 302	EPA 9040	272521		
40159479003	MW 303	EPA 9040	272530		
40159479004	MW 304	EPA 9040	272530		
40159479001	MW 301	EPA 300.0	273168		
40159479002	MW 302	EPA 300.0	273168		
40159479003	MW 303	EPA 300.0	273168		
40159479004	MW 304	EPA 300.0	273168		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**
 Branch/Location: **Madison WI**
 Project Contact: **Meg Blodgett**
 Phone: **608-216-7362**
 Project Number: **25216069.00**
 Project Name: **Edgewater T43 Ash Fill**
 Project State: **WI**
 Sampled By (Print): **Gary Sterkel**
 Sampled By (Sign): *Gary Sterkel*
 PO #:



CHAIN OF CUSTODY

A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other
 *Preservation Codes

FILTERED?
 (YES/NO)
 PRESERVATION
 (CODE)*

V/I/N	Pick Letter	Analyses Requested
N	A	TDS
N	A	Chloride Fluoride Sulfate
N	A	pH
N	D	Boron Calcium

PAGE LAB #	CLIENT FIELD ID	Data Package Options		Matrix Codes		DATE	TIME	MATRIX
		(billable)	MS/MSD	A=Air B=Biota C=Charcoal O=Oil S=Soil SI=Sludge	W=Water DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water WP=Wipe			
001	MW 301	<input type="checkbox"/> EPA Level III	<input type="checkbox"/> On your sample (billable)			10/23/17	1031	GW
002	MW 302	<input type="checkbox"/> EPA Level IV	<input type="checkbox"/> NOT needed on your sample			10/23/17	1111	GW
003	MW 303					10/23/17	1156	GW
004	MW 304					10/23/17	1246	GW

Relinquished By:	Date/Time:	Received By:	Date/Time:
<i>Gary Sterkel</i>	10/25/17 0800	<i>Mary Travis</i>	10/25/17 9:10
<i>Mary Travis</i>	10/25/17 1320	<i>Karen Kotzke</i>	10/26/17 0955
<i>CS Logistics</i>	10/26/17 0955		

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: **Tom Karowski**
 Invoice To Company: **SCS Engineers**
 Invoice To Address: **2830 Dairy Dr Madison WI 53718**
 Invoice To Phone: _____
 CLIENT COMMENTS: **10-26-17 PER 3**
 LAB COMMENTS (Lab Use Only): **7-250ML PHD**
 Profile #: _____
 Receipt Temp = **20.1°C**
 Sample Recapt. PH **OK**
 Cooler Custody Seal **Present / Not Present**
 Intact / Not Intact



Sample Condition Upon Receipt

Pace Analytical Services, LLC. - Green Bay WI
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Project #:

Client Name: SCS Eng.

WO#: 40159479

Courier: Fed Ex UPS Client Pace Other CS Logistics



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

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used NA Type of Ice: Wet Blue Dry None

Cooler Temperature Uncorr: 201 /Corr: Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Samples on ice, cooling process has begun

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 10-26-17
Initials: KR

Comments:

Table with 15 rows of inspection criteria and checkboxes. Includes items like Chain of Custody Present, Short Hold Time Analysis, and Headspace in Vials.

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: KR for pm

Date: 10/26/17