

# 2019 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



**SCS ENGINEERS**

25219069.00 | January 31, 2020

2830 Dairy Drive  
Madison, WI 53718-6751  
608-224-2830

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## 1.0 INTRODUCTION

This 2019 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 CFR 257.50-107]. 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 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units.

This report covers the period of groundwater monitoring from January 1, 2019, through December 31, 2019.

The groundwater monitoring system at the Edgewater (EDG) 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:

- EDG I-43 Phase 3, Module 1 (existing CCR Landfill)
- EDG I-43 Phase 3, Module 2 (existing CCR Landfill)
- EDG I-43 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 of the site location is provided on **Figure 1**. A map with an aerial image showing the I-43 CCR units, and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program, is provided as **Figure 2**.

## 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 CCR units in 2019.

## 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;*

Two groundwater sampling events were completed in 2019 at the I-43 Landfill. The samples were collected under the detection monitoring program, which was established on October 17, 2017.

Groundwater samples collected during the semiannual events, in April and October 2019, were analyzed for the Appendix III constituents. The samples from upgradient well MW-305 were also analyzed for Appendix IV constituents to complete background groundwater sampling at that monitoring well.

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** and **A2**.

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);*

There were no transitions between monitoring programs in 2019. The I-43 Landfill remained in the detection monitoring program.

In 2019, the monitoring results for the October 2018 and April 2019 monitoring events were evaluated for statistically significant increases (SSIs) in detection monitoring parameters relative to background. No SSIs were observed at any compliance monitoring wells for the October 2018 and April 2019 monitoring events.

## 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 2019 Annual Groundwater Monitoring and Corrective Action Report for the I-43 CCR units.

### **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.**

- Statistical evaluation and determination of SSIs for the October 2018 and April 2019 monitoring events.
- Two semiannual groundwater sampling and analysis events (April and October 2019).

**Description of Any Problems Encountered.** No problems were encountered in 2019.

**Discussion of Actions to Resolve the Problems.** Not applicable.

#### **Projection of Key Activities for the Upcoming Year (2020):**

- Statistical evaluation and determination of any SSIs for the October 2019 and April 2020 monitoring events.
- If an SSI is determined, then within 90 days either:
  - Complete alternative source demonstration (if applicable), or
  - Establish an assessment monitoring program.
- Two semiannual groundwater sampling and analysis events (April and October 2020).

### **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 SSIs were identified for the October 2018 or April 2019 monitoring events; therefore, no Alternate Source Demonstrations were completed.

#### **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.

#### **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 has not been initiated.

#### **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.

#### **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.




Table 1  
CCR Rule Groundwater Samples Summary



**Table 1. CCR Rule Groundwater Samples Summary  
 Edgewater Generating Station I-43 Landfill  
 SCS Engineers Project #25219069.00**

Sample Dates	Downgradient Wells			Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305
April 8-9, 2019	D	D	D	D	D/B
October 7-8, 2019	D	D	D	D	D/B
Total Samples	2	2	2	2	2

Abbreviations:

B = Background Sample

D = Required by Detection Monitoring Program

Notes:

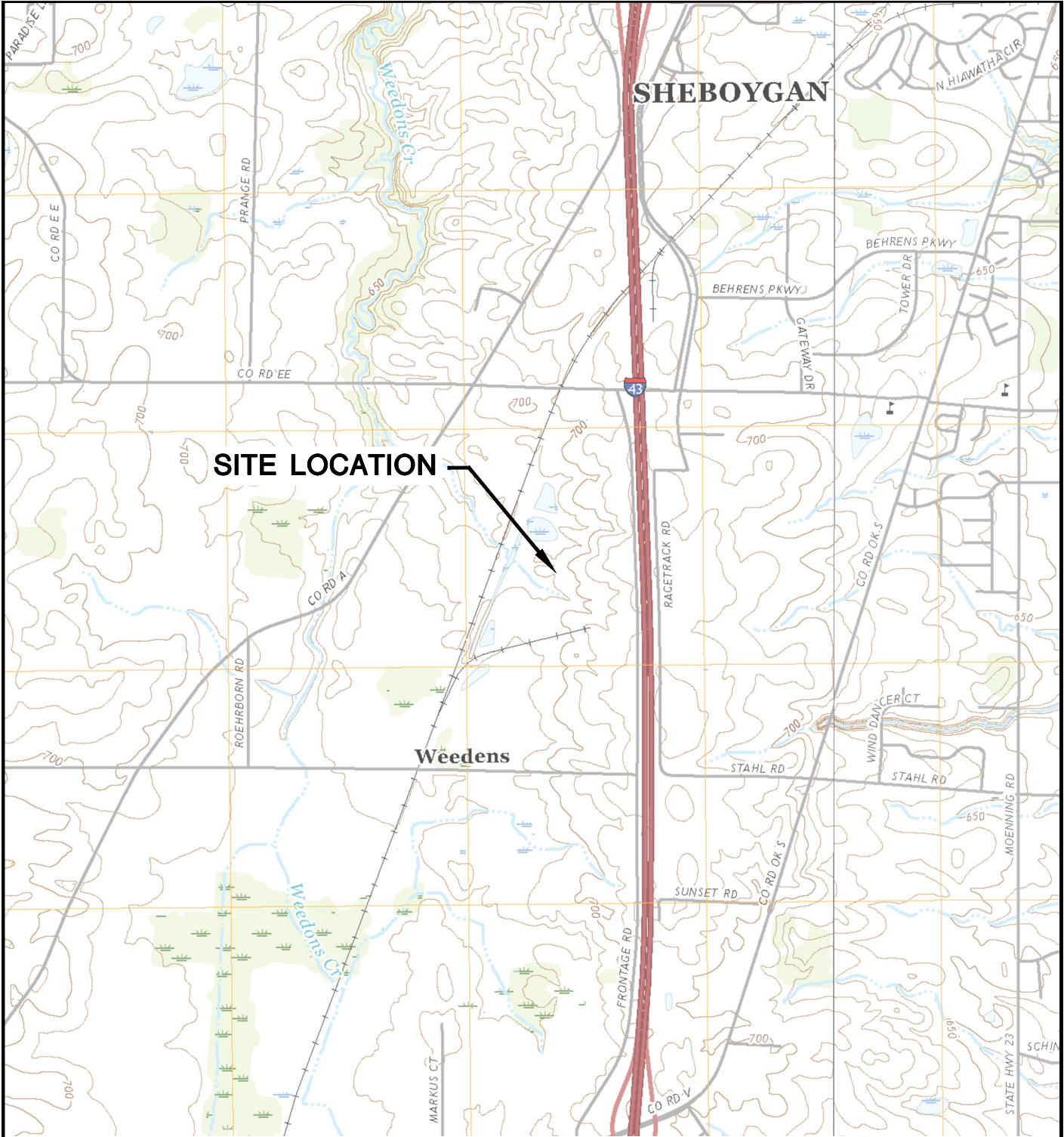
MW-305 was installed in February 2017.

Created by: NDK Date: 1/4/2018  
 Last revision by: LWJ Date: 11/13/2019  
 Checked by: MDB Date: 1/8/2019

I:\25219069.00\Deliverables\2019 CCR Fed. Annual Report\Table\[Table 1  
 GW\_Samples\_Summary\_I-43.xlsx]GW Summary

## Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations



SHEBOYGAN FALLS QUADRANGLE  
 WISCONSIN-SHEBOYGAN CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'



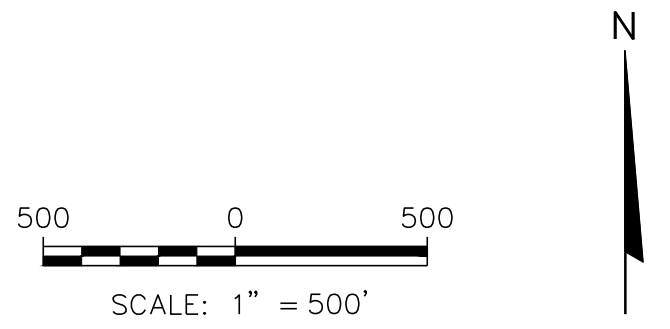
CLIENT	WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081		SITE	ALLIANT ENERGY 1-43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI		SITE LOCATION MAP
	PROJECT NO.	25219069.00		DRAWN BY:	BSS	
DRAWN:	11/20/2019	CHECKED BY:	MDB	FIGURE		
REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020		1	





LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR PIEZOMETER (BEDROCK)
	CCR UNITS
	LIMITS OF FINAL COVER

- NOTE:
- 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRIID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
  - MONITORING WELLS MW-301, MW-302, 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 WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC.



PROJECT NO.	25219069.00	DRAWN BY:	BSS
DRAWN:	11/20/2019	CHECKED BY:	MDB
REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020

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


CLIENT  
 WISCONSIN POWER AND LIGHT CO.  
 3739 LAKESHORE DRIVE  
 SHEBOYGAN, WI 53081

SITE  
 ALLIANT ENERGY  
 I-43 ASH DISPOSAL FACILITY  
 TOWN OF WILSON, WI

SITE PLAN AND MONITORING WELL LOCATIONS

FIGURE  
 2

I:\25219069.00\Drawings\CCR 2019 Annual Report\Site Plan and Monitoring Well Locations.dwg, 1/30/2020 3:47:37 PM



Appendix A  
Laboratory Reports

## A1 April 2019 Detection Monitoring

April 25, 2019

Meghan Blodgett  
SCS ENGINEERS  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 2019. 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  
Nicole Kron, SCS ENGINEERS  
Jeff Maxted, ALLIANT ENERGY  
Marc Morandi, ALLIANT ENERGY



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

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### 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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40185654001	MW-301	Water	04/09/19 11:20	04/11/19 10:00
40185654002	MW-302	Water	04/09/19 10:05	04/11/19 10:00
40185654003	MW-303	Water	04/09/19 09:15	04/11/19 10:00
40185654004	MW-304	Water	04/08/19 15:25	04/11/19 10:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40185654001	MW-301	EPA 6020	KXS	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40185654002	MW-302	EPA 6020	KXS	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40185654003	MW-303	EPA 6020	KXS	2
			RMW	7
		SM 2540C	TMK	1
		EPA 9040	ALY	1
		EPA 300.0	HMB	3
40185654004	MW-304	EPA 6020	KXS	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: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

**Sample: MW-301**      **Lab ID: 40185654001**      Collected: 04/09/19 11:20      Received: 04/11/19 10:00      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020    Preparation Method: EPA 3010							
Boron	<b>126</b>	ug/L	11.0	3.3	1	04/12/19 08:15	04/16/19 20:46	7440-42-8	
Calcium	<b>42900</b>	ug/L	250	69.8	1	04/12/19 08:15	04/16/19 20:46	7440-70-2	
<b>Field Data</b>		Analytical Method:							
Field pH	<b>8.18</b>	Std. Units			1		04/09/19 11:20		
Field Specific Conductance	<b>395</b>	umhos/cm			1		04/09/19 11:20		
Oxygen, Dissolved	<b>0.2</b>	mg/L			1		04/09/19 11:20	7782-44-7	
REDOX	<b>-99</b>	mV			1		04/09/19 11:20		
Turbidity	<b>125.8</b>	NTU			1		04/09/19 11:20		
Static Water Level	<b>653.06</b>	feet			1		04/09/19 11:20		
Temperature, Water (C)	<b>9.4</b>	deg C			1		04/09/19 11:20		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>230</b>	mg/L	20.0	8.7	1		04/15/19 11:58		R1
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	<b>7.9</b>	Std. Units	0.10	0.010	1		04/16/19 11:20		H6
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>4.0</b>	mg/L	2.0	0.50	1		04/19/19 22:33	16887-00-6	
Fluoride	<b>0.63</b>	mg/L	0.30	0.10	1		04/19/19 22:33	16984-48-8	
Sulfate	<b>9.2</b>	mg/L	3.0	1.0	1		04/19/19 22:33	14808-79-8	

**Sample: MW-302**      **Lab ID: 40185654002**      Collected: 04/09/19 10:05      Received: 04/11/19 10:00      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020    Preparation Method: EPA 3010							
Boron	<b>118</b>	ug/L	11.0	3.3	1	04/12/19 08:15	04/16/19 20:53	7440-42-8	
Calcium	<b>28400</b>	ug/L	250	69.8	1	04/12/19 08:15	04/16/19 20:53	7440-70-2	
<b>Field Data</b>		Analytical Method:							
Field pH	<b>8.14</b>	Std. Units			1		04/09/19 10:05		
Field Specific Conductance	<b>426</b>	umhos/cm			1		04/09/19 10:05		
Oxygen, Dissolved	<b>0.8</b>	mg/L			1		04/09/19 10:05	7782-44-7	
REDOX	<b>18</b>	mV			1		04/09/19 10:05		
Turbidity	<b>18.41</b>	NTU			1		04/09/19 10:05		
Static Water Level	<b>654.06</b>	feet			1		04/09/19 10:05		
Temperature, Water (C)	<b>9.9</b>	deg C			1		04/09/19 10:05		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>248</b>	mg/L	20.0	8.7	1		04/15/19 11:59		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

Sample: MW-302      Lab ID: 40185654002      Collected: 04/09/19 10:05      Received: 04/11/19 10:00      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>9040 pH</b> Analytical Method: EPA 9040									
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		04/16/19 11:21		H6
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	4.4	mg/L	2.0	0.50	1		04/19/19 22:45	16887-00-6	
Fluoride	0.73	mg/L	0.30	0.10	1		04/19/19 22:45	16984-48-8	
Sulfate	20.4	mg/L	3.0	1.0	1		04/19/19 22:45	14808-79-8	

Sample: MW-303      Lab ID: 40185654003      Collected: 04/09/19 09:15      Received: 04/11/19 10:00      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Boron	88.4	ug/L	11.0	3.3	1	04/12/19 08:15	04/16/19 21:00	7440-42-8	
Calcium	31700	ug/L	250	69.8	1	04/12/19 08:15	04/16/19 21:00	7440-70-2	
<b>Field Data</b> Analytical Method:									
Field pH	8.05	Std. Units			1		04/09/19 09:15		
Field Specific Conductance	486	umhos/cm			1		04/09/19 09:15		
Oxygen, Dissolved	0.2	mg/L			1		04/09/19 09:15	7782-44-7	
REDOX	-65	mV			1		04/09/19 09:15		
Turbidity	4.92	NTU			1		04/09/19 09:15		
Static Water Level	654.06	feet			1		04/09/19 09:15		
Temperature, Water (C)	9.5	deg C			1		04/09/19 09:15		
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	270	mg/L	20.0	8.7	1		04/15/19 11:59		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH at 25 Degrees C	7.8	Std. Units	0.10	0.010	1		04/16/19 11:22		H6
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	4.1	mg/L	2.0	0.50	1		04/19/19 22:57	16887-00-6	
Fluoride	0.57	mg/L	0.30	0.10	1		04/19/19 22:57	16984-48-8	
Sulfate	23.7	mg/L	3.0	1.0	1		04/19/19 22:57	14808-79-8	

Sample: MW-304      Lab ID: 40185654004      Collected: 04/08/19 15:25      Received: 04/11/19 10:00      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Boron	100	ug/L	11.0	3.3	1	04/12/19 08:15	04/16/19 21:20	7440-42-8	
Calcium	19100	ug/L	250	69.8	1	04/12/19 08:15	04/16/19 21:20	7440-70-2	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

**Sample: MW-304**      **Lab ID: 40185654004**      Collected: 04/08/19 15:25      Received: 04/11/19 10:00      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Field pH	<b>8.06</b>	Std. Units			1		04/08/19 15:25		
Field Specific Conductance	<b>395</b>	umhos/cm			1		04/08/19 15:25		
Oxygen, Dissolved	<b>0.7</b>	mg/L			1		04/08/19 15:25	7782-44-7	
REDOX	<b>-23</b>	mV			1		04/08/19 15:25		
Turbidity	<b>6.25</b>	NTU			1		04/08/19 15:25		
Static Water Level	<b>655.59</b>	feet			1		04/08/19 15:25		
Temperature, Water (C)	<b>10.4</b>	deg C			1		04/08/19 15:25		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>226</b>	mg/L	20.0	8.7	1		04/15/19 11:55		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	<b>7.9</b>	Std. Units	0.10	0.010	1		04/16/19 11:23		H6
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1.8J</b>	mg/L	2.0	0.50	1		04/19/19 23:10	16887-00-6	
Fluoride	<b>0.51</b>	mg/L	0.30	0.10	1		04/19/19 23:10	16984-48-8	
Sulfate	<b>14.5</b>	mg/L	3.0	1.0	1		04/19/19 23:10	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

QC Batch: 318132 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

METHOD BLANK: 1849562 Matrix: Water  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.3	11.0	04/15/19 13:01	
Calcium	ug/L	<69.8	250	04/15/19 13:01	

LABORATORY CONTROL SAMPLE: 1849563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	478	96	80-120	
Calcium	ug/L	5000	4900	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1849564 1849565

Parameter	Units	40185656001		1849565		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	68.0	500	557	556	98	97	75-125	0	20	
Calcium	ug/L	89000	5000	90100	91100	23	42	75-125	1	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: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

QC Batch: 318389 Analysis Method: SM 2540C  
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

METHOD BLANK: 1850749 Matrix: Water  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/15/19 11:54	

LABORATORY CONTROL SAMPLE: 1850750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	577	588	102	80-120	

SAMPLE DUPLICATE: 1850751

Parameter	Units	40185606019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	1020	1	5	

SAMPLE DUPLICATE: 1850752

Parameter	Units	40185654001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	230	250	8	5	R1

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: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

QC Batch: 318500 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

SAMPLE DUPLICATE: 1851026

Parameter	Units	40185479001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	20	H6

SAMPLE DUPLICATE: 1851027

Parameter	Units	40185514001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	8.0	1	20	H6

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

QC Batch: 318652 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

METHOD BLANK: 1851803 Matrix: Water  
Associated Lab Samples: 40185654001, 40185654002, 40185654003, 40185654004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	04/19/19 18:53	
Fluoride	mg/L	<0.10	0.30	04/19/19 18:53	
Sulfate	mg/L	<1.0	3.0	04/19/19 18:53	

LABORATORY CONTROL SAMPLE: 1851804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	
Fluoride	mg/L	2	2.1	105	90-110	
Sulfate	mg/L	20	20.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1851805 1851806

Parameter	Units	40185587001 Result	MS Spike Conc.	MSD Spike Conc.	1851805		1851806		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	15.4	20	20	37.3	37.2	109	109	90-110	0	15	
Fluoride	mg/L	0.16J	2	2	2.4	2.4	110	111	90-110	0	15 M0	
Sulfate	mg/L	27.4	20	20	48.5	50.2	106	114	90-110	3	15 M0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1851807 1851808

Parameter	Units	40185658002 Result	MS Spike Conc.	MSD Spike Conc.	1851807		1851808		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	18.4	20	20	40.1	40.1	108	108	90-110	0	15	
Fluoride	mg/L	0.87	2	2	3.1	3.1	112	112	90-110	0	15 M0	
Sulfate	mg/L	71.7	100	100	172	176	100	104	90-110	2	15	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185654

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### 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, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

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.

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: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185654

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40185654001	MW-301	EPA 3010	318132	EPA 6020	318258
40185654002	MW-302	EPA 3010	318132	EPA 6020	318258
40185654003	MW-303	EPA 3010	318132	EPA 6020	318258
40185654004	MW-304	EPA 3010	318132	EPA 6020	318258
40185654001	MW-301				
40185654002	MW-302				
40185654003	MW-303				
40185654004	MW-304				
40185654001	MW-301	SM 2540C	318389		
40185654002	MW-302	SM 2540C	318389		
40185654003	MW-303	SM 2540C	318389		
40185654004	MW-304	SM 2540C	318389		
40185654001	MW-301	EPA 9040	318500		
40185654002	MW-302	EPA 9040	318500		
40185654003	MW-303	EPA 9040	318500		
40185654004	MW-304	EPA 9040	318500		
40185654001	MW-301	EPA 300.0	318652		
40185654002	MW-302	EPA 300.0	318652		
40185654003	MW-303	EPA 300.0	318652		
40185654004	MW-304	EPA 300.0	318652		

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(Please Print Clearly)

UPPER MIDWEST REGION

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

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40185654



# 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	N	N	N	N	N	N	N	I
Pick Letter	A	A	A	D	D	A	A	
Analyses Requested	Chloride	Fluoride	Sulfate	Boron	Calcium	PH	TDS	

Company Name: SCS Engineers  
 Branch/Location: Madison WI  
 Project Contact: Meg Blodgett  
 Phone: 608-345-4221  
 Project Number: 25214069.19  
 Project Name: Edgewater I-43  
 Project State: WI  
 Sampled By (Print): Gary Stukel  
 Sampled By (Sign): Gary Stukel  
 PO #: \_\_\_\_\_ Regulatory Program: \_\_\_\_\_

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

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

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

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX
		DATE	TIME	
001	MW-301	4/9/19	1120	GW
002	MW-302	4/9/19	1005	GW
003	MW-303	4/9/19	0915	GW
004	MW-304	4/8/19	1525	GW

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): \_\_\_\_\_  
 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 Stukel Date/Time: 9/10/19 0800  
 Relinquished By: Mary Fannin Date/Time: 4/10/19 1430  
 Relinquished By: Meg Blodgett Date/Time: 4-1-19 1000  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received By: Mary Fannin Date/Time: 4/10/19 1:00  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: Susan Alfano Date/Time: 4-1-19 1000  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

PACE Project No. 40185654  
 Receipt Temp = ROT  
 Sample Receipt pH (OK) Adjusted  
 Cooler Custody Seal Present / Not Present  
Intact / Not Intact

Sample Preservation Receipt Form

Client Name: SCS Engineers Project # 40185654

All containers needing preservation have been checked and noted below:  Yes  No  N/A

Initial when completed: gscw Date/ Time:

Lab Lot# of pH paper 40153581 Lab Std #ID of preservation (if pH adjusted):

Page 15 of 16

Pace Lab #	Glass						Plastic						Vials					Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)							
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU								SP5T	ZPLC	GN				
001										2		-																									2.5 / 5 / 10
002										2		-																									2.5 / 5 / 10
003										2		-																									2.5 / 5 / 10
004										2		-																									2.5 / 5 / 10
005																																					2.5 / 5 / 10
006																																					2.5 / 5 / 10
007																																					2.5 / 5 / 10
008																																					2.5 / 5 / 10
009																																					2.5 / 5 / 10
010																																					2.5 / 5 / 10
011																																					2.5 / 5 / 10
012																																					2.5 / 5 / 10
013																																					2.5 / 5 / 10
014																																					2.5 / 5 / 10
015																																					2.5 / 5 / 10
016																																					2.5 / 5 / 10
017																																					2.5 / 5 / 10
018																																					2.5 / 5 / 10
019																																					2.5 / 5 / 10
020																																					2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: \_\_\_\_\_ Headspace in VOA Vials (>6mm) :  Yes  No  N/A \*If yes look in headspace column

<b>AG1U</b>	1 liter amber glass	<b>BP1U</b>	1 liter plastic unpres	<b>DG9A</b>	40 mL amber ascorbic	<b>JGFU</b>	4 oz amber jar unpres
<b>AG1H</b>	1 liter amber glass HCL	<b>BP2N</b>	500 mL plastic HNO3	<b>DG9T</b>	40 mL amber Na Thio	<b>WGFU</b>	4 oz clear jar unpres
<b>AG4S</b>	125 mL amber glass H2SO4	<b>BP2Z</b>	500 mL plastic NaOH, Znact	<b>VG9U</b>	40 mL clear vial unpres	<b>WPFU</b>	4 oz plastic jar unpres
<b>AG4U</b>	120 mL amber glass unpres	<b>BP3U</b>	250 mL plastic unpres	<b>VG9H</b>	40 mL clear vial HCL		
<b>AG5U</b>	100 mL amber glass unpres	<b>BP3C</b>	250 mL plastic NaOH	<b>VG9M</b>	40 mL clear vial MeOH	<b>SP5T</b>	120 mL plastic Na Thiosulfate
<b>AG2S</b>	500 mL amber glass H2SO4	<b>BP3N</b>	250 mL plastic HNO3	<b>VG9D</b>	40 mL clear vial DI	<b>ZPLC</b>	ziploc bag
<b>BG3U</b>	250 mL clear glass unpres	<b>BP3S</b>	250 mL plastic H2SO4			<b>GN:</b>	



1241 Bellevue Street, Green Bay, WI 54302

Document Name: Sample Condition Upon Receipt (SCUR)

Document Revised: 25Apr2018

Document No.: F-GB-C-031-Rev.07

Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS Engineers

Project #: \_\_\_\_\_

WO#: 40185654

Courier: [X] CS Logistics [ ] Fed Ex [ ] Speedee [ ] UPS [ ] Waltco [ ] Client [ ] Pace Other: \_\_\_\_\_



Tracking #: \_\_\_\_\_

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

Custody Seal on Samples Present: [ ] yes [X] no Seals intact: [ ] yes [ ] no

Packing Material: [X] Bubble Wrap [ ] Bubble Bags [ ] None [ ] Other

Thermometer Used SR - N/A Type of Ice: [X] VWA [ ] Blue Dry None [X] Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT / Corr: \_\_\_\_\_

Temp Blank Present: [ ] yes [X] no

Biological Tissue is Frozen: [ ] yes [ ] no

Person examining contents: Date: 4-11-19 Initials: SCU

Temp should be above freezing to 6°C. Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	[X] Yes [ ] No [ ] N/A	1.
Chain of Custody Filled Out:	[ ] Yes [X] No [ ] N/A	2. No pay #, Mail 4-11-19 SCU
Chain of Custody Relinquished:	[X] Yes [ ] No [ ] N/A	3.
Sampler Name & Signature on COC:	[X] Yes [ ] No [ ] N/A	4.
Samples Arrived within Hold Time:	[X] Yes [ ] No	5.
- VOA Samples frozen upon receipt	[ ] Yes [ ] No	Date/Time:
Short Hold Time Analysis (<72hr):	[ ] Yes [ ] No	6.
Rush Turn Around Time Requested:	[ ] Yes [X] No	7.
Sufficient Volume:		8.
For Analysis: [X] Yes [ ] No MS/MSD: [ ] Yes [X] No [ ] N/A		
Correct Containers Used:	[X] Yes [ ] No	9.
-Pace Containers Used:	[X] Yes [ ] No [ ] N/A	
-Pace IR Containers Used:	[ ] Yes [ ] No [X] N/A	
Containers Intact:	[X] Yes [ ] No	10.
Filtered volume received for Dissolved tests	[ ] Yes [ ] No [X] N/A	11.
Sample Labels match COC:	[ ] Yes [X] No [ ] N/A	12. 004 - Collect date 4/8 - collect time matched. 4-11-19 SCU
-Includes date/time/ID/Analysis Matrix:		
Trip Blank Present:	[ ] Yes [ ] No [X] N/A	13.
Trip Blank Custody Seals Present	[ ] Yes [ ] No [X] 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 Gr DM

Date: 4/11/19

April 26, 2019

Meghan Blodgett  
SCS ENGINEERS  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185656

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 2019. 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  
Nicole Kron, SCS ENGINEERS  
Jeff Maxted, ALLIANT ENERGY  
Marc Morandi, ALLIANT ENERGY



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

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### Pennsylvania Certification IDs

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

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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### 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: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40185656001	MW-305	Water	04/09/19 12:15	04/11/19 10:00
40185656002	FIELD BLANK	Water	04/09/19 12:25	04/11/19 10:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40185656001	MW-305	EPA 6020	KXS	14	PASI-G
		EPA 7470	AJT	1	PASI-G
			RMW	7	PASI-G
		EPA 903.1	MK1	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
		40185656002	FIELD BLANK	EPA 6020	KXS
EPA 7470	AJT			1	PASI-G
EPA 903.1	MK1			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: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

**Sample: MW-305**      **Lab ID: 40185656001**      Collected: 04/09/19 12:15      Received: 04/11/19 10:00      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020    Preparation Method: EPA 3010							
Antimony	<b>0.78J</b>	ug/L	1.0	0.15	1	04/12/19 08:15	04/16/19 19:24	7440-36-0	
Arsenic	<b>2.9</b>	ug/L	1.0	0.28	1	04/12/19 08:15	04/16/19 19:24	7440-38-2	
Barium	<b>169</b>	ug/L	4.9	1.5	1	04/12/19 08:15	04/16/19 19:24	7440-39-3	
Beryllium	<b>0.19J</b>	ug/L	1.0	0.18	1	04/12/19 08:15	04/16/19 19:24	7440-41-7	
Boron	<b>68.0</b>	ug/L	11.0	3.3	1	04/12/19 08:15	04/16/19 19:24	7440-42-8	
Cadmium	<b>0.83J</b>	ug/L	1.0	0.15	1	04/12/19 08:15	04/16/19 19:24	7440-43-9	
Calcium	<b>89000</b>	ug/L	5000	1400	20	04/12/19 08:15	04/16/19 18:57	7440-70-2	P6
Chromium	<b>1.2J</b>	ug/L	3.4	1.0	1	04/12/19 08:15	04/16/19 19:24	7440-47-3	
Cobalt	<b>0.83J</b>	ug/L	1.0	0.12	1	04/12/19 08:15	04/16/19 19:24	7440-48-4	
Lead	<b>0.81J</b>	ug/L	1.0	0.24	1	04/12/19 08:15	04/16/19 19:24	7439-92-1	
Lithium	<b>11.8</b>	ug/L	1.0	0.19	1	04/12/19 08:15	04/16/19 19:24	7439-93-2	
Molybdenum	<b>3.3</b>	ug/L	1.5	0.44	1	04/12/19 08:15	04/16/19 19:24	7439-98-7	
Selenium	<b>0.92J</b>	ug/L	1.1	0.32	1	04/12/19 08:15	04/16/19 19:24	7782-49-2	
Thallium	<b>0.80J</b>	ug/L	1.0	0.14	1	04/12/19 08:15	04/16/19 19:24	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470    Preparation Method: EPA 7470							
Mercury	<b>&lt;0.084</b>	ug/L	0.28	0.084	1	04/16/19 09:50	04/17/19 09:33	7439-97-6	
<b>Field Data</b>		Analytical Method:							
Field pH	<b>7.85</b>	Std. Units			1		04/09/19 12:15		
Field Specific Conductance	<b>942</b>	umhos/cm			1		04/09/19 12:15		
Oxygen, Dissolved	<b>0.3</b>	mg/L			1		04/09/19 12:15	7782-44-7	
REDOX	<b>-75</b>	mV			1		04/09/19 12:15		
Turbidity	<b>9.67</b>	NTU			1		04/09/19 12:15		
Static Water Level	<b>659.03</b>	feet			1		04/09/19 12:15		
Temperature, Water (C)	<b>9.8</b>	deg C			1		04/09/19 12:15		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>568</b>	mg/L	20.0	8.7	1		04/15/19 11:59		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	<b>7.5</b>	Std. Units	0.10	0.010	1		04/16/19 11:25		H6
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>23.0</b>	mg/L	2.0	0.50	1		04/19/19 23:22	16887-00-6	
Fluoride	<b>0.65</b>	mg/L	0.30	0.10	1		04/19/19 23:22	16984-48-8	
Sulfate	<b>136</b>	mg/L	30.0	10.0	10		04/20/19 00:11	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

**Sample: FIELD BLANK**      **Lab ID: 40185656002**      Collected: 04/09/19 12:25      Received: 04/11/19 10:00      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020    Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	04/12/19 08:15	04/15/19 13:08	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	04/12/19 08:15	04/15/19 13:08	7440-38-2	
Barium	<1.5	ug/L	4.9	1.5	1	04/12/19 08:15	04/15/19 13:08	7440-39-3	
Beryllium	<0.18	ug/L	1.0	0.18	1	04/12/19 08:15	04/15/19 13:08	7440-41-7	
Boron	<3.3	ug/L	11.0	3.3	1	04/12/19 08:15	04/15/19 13:08	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	04/12/19 08:15	04/15/19 13:08	7440-43-9	
Calcium	<69.8	ug/L	250	69.8	1	04/12/19 08:15	04/15/19 13:08	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	04/12/19 08:15	04/15/19 13:08	7440-47-3	
Cobalt	<0.12	ug/L	1.0	0.12	1	04/12/19 08:15	04/15/19 13:08	7440-48-4	
Lead	<0.24	ug/L	1.0	0.24	1	04/12/19 08:15	04/15/19 13:08	7439-92-1	
Lithium	<0.19	ug/L	1.0	0.19	1	04/12/19 08:15	04/15/19 13:08	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	04/12/19 08:15	04/15/19 13:08	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	04/12/19 08:15	04/15/19 13:08	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	04/12/19 08:15	04/15/19 13:08	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470    Preparation Method: EPA 7470							
Mercury	<0.084	ug/L	0.28	0.084	1	04/16/19 09:50	04/17/19 09:42	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		04/15/19 11:59		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	7.4	Std. Units	0.10	0.010	1		04/16/19 11:30		H6
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		04/20/19 00:23	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		04/20/19 00:23	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		04/20/19 00:23	14808-79-8	

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185656

QC Batch: 318509 Analysis Method: EPA 7470  
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
Associated Lab Samples: 40185656001, 40185656002

METHOD BLANK: 1851057 Matrix: Water  
Associated Lab Samples: 40185656001, 40185656002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.084	0.28	04/17/19 09:28	

LABORATORY CONTROL SAMPLE: 1851058

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1851059 1851060

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40185656001 Result	Spike Conc.	Spike Conc.	Result						
Mercury	ug/L	<0.084	5	5	5.0	5.2	100	104	85-115	4	20

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185656

QC Batch: 318132 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 40185656001, 40185656002

METHOD BLANK: 1849562 Matrix: Water  
Associated Lab Samples: 40185656001, 40185656002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	04/15/19 13:01	
Arsenic	ug/L	<0.28	1.0	04/15/19 13:01	
Barium	ug/L	<1.5	4.9	04/15/19 13:01	
Beryllium	ug/L	<0.18	1.0	04/15/19 13:01	
Boron	ug/L	<3.3	11.0	04/15/19 13:01	
Cadmium	ug/L	<0.15	1.0	04/15/19 13:01	
Calcium	ug/L	<69.8	250	04/15/19 13:01	
Chromium	ug/L	<1.0	3.4	04/15/19 13:01	
Cobalt	ug/L	<0.12	1.0	04/15/19 13:01	
Lead	ug/L	<0.24	1.0	04/15/19 13:01	
Lithium	ug/L	<0.19	1.0	04/15/19 13:01	
Molybdenum	ug/L	<0.44	1.5	04/15/19 13:01	
Selenium	ug/L	<0.32	1.1	04/15/19 13:01	
Thallium	ug/L	<0.14	1.0	04/15/19 13:01	

LABORATORY CONTROL SAMPLE: 1849563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	516	103	80-120	
Arsenic	ug/L	500	475	95	80-120	
Barium	ug/L	500	485	97	80-120	
Beryllium	ug/L	500	490	98	80-120	
Boron	ug/L	500	478	96	80-120	
Cadmium	ug/L	500	507	101	80-120	
Calcium	ug/L	5000	4900	98	80-120	
Chromium	ug/L	500	488	98	80-120	
Cobalt	ug/L	500	488	98	80-120	
Lead	ug/L	500	516	103	80-120	
Lithium	ug/L	500	472	94	80-120	
Molybdenum	ug/L	500	474	95	80-120	
Selenium	ug/L	500	510	102	80-120	
Thallium	ug/L	500	482	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1849564 1849565

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	0.78J	500	500	507	520	101	104	75-125	2	20	

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

Parameter	Units	1849564		1849565		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	2.9	500	500	484	497	96	99	75-125	3	20		
Barium	ug/L	169	500	500	654	672	97	101	75-125	3	20		
Beryllium	ug/L	0.19J	500	500	484	493	97	99	75-125	2	20		
Boron	ug/L	68.0	500	500	557	556	98	97	75-125	0	20		
Cadmium	ug/L	0.83J	500	500	495	508	99	101	75-125	3	20		
Calcium	ug/L	89000	5000	5000	90100	91100	23	42	75-125	1	20	P6	
Chromium	ug/L	1.2J	500	500	489	502	98	100	75-125	3	20		
Cobalt	ug/L	0.83J	500	500	483	499	96	100	75-125	3	20		
Lead	ug/L	0.81J	500	500	483	494	96	99	75-125	2	20		
Lithium	ug/L	11.8	500	500	485	494	95	96	75-125	2	20		
Molybdenum	ug/L	3.3	500	500	476	486	94	96	75-125	2	20		
Selenium	ug/L	0.92J	500	500	514	527	103	105	75-125	2	20		
Thallium	ug/L	0.80J	500	500	512	524	102	105	75-125	2	20		

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

QC Batch:	318389	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	40185656001, 40185656002		

METHOD BLANK: 1850749 Matrix: Water

Associated Lab Samples: 40185656001, 40185656002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/15/19 11:54	

LABORATORY CONTROL SAMPLE: 1850750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	577	588	102	80-120	

SAMPLE DUPLICATE: 1850751

Parameter	Units	40185606019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	1020	1	5	

SAMPLE DUPLICATE: 1850752

Parameter	Units	40185654001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	230	250	8	5	R1

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

QC Batch: 318500 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 40185656001, 40185656002

SAMPLE DUPLICATE: 1851026

Parameter	Units	40185479001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	20	H6

SAMPLE DUPLICATE: 1851027

Parameter	Units	40185514001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	8.0	1	20	H6

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### QUALITY CONTROL DATA

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185656

QC Batch: 318652 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 40185656001, 40185656002

METHOD BLANK: 1851803 Matrix: Water  
Associated Lab Samples: 40185656001, 40185656002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	04/19/19 18:53	
Fluoride	mg/L	<0.10	0.30	04/19/19 18:53	
Sulfate	mg/L	<1.0	3.0	04/19/19 18:53	

LABORATORY CONTROL SAMPLE: 1851804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	
Fluoride	mg/L	2	2.1	105	90-110	
Sulfate	mg/L	20	20.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1851805 1851806

Parameter	Units	40185587001 Result	MS Spike Conc.	MSD Spike Conc.	1851805		1851806		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	15.4	20	20	37.3	37.2	109	109	90-110	0	15	
Fluoride	mg/L	0.16J	2	2	2.4	2.4	110	111	90-110	0	15 M0	
Sulfate	mg/L	27.4	20	20	48.5	50.2	106	114	90-110	3	15 M0	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1851807 1851808

Parameter	Units	40185658002 Result	MS Spike Conc.	MSD Spike Conc.	1851807		1851808		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	18.4	20	20	40.1	40.1	108	108	90-110	0	15	
Fluoride	mg/L	0.87	2	2	3.1	3.1	112	112	90-110	0	15 M0	
Sulfate	mg/L	71.7	100	100	172	176	100	104	90-110	2	15	

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: MW-305</b>		<b>Lab ID: 40185656001</b>	Collected: 04/09/19 12:15	Received: 04/11/19 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	<b>0.764 ± 0.507 (0.591)</b>	pCi/L	04/25/19 12:39	13982-63-3		
Radium-228	EPA 904.0	<b>0.921 ± 0.451 (0.783)</b>	pCi/L	04/24/19 14:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.69 ± 0.958 (1.37)</b>	pCi/L	04/26/19 09:32	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FIELD BLANK</b>		<b>Lab ID: 40185656002</b>	Collected: 04/09/19 12:25	Received: 04/11/19 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	<b>0.580 ± 0.610 (0.968)</b>	pCi/L	04/25/19 12:39	13982-63-3		
Radium-228	EPA 904.0	<b>0.995 ± 0.457 (0.764)</b>	pCi/L	04/24/19 14:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.58 ± 1.07 (1.73)</b>	pCi/L	04/26/19 09:32	7440-14-4		

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

QC Batch: 338342

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40185656001, 40185656002

METHOD BLANK: 1646896

Matrix: Water

Associated Lab Samples: 40185656001, 40185656002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.422 ± 0.338 (0.674) C:81% T:86%	pCi/L	04/24/19 14:13	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

QC Batch: 338333

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40185656001, 40185656002

METHOD BLANK: 1646885

Matrix: Water

Associated Lab Samples: 40185656001, 40185656002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.562 ± 0.445 (0.605) C:NA T:94%	pCi/L	04/25/19 11:39	

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## QUALIFIERS

Project: 25214069.19 EDGEWATER I-43  
Pace Project No.: 40185656

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### 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, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

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.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25214069.19 EDGEWATER I-43

Pace Project No.: 40185656

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40185656001	MW-305	EPA 3010	318132	EPA 6020	318258
40185656002	FIELD BLANK	EPA 3010	318132	EPA 6020	318258
40185656001	MW-305	EPA 7470	318509	EPA 7470	318601
40185656002	FIELD BLANK	EPA 7470	318509	EPA 7470	318601
40185656001	MW-305				
40185656001	MW-305	EPA 903.1	338333		
40185656002	FIELD BLANK	EPA 903.1	338333		
40185656001	MW-305	EPA 904.0	338342		
40185656002	FIELD BLANK	EPA 904.0	338342		
40185656001	MW-305	Total Radium Calculation	340066		
40185656002	FIELD BLANK	Total Radium Calculation	340066		
40185656001	MW-305	SM 2540C	318389		
40185656002	FIELD BLANK	SM 2540C	318389		
40185656001	MW-305	EPA 9040	318500		
40185656002	FIELD BLANK	EPA 9040	318500		
40185656001	MW-305	EPA 300.0	318652		
40185656002	FIELD BLANK	EPA 300.0	318652		

### REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: **SCS Engineers**  
 Branch/Location: **Madison WI**  
 Project Contact: **Meg Blodgett**  
 Phone: **608-345-9221**  
 Project Number: **25214069.19**  
 Project Name: **Edgewater I-43**  
 Project State: **WI**  
 Sampled By (Print): **Gary Stukel**  
 Sampled By (Sign): **Gary Stukel**  
 PO #:



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

**40185656**

**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	N	N	N	N	N	N	N	N	
Pick Letter	A	A	A	A	D	D	D	D	
Analyses Requested	Chloride	Fluoride	Sulfate	TPS	PH	Radium 220/226	B, Ca, Sr, As, Ba, Be	Cd, Cr, Co, Pb, Li	Hg, Mo, Se, Tl
	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	Y	X

Quote #: **40185656**

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)

Profile #

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

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

Relinquished By: **Gary Stukel** Date/Time: **9/10/19 0800**

Relinquished By: **Mary Farnin** Date/Time: **9/10/19 1430**

Relinquished By: **Chloe Grotus** Date/Time: **4-11-19 1000**

Relinquished By:

Received By: **Mary Farnin** Date/Time: **9/10/19 11:00**

Received By: **Juska Wilke** Date/Time: **4-11-19 1000**

Received By:

PACE Project No. **40185656**

Receipt Temp = **ROI**

Sample Receipt pH **OK / Adjusted**

Cooler Custody Seal **Present / Not Present**

Intact / Not Intact

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

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

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

PACE LAB #	CLIENT FIELD ID	COLLECTION			MATRIX
		DATE	TIME		
<b>001</b>	<b>MW-305</b>	<b>4/9/19</b>	<b>1215</b>	<b>GW</b>	
<b>002</b>	<b>Field Blank</b>	<b>4/9/19</b>	<b>1225</b>	<b>W</b>	

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







1241 Bellevue Street, Green Bay, WI 54302

Document Name: Sample Condition Upon Receipt (SCUR)

Document Revised: 25Apr2018

Document No.: F-GB-C-031-Rev.07

Issuing Authority: Pace Green Bay Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Client Name: SCS Engineers

Project #:

**WO# : 40185656**

40185656

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Waltco  
 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 SR - N/A Type of Ice:  VVA  Blue Dry None

Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT - Corr: \_\_\_\_\_

Temp Blank Present:  yes  no

Biological Tissue is Frozen:  yes  no

Person examining contents:  
Date: 4-11-19  
Initials: SCW

Temp should be above freezing to 6°C.  
Biota Samples may be received at ≤ 0°C.

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>No pag #, Mail</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>9-11-19</u> <u>SCW</u>
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	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	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	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	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 type="checkbox"/> No <input type="checkbox"/> N/A	12.
- Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
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: AL for DM

Date: 4/11/19

## A2 October 2019 Detection Monitoring

December 04, 2019

Meghan Blodgett  
SCS ENGINEERS  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

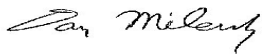
Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 09, 2019. 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.

Revised Report: Turbidity is now included for MW-303.

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  
Nicole Kron, SCS ENGINEERS  
Jeff Maxted, ALLIANT ENERGY  
Marc Morandi, ALLIANT ENERGY



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

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### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

### **Pace Analytical Services Green Bay**

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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40196861001	MW-301	Water	10/08/19 09:10	10/09/19 09:10
40196861002	MW-302	Water	10/08/19 08:10	10/09/19 09:10
40196861003	MW-303	Water	10/07/19 16:10	10/09/19 09:10
40196861004	MW-304	Water	10/08/19 10:50	10/09/19 09:10
40196861005	MW-305	Water	10/08/19 13:05	10/09/19 09:10
40196861006	FIELD BLANK	Water	10/08/19 12:50	10/09/19 09:10

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40196861001	MW-301	EPA 6020	DS1	2	PASI-G
			HMG	7	PASI-G
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40196861002	MW-302	EPA 6020	DS1	2	PASI-G
			HMG	7	PASI-G
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40196861003	MW-303	EPA 6020	DS1	2	PASI-G
			HMG	7	PASI-G
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40196861004	MW-304	EPA 6020	DS1	2	PASI-G
			HMG	7	PASI-G
		SM 2540C	TMK	1	PASI-G
		EPA 9040	ALY	1	PASI-G
		EPA 300.0	HMB	3	PASI-G
40196861005	MW-305	EPA 6020	DS1	14	PASI-G
			EPA 7470	AJT	1
			HMG	7	PASI-G
		EPA 903.1	MK1	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
40196861006	FIELD BLANK	EPA 6020	DS1	14	PASI-G
			EPA 7470	AJT	1
		EPA 903.1	MK1	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 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

**Sample: MW-301**      **Lab ID: 40196861001**      Collected: 10/08/19 09:10      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020      Preparation Method: EPA 3010							
Boron	142	ug/L	10.0	3.0	1	10/11/19 07:55	10/15/19 10:04	7440-42-8	
Calcium	42600	ug/L	254	76.2	1	10/11/19 07:55	10/15/19 10:04	7440-70-2	
<b>Field Data</b>		Analytical Method:							
Field pH	7.7	Std. Units			1		10/08/19 09:10		
Field Specific Conductance	390	umhos/cm			1		10/08/19 09:10		
Oxygen, Dissolved	0.32	mg/L			1		10/08/19 09:10	7782-44-7	
REDOX	97	mV			1		10/08/19 09:10		
Turbidity	133.7	NTU			1		10/08/19 09:10		
Static Water Level	653.26	feet			1		10/08/19 09:10		
Temperature, Water (C)	9.8	deg C			1		10/08/19 09:10		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	256	mg/L	20.0	8.7	1		10/10/19 17:11		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		10/15/19 11:36		H6
<b>300.0 IC Anions</b>		Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	2.0	0.50	1		10/18/19 11:02	16887-00-6	
Fluoride	0.63	mg/L	0.30	0.10	1		10/18/19 11:02	16984-48-8	
Sulfate	9.3	mg/L	3.0	1.0	1		10/18/19 11:02	14808-79-8	

**Sample: MW-302**      **Lab ID: 40196861002**      Collected: 10/08/19 08:10      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020      Preparation Method: EPA 3010							
Boron	129	ug/L	10.0	3.0	1	10/11/19 07:55	10/15/19 10:11	7440-42-8	
Calcium	29900	ug/L	254	76.2	1	10/11/19 07:55	10/15/19 10:11	7440-70-2	
<b>Field Data</b>		Analytical Method:							
Field pH	7.67	Std. Units			1		10/08/19 08:10		
Field Specific Conductance	423	umhos/cm			1		10/08/19 08:10		
Oxygen, Dissolved	0.72	mg/L			1		10/08/19 08:10	7782-44-7	
REDOX	90	mV			1		10/08/19 08:10		
Turbidity	11.73	NTU			1		10/08/19 08:10		
Static Water Level	653.21	feet			1		10/08/19 08:10		
Temperature, Water (C)	9.7	deg C			1		10/08/19 08:10		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	242	mg/L	20.0	8.7	1		10/10/19 17:11		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

Sample: MW-302      Lab ID: 40196861002      Collected: 10/08/19 08:10      Received: 10/09/19 09:10      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>9040 pH</b> Analytical Method: EPA 9040									
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		10/15/19 11:38		H6
<b>300.0 IC Anions</b> Analytical Method: EPA 300.0									
Chloride	3.8	mg/L	2.0	0.50	1		10/18/19 11:41	16887-00-6	
Fluoride	0.71	mg/L	0.30	0.10	1		10/18/19 11:41	16984-48-8	
Sulfate	18.4	mg/L	3.0	1.0	1		10/18/19 11:41	14808-79-8	

Sample: MW-303      Lab ID: 40196861003      Collected: 10/07/19 16:10      Received: 10/09/19 09:10      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Boron	91.2	ug/L	10.0	3.0	1	10/11/19 07:55	10/15/19 10:18	7440-42-8	
Calcium	30900	ug/L	254	76.2	1	10/11/19 07:55	10/15/19 10:18	7440-70-2	
<b>Field Data</b> Analytical Method:									
Field pH	10.12	Std. Units			1		10/07/19 16:10		
Field Specific Conductance	497	umhos/cm			1		10/07/19 16:10		
Oxygen, Dissolved	0.56	mg/L			1		10/07/19 16:10	7782-44-7	
REDOX	127	mV			1		10/07/19 16:10		
Turbidity	9.74	NTU			1		10/07/19 16:10		
Static Water Level	653.27	feet			1		10/07/19 16:10		
Temperature, Water (C)	11.8	deg C			1		10/07/19 16:10		
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	230	mg/L	20.0	8.7	1		10/10/19 17:11		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH at 25 Degrees C	7.9	Std. Units	0.10	0.010	1		10/15/19 11:39		H6
<b>300.0 IC Anions</b> Analytical Method: EPA 300.0									
Chloride	4.7	mg/L	2.0	0.50	1		10/18/19 11:55	16887-00-6	
Fluoride	0.60	mg/L	0.30	0.10	1		10/18/19 11:55	16984-48-8	
Sulfate	30.3	mg/L	3.0	1.0	1		10/18/19 11:55	14808-79-8	

Sample: MW-304      Lab ID: 40196861004      Collected: 10/08/19 10:50      Received: 10/09/19 09:10      Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Boron	104	ug/L	10.0	3.0	1	10/14/19 07:07	10/14/19 20:17	7440-42-8	
Calcium	20600	ug/L	254	76.2	1	10/14/19 07:07	10/14/19 20:17	7440-70-2	SD

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

**Sample: MW-304**      **Lab ID: 40196861004**      Collected: 10/08/19 10:50      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b> Analytical Method:									
Field pH	7.68	Std. Units			1		10/08/19 10:50		
Field Specific Conductance	404	umhos/cm			1		10/08/19 10:50		
Oxygen, Dissolved	0.81	mg/L			1		10/08/19 10:50	7782-44-7	
REDOX	104	mV			1		10/08/19 10:50		
Turbidity	43.61	NTU			1		10/08/19 10:50		
Apparent Color	654.77	no units			1		10/08/19 10:50		
Temperature, Water (C)	11	deg C			1		10/08/19 10:50		
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	172	mg/L	20.0	8.7	1		10/10/19 17:12		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH at 25 Degrees C	8.0	Std. Units	0.10	0.010	1		10/15/19 11:40		H6
<b>300.0 IC Anions</b> Analytical Method: EPA 300.0									
Chloride	1.7J	mg/L	2.0	0.50	1		10/18/19 12:08	16887-00-6	
Fluoride	0.48	mg/L	0.30	0.10	1		10/18/19 12:08	16984-48-8	
Sulfate	13.5	mg/L	3.0	1.0	1		10/18/19 12:08	14808-79-8	

**Sample: MW-305**      **Lab ID: 40196861005**      Collected: 10/08/19 13:05      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<0.15	ug/L	1.0	0.15	1	10/14/19 07:07	10/14/19 22:23	7440-36-0	
Arsenic	2.4	ug/L	1.0	0.28	1	10/14/19 07:07	10/15/19 11:54	7440-38-2	
Barium	169	ug/L	23.3	7.0	10	10/14/19 07:07	10/14/19 19:35	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	10/14/19 07:07	10/15/19 11:54	7440-41-7	
Boron	73.0	ug/L	10.0	3.0	1	10/14/19 07:07	10/15/19 11:54	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	10/14/19 07:07	10/14/19 22:23	7440-43-9	
Calcium	90300	ug/L	2540	762	10	10/14/19 07:07	10/14/19 19:35	7440-70-2	P6
Chromium	<1.0	ug/L	3.4	1.0	1	10/14/19 07:07	10/15/19 11:54	7440-47-3	
Cobalt	<0.12	ug/L	1.0	0.12	1	10/14/19 07:07	10/15/19 11:54	7440-48-4	
Lead	<0.24	ug/L	1.0	0.24	1	10/14/19 07:07	10/14/19 22:23	7439-92-1	
Lithium	12.4	ug/L	1.0	0.22	1	10/14/19 07:07	10/15/19 11:54	7439-93-2	
Molybdenum	2.6	ug/L	1.5	0.44	1	10/14/19 07:07	10/14/19 22:23	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	10/14/19 07:07	10/15/19 11:54	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	10/14/19 07:07	10/14/19 22:23	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	<0.084	ug/L	0.28	0.084	1	10/22/19 14:50	10/23/19 09:35	7439-97-6	

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## ANALYTICAL RESULTS

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

**Sample: MW-305**      **Lab ID: 40196861005**      Collected: 10/08/19 13:05      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Field pH	7.36	Std. Units			1		10/08/19 13:05		
Field Specific Conductance	935	umhos/cm			1		10/08/19 13:05		
Oxygen, Dissolved	0.82	mg/L			1		10/08/19 13:05	7782-44-7	
REDOX	112	mV			1		10/08/19 13:05		
Turbidity	6.56	NTU			1		10/08/19 13:05		
Static Water Level	658.77	feet			1		10/08/19 13:05		
Temperature, Water (C)	12.4	deg C			1		10/08/19 13:05		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	548	mg/L	20.0	8.7	1		10/10/19 17:12		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	7.6	Std. Units	0.10	0.010	1		10/15/19 11:42		H6
<b>300.0 IC Anions</b>		Analytical Method: EPA 300.0							
Chloride	22.5	mg/L	2.0	0.50	1		10/18/19 12:21	16887-00-6	
Fluoride	0.63	mg/L	0.30	0.10	1		10/18/19 12:21	16984-48-8	
Sulfate	137	mg/L	15.0	5.0	5		10/21/19 12:01	14808-79-8	

**Sample: FIELD BLANK**      **Lab ID: 40196861006**      Collected: 10/08/19 12:50      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020      Preparation Method: EPA 3010							
Antimony	<0.15	ug/L	1.0	0.15	1	10/14/19 07:07	10/14/19 18:47	7440-36-0	
Arsenic	<0.28	ug/L	1.0	0.28	1	10/14/19 07:07	10/14/19 18:47	7440-38-2	
Barium	<0.70	ug/L	2.3	0.70	1	10/14/19 07:07	10/14/19 18:47	7440-39-3	
Beryllium	<0.25	ug/L	1.0	0.25	1	10/14/19 07:07	10/14/19 18:47	7440-41-7	
Boron	<3.0	ug/L	10.0	3.0	1	10/14/19 07:07	10/14/19 18:47	7440-42-8	
Cadmium	<0.15	ug/L	1.0	0.15	1	10/14/19 07:07	10/14/19 18:47	7440-43-9	
Calcium	<76.2	ug/L	254	76.2	1	10/14/19 07:07	10/14/19 18:47	7440-70-2	
Chromium	<1.0	ug/L	3.4	1.0	1	10/14/19 07:07	10/14/19 18:47	7440-47-3	
Cobalt	<0.12	ug/L	1.0	0.12	1	10/14/19 07:07	10/14/19 18:47	7440-48-4	
Lead	<0.24	ug/L	1.0	0.24	1	10/14/19 07:07	10/14/19 18:47	7439-92-1	
Lithium	<0.22	ug/L	1.0	0.22	1	10/14/19 07:07	10/14/19 18:47	7439-93-2	
Molybdenum	<0.44	ug/L	1.5	0.44	1	10/14/19 07:07	10/14/19 18:47	7439-98-7	
Selenium	<0.32	ug/L	1.1	0.32	1	10/14/19 07:07	10/14/19 18:47	7782-49-2	
Thallium	<0.14	ug/L	1.0	0.14	1	10/14/19 07:07	10/14/19 18:47	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470      Preparation Method: EPA 7470							
Mercury	<0.084	ug/L	0.28	0.084	1	10/22/19 14:50	10/23/19 09:42	7439-97-6	

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### ANALYTICAL RESULTS

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

**Sample: FIELD BLANK**      **Lab ID: 40196861006**      Collected: 10/08/19 12:50      Received: 10/09/19 09:10      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		10/10/19 17:12		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH at 25 Degrees C	6.5	Std. Units	0.10	0.010	1		10/15/19 11:46		H6
<b>300.0 IC Anions</b>		Analytical Method: EPA 300.0							
Chloride	<0.50	mg/L	2.0	0.50	1		10/18/19 13:14	16887-00-6	
Fluoride	<0.10	mg/L	0.30	0.10	1		10/18/19 13:14	16984-48-8	
Sulfate	<1.0	mg/L	3.0	1.0	1		10/18/19 13:14	14808-79-8	

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

QC Batch: 338359 Analysis Method: EPA 7470  
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
Associated Lab Samples: 40196861005, 40196861006

METHOD BLANK: 1964880 Matrix: Water  
Associated Lab Samples: 40196861005, 40196861006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.084	0.28	10/23/19 09:14	

LABORATORY CONTROL SAMPLE: 1964881

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1964882 1964883

Parameter	Units	40196970001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec							
Mercury	ug/L	<0.084	5	5	5.1	5.0	101	100	85-115	1	20				

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

QC Batch: 337095 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 40196861001, 40196861002, 40196861003

METHOD BLANK: 1957892 Matrix: Water  
Associated Lab Samples: 40196861001, 40196861002, 40196861003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	10/15/19 07:53	
Calcium	ug/L	<76.2	254	10/15/19 07:53	

LABORATORY CONTROL SAMPLE: 1957893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	500	474	95	80-120	
Calcium	ug/L	5000	5060	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1957894 1957895

Parameter	Units	40196734001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	7220	500	500	7950	8800	146	316	75-125	10	20	P6
Calcium	ug/L	87600	5000	5000	95700	98200	161	210	75-125	3	20	P6

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

QC Batch: 337277 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 40196861004, 40196861005, 40196861006

METHOD BLANK: 1959950 Matrix: Water  
Associated Lab Samples: 40196861004, 40196861005, 40196861006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	10/14/19 18:40	
Arsenic	ug/L	<0.28	1.0	10/14/19 18:40	
Barium	ug/L	<0.70	2.3	10/14/19 18:40	
Beryllium	ug/L	<0.25	1.0	10/14/19 18:40	
Boron	ug/L	<3.0	10.0	10/14/19 18:40	
Cadmium	ug/L	<0.15	1.0	10/14/19 18:40	
Calcium	ug/L	<76.2	254	10/14/19 18:40	
Chromium	ug/L	<1.0	3.4	10/14/19 18:40	
Cobalt	ug/L	<0.12	1.0	10/14/19 18:40	
Lead	ug/L	<0.24	1.0	10/14/19 18:40	
Lithium	ug/L	<0.22	1.0	10/14/19 18:40	
Molybdenum	ug/L	<0.44	1.5	10/14/19 18:40	
Selenium	ug/L	<0.32	1.1	10/14/19 18:40	
Thallium	ug/L	<0.14	1.0	10/14/19 18:40	

LABORATORY CONTROL SAMPLE: 1959951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	497	99	80-120	
Arsenic	ug/L	500	478	96	80-120	
Barium	ug/L	500	477	95	80-120	
Beryllium	ug/L	500	488	98	80-120	
Boron	ug/L	500	464	93	80-120	
Cadmium	ug/L	500	501	100	80-120	
Calcium	ug/L	5000	5080	102	80-120	
Chromium	ug/L	500	478	96	80-120	
Cobalt	ug/L	500	467	93	80-120	
Lead	ug/L	500	470	94	80-120	
Lithium	ug/L	500	477	95	80-120	
Molybdenum	ug/L	500	452	90	80-120	
Selenium	ug/L	500	494	99	80-120	
Thallium	ug/L	500	476	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1959952 1959953

Parameter	Units	40196861005 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	513	510	103	102	75-125	1	20		

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

Parameter	Units	1959952		1959953		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40196861005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Arsenic	ug/L	2.4	500	500	512	504	102	100	75-125	2	20		
Barium	ug/L	169	500	500	671	672	100	101	75-125	0	20		
Beryllium	ug/L	<0.25	500	500	513	469	103	94	75-125	9	20		
Boron	ug/L	73.0	500	500	582	529	102	91	75-125	10	20		
Cadmium	ug/L	<0.15	500	500	514	512	103	102	75-125	0	20		
Calcium	ug/L	90300	5000	5000	96800	99900	130	192	75-125	3	20	P6	
Chromium	ug/L	<1.0	500	500	492	486	98	97	75-125	1	20		
Cobalt	ug/L	<0.12	500	500	488	484	98	97	75-125	1	20		
Lead	ug/L	<0.24	500	500	489	489	98	98	75-125	0	20		
Lithium	ug/L	12.4	500	500	518	476	101	93	75-125	8	20		
Molybdenum	ug/L	2.6	500	500	477	476	95	95	75-125	0	20		
Selenium	ug/L	<0.32	500	500	524	521	105	104	75-125	1	20		
Thallium	ug/L	<0.14	500	500	502	502	100	100	75-125	0	20		

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

QC Batch: 337052

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 40196861001, 40196861002, 40196861003, 40196861004, 40196861005, 40196861006

METHOD BLANK: 1957339

Matrix: Water

Associated Lab Samples: 40196861001, 40196861002, 40196861003, 40196861004, 40196861005, 40196861006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	10/10/19 17:08	

LABORATORY CONTROL SAMPLE: 1957340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	547	544	99	80-120	

SAMPLE DUPLICATE: 1957341

Parameter	Units	40196734001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	694	704	1	10	

SAMPLE DUPLICATE: 1957342

Parameter	Units	40196880006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	328	348	6	10	

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

QC Batch: 337490

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Associated Lab Samples: 40196861001, 40196861002, 40196861003, 40196861004, 40196861005, 40196861006

SAMPLE DUPLICATE: 1960489

Parameter	Units	40196734001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	20	H6

SAMPLE DUPLICATE: 1960490

Parameter	Units	40196949002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.4	1	20	H6

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### QUALITY CONTROL DATA

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

QC Batch: 337587 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 40196861001, 40196861002, 40196861003, 40196861004, 40196861005, 40196861006

METHOD BLANK: 1961046 Matrix: Water  
Associated Lab Samples: 40196861001, 40196861002, 40196861003, 40196861004, 40196861005, 40196861006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.50	2.0	10/18/19 10:22	
Fluoride	mg/L	<0.10	0.30	10/18/19 10:22	
Sulfate	mg/L	<1.0	3.0	10/18/19 10:22	

LABORATORY CONTROL SAMPLE: 1961047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.2	101	90-110	
Fluoride	mg/L	2	2.1	103	90-110	
Sulfate	mg/L	20	20.2	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1961048 1961049

Parameter	Units	40196861001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.8	20	20	24.3	24.4	102	103	90-110	0	15	
Fluoride	mg/L	0.63	2	2	2.7	2.7	101	102	90-110	1	15	
Sulfate	mg/L	9.3	20	20	29.3	29.3	100	100	90-110	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1961050 1961051

Parameter	Units	40196954001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	25.4	20	20	44.4	44.4	95	95	90-110	0	15	
Fluoride	mg/L	<0.10	2	2	2.1	2.1	103	103	90-110	1	15	
Sulfate	mg/L	22.5	20	20	41.7	41.8	96	96	90-110	0	15	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: MW-305</b>		<b>Lab ID: 40196861005</b>	Collected: 10/08/19 13:05	Received: 10/09/19 09:10	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	<b>0.238 ± 0.437 (0.780)</b>	pCi/L	10/28/19 15:33	13982-63-3		
Radium-228	EPA 904.0	<b>0.473 ± 0.351 (0.680)</b>	pCi/L	10/25/19 14:57	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.711 ± 0.788 (1.46)</b>	pCi/L	10/30/19 16:01	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FIELD BLANK</b>		<b>Lab ID: 40196861006</b>	Collected: 10/08/19 12:50	Received: 10/09/19 09:10	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 903.1	<b>0.225 ± 0.442 (0.793)</b>	pCi/L	10/28/19 15:33	13982-63-3		
Radium-228	EPA 904.0	<b>0.667 ± 0.477 (0.932)</b>	pCi/L	10/25/19 14:23	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.892 ± 0.919 (1.73)</b>	pCi/L	10/30/19 16:01	7440-14-4		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 25216069 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

QC Batch: 366051

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 40196861005, 40196861006

METHOD BLANK: 1775668

Matrix: Water

Associated Lab Samples: 40196861005, 40196861006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.243 ± 0.372 (0.805) C:76% T:86%	pCi/L	10/25/19 14:04	

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 ALLIANT EDG I-43 CCR

Pace Project No.: 40196861

QC Batch: 366052

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 40196861005, 40196861006

METHOD BLANK: 1775669

Matrix: Water

Associated Lab Samples: 40196861005, 40196861006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.128 ± 0.222 (0.396) C:NA T:83%	pCi/L	10/28/19 15:12	

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 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

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### 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, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

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.

SD The serial dilution and the original analysis did not agree within  $\pm 10\%$ . The concentration is estimated due to a suspected chemical or physical interference.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069 ALLIANT EDG I-43 CCR  
Pace Project No.: 40196861

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40196861001	MW-301	EPA 3010	337095	EPA 6020	337193
40196861002	MW-302	EPA 3010	337095	EPA 6020	337193
40196861003	MW-303	EPA 3010	337095	EPA 6020	337193
40196861004	MW-304	EPA 3010	337277	EPA 6020	337400
40196861005	MW-305	EPA 3010	337277	EPA 6020	337400
40196861006	FIELD BLANK	EPA 3010	337277	EPA 6020	337400
40196861005	MW-305	EPA 7470	338359	EPA 7470	338406
40196861006	FIELD BLANK	EPA 7470	338359	EPA 7470	338406
40196861001	MW-301				
40196861002	MW-302				
40196861003	MW-303				
40196861004	MW-304				
40196861005	MW-305				
40196861005	MW-305	EPA 903.1	366052		
40196861006	FIELD BLANK	EPA 903.1	366052		
40196861005	MW-305	EPA 904.0	366051		
40196861006	FIELD BLANK	EPA 904.0	366051		
40196861005	MW-305	Total Radium Calculation	368618		
40196861006	FIELD BLANK	Total Radium Calculation	368618		
40196861001	MW-301	SM 2540C	337052		
40196861002	MW-302	SM 2540C	337052		
40196861003	MW-303	SM 2540C	337052		
40196861004	MW-304	SM 2540C	337052		
40196861005	MW-305	SM 2540C	337052		
40196861006	FIELD BLANK	SM 2540C	337052		
40196861001	MW-301	EPA 9040	337490		
40196861002	MW-302	EPA 9040	337490		
40196861003	MW-303	EPA 9040	337490		
40196861004	MW-304	EPA 9040	337490		
40196861005	MW-305	EPA 9040	337490		
40196861006	FIELD BLANK	EPA 9040	337490		
40196861001	MW-301	EPA 300.0	337587		
40196861002	MW-302	EPA 300.0	337587		
40196861003	MW-303	EPA 300.0	337587		
40196861004	MW-304	EPA 300.0	337587		
40196861005	MW-305	EPA 300.0	337587		
40196861006	FIELD BLANK	EPA 300.0	337587		

### REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: SCS Engineers  
 Branch/Location: Madison WI  
 Project Contact: Tom Karowski  
 Phone: \_\_\_\_\_  
 Project Number: 25216069  
 Project Name: Alliant Edgewater I-43  
 Project State: WI  
 Sampled By (Print): Charlie Bills  
 Sampled By (Sign): [Signature]  
 PO #: \_\_\_\_\_ Regulatory Program: \_\_\_\_\_



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

40190861

### 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	N	N	N	N	N	N
	N	N	N	N	N	N
Pick Letter	A	D	D	D	D	D
Analyses Requested	Chloride, Fluoride, Sulfate, TDS, PH	Boron	Calcium	Radium 228/226	Antimony, Arsenic	Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium

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: \_\_\_\_\_

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

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

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

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Analysis Requested	Chloride, Fluoride, Sulfate, TDS, PH	Boron	Calcium	Radium 228/226	Antimony, Arsenic	Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium
		DATE	TIME								
001	MW-301	10-8-19	0910	GW		X	X				
002	MW-302	10-8-19	0810	GW		X	X				
003	MW-303	10-7-19	1100	GW		X	X				
004	MW-304	10-8-19	1050	GW		X	X				
005	MW-305	10-8-19	1305	GW		X	X	X	X	X	X
006	Field Blank	10-8-19	1250	W		X	X	X	X	X	X

CLIENT COMMENTS: \_\_\_\_\_  
 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: <u>[Signature]</u>	Date/Time: <u>10-8-19 @ 1800</u>	Received By: _____	Date/Time: _____
Relinquished By: <u>Fed Ex</u>	Date/Time: <u>10/9/19 0910</u>	Received By: <u>[Signature]</u>	Date/Time: <u>10/11/19 0910</u>
Relinquished By: _____	Date/Time: _____	Received By: _____	Date/Time: _____
Relinquished By: _____	Date/Time: _____	Received By: _____	Date/Time: _____

PACE Project No. 40190861  
 Receipt Temp = RAI °C  
 Sample Receipt pH (OK) Adjusted  
 Cooler Custody Seal Present / Not Present  
Intact / Not Intact

**Sample Preservation Receipt Form**

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

Client Name: SCS Engineers

Project # 46196821

All containers needing preservation have been checked and noted below:  Yes  No  N/A

Lab Lot# of pH paper: 1050891

Lab Std #ID of preservation (if pH adjusted):

Initial when completed: *[Signature]* Date/Time:


Pace Lab #	Glass						Plastic						Vials					Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤	pH after adjusted	Volume (mL)						
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BPIU	BP2N	BP2Z	BP3U	BP3B	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU								SP5T	ZPLC	GN			
001																																				
002										2		1																							X	2.5 / 5 / 10
003										2		1																							X	2.5 / 5 / 10
004										2		1																							X	2.5 / 5 / 10
005										2			2																						X	2.5 / 5 / 10
006										2			2													2									Y	2.5 / 5 / 10
007										2			2												2										X	2.5 / 5 / 10
008																																				2.5 / 5 / 10
009																																				2.5 / 5 / 10
010																																				2.5 / 5 / 10
011																																				2.5 / 5 / 10
012																																				2.5 / 5 / 10
013																																				2.5 / 5 / 10
014																																				2.5 / 5 / 10
015																																				2.5 / 5 / 10
016																																				2.5 / 5 / 10
017																																				2.5 / 5 / 10
018																																				2.5 / 5 / 10
019																																				2.5 / 5 / 10
020																																				2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm) :  Yes  No  N/A \*If yes look in headspace column

AG1U	1 liter amber glass	BPIU	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3B	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH		
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	SP5T	120 mL plastic Na Thiosulfate
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			ZPLC	ziploc bag

*Handwritten:* 20 liter plastic HNO3 (905)  
20 liter plastic HNO3 (006)

 1241 Bellevue Street, Green Bay, WI 54302	Document Name: <b>Sample Condition Upon Receipt (SCUR)</b>	Document Revised: 25Apr2018
	Document No.: <b>F-GB-C-031-Rev.07</b>	Issuing Authority: Pace Green Bay Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project #: \_\_\_\_\_

WO#: 40196861



40196861

**Client Name:** SCS Engineers

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Walco  
 Client  Pace Other: \_\_\_\_\_

Tracking #: 7766 1231 7534

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

Cooler Temperature    Uncorr: ROI    /Corr: —

Temp Blank Present:  yes  no    Biological Tissue is Frozen:  yes  no

Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C.

Person examining contents:  
 Date: 10/9/19  
 Initials: [Signature]

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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <i>No page number / mail to not documented with [Signature]</i>
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	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	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No    MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	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	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. <i>Sample mw-302 does not have time documented on bottle 10/9/19 [Signature]</i>
-Includes date/time/ID/Analysis    Matrix: _____		
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
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: HUR per DM    Date: 10/9/19