



## 2017 Annual Groundwater Monitoring and Corrective Action Report

### Prairie Creek Generating Station Cedar Rapids, Iowa

Prepared for:



Prepared by:

**SCS ENGINEERS**  
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January 31, 2018  
File No. 25216074.17

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**2017 Annual Groundwater Monitoring and Corrective Action Report**  
**Prairie Creek Generating Station**  
**Cedar Rapids, Iowa**

Prepared for:

**Alliant Energy**

Prepared by:

**SCS ENGINEERS**  
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## 1.0 INTRODUCTION

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

This report covers the period of groundwater monitoring from December 10, 2016 through December 31, 2017. December 10, 2016 is the date of the first background sampling round. All future annual reports will cover the period from January 1 through December 31 of the previous year.

The groundwater monitoring system at the PCS is a multiunit system that includes the following seven existing CCR units:

- PCS Pond 3
- PCS Pond 4
- PCS Pond 5
- PCS Pond 6
- PCS Pond 7
- PCS Discharge Pond
- PCS Beneficial Use Storage Area

The multiunit system is designed to detect monitored constituents at the waste boundary of the facility as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two upgradient and four downgradient monitoring wells.

## 2.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

***Annual groundwater monitoring and corrective action report.*** *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the*

*annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:*

## 2.1 § 257.90(E)(1) SITE MAP

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

A map with an aerial image showing the CCR units and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 1**. Other CCR units are also presented on **Figure 1**.

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

*Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;*

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the CCR units in 2017. The upgradient monitoring wells, MW-301 and MW-302, were installed in October 31, 2016. The downgradient monitoring wells were installed on November 2, 2016 (MW-306) and December 5 through 6, 2016 (MW-303, MW-304, MW-305).

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

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

Eight groundwater samples were collected from each CCR monitoring well for the establishment of background. Background sampling began in December 2016 and concluded in August 2017. Background samples were analyzed for both Appendix III and Appendix IV constituents. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs is included in **Table 1**. The results of the analytical laboratory analyses are provided in the laboratory reports in **Appendices A1** through **A8**.

Detection monitoring was initiated at the site on October 17, 2017. The date of sample collection, field measurements, and the analytical results of the analytical laboratory analyses are provided in **Appendix A9**.

Assessment monitoring has not been initiated for the CCR Units at the Prairie Creek Generating Station.

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

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

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

## 2.5 § 257.90(E)(5) OTHER REQUIREMENTS

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

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in *italics*, followed by applicable information relative to the 2017 Annual Groundwater Monitoring and Corrective Action Report for the 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.** Collection of background groundwater quality data was completed, and the initial detection monitoring sampling and analysis event was completed.

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

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

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

- Statistical evaluation and determination of any SSIs for October 2017 monitoring event (by 1/15/18)
- If an SSI is determined, then within 90 days either

- Complete alternative source demonstration (if applicable), or
- Establish an assessment monitoring program
- Two semi-annual groundwater sampling and analysis events (April and October 2018)

#### **2.5.2 §257.94(d) Alternative Detection Monitoring Frequency**

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

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

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

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

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

#### **2.5.4 §257.95(c) Alternative Assessment Monitoring Frequency**

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

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

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

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

Not Applicable. Assessment monitoring was not performed in 2017.

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

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



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

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

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

Not Applicable. Corrective measures assessment has not been initiated.

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**TABLE 1**

CCR Rule Groundwater Samples Summary

**Table 1. CCR Rule Groundwater Samples Summary  
Prairie Creek Generating Station /SCS Engineers Project #25216074**

Sample Dates	Downgradient Wells				Background Wells	
	MW-303	MW-304	MW-305	MW-306	MW-301	MW-302
12/20-21/2016	B	B	B	B	B	B
1/23-24/2017	B	B	B	B	B	B
2/23/2017	B	B	B	B	B	B
3/28/2017	B	B	B	B	B	B
4/26-27/2017	B	B	B	B	B	B
5/25/2017	B	B	B	B	B	B
6/28/2017	B	B	B	B	B	B
8/17/2017	B	B	B	B	B	B
10/17/2017	D	D	D	D	D	D
Total Samples	9	9	9	9	9	9

Abbreviations:

B = Background Sample

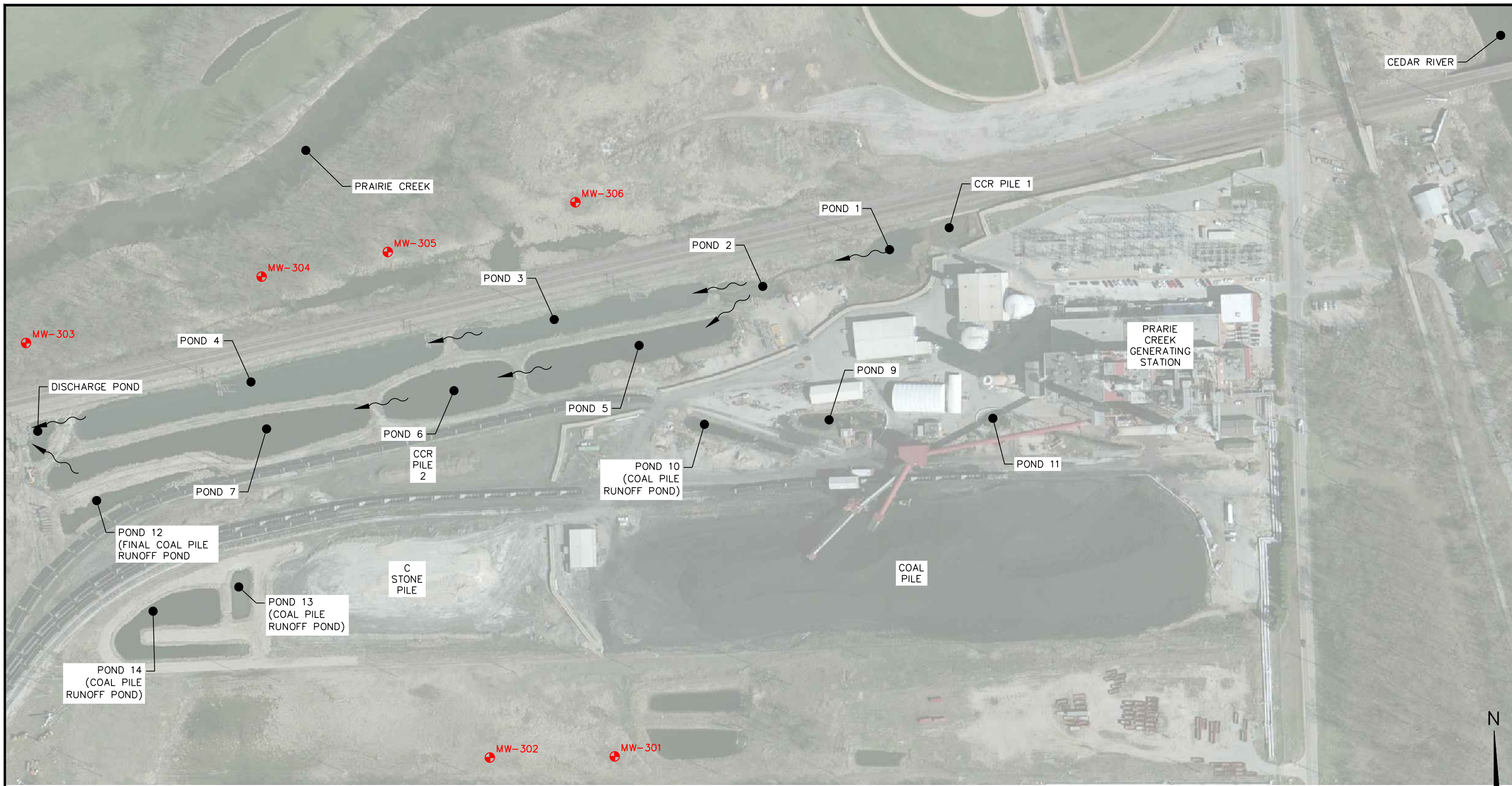
D = Required by Detection Monitoring Program

Created by: NDK Date: 1/9/2018  
 Last revision by: NDk Date: 1/9/2018  
 Checked by: NDK Date: 1/9/2018

I:\25216074.00\Reports\2017 Annual Report\GW\_Samples\_Summary\_Table\_PGS-1.xlsx]GW Summary

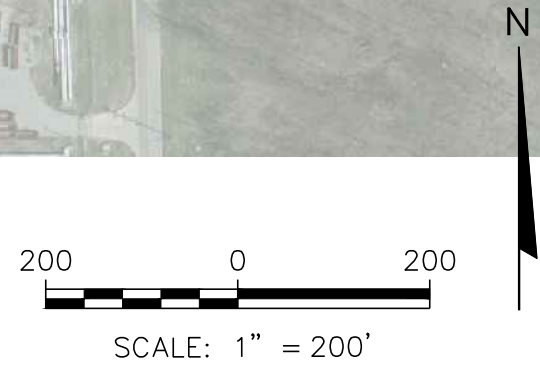
**FIGURE 1**

Site Plan and Monitoring Well Locations



**LEGEND**

FLOW DIRECTION BETWEEN CCR PONDS  
 CCR MONITORING WELL



PROJECT NO.	25216074.17	DRAWN BY:	AHB	<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE IPL-PRAIRIE CREEK GENERATING STATION 3300 C ST. SW CEDAR RAPIDS, IA 52404	MONITORING WELL LOCATION MAP	FIGURE
DRAWN:	01/26/17	CHECKED BY:	NK					1
REVISED:	01/18/18	APPROVED BY:						

I:\25216074.00\Drawings\2017 Annual Rot.dwg, 1/18/2018 11:25:43 AM

## **APPENDIX A**

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

## A1 Round 1 Background Sampling, Analytical Laboratory Report



January 05, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234860

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60234860001	MW-301	Water	12/20/16 15:30	12/22/16 11:35
60234860002	MW-302	Water	12/20/16 14:30	12/22/16 11:35
60234860003	MW-303	Water	12/20/16 16:30	12/22/16 11:35
60234860004	MW-304	Water	12/21/16 10:20	12/22/16 11:35
60234860005	MW-305	Water	12/21/16 11:30	12/22/16 11:35
60234860006	MW-306	Water	12/21/16 12:30	12/22/16 11:35
60234860007	FIELD BLANK	Water	12/21/16 09:00	12/22/16 11:35

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60234860001	MW-301	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860002	MW-302	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860003	MW-303	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860004	MW-304	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860005	MW-305	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860006	MW-306	EPA 6010	JGP	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60234860007	FIELD BLANK	EPA 6010	JGP	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	SMW	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: MW-301		Lab ID: 60234860001		Collected: 12/20/16 15:30		Received: 12/22/16 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	ND	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:26	7440-42-8	
Calcium	137	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:26	7440-70-2	
Lithium	14.9	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:26	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	0.28J	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 10:53	7440-36-0	B
Arsenic	0.70J	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 10:53	7440-38-2	B
Barium	250	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 10:53	7440-39-3	M1
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 10:53	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 10:53	7440-43-9	
Chromium	3.9	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 10:53	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 10:53	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 10:53	7439-92-1	
Molybdenum	0.61J	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 10:53	7439-98-7	B
Selenium	0.97J	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 10:53	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 10:53	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:19	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	556	mg/L	5.0	5.0	1		12/23/16 08:57		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	7.0	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	19.5	mg/L	1.0	0.50	1		12/30/16 14:23	16887-00-6	M1
Fluoride	0.13J	mg/L	0.20	0.027	1		12/30/16 14:23	16984-48-8	
Sulfate	108	mg/L	10.0	1.5	10		12/31/16 12:25	14808-79-8	

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**ANALYTICAL RESULTS**

Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234860

Sample: MW-302      Lab ID: 60234860002      Collected: 12/20/16 14:30      Received: 12/22/16 11:35      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	ND	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:29	7440-42-8	
Calcium	<b>107</b>	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:29	7440-70-2	
Lithium	<b>8.7J</b>	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:29	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.32J</b>	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:07	7440-36-0	B
Arsenic	<b>2.3</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:07	7440-38-2	
Barium	<b>200</b>	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:07	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:07	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:07	7440-43-9	
Chromium	<b>3.3</b>	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:07	7440-47-3	B
Cobalt	<b>2.7</b>	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:07	7440-48-4	
Lead	<b>0.55J</b>	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:07	7439-92-1	
Molybdenum	<b>0.76J</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:07	7439-98-7	B
Selenium	<b>0.55J</b>	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:07	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:07	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:30	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>465</b>	mg/L	5.0	5.0	1		12/23/16 08:57		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>6.8</b>	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	<b>22.6</b>	mg/L	2.0	1.0	2		12/31/16 13:06	16887-00-6	
Fluoride	<b>0.16J</b>	mg/L	0.20	0.027	1		12/30/16 15:04	16984-48-8	
Sulfate	<b>77.7</b>	mg/L	5.0	0.77	5		12/31/16 13:19	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: MW-303		Lab ID: 60234860003		Collected: 12/20/16 16:30		Received: 12/22/16 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>767</b>	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:33	7440-42-8	
Calcium	<b>68.7</b>	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:33	7440-70-2	
Lithium	<b>19.0</b>	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:33	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>2.0</b>	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:11	7440-36-0	B
Arsenic	<b>20.8</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:11	7440-38-2	
Barium	<b>68.8</b>	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:11	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:11	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:11	7440-43-9	
Chromium	<b>1.1</b>	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:11	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:11	7440-48-4	
Lead	<b>0.36J</b>	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:11	7439-92-1	
Molybdenum	<b>37.8</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:11	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:11	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:11	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:33	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>346</b>	mg/L	5.0	5.0	1		12/23/16 08:58		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.0</b>	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>17.6</b>	mg/L	1.0	0.50	1		12/30/16 15:31	16887-00-6	
Fluoride	<b>0.55</b>	mg/L	0.20	0.027	1		12/30/16 15:31	16984-48-8	
Sulfate	<b>72.6</b>	mg/L	5.0	0.77	5		12/31/16 14:00	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: MW-304		Lab ID: 60234860004		Collected: 12/21/16 10:20		Received: 12/22/16 11:35		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP</b>		Analytical Method: EPA 6010		Preparation Method: EPA 3010					
Boron	372	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:37	7440-42-8	
Calcium	71.0	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:37	7440-70-2	
Lithium	12.1	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:37	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020		Preparation Method: EPA 3010					
Antimony	2.4	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:15	7440-36-0	
Arsenic	11.4	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:15	7440-38-2	
Barium	65.3	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:15	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:15	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:15	7440-43-9	
Chromium	0.58J	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:15	7440-47-3	B
Cobalt	0.75J	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:15	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:15	7439-92-1	
Molybdenum	33.5	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:15	7439-98-7	
Selenium	1.1	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:15	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:15	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470		Preparation Method: EPA 7470					
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:35	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	396	mg/L	5.0	5.0	1		12/27/16 15:14		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	6.9	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	20.2	mg/L	2.0	1.0	2		12/31/16 14:28	16887-00-6	
Fluoride	0.84	mg/L	0.20	0.027	1		12/30/16 15:45	16984-48-8	
Sulfate	93.8	mg/L	10.0	1.5	10		12/31/16 14:42	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: MW-305		Lab ID: 60234860005		Collected: 12/21/16 11:30		Received: 12/22/16 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010		Preparation Method: EPA 3010					
Boron	<b>363</b>	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:40	7440-42-8	
Calcium	<b>65.1</b>	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:40	7440-70-2	
Lithium	<b>15.5</b>	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:40	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020		Preparation Method: EPA 3010					
Antimony	<b>2.7</b>	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:20	7440-36-0	
Arsenic	<b>15.4</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:20	7440-38-2	
Barium	<b>71.4</b>	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:20	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:20	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:20	7440-43-9	
Chromium	<b>0.55J</b>	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:20	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:20	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:20	7439-92-1	
Molybdenum	<b>30.7</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:20	7439-98-7	
Selenium	<b>1.3</b>	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:20	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:20	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470		Preparation Method: EPA 7470					
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:37	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>370</b>	mg/L	5.0	5.0	1		12/27/16 15:14		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.1</b>	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>18.0</b>	mg/L	1.0	0.50	1		12/30/16 15:59	16887-00-6	
Fluoride	<b>0.63</b>	mg/L	0.20	0.027	1		12/30/16 15:59	16984-48-8	
Sulfate	<b>72.1</b>	mg/L	5.0	0.77	5		12/31/16 14:55	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: MW-306		Lab ID: 60234860006		Collected: 12/21/16 12:30		Received: 12/22/16 11:35		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010		Preparation Method: EPA 3010					
Boron	<b>2990</b>	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:55	7440-42-8	
Calcium	<b>52.4</b>	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:55	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:55	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020		Preparation Method: EPA 3010					
Antimony	<b>0.25J</b>	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:24	7440-36-0	B
Arsenic	<b>0.82J</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:24	7440-38-2	B
Barium	<b>53.0</b>	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:24	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:24	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:24	7440-43-9	
Chromium	<b>0.65J</b>	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:24	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:24	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:24	7439-92-1	
Molybdenum	<b>272</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:24	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:24	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:24	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470		Preparation Method: EPA 7470					
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:39	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>444</b>	mg/L	5.0	5.0	1		12/27/16 15:15		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>45.4</b>	mg/L	5.0	2.5	5		12/31/16 15:09	16887-00-6	
Fluoride	<b>0.26</b>	mg/L	0.20	0.027	1		12/30/16 16:40	16984-48-8	
Sulfate	<b>142</b>	mg/L	10.0	1.5	10		12/31/16 15:23	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Sample: FIELD BLANK									
Lab ID: 6023486007									
Collected: 12/21/16 09:00									
Received: 12/22/16 11:35									
Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Boron	ND	ug/L	100	50.0	1	12/27/16 14:00	12/28/16 10:51	7440-42-8	
Calcium	ND	mg/L	0.10	0.0081	1	12/27/16 14:00	12/28/16 10:51	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	12/27/16 14:00	12/28/16 10:51	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<b>0.22J</b>	ug/L	1.0	0.058	1	12/27/16 14:00	12/30/16 11:28	7440-36-0	B
Arsenic	<b>0.14J</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:28	7440-38-2	B
Barium	<b>0.20J</b>	ug/L	1.0	0.14	1	12/27/16 14:00	12/30/16 11:28	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.080	1	12/27/16 14:00	12/30/16 11:28	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	12/27/16 14:00	12/30/16 11:28	7440-43-9	
Chromium	<b>0.58J</b>	ug/L	1.0	0.34	1	12/27/16 14:00	12/30/16 11:28	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:28	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	12/27/16 14:00	12/30/16 11:28	7439-92-1	
Molybdenum	<b>0.27J</b>	ug/L	1.0	0.10	1	12/27/16 14:00	12/30/16 11:28	7439-98-7	B
Selenium	ND	ug/L	1.0	0.18	1	12/27/16 14:00	12/30/16 11:28	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	12/27/16 14:00	12/30/16 11:28	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	12/28/16 09:30	12/28/16 13:41	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		12/27/16 15:16		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.8</b>	Std. Units	0.10	0.10	1		01/04/17 15:20		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		12/30/16 16:54	16887-00-6	
Fluoride	ND	mg/L	0.20	0.027	1		12/30/16 16:54	16984-48-8	
Sulfate	<b>0.31J</b>	mg/L	1.0	0.15	1		12/30/16 16:54	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

QC Batch: 460563

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

METHOD BLANK: 1885042

Matrix: Water

Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	12/28/16 13:04	

LABORATORY CONTROL SAMPLE: 1885043

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1885044 1885045

Parameter	Units	60234860001 Result	MS		MSD		% Rec	MSD	% Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Spike Conc.	Conc.							
Mercury	ug/L	ND	5	5	5.1	5.3	102	105	75-125	3	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234860

QC Batch: 460425 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

METHOD BLANK: 1884713 Matrix: Water  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	50.0	12/28/16 10:08	
Calcium	mg/L	ND	0.10	0.0081	12/28/16 10:08	
Lithium	ug/L	ND	10.0	4.9	12/28/16 10:08	

LABORATORY CONTROL SAMPLE: 1884714

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	966	97	80-120	
Calcium	mg/L	10	9.8	98	80-120	
Lithium	ug/L	1000	990	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1884715 1884716

Parameter	Units	60234450001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	ND	1000	1000	1050	1060	99	99	75-125	1	20	
Calcium	mg/L	89900	10	10	103	104	129	137	75-125	1	20	M1
Lithium	ug/L	15.2	1000	1000	1050	1040	103	102	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234860

QC Batch: 460435 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

METHOD BLANK: 1884738 Matrix: Water  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.23J	1.0	0.058	12/30/16 10:22	
Arsenic	ug/L	0.18J	1.0	0.10	12/30/16 10:22	
Barium	ug/L	0.76J	1.0	0.14	12/30/16 10:22	
Beryllium	ug/L	ND	0.50	0.080	12/30/16 10:22	
Cadmium	ug/L	ND	0.50	0.029	12/30/16 10:22	
Chromium	ug/L	0.44J	1.0	0.34	12/30/16 10:22	
Cobalt	ug/L	ND	1.0	0.50	12/30/16 10:22	
Lead	ug/L	ND	1.0	0.19	12/30/16 10:22	
Molybdenum	ug/L	0.25J	1.0	0.10	12/30/16 10:22	
Selenium	ug/L	ND	1.0	0.18	12/30/16 10:22	
Thallium	ug/L	ND	1.0	0.50	12/30/16 10:22	

LABORATORY CONTROL SAMPLE: 1884739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.8	100	80-120	
Arsenic	ug/L	40	40.7	102	80-120	
Barium	ug/L	40	39.8	99	80-120	
Beryllium	ug/L	40	40.9	102	80-120	
Cadmium	ug/L	40	39.6	99	80-120	
Chromium	ug/L	40	40.5	101	80-120	
Cobalt	ug/L	40	39.4	99	80-120	
Lead	ug/L	40	38.7	97	80-120	
Molybdenum	ug/L	40	41.2	103	80-120	
Selenium	ug/L	40	40.6	101	80-120	
Thallium	ug/L	40	39.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1884740 1884741

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Antimony	ug/L	0.28J	40	40	37.7	38.7	94	96	75-125	3	20	
Arsenic	ug/L	0.70J	40	40	39.9	39.5	98	97	75-125	1	20	
Barium	ug/L	250	40	40	277	278	68	70	75-125	0	20	M1
Beryllium	ug/L	ND	40	40	34.2	35.8	86	90	75-125	5	20	
Cadmium	ug/L	ND	40	40	36.0	35.9	90	90	75-125	0	20	
Chromium	ug/L	3.9	40	40	41.6	42.2	94	96	75-125	2	20	
Cobalt	ug/L	ND	40	40	36.5	37.1	91	92	75-125	2	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Parameter	Units	60234860001		1884740		1884741		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS Result	MSD Result							
Lead	ug/L	ND	40	40	35.2	35.6	87	88	75-125	1	20			
Molybdenum	ug/L	0.61J	40	40	42.8	41.9	105	103	75-125	2	20			
Selenium	ug/L	0.97J	40	40	40.0	37.8	97	92	75-125	6	20			
Thallium	ug/L	ND	40	40	37.0	37.6	92	94	75-125	2	20			

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

QC Batch: 460157

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60234860001, 60234860002, 60234860003

METHOD BLANK: 1883744

Matrix: Water

Associated Lab Samples: 60234860001, 60234860002, 60234860003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	12/23/16 08:37	

LABORATORY CONTROL SAMPLE: 1883745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	934	93	80-120	

SAMPLE DUPLICATE: 1883746

Parameter	Units	60234727001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1150	1180	3	10	

SAMPLE DUPLICATE: 1883747

Parameter	Units	60234723001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	538	513	5	10	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

QC Batch: 460495

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60234860004, 60234860005, 60234860006, 60234860007

METHOD BLANK: 1884856

Matrix: Water

Associated Lab Samples: 60234860004, 60234860005, 60234860006, 60234860007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	12/27/16 15:08	

LABORATORY CONTROL SAMPLE: 1884857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	963	96	80-120	

SAMPLE DUPLICATE: 1884858

Parameter	Units	60234820001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3820	3900	2	10	

SAMPLE DUPLICATE: 1884859

Parameter	Units	60234903001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	473	481	2	10	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

QC Batch: 461143 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

SAMPLE DUPLICATE: 1887471

Parameter	Units	60234620002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.4	6.4	0	10	H6

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**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25215173.10

Project No.: 60234860

QC Batch: 460861 Analysis Method: EPA 9056  
 QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
 Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

METHOD BLANK: 1886363 Matrix: Water  
 Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006, 60234860007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	12/30/16 13:56	
Fluoride	mg/L	ND	0.20	0.027	12/30/16 13:56	
Sulfate	mg/L	ND	1.0	0.15	12/30/16 13:56	

LABORATORY CONTROL SAMPLE: 1886364

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	80-120	
Fluoride	mg/L	2.5	2.7	106	80-120	
Sulfate	mg/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1886365 1886366

Parameter	Units	60234860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	19.5	5	5	25.6	25.7	123	124	80-120	0	15	M1
Fluoride	mg/L	0.13J	2.5	2.5	3.0	3.0	115	116	80-120	1	15	

SAMPLE DUPLICATE: 1886367

Parameter	Units	60234860002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.16J	0.15J		15	

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234860

QC Batch: 460919 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006

METHOD BLANK: 1886580 Matrix: Water  
Associated Lab Samples: 60234860001, 60234860002, 60234860003, 60234860004, 60234860005, 60234860006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	12/31/16 10:35	
Sulfate	mg/L	ND	1.0	0.15	12/31/16 10:35	

LABORATORY CONTROL SAMPLE: 1886581

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	80-120	
Sulfate	mg/L	5	5.1	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1886582 1886583

Parameter	Units	60234860001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	108	50	50	166	167	116	119	80-120	1	15	

SAMPLE DUPLICATE: 1886584

Parameter	Units	60234860003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	72.6	71.3	2	15	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60234860001	MW-301	EPA 3010	460425	EPA 6010	460498
60234860002	MW-302	EPA 3010	460425	EPA 6010	460498
60234860003	MW-303	EPA 3010	460425	EPA 6010	460498
60234860004	MW-304	EPA 3010	460425	EPA 6010	460498
60234860005	MW-305	EPA 3010	460425	EPA 6010	460498
60234860006	MW-306	EPA 3010	460425	EPA 6010	460498
60234860007	FIELD BLANK	EPA 3010	460425	EPA 6010	460498
60234860001	MW-301	EPA 3010	460435	EPA 6020	460505
60234860002	MW-302	EPA 3010	460435	EPA 6020	460505
60234860003	MW-303	EPA 3010	460435	EPA 6020	460505
60234860004	MW-304	EPA 3010	460435	EPA 6020	460505
60234860005	MW-305	EPA 3010	460435	EPA 6020	460505
60234860006	MW-306	EPA 3010	460435	EPA 6020	460505
60234860007	FIELD BLANK	EPA 3010	460435	EPA 6020	460505
60234860001	MW-301	EPA 7470	460563	EPA 7470	460606
60234860002	MW-302	EPA 7470	460563	EPA 7470	460606
60234860003	MW-303	EPA 7470	460563	EPA 7470	460606
60234860004	MW-304	EPA 7470	460563	EPA 7470	460606
60234860005	MW-305	EPA 7470	460563	EPA 7470	460606
60234860006	MW-306	EPA 7470	460563	EPA 7470	460606
60234860007	FIELD BLANK	EPA 7470	460563	EPA 7470	460606
60234860001	MW-301	SM 2540C	460157		
60234860002	MW-302	SM 2540C	460157		
60234860003	MW-303	SM 2540C	460157		
60234860004	MW-304	SM 2540C	460495		
60234860005	MW-305	SM 2540C	460495		
60234860006	MW-306	SM 2540C	460495		
60234860007	FIELD BLANK	SM 2540C	460495		
60234860001	MW-301	EPA 9040	461143		
60234860002	MW-302	EPA 9040	461143		
60234860003	MW-303	EPA 9040	461143		
60234860004	MW-304	EPA 9040	461143		
60234860005	MW-305	EPA 9040	461143		
60234860006	MW-306	EPA 9040	461143		
60234860007	FIELD BLANK	EPA 9040	461143		
60234860001	MW-301	EPA 9056	460861		
60234860001	MW-301	EPA 9056	460919		
60234860002	MW-302	EPA 9056	460861		
60234860002	MW-302	EPA 9056	460919		
60234860003	MW-303	EPA 9056	460861		
60234860003	MW-303	EPA 9056	460919		
60234860004	MW-304	EPA 9056	460861		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234860

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60234860004	MW-304	EPA 9056	460919		
60234860005	MW-305	EPA 9056	460861		
60234860005	MW-305	EPA 9056	460919		
60234860006	MW-306	EPA 9056	460861		
60234860006	MW-306	EPA 9056	460919		
60234860007	FIELD BLANK	EPA 9056	460861		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60234860



60234860

Client Name: SCS Engineers

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7851 0255 9708 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.3 Corr. Factor CF +0.7 CF +0.9 Corrected 2.0

Date and initials of person examining contents: BSB 12/21/16

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>PH</u>
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>wt</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks:	<input checked="" type="checkbox"/> N/A	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 12.22.16



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:		
Company: SCS Engineers	Report To: Meghan Blodgett	Copy To: Tom Karwaski	Company Name: SCS Engineers	Attention: Meghan Blodgett/Jess Vaicheff		
Address: 2830 Dairy Drive		Purchase Order No.:	Address:	REGULATORY AGENCY		
Email To: mblodgett@scsengineers.com		Project Name: IPL Prairie Creek	Reference: Pace Project Manager	<input type="checkbox"/> NPDES	<input type="checkbox"/> GROUND WATER	<input type="checkbox"/> DRINKING WATER
Phone: 608-216-7362	Fax:	Project Number: 25215173.10	Trudy Gipson 913-563-1405	<input type="checkbox"/> UST	<input type="checkbox"/> RCRA	<input type="checkbox"/> OTHER
Requested Due Date/TAT:			Pace Profile #: 6696 Line 2	Site Location	STATE: IA	

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		PRESERVATIVES	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB				
1		DRINKING WATER	WT	G	DATE	TIME	Unpreserved	Y		608 34860
2		WASTE WATER	WT	G	12/25/16	1530	H <sub>2</sub> SO <sub>4</sub>	N		BR20 R22N <sup>2</sup> 601
3		SOIL/SOLID	WT	G	1/22/16	1430	HCl	N		
4		WASTE WATER	WT	G	12/25/16	1630	NaOH	N		
5		WASTE WATER	WT	G	1/22/16	1020	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	N		
6		WASTE WATER	WT	G	1/23/16	1130	Methanol	N		
7		FIELD BLANK	WT	G	1/23/16	1230	Other	N		
8			WT	G	1/23/16	0900		N		
9										
10										
11										
12										

Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Temp in °C	Received on	Custody Sealed	Samples Intact
	Meghan Blodgett	12/21/16	1320	Kyle Koeniger	12/21/16	1135	Y	2.0	Y	Y	Y
<b>SAMPLER NAME AND SIGNATURE</b> PRINT Name of SAMPLER: Kyle Koeniger SIGNATURE of SAMPLER: <i>[Signature]</i>											
DATE Signed (MM/DD/YYYY): 12/21/16											

January 23, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25215173.10  
Pace Project No.: 60234863

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

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### **Pennsylvania Certification IDs**

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60234863001	MW-301	Water	12/20/16 15:30	12/22/16 11:35
60234863002	MW-302	Water	12/20/16 14:30	12/22/16 11:35
60234863003	MW-303	Water	12/20/16 16:30	12/22/16 11:35
60234863004	MW-304	Water	12/21/16 10:20	12/22/16 11:35
60234863005	MW-305	Water	12/21/16 11:30	12/22/16 11:35
60234863006	MW-306	Water	12/21/16 12:30	12/22/16 11:35
60234863007	FIELD BLANK	Water	12/21/16 09:00	12/22/16 11:35

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60234863001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60234863007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-301**      **Lab ID: 60234863001**      Collected: 12/20/16 15:30      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.743 (1.49)</b> <b>C:NA T:90%</b>	pCi/L	01/20/17 11:16	13982-63-3	
Radium-228	EPA 904.0	<b>1.06 ± 0.656 (1.23)</b> <b>C:48% T:80%</b>	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.06 ± 1.40 (2.72)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-302**      **Lab ID: 60234863002**      Collected: 12/20/16 14:30      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.413 (0.667)</b> <b>C:NA T:89%</b>	pCi/L	01/20/17 11:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.597 ± 0.505 (1.01)</b> <b>C:61% T:72%</b>	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.597 ± 0.918 (1.68)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-303**      **Lab ID: 60234863003**      Collected: 12/20/16 16:30      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.545 ± 0.440 (0.246)</b> C:NA T:87%	pCi/L	01/20/17 11:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.380 ± 0.537 (1.15)</b> C:54% T:79%	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.925 ± 0.977 (1.40)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-304**      **Lab ID: 60234863004**      Collected: 12/21/16 10:20      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.522 ± 0.422 (0.236)</b> C:NA T:87%	pCi/L	01/20/17 11:16	13982-63-3	
Radium-228	EPA 904.0	<b>1.22 ± 0.489 (0.767)</b> C:76% T:80%	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.74 ± 0.911 (1.00)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-305**      **Lab ID: 60234863005**      Collected: 12/21/16 11:30      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.391 (0.795)</b> C:NA T:92%	pCi/L	01/20/17 11:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.665 ± 0.458 (0.879)</b> C:66% T:79%	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.665 ± 0.849 (1.67)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: MW-306**      **Lab ID: 60234863006**      Collected: 12/21/16 12:30      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.430 (0.693)</b> C:NA T:81%	pCi/L	01/20/17 11:32	13982-63-3	
Radium-228	EPA 904.0	<b>0.843 ± 0.555 (1.06)</b> C:60% T:77%	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.843 ± 0.985 (1.75)</b>	pCi/L	01/23/17 09:15	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

**Sample: FIELD BLANK**      **Lab ID: 60234863007**      Collected: 12/21/16 09:00      Received: 12/22/16 11:35      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>-0.086 ± 0.395 (0.803)</b> C:NA T:86%	pCi/L	01/20/17 11:32	13982-63-3	
Radium-228	EPA 904.0	<b>0.778 ± 0.505 (0.965)</b> C:69% T:76%	pCi/L	01/20/17 12:02	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.778 ± 0.900 (1.77)</b>	pCi/L	01/23/17 09:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

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QC Batch: 245989 Analysis Method: EPA 903.1

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

Associated Lab Samples: 60234863001, 60234863002, 60234863003, 60234863004, 60234863005, 60234863006, 60234863007

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METHOD BLANK: 1209859 Matrix: Water

Associated Lab Samples: 60234863001, 60234863002, 60234863003, 60234863004, 60234863005, 60234863006, 60234863007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.363 (0.738) C:NA T:96%	pCi/L	01/20/17 11:16	

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: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

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QC Batch:	245990	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	60234863001, 60234863002, 60234863003, 60234863004, 60234863005, 60234863006, 60234863007		

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METHOD BLANK:	1209860	Matrix:	Water
Associated Lab Samples:	60234863001, 60234863002, 60234863003, 60234863004, 60234863005, 60234863006, 60234863007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.348 ± 0.434 (0.917) C:59% T:74%	pCi/L	01/20/17 11:41	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

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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 adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25215173.10

Pace Project No.: 60234863

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60234863001	MW-301	EPA 903.1	245989		
60234863002	MW-302	EPA 903.1	245989		
60234863003	MW-303	EPA 903.1	245989		
60234863004	MW-304	EPA 903.1	245989		
60234863005	MW-305	EPA 903.1	245989		
60234863006	MW-306	EPA 903.1	245989		
60234863007	FIELD BLANK	EPA 903.1	245989		
60234863001	MW-301	EPA 904.0	245990		
60234863002	MW-302	EPA 904.0	245990		
60234863003	MW-303	EPA 904.0	245990		
60234863004	MW-304	EPA 904.0	245990		
60234863005	MW-305	EPA 904.0	245990		
60234863006	MW-306	EPA 904.0	245990		
60234863007	FIELD BLANK	EPA 904.0	245990		
60234863001	MW-301	Total Radium Calculation	247097		
60234863002	MW-302	Total Radium Calculation	247097		
60234863003	MW-303	Total Radium Calculation	247097		
60234863004	MW-304	Total Radium Calculation	247097		
60234863005	MW-305	Total Radium Calculation	247097		
60234863006	MW-306	Total Radium Calculation	247097		
60234863007	FIELD BLANK	Total Radium Calculation	247097		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60234863



Client Name: SCS Engineers

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7851 0255 8779 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 19 Corr. Factor CF +0.7 / CF +0.9 Corrected 26

Date and initials of person examining contents: 12/2/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples contain multiple phases? Matrix: <u>VT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <u>JP/22</u>
Cyanide water sample checks: <input checked="" type="checkbox"/> N/A	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 12.22.16



# CHAIN-OF-CUSTODY / Analytical Request Document

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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Report To: Meghan Blodgett	Attention: Meghan Blodgett/Jess Vaicheck	Company Name: SCS Engineers	Address:	
Address: 2830 Dairy Drive	Copy To: Tom Karwaski		Address:	REGULATORY AGENCY	
Madison WI 53718	Purchase Order No.:		Reference: Trudy Gipson 913-563-1405	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Email To: mblodgett@scsengineers.com	Project Name: IPL Prairie Creek	Pace Project Manager: Trudy Gipson 913-563-1405	Pace Profile #: 6696 Line 2	Site Location STATE: IA	
Phone: 608-216-7362	Project Number: 25215173.10_				
Requested Due Date/TAT:					

Page: 1 of 1

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WIP AIR AR OTHER OT TISSUE TS	Section D Required Client Information	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Y/N ↑	Requested Analysis Filtered (Y/N)			Residual Chlorine (Y/N)	Pace Project No / Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	DATE		
1	MW-301		WT	G	xxx	xxx	12/22/16	1530	2	2	X	X	60034863
2	MW-302		WT	G	xxx	xxx	12/22/16	1430	2	2	X	X	021
3	MW-303		WT	G	xxx	xxx	12/22/16	1630	2	2	X	X	023
4	MW-304		WT	G	xxx	xxx	12/22/16	1020	2	2	X	X	004
5	MW-305		WT	G	xxx	xxx	12/22/16	1130	2	2	X	X	005
6	MW-306		WT	G	xxx	xxx	12/22/16	1730	2	2	X	X	006
7	FIELD BLANK		WT	G	xxx	xxx	12/22/16	0900	2	2	X	X	007
8													
9													
10													
11													
12													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Temp In °C	Received on Ice (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Leiret Boulevard, Lenexa, KS 66219	Mylee Gunn	12/22/16	1320	Jess Vaicheck	12/22	1755	Y Y Y Y	2.6	Y	Y	Y
SAMPLER NAME AND SIGNATURE											
PRINT Name of SAMPLER: Kyle Kraemer			DATE Signed (MM/DD/YY): 12/21/16								
SIGNATURE of SAMPLER: Mylee Gunn											

# Chain of Custody



Workorder: 60234863      Workorder Name: IPL Prairie Creek/25215173.10      Owner Received Date: 12/22/2016 Results Requested By: 1/17/2017

Report To		Subcontract To		Requested Analysis											
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665		Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600													
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		903.1 Radium-226	904.0 Radium-228	Total Radium					LAB USE ONLY
1	MW-301	PS	12/20/2016 15:30	60234863001	Water	2	CONH	X	X	X					001
2	MW-302	PS	12/20/2016 14:30	60234863002	Water	2		X	X	X					002
3	MW-303	PS	12/20/2016 16:30	60234863003	Water	2		X	X	X					003
4	MW-304	PS	12/21/2016 10:20	60234863004	Water	2		X	X	X					004
5	MW-305	PS	12/21/2016 11:30	60234863005	Water	2		X	X	X					005
6	MW-306	PS	12/21/2016 12:30	60234863006	Water	2		X	X	X					006
7	FIELD BLANK	PS	12/21/2016 09:00	60234863007	Water	2		X	X	X					007
Comments															
Transfers		Released By	Date/Time	Received	Date/Time										
1		<i>[Signature]</i>	12/21/16 17:00	<i>[Signature]</i>	12-23-16/1250										
2															
3															
Cooler Temperature on Receipt <u>N/A</u> °C      Custody Seal <u>Y</u> or <u>N</u> Received on Ice <u>Y</u> or <u>N</u> Samples Intact <u>Y</u> or <u>N</u>															

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO# : 30206606

# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace/ISS

Project # 30206606

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7044 6657 9875

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 09/18 12-23-18

**Comments:**

	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC:	X			5.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>09/18</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:		X		15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>09/18</u> Date: <u>12-23-18</u>

**Client Notification/ Resolution:**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

**Note:** Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)  
 \*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

## A2 Round 2 Background Sampling, Analytical Laboratory Report

February 07, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60236751

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236751001	MW-301	Water	01/23/17 14:30	01/26/17 08:40
60236751002	MW-302	Water	01/23/17 17:00	01/26/17 08:40
60236751003	MW-303	Water	01/23/17 15:50	01/26/17 08:40
60236751004	MW-304	Water	01/24/17 09:10	01/26/17 08:40
60236751005	MW-305	Water	01/24/17 09:50	01/26/17 08:40
60236751006	MW-306	Water	01/24/17 10:35	01/26/17 08:40
60236751007	FIELD BLANK	Water	01/23/17 14:15	01/26/17 08:40

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236751001	MW-301	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751002	MW-302	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751003	MW-303	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751004	MW-304	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751005	MW-305	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751006	MW-306	EPA 6010	SMW	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236751007	FIELD BLANK	EPA 6010	SMW	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	SMW	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

**Sample: MW-301**      **Lab ID: 60236751001**      Collected: 01/23/17 14:30      Received: 01/26/17 08:40      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/01/17 10:12		
Field pH	<b>6.80</b>	Std. Units	0.10	0.050	1		02/01/17 10:12		
Field Temperature	<b>11.2</b>	deg C	0.50	0.25	1		02/01/17 10:12		
Field Specific Conductance	<b>895</b>	umhos/cm	1.0	1.0	1		02/01/17 10:12		
Oxygen, Dissolved	<b>2.75</b>	mg/L			1		02/01/17 10:12	7782-44-7	
REDOX	<b>54.7</b>	mV			1		02/01/17 10:12		
Turbidity	<b>6.66</b>	NTU	1.0	1.0	1		02/01/17 10:12		
Groundwater Elevation	<b>716.05</b>	feet			1		02/01/17 10:12		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	ND	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 11:44	7440-42-8	
Calcium	<b>140</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 11:44	7440-70-2	
Lithium	<b>13.4</b>	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 11:44	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.20J</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 12:36	7440-36-0	B
Arsenic	<b>0.69J</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:36	7440-38-2	
Barium	<b>257</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 12:36	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 12:36	7440-41-7	
Cadmium	<b>0.059J</b>	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 12:36	7440-43-9	
Chromium	<b>4.3</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 12:36	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:36	7440-48-4	
Lead	<b>0.23J</b>	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 12:36	7439-92-1	
Molybdenum	<b>0.34J</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:36	7439-98-7	
Selenium	<b>1.2</b>	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 12:36	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:36	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>587</b>	mg/L	5.0	5.0	1		01/27/17 11:00		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>8.0</b>	Std. Units	0.10	0.10	1		02/07/17 13:14		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>24.1</b>	mg/L	2.0	1.0	2		01/31/17 14:45	16887-00-6	
Fluoride	<b>0.079J</b>	mg/L	0.20	0.027	1		01/31/17 14:17	16984-48-8	
Sulfate	<b>101</b>	mg/L	10.0	1.5	10		01/31/17 13:21	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Sample: MW-302		Lab ID: 60236751002		Collected: 01/23/17 17:00		Received: 01/26/17 08:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		02/01/17 10:12		
Field pH	<b>6.72</b>	Std. Units	0.10	0.050	1		02/01/17 10:12		
Field Temperature	<b>7.8</b>	deg C	0.50	0.25	1		02/01/17 10:12		
Field Specific Conductance	<b>712.2</b>	umhos/cm	1.0	1.0	1		02/01/17 10:12		
Oxygen, Dissolved	<b>2.78</b>	mg/L			1		02/01/17 10:12	7782-44-7	
REDOX	<b>-12.1</b>	mV			1		02/01/17 10:12		
Turbidity	<b>0.95</b>	NTU	1.0	1.0	1		02/01/17 10:12		
Groundwater Elevation	<b>715.77</b>	feet			1		02/01/17 10:12		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	ND	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 11:55	7440-42-8	
Calcium	<b>106</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 11:55	7440-70-2	
Lithium	<b>7.7J</b>	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 11:55	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.14J</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 12:40	7440-36-0	B
Arsenic	<b>1.7</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:40	7440-38-2	
Barium	<b>194</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 12:40	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 12:40	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 12:40	7440-43-9	
Chromium	<b>2.1</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 12:40	7440-47-3	
Cobalt	<b>2.2</b>	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:40	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 12:40	7439-92-1	
Molybdenum	<b>0.43J</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:40	7439-98-7	
Selenium	<b>0.36J</b>	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 12:40	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:40	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:43	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>463</b>	mg/L	5.0	5.0	1		01/27/17 11:01		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		02/07/17 13:16		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>21.4</b>	mg/L	2.0	1.0	2		01/31/17 15:26	16887-00-6	
Fluoride	<b>0.079J</b>	mg/L	0.20	0.027	1		01/31/17 15:12	16984-48-8	
Sulfate	<b>75.6</b>	mg/L	10.0	1.5	10		01/31/17 15:40	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

**Sample: MW-303**      **Lab ID: 60236751003**      Collected: 01/23/17 15:50      Received: 01/26/17 08:40      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/01/17 10:13		
Field pH	<b>7.55</b>	Std. Units	0.10	0.050	1		02/01/17 10:13		
Field Temperature	<b>11.7</b>	deg C	0.50	0.25	1		02/01/17 10:13		
Field Specific Conductance	<b>602.3</b>	umhos/cm	1.0	1.0	1		02/01/17 10:13		
Oxygen, Dissolved	<b>0.17</b>	mg/L			1		02/01/17 10:13	7782-44-7	
REDOX	<b>-58.1</b>	mV			1		02/01/17 10:13		
Turbidity	<b>0.50</b>	NTU	1.0	1.0	1		02/01/17 10:13		
Groundwater Elevation	<b>704.64</b>	feet			1		02/01/17 10:13		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>773</b>	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 11:59	7440-42-8	
Calcium	<b>71.4</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 11:59	7440-70-2	
Lithium	<b>20.5</b>	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 11:59	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.7</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 12:53	7440-36-0	
Arsenic	<b>23.1</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:53	7440-38-2	
Barium	<b>66.0</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 12:53	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 12:53	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 12:53	7440-43-9	
Chromium	<b>0.60J</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 12:53	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:53	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 12:53	7439-92-1	
Molybdenum	<b>30.5</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:53	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 12:53	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:53	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:45	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>375</b>	mg/L	5.0	5.0	1		01/27/17 11:02		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>8.0</b>	Std. Units	0.10	0.10	1		02/07/17 13:15		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>18.7</b>	mg/L	1.0	0.50	1		01/31/17 15:54	16887-00-6	
Fluoride	<b>0.55</b>	mg/L	0.20	0.027	1		01/31/17 15:54	16984-48-8	
Sulfate	<b>72.7</b>	mg/L	5.0	0.77	5		01/31/17 16:22	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Sample: MW-304		Lab ID: 60236751004		Collected: 01/24/17 09:10		Received: 01/26/17 08:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		02/01/17 10:14		
Field pH	<b>7.25</b>	Std. Units	0.10	0.050	1		02/01/17 10:14		
Field Temperature	<b>12.6</b>	deg C	0.50	0.25	1		02/01/17 10:14		
Field Specific Conductance	<b>622.8</b>	umhos/cm	1.0	1.0	1		02/01/17 10:14		
Oxygen, Dissolved	<b>0.12</b>	mg/L			1		02/01/17 10:14	7782-44-7	
REDOX	<b>-66.6</b>	mV			1		02/01/17 10:14		
Turbidity	<b>0.91</b>	NTU	1.0	1.0	1		02/01/17 10:14		
Groundwater Elevation	<b>704.56</b>	feet			1		02/01/17 10:14		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>323</b>	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 12:03	7440-42-8	
Calcium	<b>68.2</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 12:03	7440-70-2	
Lithium	<b>12.0</b>	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 12:03	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>2.1</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 12:58	7440-36-0	
Arsenic	<b>11.7</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:58	7440-38-2	
Barium	<b>59.8</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 12:58	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 12:58	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 12:58	7440-43-9	
Chromium	<b>0.50J</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 12:58	7440-47-3	
Cobalt	<b>0.72J</b>	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:58	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 12:58	7439-92-1	
Molybdenum	<b>29.3</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 12:58	7439-98-7	
Selenium	<b>1.0J</b>	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 12:58	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 12:58	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:47	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>399</b>	mg/L	5.0	5.0	1		01/27/17 11:02		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.9</b>	Std. Units	0.10	0.10	1		02/07/17 13:18		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>20.6</b>	mg/L	2.0	1.0	2		01/31/17 17:18	16887-00-6	
Fluoride	<b>0.80</b>	mg/L	0.20	0.027	1		01/31/17 17:04	16984-48-8	
Sulfate	<b>96.1</b>	mg/L	10.0	1.5	10		01/31/17 17:32	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

**Sample: MW-305**      **Lab ID: 60236751005**      Collected: 01/24/17 09:50      Received: 01/26/17 08:40      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/01/17 10:14		
Field pH	<b>7.51</b>	Std. Units	0.10	0.050	1		02/01/17 10:14		
Field Temperature	<b>12.0</b>	deg C	0.50	0.25	1		02/01/17 10:14		
Field Specific Conductance	<b>599.5</b>	umhos/cm	1.0	1.0	1		02/01/17 10:14		
Oxygen, Dissolved	<b>0.16</b>	mg/L			1		02/01/17 10:14	7782-44-7	
REDOX	<b>-40.4</b>	mV			1		02/01/17 10:14		
Turbidity	<b>1.14</b>	NTU	1.0	1.0	1		02/01/17 10:14		
Groundwater Elevation	<b>704.59</b>	feet			1		02/01/17 10:14		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>353</b>	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 12:06	7440-42-8	
Calcium	<b>67.8</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 12:06	7440-70-2	
Lithium	<b>13.5</b>	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 12:06	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.7</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 13:02	7440-36-0	
Arsenic	<b>15.4</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:02	7440-38-2	
Barium	<b>67.4</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 13:02	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 13:02	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 13:02	7440-43-9	
Chromium	<b>0.49J</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 13:02	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:02	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 13:02	7439-92-1	
Molybdenum	<b>31.0</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:02	7439-98-7	
Selenium	<b>1.2</b>	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 13:02	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:02	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:50	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>359</b>	mg/L	5.0	5.0	1		01/27/17 11:03		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>8.0</b>	Std. Units	0.10	0.10	1		02/07/17 13:19		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>18.6</b>	mg/L	1.0	0.50	1		01/31/17 17:45	16887-00-6	
Fluoride	<b>0.56</b>	mg/L	0.20	0.027	1		01/31/17 17:45	16984-48-8	
Sulfate	<b>79.8</b>	mg/L	5.0	0.77	5		01/31/17 17:59	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Sample: MW-306		Lab ID: 60236751006		Collected: 01/24/17 10:35		Received: 01/26/17 08:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		02/01/17 10:15		
Field pH	<b>7.71</b>	Std. Units	0.10	0.050	1		02/01/17 10:15		
Field Temperature	<b>13.4</b>	deg C	0.50	0.25	1		02/01/17 10:15		
Field Specific Conductance	<b>644</b>	umhos/cm	1.0	1.0	1		02/01/17 10:15		
Oxygen, Dissolved	<b>0.23</b>	mg/L			1		02/01/17 10:15	7782-44-7	
REDOX	<b>-88.9</b>	mV			1		02/01/17 10:15		
Turbidity	<b>2.25</b>	NTU	1.0	1.0	1		02/01/17 10:15		
Groundwater Elevation	<b>704.49</b>	feet			1		02/01/17 10:15		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>3050</b>	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 12:10	7440-42-8	
Calcium	<b>48.4</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 12:10	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 12:10	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.091J</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 13:19	7440-36-0	B
Arsenic	<b>0.58J</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:19	7440-38-2	
Barium	<b>47.4</b>	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 13:19	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 13:19	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 13:19	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 13:19	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:19	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 13:19	7439-92-1	
Molybdenum	<b>277</b>	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:19	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 13:19	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:19	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:52	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>398</b>	mg/L	5.0	5.0	1		01/27/17 11:05		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.8</b>	Std. Units	0.10	0.10	1		02/07/17 13:21		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>40.3</b>	mg/L	5.0	2.5	5		01/31/17 18:27	16887-00-6	
Fluoride	<b>0.23</b>	mg/L	0.20	0.027	1		01/31/17 18:13	16984-48-8	
Sulfate	<b>128</b>	mg/L	10.0	1.5	10		01/31/17 18:41	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Sample: FIELD BLANK									
Lab ID: 60236751007									
Collected: 01/23/17 14:15									
Received: 01/26/17 08:40									
Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Boron	ND	ug/L	100	50.0	1	01/26/17 13:00	01/27/17 12:14	7440-42-8	
Calcium	<b>0.019J</b>	mg/L	0.10	0.0081	1	01/26/17 13:00	01/27/17 12:14	7440-70-2	B
Lithium	ND	ug/L	10.0	4.9	1	01/26/17 13:00	01/27/17 12:14	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<b>0.074J</b>	ug/L	1.0	0.058	1	01/26/17 13:00	02/02/17 13:15	7440-36-0	B
Arsenic	ND	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:15	7440-38-2	
Barium	ND	ug/L	1.0	0.14	1	01/26/17 13:00	02/02/17 13:15	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/26/17 13:00	02/02/17 13:15	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/26/17 13:00	02/02/17 13:15	7440-43-9	
Chromium	<b>0.36J</b>	ug/L	1.0	0.34	1	01/26/17 13:00	02/02/17 13:15	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:15	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/26/17 13:00	02/02/17 13:15	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.10	1	01/26/17 13:00	02/02/17 13:15	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	01/26/17 13:00	02/02/17 13:15	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/26/17 13:00	02/02/17 13:15	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.039	1	02/01/17 08:35	02/02/17 10:54	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		01/27/17 11:02		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>5.5</b>	Std. Units	0.10	0.10	1		02/01/17 13:02		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		01/31/17 18:55	16887-00-6	
Fluoride	ND	mg/L	0.20	0.027	1		01/31/17 18:55	16984-48-8	
Sulfate	ND	mg/L	1.0	0.15	1		01/31/17 18:55	14808-79-8	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

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QC Batch: 463891 Analysis Method: EPA 7470  
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

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METHOD BLANK: 1898796 Matrix: Water  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	02/02/17 10:10	

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LABORATORY CONTROL SAMPLE: 1898797

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	101	80-120	

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MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1898798 1898799

Parameter	Units	60236761001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.039	5	5	5.1	4.8	102	97	75-125	5	20	

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**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 463385

Analysis Method: EPA 6010

QC Batch Method: EPA 3010

Analysis Description: 6010 MET

Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

METHOD BLANK: 1896987

Matrix: Water

Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	50.0	01/27/17 11:12	
Calcium	mg/L	0.013J	0.10	0.0081	01/27/17 11:12	
Lithium	ug/L	ND	10.0	4.9	01/27/17 11:12	

LABORATORY CONTROL SAMPLE: 1896988

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1030	103	80-120	
Calcium	mg/L	10	10.2	102	80-120	
Lithium	ug/L	1000	1040	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1896989 1896990

Parameter	Units	60236712001		1896989		1896990		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Boron	ug/L	90.7J	1000	1000	1120	1110	103	102	75-125	1	20		
Calcium	mg/L	37100	10	10	45.7	46.2	85	91	75-125	1	20		
Lithium	ug/L	30.0	1000	1000	1060	1050	103	102	75-125	1	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 463386 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

METHOD BLANK: 1896993 Matrix: Water  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.077J	1.0	0.058	02/02/17 12:23	
Arsenic	ug/L	ND	1.0	0.10	02/02/17 12:23	
Barium	ug/L	ND	1.0	0.14	02/02/17 12:23	
Beryllium	ug/L	ND	0.50	0.080	02/02/17 12:23	
Cadmium	ug/L	ND	0.50	0.029	02/02/17 12:23	
Chromium	ug/L	ND	1.0	0.34	02/02/17 12:23	
Cobalt	ug/L	ND	1.0	0.50	02/02/17 12:23	
Lead	ug/L	ND	1.0	0.19	02/02/17 12:23	
Molybdenum	ug/L	ND	1.0	0.10	02/02/17 12:23	
Selenium	ug/L	ND	1.0	0.18	02/02/17 12:23	
Thallium	ug/L	ND	1.0	0.50	02/02/17 12:23	

LABORATORY CONTROL SAMPLE: 1896994

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.6	99	80-120	
Arsenic	ug/L	40	40.5	101	80-120	
Barium	ug/L	40	38.9	97	80-120	
Beryllium	ug/L	40	39.7	99	80-120	
Cadmium	ug/L	40	39.6	99	80-120	
Chromium	ug/L	40	39.6	99	80-120	
Cobalt	ug/L	40	39.4	98	80-120	
Lead	ug/L	40	38.4	96	80-120	
Molybdenum	ug/L	40	41.0	102	80-120	
Selenium	ug/L	40	40.5	101	80-120	
Thallium	ug/L	40	36.4	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1896995 1896996

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Antimony	ug/L	0.14J	40	40	39.3	39.5	98	98	75-125	1	20	
Arsenic	ug/L	1.7	40	40	41.5	41.6	100	100	75-125	0	20	
Barium	ug/L	194	40	40	236	242	106	120	75-125	2	20	
Beryllium	ug/L	ND	40	40	40.1	40.8	100	102	75-125	2	20	
Cadmium	ug/L	ND	40	40	39.1	39.1	98	98	75-125	0	20	
Chromium	ug/L	2.1	40	40	41.5	41.9	98	100	75-125	1	20	
Cobalt	ug/L	2.2	40	40	40.2	40.5	95	96	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Parameter	Units	60236751002		1896995		1896996		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Lead	ug/L	ND	40	40	39.0	38.9	97	97	75-125	0	20			
Molybdenum	ug/L	0.43J	40	40	42.0	42.2	104	104	75-125	1	20			
Selenium	ug/L	0.36J	40	40	37.2	39.1	92	97	75-125	5	20			
Thallium	ug/L	ND	40	40	37.4	37.2	93	93	75-125	0	20			

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 463484

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

METHOD BLANK: 1897372

Matrix: Water

Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	01/27/17 10:54	

LABORATORY CONTROL SAMPLE: 1897373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	994	99	80-120	

SAMPLE DUPLICATE: 1897374

Parameter	Units	60236751001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	587	610	4	10	H1

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 464025 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60236751007

SAMPLE DUPLICATE: 1899241

Parameter	Units	60236559002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.6	7.6	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 464442 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006

SAMPLE DUPLICATE: 1901403

Parameter	Units	60236751005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.0	8.0	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

QC Batch: 463900 Analysis Method: EPA 9056  
 QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

METHOD BLANK: 1898816 Matrix: Water  
 Associated Lab Samples: 60236751001, 60236751002, 60236751003, 60236751004, 60236751005, 60236751006, 60236751007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	01/31/17 10:21	
Fluoride	mg/L	ND	0.20	0.027	01/31/17 10:21	
Sulfate	mg/L	ND	1.0	0.15	01/31/17 10:21	

LABORATORY CONTROL SAMPLE: 1898817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	80-120	
Fluoride	mg/L	2.5	2.6	103	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1898818 1898819

Parameter	Units	60236610001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	841	250	250	1580	1000	296	64	80-120	45	15	M1,R1

SAMPLE DUPLICATE: 1898820

Parameter	Units	60236751001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	24.1	23.6	2	15	
Fluoride	mg/L	0.079J	0.084J		15	
Sulfate	mg/L	101	96.7	5	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

H1 Analysis conducted outside the EPA method holding time.

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

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

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236751001	MW-301		464031		
60236751002	MW-302		464031		
60236751003	MW-303		464031		
60236751004	MW-304		464031		
60236751005	MW-305		464031		
60236751006	MW-306		464031		
60236751001	MW-301	EPA 3010	463385	EPA 6010	463416
60236751002	MW-302	EPA 3010	463385	EPA 6010	463416
60236751003	MW-303	EPA 3010	463385	EPA 6010	463416
60236751004	MW-304	EPA 3010	463385	EPA 6010	463416
60236751005	MW-305	EPA 3010	463385	EPA 6010	463416
60236751006	MW-306	EPA 3010	463385	EPA 6010	463416
60236751007	FIELD BLANK	EPA 3010	463385	EPA 6010	463416
60236751001	MW-301	EPA 3010	463386	EPA 6020	463417
60236751002	MW-302	EPA 3010	463386	EPA 6020	463417
60236751003	MW-303	EPA 3010	463386	EPA 6020	463417
60236751004	MW-304	EPA 3010	463386	EPA 6020	463417
60236751005	MW-305	EPA 3010	463386	EPA 6020	463417
60236751006	MW-306	EPA 3010	463386	EPA 6020	463417
60236751007	FIELD BLANK	EPA 3010	463386	EPA 6020	463417
60236751001	MW-301	EPA 7470	463891	EPA 7470	464010
60236751002	MW-302	EPA 7470	463891	EPA 7470	464010
60236751003	MW-303	EPA 7470	463891	EPA 7470	464010
60236751004	MW-304	EPA 7470	463891	EPA 7470	464010
60236751005	MW-305	EPA 7470	463891	EPA 7470	464010
60236751006	MW-306	EPA 7470	463891	EPA 7470	464010
60236751007	FIELD BLANK	EPA 7470	463891	EPA 7470	464010
60236751001	MW-301	SM 2540C	463484		
60236751002	MW-302	SM 2540C	463484		
60236751003	MW-303	SM 2540C	463484		
60236751004	MW-304	SM 2540C	463484		
60236751005	MW-305	SM 2540C	463484		
60236751006	MW-306	SM 2540C	463484		
60236751007	FIELD BLANK	SM 2540C	463484		
60236751001	MW-301	EPA 9040	464442		
60236751002	MW-302	EPA 9040	464442		
60236751003	MW-303	EPA 9040	464442		
60236751004	MW-304	EPA 9040	464442		
60236751005	MW-305	EPA 9040	464442		
60236751006	MW-306	EPA 9040	464442		
60236751007	FIELD BLANK	EPA 9040	464025		
60236751001	MW-301	EPA 9056	463900		
60236751002	MW-302	EPA 9056	463900		
60236751003	MW-303	EPA 9056	463900		
60236751004	MW-304	EPA 9056	463900		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236751

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236751005	MW-305	EPA 9056	463900		
60236751006	MW-306	EPA 9056	463900		
60236751007	FIELD BLANK	EPA 9056	463900		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60236751



Client Name: SCS

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7854 0536 1674 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3/6 Corr. Factor: CF +1.5 / CF +0.9 Corrected 5/1

Date and initials of person examining contents: JB 1/26

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>PK</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks:	<input checked="" type="checkbox"/> N/A	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 1-26-17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Report To: Meghan Blodgett	Report To: Meghan Blodgett/Jess Valcheff	Attention: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers	REGULATORY AGENCY
Address: 2830 Dairy Drive	Copy To: Tom Karwaski	Address:		Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Madison WI 53718	Purchase Order No.:	Pace Quote Reference:		Pace Quote Reference:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Email To: mblodgett@scsengineers.com	Project Name: IPL Prairie Creek	Pace Project Manager:	Trudy Gipson 913-563-1405	Pace Project Manager:	Site Location
Phone: 608-216-7362	Project Number: 25216074	Pace Profile #:	6696 Line 2	Pace Profile #:	STATE: IA
Requested Due Date/TAT:					

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER WT PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives	Analysis Test ↓	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.			
			COMPOSITE START	COMPOSITE END/GRAB						DATE	TIME	Y	N	N	N	N	N	N	N	N	N			N	N	N
1		MW-301	WT	G	WT	WT	2	Unpreserved	↑	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	60236751	01
2		MW-302	WT	G	WT	WT	2	H <sub>2</sub> SO <sub>4</sub>	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	02	02
3		MW-303	WT	G	WT	WT	2	HCl	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	03	03
4		MW-304	WT	G	WT	WT	2	NaOH	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	04	04
5		MW-305	WT	G	WT	WT	2	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	05	05
6		MW-306	WT	G	WT	WT	2	HNO <sub>3</sub>	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	06	06
7		FIELD BLANK	WT	G	WT	WT	2	Other	↓	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	07	07
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Temp In °C	Received on	Custody Sealed	Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loriet Boulevard, Lenexa, KS 66219	<i>Meghan Blodgett</i>	1-25-17	0910	<i>Jess Valcheff</i>	1/26	0840	Y Y Y Y	51	Y	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Cu-Pb-Mo-Se-Tl												

\*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. F-ALL-Q-020rev.07, 15-Feb-2007

February 17, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60236754

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

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### Pennsylvania Certification IDs

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236754001	MW-301	Water	01/23/17 14:30	01/26/17 08:40
60236754002	MW-302	Water	01/23/17 17:00	01/26/17 08:40
60236754003	MW-303	Water	01/23/17 15:50	01/26/17 08:40
60236754004	MW-304	Water	01/24/17 09:10	01/26/17 08:40
60236754005	MW-305	Water	01/24/17 09:50	01/26/17 08:40
60236754006	MW-306	Water	01/24/17 10:35	01/26/17 08:40
60236754007	FIELD BLANK	Water	01/23/17 14:15	01/26/17 08:40

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236754001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236754007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-301**      **Lab ID: 60236754001**      Collected: 01/23/17 14:30      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.404 ± 0.371 (0.219)</b> <b>C:NA T:73%</b>	pCi/L	02/17/17 12:43	13982-63-3	
Radium-228	EPA 904.0	<b>0.553 ± 0.479 (0.967)</b> <b>C:68% T:84%</b>	pCi/L	02/16/17 17:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.957 ± 0.850 (1.19)</b>	pCi/L	02/17/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-302**      **Lab ID: 60236754002**      Collected: 01/23/17 17:00      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.138 ± 0.315 (0.507)</b> <b>C:NA T:86%</b>	pCi/L	02/17/17 12:43	13982-63-3	
Radium-228	EPA 904.0	<b>-0.321 ± 0.471 (1.16)</b> <b>C:64% T:79%</b>	pCi/L	02/16/17 17:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.138 ± 0.786 (1.67)</b>	pCi/L	02/17/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-303**      **Lab ID: 60236754003**      Collected: 01/23/17 15:50      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.535 ± 0.495 (0.720)</b> <b>C:NA T:83%</b>	pCi/L	02/17/17 12:58	13982-63-3	
Radium-228	EPA 904.0	<b>0.112 ± 0.410 (0.931)</b> <b>C:69% T:79%</b>	pCi/L	02/16/17 17:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.647 ± 0.905 (1.65)</b>	pCi/L	02/17/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-304**      **Lab ID: 60236754004**      Collected: 01/24/17 09:10      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.131 ± 0.362 (0.703)</b> C:NA T:85%	pCi/L	02/17/17 12:58	13982-63-3	
Radium-228	EPA 904.0	<b>0.308 ± 0.572 (1.25)</b> C:53% T:78%	pCi/L	02/16/17 17:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.439 ± 0.934 (1.95)</b>	pCi/L	02/17/17 15:08	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-305**      **Lab ID: 60236754005**      Collected: 01/24/17 09:50      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.374 ± 0.344 (0.203)</b> C:NA T:75%	pCi/L	02/17/17 12:58	13982-63-3	
Radium-228	EPA 904.0	<b>0.193 ± 0.494 (1.10)</b> C:59% T:80%	pCi/L	02/16/17 17:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.567 ± 0.838 (1.30)</b>	pCi/L	02/17/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: MW-306**      **Lab ID: 60236754006**      Collected: 01/24/17 10:35      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.445 (0.941)</b> C:NA T:76%	pCi/L	02/17/17 12:58	13982-63-3	
Radium-228	EPA 904.0	<b>0.481 ± 0.525 (1.09)</b> C:50% T:87%	pCi/L	02/16/17 17:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.481 ± 0.970 (2.03)</b>	pCi/L	02/17/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

**Sample: FIELD BLANK**      **Lab ID: 60236754007**      Collected: 01/23/17 14:15      Received: 01/26/17 08:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.126 ± 0.289 (0.465)</b> C:NA T:88%	pCi/L	02/17/17 12:58	13982-63-3	
Radium-228	EPA 904.0	<b>-0.0262 ± 0.425 (1.00)</b> C:59% T:82%	pCi/L	02/16/17 17:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.126 ± 0.714 (1.47)</b>	pCi/L	02/17/17 15:08	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

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QC Batch:	248489	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	60236754001, 60236754002, 60236754003, 60236754004, 60236754005, 60236754006, 60236754007		

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METHOD BLANK:	1222259	Matrix:	Water
Associated Lab Samples:	60236754001, 60236754002, 60236754003, 60236754004, 60236754005, 60236754006, 60236754007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.201 ± 0.407 (0.837) C:56% T:82%	pCi/L	02/16/17 17:30	

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

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

QC Batch: 248488

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 60236754001, 60236754002, 60236754003, 60236754004, 60236754005, 60236754006, 60236754007

METHOD BLANK: 1222257

Matrix: Water

Associated Lab Samples: 60236754001, 60236754002, 60236754003, 60236754004, 60236754005, 60236754006, 60236754007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.128 ± 0.292 (0.688) C:NA T:90%	pCi/L	02/17/17 12:03	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

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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 adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60236754

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236754001	MW-301	EPA 903.1	248488		
60236754002	MW-302	EPA 903.1	248488		
60236754003	MW-303	EPA 903.1	248488		
60236754004	MW-304	EPA 903.1	248488		
60236754005	MW-305	EPA 903.1	248488		
60236754006	MW-306	EPA 903.1	248488		
60236754007	FIELD BLANK	EPA 903.1	248488		
60236754001	MW-301	EPA 904.0	248489		
60236754002	MW-302	EPA 904.0	248489		
60236754003	MW-303	EPA 904.0	248489		
60236754004	MW-304	EPA 904.0	248489		
60236754005	MW-305	EPA 904.0	248489		
60236754006	MW-306	EPA 904.0	248489		
60236754007	FIELD BLANK	EPA 904.0	248489		
60236754001	MW-301	Total Radium Calculation	249691		
60236754002	MW-302	Total Radium Calculation	249691		
60236754003	MW-303	Total Radium Calculation	249691		
60236754004	MW-304	Total Radium Calculation	249691		
60236754005	MW-305	Total Radium Calculation	249691		
60236754006	MW-306	Total Radium Calculation	249691		
60236754007	FIELD BLANK	Total Radium Calculation	249691		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60236754



Client Name: SCS

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7894 052 1674 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 T-239 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 12 Corr. Factor CF +1.5 CF +0.9 Corrected 2.7

Date and initials of person examining contents: SB/26

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>VT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks: <input checked="" type="checkbox"/> N/A		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

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



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 7

**Section A**  
Required Client Information:  
Company: SCS Engineers  
Address: 2830 Dairy Drive  
Madison WI 53718  
Email To: mblodgett@scsengineers.com  
Phone: 608-216-7362 Fax:  
Requested Due Date/TAT:

**Section B**  
Required Project Information:  
Report To: Meghan Blodgett  
Copy To: Tom Karwaski  
Purchase Order No.:  
Project Name: IPL Prairie Creek  
Project Number: 25216074

**Section C**  
Invoice Information:  
Attention: Meghan Blodgett/Jess Vaicheff  
Company Name: SCS Engineers  
Address:  
Pace Quote Reference:  
Pace Project Manager: Trudy Gipson 913-563-1405  
Pace Profile #: 6696 Line 2

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location: IA  
 STATE: IA

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	Preservatives										Analysis Test Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> SO <sub>3</sub>	Methanol	Other	603 1 Radium-226			
1	MW-301	WT	G	1/23/17	1430	2	2	2										60736754	607
2	MW-302	WT	G	1/23/17	1700	2	2	2										60736754	607
3	MW-303	WT	G	1/24/17	1550	2	2	2										60736754	603
4	MW-304	WT	G	1/24/17	0910	2	2	2										60736754	604
5	MW-305	WT	G	1/24/17	0960	2	2	2										60736754	605
6	MW-306	WT	G	1/23/17	1035	2	2	2										60736754	606
7	FIELD BLANK	WT	G	1/23/17	1415	2	2	2										60736754	607
8																			
9																			
10																			
11																			
12																			

**ADDITIONAL COMMENTS**  
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219

**RELINQUISHED BY / AFFILIATION**  
Myley P  
DATE: 1-25-17  
TIME: 0900

**ACCEPTED BY / AFFILIATION**  
J. Kramer  
DATE: 1/26/17  
TIME: 0840

**SAMPLE CONDITIONS**  
Received on Ice (Y/N) Y  
Cooler Sealed (Y/N) Y  
Temp in °C 2.7  
Samples Intact (Y/N) Y

**SAMPLER NAME AND SIGNATURE**  
PRINT Name of SAMPLER: Kyle Kramer  
SIGNATURE of SAMPLER: Myley P  
DATE Signed (MM/DD/YY): 1-25-17



# Chain of Custody



Workorder: 60236754 Workorder Name: IPL Prairie Creek/25216074 Owner Received Date: 1/26/2017 Results Requested By: 2/20/2017

Report To: Subcontract To

Trudy Gipson  
Pace Analytical Kansas  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone (913)599-5665

Pace Analytical Pittsburgh  
1638 Roseytown Road  
Suites 2,3, & 4  
Greensburg, PA 15601  
Phone (724)850-5600

Requested Analysis

WO#: 30209192



30209192

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Matrix	Preserved Containers	903.1 Radium-226	904.0 Radium-228	Total Radium	LAB USE ONLY
1	MW-301	PS	1/23/2017 14:30	60236754001	Water	HNO <sub>3</sub>	2	X	X	X	001
2	MW-302	PS	1/23/2017 17:00	60236754002	Water		2	X	X	X	002
3	MW-303	PS	1/23/2017 15:50	60236754003	Water		2	X	X	X	003
4	MW-304	PS	1/24/2017 09:10	60236754004	Water		2	X	X	X	004
5	MW-305	PS	1/24/2017 09:50	60236754005	Water		2	X	X	X	005
6	MW-306	PS	1/24/2017 10:35	60236754006	Water		2	X	X	X	006
7	FIELD BLANK	PS	1/23/2017 14:15	60236754007	Water		2	X	X	X	007

Comments

Transfers	Released By	Date/Time	Received	Date/Time
1	<i>[Signature]</i>	1/26/17 17:00	<i>[Signature]</i>	1-27-17/1000
2				
3				

Cooler Temperature on Receipt N/A°C Custody Seal Y or N Received on Ice Y or N Samples Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, KS Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7044 6698 9707

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: QCHR 1-27-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC:	X			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.	X			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>QCHR</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>QCHR</u> Date: <u>1-27-17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

### A3 Round 3 Background Sampling, Analytical Laboratory Report

March 07, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60238563

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on February 25, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60238563001	MW-301	Water	02/23/17 13:40	02/25/17 08:45
60238563002	MW-302	Water	02/23/17 15:45	02/25/17 08:45
60238563003	MW-303	Water	02/23/17 12:15	02/25/17 08:45
60238563004	MW-304	Water	02/23/17 14:40	02/25/17 08:45
60238563005	MW-305	Water	02/23/17 17:00	02/25/17 08:45
60238563006	MW-306	Water	02/23/17 17:45	02/25/17 08:45
60238563007	FIELD BLANK	Water	02/23/17 13:15	02/25/17 08:45

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60238563001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60238563007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	SMW	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	OL	3	PASI-K

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

**Sample: MW-301**      **Lab ID: 60238563001**      Collected: 02/23/17 13:40      Received: 02/25/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/23/17 13:40		
Field pH	<b>6.57</b>	Std. Units	0.10	0.050	1		02/23/17 13:40		
Field Temperature	<b>10.7</b>	deg C	0.50	0.25	1		02/23/17 13:40		
Field Specific Conductance	<b>918</b>	umhos/cm	1.0	1.0	1		02/23/17 13:40		
Field Oxidation Potential	<b>175.5</b>	mV			1		02/23/17 13:40		
Oxygen, Dissolved	<b>2.42</b>	mg/L			1		02/23/17 13:40	7782-44-7	
Turbidity	<b>4.57</b>	NTU	1.0	1.0	1		02/23/17 13:40		
Groundwater Elevation	<b>715.87</b>	feet			1		02/23/17 13:40		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>25.2J</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 11:48	7440-42-8	
Calcium	<b>148</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 11:48	7440-70-2	
Lithium	<b>11.1</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 11:48	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.057J</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 12:44	7440-36-0	
Arsenic	<b>0.55J</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 12:44	7440-38-2	
Barium	<b>264</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 12:44	7440-39-3	
Beryllium	<b>0.075J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 12:44	7440-41-7	B
Cadmium	<b>0.066J</b>	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 12:44	7440-43-9	
Chromium	<b>4.5</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 12:44	7440-47-3	
Cobalt	<b>0.25J</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 12:44	7440-48-4	B
Lead	<b>0.16J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 12:44	7439-92-1	
Molybdenum	<b>0.38J</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 12:44	7439-98-7	B
Selenium	<b>0.98J</b>	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 12:44	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 12:44	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:02	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>611</b>	mg/L	5.0	5.0	1		02/28/17 13:46		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		03/02/17 11:50		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>24.4</b>	mg/L	2.0	1.0	2		03/05/17 11:36	16887-00-6	
Fluoride	<b>0.13J</b>	mg/L	0.20	0.10	1		03/05/17 10:56	16984-48-8	
Sulfate	<b>99.2</b>	mg/L	10.0	5.0	10		03/05/17 12:17	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Sample: MW-302		Lab ID: 60238563002		Collected: 02/23/17 15:45		Received: 02/25/17 08:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		02/23/17 15:45		
Field pH	<b>6.38</b>	Std. Units	0.10	0.050	1		02/23/17 15:45		
Field Temperature	<b>6.5</b>	deg C	0.50	0.25	1		02/23/17 15:45		
Field Specific Conductance	<b>624.9</b>	umhos/cm	1.0	1.0	1		02/23/17 15:45		
Field Oxidation Potential	<b>40.7</b>	mV			1		02/23/17 15:45		
Oxygen, Dissolved	<b>1.73</b>	mg/L			1		02/23/17 15:45	7782-44-7	
Turbidity	<b>0.80</b>	NTU	1.0	1.0	1		02/23/17 15:45		
Groundwater Elevation	<b>715.55</b>	feet			1		02/23/17 15:45		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>30.1J</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 11:51	7440-42-8	
Calcium	<b>95.0</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 11:51	7440-70-2	
Lithium	<b>3.4J</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 11:51	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.049J</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 12:57	7440-36-0	
Arsenic	<b>1.6</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 12:57	7440-38-2	
Barium	<b>166</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 12:57	7440-39-3	
Beryllium	<b>0.078J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 12:57	7440-41-7	B
Cadmium	<b>0.040J</b>	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 12:57	7440-43-9	
Chromium	<b>1.7</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 12:57	7440-47-3	
Cobalt	<b>3.0</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 12:57	7440-48-4	
Lead	<b>0.14J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 12:57	7439-92-1	
Molybdenum	<b>0.45J</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 12:57	7439-98-7	B
Selenium	<b>0.37J</b>	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 12:57	7782-49-2	
Thallium	<b>0.050J</b>	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 12:57	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:09	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>416</b>	mg/L	5.0	5.0	1		02/28/17 13:47		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>6.6</b>	Std. Units	0.10	0.10	1		02/27/17 15:26		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.2</b>	mg/L	2.0	1.0	2		03/05/17 13:51	16887-00-6	
Fluoride	<b>0.10J</b>	mg/L	0.20	0.10	1		03/05/17 13:24	16984-48-8	
Sulfate	<b>69.7</b>	mg/L	5.0	2.5	5		03/05/17 14:17	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

**Sample: MW-303**      **Lab ID: 60238563003**      Collected: 02/23/17 12:15      Received: 02/25/17 08:45      Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/23/17 12:15		
Field pH	<b>7.09</b>	Std. Units	0.10	0.050	1		02/23/17 12:15		
Field Temperature	<b>10.9</b>	deg C	0.50	0.25	1		02/23/17 12:15		
Field Specific Conductance	<b>663.2</b>	umhos/cm	1.0	1.0	1		02/23/17 12:15		
Field Oxidation Potential	<b>4.1</b>	mV			1		02/23/17 12:15		
Oxygen, Dissolved	<b>0.13</b>	mg/L			1		02/23/17 12:15	7782-44-7	
Turbidity	<b>0.30</b>	NTU	1.0	1.0	1		02/23/17 12:15		
Groundwater Elevation	<b>704.46</b>	feet			1		02/23/17 12:15		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>851</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 11:53	7440-42-8	
Calcium	<b>85.4</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 11:53	7440-70-2	
Lithium	<b>17.7</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 11:53	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.2</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 13:01	7440-36-0	
Arsenic	<b>23.4</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 13:01	7440-38-2	
Barium	<b>75.4</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 13:01	7440-39-3	
Beryllium	<b>0.072J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 13:01	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 13:01	7440-43-9	
Chromium	<b>0.28J</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 13:01	7440-47-3	
Cobalt	<b>0.40J</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 13:01	7440-48-4	B
Lead	<b>0.037J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 13:01	7439-92-1	
Molybdenum	<b>26.7</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 13:01	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 13:01	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 13:01	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:11	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>413</b>	mg/L	5.0	5.0	1		02/28/17 13:47		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.4</b>	Std. Units	0.10	0.10	1		03/02/17 11:44		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>19.6</b>	mg/L	1.0	0.50	1		03/05/17 14:44	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.20	0.10	1		03/05/17 14:44	16984-48-8	
Sulfate	<b>82.4</b>	mg/L	10.0	5.0	10		03/05/17 15:11	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

**Sample: MW-304**      **Lab ID: 60238563004**      Collected: 02/23/17 14:40      Received: 02/25/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/23/17 14:40		
Field pH	<b>7.01</b>	Std. Units	0.10	0.050	1		02/23/17 14:40		
Field Temperature	<b>10.8</b>	deg C	0.50	0.25	1		02/23/17 14:40		
Field Specific Conductance	<b>621.3</b>	umhos/cm	1.0	1.0	1		02/23/17 14:40		
Field Oxidation Potential	<b>-80</b>	mV			1		02/23/17 14:40		
Oxygen, Dissolved	<b>0.14</b>	mg/L			1		02/23/17 14:40	7782-44-7	
Turbidity	<b>0.43</b>	NTU	1.0	1.0	1		02/23/17 14:40		
Groundwater Elevation	<b>704.65</b>	feet			1		02/23/17 14:40		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>277</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 11:55	7440-42-8	
Calcium	<b>73.6</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 11:55	7440-70-2	
Lithium	<b>10.6</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 11:55	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.9</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 13:06	7440-36-0	
Arsenic	<b>12.0</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 13:06	7440-38-2	
Barium	<b>56.4</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 13:06	7440-39-3	
Beryllium	<b>0.064J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 13:06	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 13:06	7440-43-9	
Chromium	<b>0.41J</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 13:06	7440-47-3	
Cobalt	<b>0.79J</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 13:06	7440-48-4	
Lead	<b>0.11J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 13:06	7439-92-1	
Molybdenum	<b>27.5</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 13:06	7439-98-7	
Selenium	<b>1.4</b>	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 13:06	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 13:06	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:13	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>402</b>	mg/L	5.0	5.0	1		02/28/17 13:47		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.4</b>	Std. Units	0.10	0.10	1		03/02/17 11:52		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>21.4</b>	mg/L	2.0	1.0	2		03/05/17 16:05	16887-00-6	
Fluoride	<b>0.72</b>	mg/L	0.20	0.10	1		03/05/17 15:51	16984-48-8	
Sulfate	<b>107</b>	mg/L	10.0	5.0	10		03/05/17 16:18	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

**Sample: MW-305**      **Lab ID: 60238563005**      Collected: 02/23/17 17:00      Received: 02/25/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		02/23/17 17:00		
Field pH	<b>7.13</b>	Std. Units	0.10	0.050	1		02/23/17 17:00		
Field Temperature	<b>11.0</b>	deg C	0.50	0.25	1		02/23/17 17:00		
Field Specific Conductance	<b>602.3</b>	umhos/cm	1.0	1.0	1		02/23/17 17:00		
Field Oxidation Potential	<b>17.2</b>	mV			1		02/23/17 17:00		
Oxygen, Dissolved	<b>0.10</b>	mg/L			1		02/23/17 17:00	7782-44-7	
Turbidity	<b>0.40</b>	NTU	1.0	1.0	1		02/23/17 17:00		
Groundwater Elevation	<b>704.67</b>	feet			1		02/23/17 17:00		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>316</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 11:58	7440-42-8	
Calcium	<b>71.3</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 11:58	7440-70-2	
Lithium	<b>9.7J</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 11:58	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.0</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 13:10	7440-36-0	
Arsenic	<b>16.0</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 13:10	7440-38-2	
Barium	<b>65.3</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 13:10	7440-39-3	
Beryllium	<b>0.064J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 13:10	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 13:10	7440-43-9	
Chromium	<b>0.44J</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 13:10	7440-47-3	
Cobalt	<b>0.56J</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 13:10	7440-48-4	B
Lead	<b>0.070J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 13:10	7439-92-1	
Molybdenum	<b>29.0</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 13:10	7439-98-7	
Selenium	<b>0.92J</b>	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 13:10	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 13:10	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:15	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>389</b>	mg/L	5.0	5.0	1		02/28/17 13:47		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		03/02/17 11:53		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>19.2</b>	mg/L	2.0	1.0	2		03/05/17 16:45	16887-00-6	
Fluoride	<b>0.53</b>	mg/L	0.20	0.10	1		03/05/17 16:31	16984-48-8	
Sulfate	<b>79.0</b>	mg/L	10.0	5.0	10		03/05/17 16:58	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Sample: MW-306		Lab ID: 60238563006		Collected: 02/23/17 17:45		Received: 02/25/17 08:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		02/23/17 17:45		
Field pH	<b>7.31</b>	Std. Units	0.10	0.050	1		02/23/17 17:45		
Field Temperature	<b>13.4</b>	deg C	0.50	0.25	1		02/23/17 17:45		
Field Specific Conductance	<b>629</b>	umhos/cm	1.0	1.0	1		02/23/17 17:45		
Field Oxidation Potential	<b>-48.1</b>	mV			1		02/23/17 17:45		
Oxygen, Dissolved	<b>0.13</b>	mg/L			1		02/23/17 17:45	7782-44-7	
Turbidity	<b>0.79</b>	NTU	1.0	1.0	1		02/23/17 17:45		
Groundwater Elevation	<b>704.59</b>	feet			1		02/23/17 17:45		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>3160</b>	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 12:00	7440-42-8	
Calcium	<b>51.2</b>	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 12:00	7440-70-2	
Lithium	<b>ND</b>	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 12:00	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>ND</b>	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 13:15	7440-36-0	
Arsenic	<b>0.50J</b>	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 13:15	7440-38-2	
Barium	<b>47.7</b>	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 13:15	7440-39-3	
Beryllium	<b>0.068J</b>	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 13:15	7440-41-7	B
Cadmium	<b>ND</b>	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 13:15	7440-43-9	
Chromium	<b>0.34J</b>	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 13:15	7440-47-3	
Cobalt	<b>0.16J</b>	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 13:15	7440-48-4	B
Lead	<b>0.075J</b>	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 13:15	7439-92-1	
Molybdenum	<b>282</b>	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 13:15	7439-98-7	
Selenium	<b>ND</b>	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 13:15	7782-49-2	
Thallium	<b>ND</b>	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 13:15	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:17	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>423</b>	mg/L	5.0	5.0	1		02/28/17 13:48		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.7</b>	Std. Units	0.10	0.10	1		03/02/17 11:55		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>36.8</b>	mg/L	5.0	2.5	5		03/05/17 17:25	16887-00-6	
Fluoride	<b>0.26</b>	mg/L	0.20	0.10	1		03/05/17 17:12	16984-48-8	
Sulfate	<b>130</b>	mg/L	10.0	5.0	10		03/05/17 17:38	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Sample: FIELD BLANK      Lab ID: 60238563007      Collected: 02/23/17 13:15      Received: 02/25/17 08:45      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	5.2J	ug/L	100	3.5	1	02/27/17 14:45	02/28/17 12:02	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	02/27/17 14:45	02/28/17 12:02	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	02/27/17 14:45	02/28/17 12:02	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	03/02/17 15:45	03/03/17 13:28	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	03/02/17 15:45	03/03/17 13:28	7440-38-2	
Barium	0.27J	ug/L	1.0	0.095	1	03/02/17 15:45	03/03/17 13:28	7440-39-3	B
Beryllium	0.061J	ug/L	0.50	0.012	1	03/02/17 15:45	03/03/17 13:28	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	03/02/17 15:45	03/03/17 13:28	7440-43-9	
Chromium	0.39J	ug/L	1.0	0.054	1	03/02/17 15:45	03/03/17 13:28	7440-47-3	
Cobalt	0.076J	ug/L	1.0	0.014	1	03/02/17 15:45	03/03/17 13:28	7440-48-4	B
Lead	ND	ug/L	1.0	0.033	1	03/02/17 15:45	03/03/17 13:28	7439-92-1	
Molybdenum	0.081J	ug/L	1.0	0.058	1	03/02/17 15:45	03/03/17 13:28	7439-98-7	B
Selenium	ND	ug/L	1.0	0.086	1	03/02/17 15:45	03/03/17 13:28	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/02/17 15:45	03/03/17 13:28	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/01/17 09:30	03/01/17 13:19	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		02/28/17 13:48		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	6.9	Std. Units	0.10	0.10	1		03/02/17 11:48		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		03/05/17 17:52	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		03/05/17 17:52	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/05/17 17:52	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 467098

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

METHOD BLANK: 1911528

Matrix: Water

Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	03/01/17 12:42	

LABORATORY CONTROL SAMPLE: 1911529

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1911530 1911531

Parameter	Units	60238641002		1911531		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	0.32	5	5	5.2	5.6	99	106	75-125	7	20

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 466834 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

METHOD BLANK: 1910670 Matrix: Water  
 Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	02/28/17 11:44	
Calcium	mg/L	ND	0.10	0.036	02/28/17 11:44	
Lithium	ug/L	ND	10.0	2.9	02/28/17 11:44	

LABORATORY CONTROL SAMPLE: 1910671

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	80-120	
Calcium	mg/L	10	10.5	105	80-120	
Lithium	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1910672 1910673

Parameter	Units	60238488002		60238488003		60238488004		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
Boron	ug/L	212	1000	1000	1270	1280	106	107	75-125	1	20
Calcium	mg/L	119000	10	10	129	129	101	100	75-125	0	20
Lithium	ug/L	42.6	1000	1000	1080	1060	103	102	75-125	2	20

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 467355 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

METHOD BLANK: 1912540 Matrix: Water  
 Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	03/03/17 12:35	
Arsenic	ug/L	ND	1.0	0.052	03/03/17 12:35	
Barium	ug/L	0.30J	1.0	0.095	03/03/17 12:35	
Beryllium	ug/L	0.061J	0.50	0.012	03/03/17 12:35	
Cadmium	ug/L	ND	0.50	0.018	03/03/17 12:35	
Chromium	ug/L	ND	1.0	0.054	03/03/17 12:35	
Cobalt	ug/L	0.077J	1.0	0.014	03/03/17 12:35	
Lead	ug/L	ND	1.0	0.033	03/03/17 12:35	
Molybdenum	ug/L	0.090J	1.0	0.058	03/03/17 12:35	
Selenium	ug/L	ND	1.0	0.086	03/03/17 12:35	
Thallium	ug/L	ND	1.0	0.036	03/03/17 12:35	

LABORATORY CONTROL SAMPLE: 1912541

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.9	97	80-120	
Arsenic	ug/L	40	39.0	98	80-120	
Barium	ug/L	40	39.0	97	80-120	
Beryllium	ug/L	40	37.7	94	80-120	
Cadmium	ug/L	40	39.5	99	80-120	
Chromium	ug/L	40	40.1	100	80-120	
Cobalt	ug/L	40	39.2	98	80-120	
Lead	ug/L	40	38.1	95	80-120	
Molybdenum	ug/L	40	40.8	102	80-120	
Selenium	ug/L	40	39.5	99	80-120	
Thallium	ug/L	40	36.3	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1912542 1912543

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60238563001 Result	Spike Conc.	Spike Conc.	Result							
Antimony	ug/L	0.057J	40	40	39.2	39.0	98	97	75-125	0	20	
Arsenic	ug/L	0.55J	40	40	39.8	39.7	98	98	75-125	0	20	
Barium	ug/L	264	40	40	302	300	95	89	75-125	1	20	
Beryllium	ug/L	0.075J	40	40	37.1	37.0	93	92	75-125	0	20	
Cadmium	ug/L	0.066J	40	40	39.0	39.2	97	98	75-125	0	20	
Chromium	ug/L	4.5	40	40	43.6	43.8	98	98	75-125	0	20	
Cobalt	ug/L	0.25J	40	40	37.9	38.3	94	95	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Parameter	Units	1912542		1912543		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		60238563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Lead	ug/L	0.16J	40	40	38.2	38.4	95	96	75-125	0	20		
Molybdenum	ug/L	0.38J	40	40	41.8	49.8	104	123	75-125	17	20		
Selenium	ug/L	0.98J	40	40	38.8	37.6	95	92	75-125	3	20		
Thallium	ug/L	ND	40	40	36.4	36.3	91	91	75-125	0	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 467042

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

METHOD BLANK: 1911267

Matrix: Water

Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	02/28/17 13:44	

LABORATORY CONTROL SAMPLE: 1911268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	969	97	80-120	

SAMPLE DUPLICATE: 1911269

Parameter	Units	60238357001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1900	1880	1	10	

SAMPLE DUPLICATE: 1911270

Parameter	Units	60238563006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	423	427	1	10	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 466872 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60238563002

SAMPLE DUPLICATE: 1910744

Parameter	Units	60238380001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.7	6.7	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch: 467298

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Associated Lab Samples: 60238563001, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

SAMPLE DUPLICATE: 1912237

Parameter	Units	60238563003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.4	7.5	1	10	H6

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: IPL Prairie Creek/25216074

Pace Project No.: 60238563

QC Batch:	467436	Analysis Method:	EPA 9056
QC Batch Method:	EPA 9056	Analysis Description:	9056 IC Anions
Associated Lab Samples:	60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007		

METHOD BLANK: 1912925 Matrix: Water  
Associated Lab Samples: 60238563001, 60238563002, 60238563003, 60238563004, 60238563005, 60238563006, 60238563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	03/05/17 10:29	
Fluoride	mg/L	ND	0.20	0.10	03/05/17 10:29	
Sulfate	mg/L	ND	1.0	0.50	03/05/17 10:29	

LABORATORY CONTROL SAMPLE: 1912926

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	102	80-120	
Fluoride	mg/L	2.5	2.6	103	80-120	
Sulfate	mg/L	5	5.4	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1912927 1912928

Parameter	Units	60238563001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	24.4	10	10	35.4	35.1	110	107	80-120	1	15	
Fluoride	mg/L	0.13J	2.5	2.5	2.7	2.8	102	106	80-120	4	15	
Sulfate	mg/L	99.2	50	50	155	155	112	111	80-120	0	15	

SAMPLE DUPLICATE: 1912929

Parameter	Units	60238563002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	19.2	19.0	1	15	
Fluoride	mg/L	0.10J	0.12J		15	
Sulfate	mg/L	69.7	69.7	0	15	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60238563001	MW-301		466934		
60238563002	MW-302		466934		
60238563003	MW-303		466934		
60238563004	MW-304		466934		
60238563005	MW-305		466934		
60238563006	MW-306		466934		
60238563001	MW-301	EPA 3010	466834	EPA 6010	466939
60238563002	MW-302	EPA 3010	466834	EPA 6010	466939
60238563003	MW-303	EPA 3010	466834	EPA 6010	466939
60238563004	MW-304	EPA 3010	466834	EPA 6010	466939
60238563005	MW-305	EPA 3010	466834	EPA 6010	466939
60238563006	MW-306	EPA 3010	466834	EPA 6010	466939
60238563007	FIELD BLANK	EPA 3010	466834	EPA 6010	466939
60238563001	MW-301	EPA 3010	467355	EPA 6020	467423
60238563002	MW-302	EPA 3010	467355	EPA 6020	467423
60238563003	MW-303	EPA 3010	467355	EPA 6020	467423
60238563004	MW-304	EPA 3010	467355	EPA 6020	467423
60238563005	MW-305	EPA 3010	467355	EPA 6020	467423
60238563006	MW-306	EPA 3010	467355	EPA 6020	467423
60238563007	FIELD BLANK	EPA 3010	467355	EPA 6020	467423
60238563001	MW-301	EPA 7470	467098	EPA 7470	467154
60238563002	MW-302	EPA 7470	467098	EPA 7470	467154
60238563003	MW-303	EPA 7470	467098	EPA 7470	467154
60238563004	MW-304	EPA 7470	467098	EPA 7470	467154
60238563005	MW-305	EPA 7470	467098	EPA 7470	467154
60238563006	MW-306	EPA 7470	467098	EPA 7470	467154
60238563007	FIELD BLANK	EPA 7470	467098	EPA 7470	467154
60238563001	MW-301	SM 2540C	467042		
60238563002	MW-302	SM 2540C	467042		
60238563003	MW-303	SM 2540C	467042		
60238563004	MW-304	SM 2540C	467042		
60238563005	MW-305	SM 2540C	467042		
60238563006	MW-306	SM 2540C	467042		
60238563007	FIELD BLANK	SM 2540C	467042		
60238563001	MW-301	EPA 9040	467298		
60238563002	MW-302	EPA 9040	466872		
60238563003	MW-303	EPA 9040	467298		
60238563004	MW-304	EPA 9040	467298		
60238563005	MW-305	EPA 9040	467298		
60238563006	MW-306	EPA 9040	467298		
60238563007	FIELD BLANK	EPA 9040	467298		
60238563001	MW-301	EPA 9056	467436		
60238563002	MW-302	EPA 9056	467436		
60238563003	MW-303	EPA 9056	467436		
60238563004	MW-304	EPA 9056	467436		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60238563005	MW-305	EPA 9056	467436		
60238563006	MW-306	EPA 9056	467436		
60238563007	FIELD BLANK	EPA 9056	467436		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60238563
Barcode
60238563

Client Name: SCS

Courier: FedEx [checked] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7457 1964 7823 Pace Shipping Label Used? Yes [ ] No [ ]

Custody Seal on Cooler/Box Present: Yes [checked] No [ ] Seals intact: Yes [checked] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [checked] Other [ ]

Thermometer Used: T-266 / T-239 Type of Ice: Wet [checked] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 0.7 Corr. Factor CF +1.5 CF +0.9 Corrected 2.2

Date and initials of person examining contents: JBZ/25/17

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and handwritten notes (e.g., PH, WT).

Client Notification/ Resolution: Copy COC to Client? Y / [checked] N Field Data Required? [checked] Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: [Signature] Date: 2-27-17

# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Report To: Meghan Blodgett	Attention: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers	REGULATORY AGENCY	
Address: 2830 Dairy Drive	Copy To: Tom Kawaski	Address:	Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Madison WI 53718	Purchase Order No.:	Face Quote Reference:	Face Project Manager:	Site Location	STATE: IA
Email To: mblodgett@scsengineers.com	Project Name: IPL Prairie Creek	Project Reference: 913-563-1405	Trudy Gipson	9040 pH	
Phone: 608-216-7362	Fax:	Face Profile #: 6696 Line 2		2540C TDS	
Requested Due Date/TAT:	Project Number: 25216074			9056 Chloride-Fluoride-Sulfate	

ITEM #	Valid Matrix Codes	Section D Required Client Information	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB								
1	MW-301		DATE: xxx	TIME: 1340	G	WT	2	H <sub>2</sub> SO <sub>4</sub>	Y	X	X	60235503
2	MW-302		DATE: xxx	TIME: 1545	G	WT	2	HNO <sub>3</sub>	X	X	X	02
3	MW-303		DATE: xxx	TIME: 1215	G	WT	2	NaOH	X	X	X	03
4	MW-304		DATE: xxx	TIME: 1440	G	WT	2	Na <sub>2</sub> SO <sub>3</sub>	X	X	X	04
5	MW-305		DATE: xxx	TIME: 1700	G	WT	2	HCl	X	X	X	05
6	MW-306		DATE: xxx	TIME: 1745	G	WT	2	Methanol	X	X	X	06
7	FIELD BLANK		DATE: xxx	TIME: 1315	G	WT	2	Other	X	X	X	07

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>Mylee Blodgett</i>	3/24/17	1030	<i>Jess Valcheff</i>	2/25/17	0845	Temp in °C: 2.2 Received on Ice (Y/N): Y Custody Sealed (Y/N): Y Samples Intact (Y/N): Y

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: *Kyle Kravos*  
 SIGNATURE of SAMPLER: *Kyle Kravos*  
 DATE Signed (MM/DD/YYYY): 3/24/17

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

March 21, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

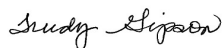
RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60238566

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on February 25, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

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### **Pennsylvania Certification IDs**

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60238566001	MW-301	Water	02/23/17 13:40	02/25/17 08:45
60238566002	MW-302	Water	02/23/17 15:45	02/25/17 08:45
60238566003	MW-303	Water	02/23/17 12:15	02/25/17 08:45
60238566004	MW-304	Water	02/23/17 14:40	02/25/17 08:45
60238566005	MW-305	Water	02/23/17 17:00	02/25/17 08:45
60238566006	MW-306	Water	02/23/17 17:45	02/25/17 08:45
60238566007	FIELD BLANK	Water	02/23/17 13:15	02/25/17 08:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60238566001	MW-301	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566002	MW-302	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566003	MW-303	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566004	MW-304	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566005	MW-305	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566006	MW-306	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60238566007	FIELD BLANK	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-301**      **Lab ID: 60238566001**      Collected: 02/23/17 13:40      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.438 ± 0.572 (0.943)</b> C:NA T:88%	pCi/L	03/17/17 10:31	13982-63-3	
Radium-228	EPA 904.0	<b>0.981 ± 0.667 (1.30)</b> C:50% T:86%	pCi/L	03/17/17 12:05	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.42 ± 1.24 (2.24)</b>	pCi/L	03/21/17 16:01	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-302**      **Lab ID: 60238566002**      Collected: 02/23/17 15:45      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.267 ± 0.462 (0.826)</b> C:NA T:89%	pCi/L	03/17/17 10:31	13982-63-3	
Radium-228	EPA 904.0	<b>0.388 ± 0.624 (1.35)</b> C:46% T:72%	pCi/L	03/17/17 12:05	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.655 ± 1.09 (2.18)</b>	pCi/L	03/21/17 16:01	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-303**      **Lab ID: 60238566003**      Collected: 02/23/17 12:15      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.488 (1.03)</b> C:NA T:93%	pCi/L	03/17/17 10:48	13982-63-3	
Radium-228	EPA 904.0	<b>0.375 ± 0.606 (1.32)</b> C:47% T:81%	pCi/L	03/17/17 12:05	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.375 ± 1.09 (2.35)</b>	pCi/L	03/21/17 16:01	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-304**      **Lab ID: 60238566004**      Collected: 02/23/17 14:40      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.162 ± 0.371 (0.597)</b> <b>C:NA T:93%</b>	pCi/L	03/17/17 10:48	13982-63-3	
Radium-228	EPA 904.0	<b>-0.0742 ± 0.572 (1.35)</b> <b>C:46% T:88%</b>	pCi/L	03/17/17 12:03	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.162 ± 0.943 (1.95)</b>	pCi/L	03/21/17 16:01	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-305**      **Lab ID: 60238566005**      Collected: 02/23/17 17:00      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.414 (0.843)</b> C:NA T:85%	pCi/L	03/17/17 10:48	13982-63-3	
Radium-228	EPA 904.0	<b>0.209 ± 0.658 (1.48)</b> C:42% T:78%	pCi/L	03/17/17 12:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.209 ± 1.07 (2.32)</b>	pCi/L	03/21/17 16:01	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: MW-306**      **Lab ID: 60238566006**      Collected: 02/23/17 17:45      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>-0.245 ± 0.482 (1.15)</b> C:NA T:91%	pCi/L	03/17/17 10:48	13982-63-3	
Radium-228	EPA 904.0	<b>0.391 ± 0.651 (1.42)</b> C:45% T:76%	pCi/L	03/17/17 12:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.391 ± 1.13 (2.57)</b>	pCi/L	03/21/17 16:01	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

**Sample: FIELD BLANK**      **Lab ID: 60238566007**      Collected: 02/23/17 13:15      Received: 02/25/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.348 (0.709)</b> C:NA T:96%	pCi/L	03/17/17 10:59	13982-63-3	
Radium-228	EPA 904.0	<b>0.183 ± 0.582 (1.31)</b> C:47% T:77%	pCi/L	03/17/17 12:03	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.183 ± 0.930 (2.02)</b>	pCi/L	03/21/17 16:01	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

---

QC Batch:	251477	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	60238566001, 60238566002, 60238566003, 60238566004, 60238566005, 60238566006, 60238566007		

---

METHOD BLANK:	1237163	Matrix:	Water
Associated Lab Samples:	60238566001, 60238566002, 60238566003, 60238566004, 60238566005, 60238566006, 60238566007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.241 ± 0.451 (0.966) C:49% T:79%	pCi/L	03/17/17 12:05	

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: IPL Prairie Creek/25216074

Pace Project No.: 60238566

QC Batch: 251475

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Associated Lab Samples: 60238566001, 60238566002, 60238566003, 60238566004, 60238566005, 60238566006, 60238566007

METHOD BLANK: 1237160

Matrix: Water

Associated Lab Samples: 60238566001, 60238566002, 60238566003, 60238566004, 60238566005, 60238566006, 60238566007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.102 ± 0.542 (0.992) C:NA T:83%	pCi/L	03/17/17 10:15	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60238566

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60238566001	MW-301	EPA 903.1	251475		
60238566002	MW-302	EPA 903.1	251475		
60238566003	MW-303	EPA 903.1	251475		
60238566004	MW-304	EPA 903.1	251475		
60238566005	MW-305	EPA 903.1	251475		
60238566006	MW-306	EPA 903.1	251475		
60238566007	FIELD BLANK	EPA 903.1	251475		
60238566001	MW-301	EPA 904.0	251477		
60238566002	MW-302	EPA 904.0	251477		
60238566003	MW-303	EPA 904.0	251477		
60238566004	MW-304	EPA 904.0	251477		
60238566005	MW-305	EPA 904.0	251477		
60238566006	MW-306	EPA 904.0	251477		
60238566007	FIELD BLANK	EPA 904.0	251477		
60238566001	MW-301	Total Radium Calculation	252842		
60238566002	MW-302	Total Radium Calculation	252842		
60238566003	MW-303	Total Radium Calculation	252842		
60238566004	MW-304	Total Radium Calculation	252842		
60238566005	MW-305	Total Radium Calculation	252842		
60238566006	MW-306	Total Radium Calculation	252842		
60238566007	FIELD BLANK	Total Radium Calculation	252842		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60238566



Client Name: SCS Engineers

Courier: FedEx [checked] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7957 1569 7834 Pace Shipping Label Used? Yes [ ] No [ ]

Custody Seal on Cooler/Box Present: Yes [checked] No [ ] Seals intact: Yes [checked] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [checked] Other [ ]

Thermometer Used: T-266 / T-239 Type of Ice: Wet [checked] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 1.3 Corr. Factor CF +1.5 CF +0.9 Corrected 2.8

Date and initials of person examining contents: JB/25/17

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and a blank column for notes. Rows include Chain of Custody, Sample arrival, Short Hold Time, Rush Turn Around Time, Sufficient volume, Containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels, Multiple phases, pH preservation, Cyanide checks, Trip Blank, Headspace, and Additional labels.

Client Notification/ Resolution: Copy COC to Client? Y / [checked] N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 2.27.17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Report To: Meghan Blodgett	Report To: Tom Karwaski	Attention: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers	REGULATORY AGENCY
Address: 2830 Dairy Drive	Copy To:	Address:		Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Email To: mblodgett@scsengineers.com	Purchase Order No.:	Pace Quote Reference:		Pace Project Manager:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Phone: 608-216-7362	Project Name: IPL Prairie Creek	Pace Project Manager:	Trudy Gipson 913-563-1405	Site Location STATE: IA	
Requested Due Date/TAT:	Project Number: 25216074	Pace Profile #:	6696 Line 2		

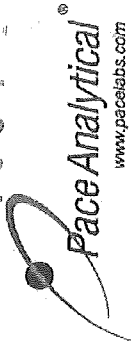
ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER WATER WASTE WATER PRODUCT SOLIDS OIL WIFE AIR OTHER TISSUE	SAMPLE ID (A-Z, 0-9 / -)	Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.							
				COMPOSITE START	COMPOSITE END/GRAB														
				DATE	TIME	DATE	TIME	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> SO <sub>3</sub>	Methanol	Other	Y/N ↑	303, Radium-226	304, Radium-228	Total Radium	
1		MW-301		3/23/17	1340	3/23/17	1340					60255106				X	X	X	
2		MW-302			1545		2					602				X	X	X	
3		MW-303			1215		2					603				X	X	X	
4		MW-304			1440		2					604				X	X	X	
5		MW-305			1700		2					605				X	X	X	
6		MW-306			1745		2					606				X	X	X	
7		FIELD BLANK			1315		2					607				X	X	X	
8																			
9																			
10																			
11																			
12																			

Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Temp in °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)
	MW-301	3/23/17	1030	[Signature]	2/25/17	0845	Y Y Y	2.8	Y	Y	Y

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

# Chain of Custody

30211991



Workorder: 60238566    Workorder Name: IPL Prairie Creek/25216074    Subcontract To

Owner Received Date: 2/25/2017    Results Requested By: 3/22/2017

Report To		Subcontract To		Requested Analysis							
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665		Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600		WO#: 30211991 							
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	Preserved Containers	903.1 Radium-226	904.0 Radium-228	Total Radium	LAB USE ONLY
1	MW-301	PS	2/23/2017 13:40	60238566001	Water	2		X	X	X	001
2	MW-302	PS	2/23/2017 15:45	60238566002	Water	2		X	X	X	002
3	MW-303	PS	2/23/2017 12:15	60238566003	Water	2		X	X	X	003
4	MW-304	PS	2/23/2017 14:40	60238566004	Water	2		X	X	X	004
5	MW-305	PS	2/23/2017 17:00	60238566005	Water	2		X	X	X	005
6	MW-306	PS	2/23/2017 17:45	60238566006	Water	2		X	X	X	006
7	FIELD BLANK		2/23/2017 13:15	60238566007	Water	2		X	X	X	007
Comments											
Transfers	Released By	Date/Time	Received	Date/Time							
1			<i>Whitney Board Pace</i>	2-28-17 0940							
2											
3											
Cooler Temperature on Receipt <i>N/A</i> °C					Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N	

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh



30211991

Client Name: Pace, KS Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7049 6660 0476

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: QAR 2-28-17

Comments:

	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:		X		3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC:	X			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.	X			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>QAR</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>QAR</u> Date: <u>2-28-17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

## A4 Round 4 Background Sampling, Analytical Laboratory Report



April 24, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60240829

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on March 30, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

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### **Pennsylvania Certification IDs**

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60240829001	MW-301	Water	03/28/17 13:40	03/30/17 08:45
60240829002	MW-302	Water	03/28/17 14:35	03/30/17 08:45
60240829003	MW-303	Water	03/28/17 15:45	03/30/17 08:45
60240829004	MW-304	Water	03/28/17 16:30	03/30/17 08:45
60240829005	MW-305	Water	03/28/17 18:00	03/30/17 08:45
60240829006	MW-306	Water	03/28/17 17:15	03/30/17 08:45
60240829007	FIELD BLANK	Water	03/28/17 12:40	03/30/17 08:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60240829001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60240829007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JJY	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: MW-301**      **Lab ID: 60240829001**      Collected: 03/28/17 13:40      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.665 ± 0.558 (0.798)</b> C:NA T:83%	pCi/L	04/17/17 23:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.750 ± 0.365 (0.624)</b> C:77% T:88%	pCi/L	04/14/17 15:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.42 ± 0.923 (1.42)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: MW-302**      **Lab ID: 60240829002**      Collected: 03/28/17 14:35      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.239 ± 0.407 (0.719)</b> C:NA T:94%	pCi/L	04/17/17 23:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.208 ± 0.365 (0.798)</b> C:71% T:86%	pCi/L	04/14/17 15:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.447 ± 0.772 (1.52)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: MW-303**      **Lab ID: 60240829003**      Collected: 03/28/17 15:45      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.192 ± 0.452 (0.838)</b> C:NA T:86%	pCi/L	04/17/17 23:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.338 ± 0.343 (0.709)</b> C:75% T:80%	pCi/L	04/14/17 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.530 ± 0.795 (1.55)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: MW-304**      **Lab ID: 60240829004**      Collected: 03/28/17 16:30      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.261 ± 0.445 (0.785)</b> C:NA T:91%	pCi/L	04/17/17 23:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.0497 ± 0.268 (0.618)</b> C:78% T:82%	pCi/L	04/14/17 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.311 ± 0.713 (1.40)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: MW-305**      **Lab ID: 60240829005**      Collected: 03/28/17 18:00      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.192 ± 0.376 (0.688)</b> C:NA T:90%	pCi/L	04/17/17 23:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.204 ± 0.328 (0.712)</b> C:74% T:83%	pCi/L	04/14/17 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.396 ± 0.704 (1.40)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

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**Sample: MW-306**      **Lab ID: 60240829006**      Collected: 03/28/17 17:15      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.493 ± 0.486 (0.739)</b> C:NA T:91%	pCi/L	04/17/17 23:24	13982-63-3	
Radium-228	EPA 904.0	<b>0.575 ± 0.403 (0.779)</b> C:71% T:82%	pCi/L	04/14/17 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.07 ± 0.889 (1.52)</b>	pCi/L	04/24/17 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

**Sample: FIELD BLANK**      **Lab ID: 60240829007**      Collected: 03/28/17 12:40      Received: 03/30/17 08:45      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>-0.069 ± 0.356 (0.824)</b> C:NA T:88%	pCi/L	04/17/17 23:40	13982-63-3	
Radium-228	EPA 904.0	<b>0.306 ± 0.365 (0.769)</b> C:73% T:79%	pCi/L	04/14/17 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.306 ± 0.721 (1.59)</b>	pCi/L	04/24/17 15:07	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

---

QC Batch:	254812	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	60240829001, 60240829002, 60240829003, 60240829004, 60240829005, 60240829006, 60240829007		

---

METHOD BLANK:	1254960	Matrix:	Water
Associated Lab Samples:	60240829001, 60240829002, 60240829003, 60240829004, 60240829005, 60240829006, 60240829007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.415 (0.878) C:NA T:88%	pCi/L	04/17/17 22:14	

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

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

QC Batch: 254813

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 60240829001, 60240829002, 60240829003, 60240829004, 60240829005, 60240829006, 60240829007

METHOD BLANK: 1254962

Matrix: Water

Associated Lab Samples: 60240829001, 60240829002, 60240829003, 60240829004, 60240829005, 60240829006, 60240829007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.480 ± 0.380 (0.744) C:71% T:74%	pCi/L	04/14/17 15:05	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

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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 adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240829

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60240829001	MW-301	EPA 903.1	254812		
60240829002	MW-302	EPA 903.1	254812		
60240829003	MW-303	EPA 903.1	254812		
60240829004	MW-304	EPA 903.1	254812		
60240829005	MW-305	EPA 903.1	254812		
60240829006	MW-306	EPA 903.1	254812		
60240829007	FIELD BLANK	EPA 903.1	254812		
60240829001	MW-301	EPA 904.0	254813		
60240829002	MW-302	EPA 904.0	254813		
60240829003	MW-303	EPA 904.0	254813		
60240829004	MW-304	EPA 904.0	254813		
60240829005	MW-305	EPA 904.0	254813		
60240829006	MW-306	EPA 904.0	254813		
60240829007	FIELD BLANK	EPA 904.0	254813		
60240829001	MW-301	Total Radium Calculation	256257		
60240829002	MW-302	Total Radium Calculation	256257		
60240829003	MW-303	Total Radium Calculation	256257		
60240829004	MW-304	Total Radium Calculation	256257		
60240829005	MW-305	Total Radium Calculation	256257		
60240829006	MW-306	Total Radium Calculation	256257		
60240829007	FIELD BLANK	Total Radium Calculation	256257		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60240829



60240829

TDG

Client Name: SCS Eng.

Courier: FedEx [x] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7014 6660 5482/5512 Pace Shipping Label Used? Yes [x] No [ ]

Custody Seal on Cooler/Box Present: Yes [x] No [ ] Seals intact: Yes [x] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [x] Other [ ]

Thermometer Used: T-266 / T-239 Type of Ice: Wet [x] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 2.7 Corr. Factor 0.5 CF +0.9 Corrected 4.1

Date and initials of person examining contents: JW 3/30/17

Temperature should be above freezing to 6°C

Table with 2 columns: Question and Yes/No/N/A checkboxes. Rows include Chain of Custody, Short Hold Time, Rush Turn Around Time, Sufficient volume, Containers used, etc.

Client Notification/ Resolution: Copy COC to Client? Y / [x] N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 3-30-17



# CHAIN-OF-CUSTODY / Analytical Request Document

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



<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers		Report To: Meghan Blodgett		Attention: Meghan Blodgett/Jess Valcheff	
Address: 2830 Dairy Drive		Copy To: Tom Kawaski		Company Name: SCS Engineers	
Madison WI 53718				Address:	
Email To: mblodgett@scsengineers.com		Purchase Order No.:		Pace Quote Reference:	
Phone: 608-216-7362		Project Name: IPL Prairie Creek		Pace Project Manager:	
Requested Due Date/TAT:		Project Number: 25216074		Pace Profile #: 6696 Line 2	
				Site Location STATE: IA	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOLID SOLID OIL WIPE AIR OTHER TISSUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.	Temp In °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)
			COMPOSITE START DATE TIME	COMPOSITE END/GRAB DATE TIME										
1	MW-301	WT	G	WT	G	2	2	2	2	2(8012)15				
2	MW-302	WT	G	WT	G	2	2	2	2	002				
3	MW-303	WT	G	WT	G	2	2	2	2	003				
4	MW-304	WT	G	WT	G	2	2	2	2	004				
5	MW-305	WT	G	WT	G	2	2	2	2	3(8012)15				
6	MW-306	WT	G	WT	G	2	2	2	2	2(8012)15				
7	FIELD BLANK	WT	G	WT	G	2	2	2	2	007				
8														
9														
10														
11														
12														

<b>ADDITIONAL COMMENTS</b>		<b>RELINQUISHED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>	<b>ACCEPTED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>
Ship To: 9608 Lorret Boulevard, Lenexa, KS 66219		Myle P	3/29/17	0855	Kyle Krueger	3/29/17	0845
<b>SAMPLER NAME AND SIGNATURE</b>		<b>DATE Signed (MM/DD/YY):</b> 3/29/17					
PRINT Name of SAMPLER: Kyle Krueger							
SIGNATURE of SAMPLER: Myle P							

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

# Chain of Custody



30215186

Workorder: 60240829    Workorder Name: IPL Prairie Creek/25216074    Owner Received Date: 3/30/2017 Results Requested By: 4/24/2017

Report To		Subcontract To		Requested Analysis									
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405		Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600											
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				903.1 Radium-226	904.0 Radium-228	Total Radium	LAB USE ONLY
1	MW-301	PS	3/28/2017 13:40	60240829001	Water	2					X	X	001
2	MW-302	PS	3/28/2017 14:35	60240829002	Water	2					X	X	002
3	MW-303	PS	3/28/2017 15:45	60240829003	Water	2					X	X	003
4	MW-304	PS	3/28/2017 16:30	60240829004	Water	2					X	X	004
5	MW-305	PS	3/28/2017 18:00	60240829005	Water	2					X	X	005
6	MW-306	PS	3/28/2017 17:15	60240829006	Water	2					X	X	006
7	FIELD BLANK	PS	3/28/2017 12:40	60240829007	Water	2					X	X	007
Comments													
Transfers	Released By	Date/Time	Received	Date/Time									
1	<i>Paul M</i>	4/4/17	<i>Wynar Murchaney</i>	4/5/17	9930								
2													
3													
Cooler Temperature on Receipt		N/A	°C	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N				

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 30215186

Sample Condition Upon Receipt Pittsburgh

30215186

KENT



Client Name: Paceks

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

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 728560912100

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

Thermometer Used N/A Type of Ice: Wet Blue (None) °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Cooler Temperature Observed Temp \_\_\_\_\_ °C Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 4/5/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>WI</u>	/			6.
Samples Arrived within Hold Time:	/			7.
Short Hold Time Analysis (<72hr remaining):	/			8.
Rush Turn Around Time Requested:	/			9.
Sufficient Volume:	/			10.
Correct Containers Used:	/			11.
-Pace Containers Used:	/			12.
Containers Intact:	/			13.
Orthophosphate field filtered			/	14.
Organic Samples checked for dechlorination:			/	15.
Filtered volume received for Dissolved tests All containers have been checked for preservation.	/			<u>PH 2</u>
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	/			Initial when completed <u>ARM</u> Date/time of preservation _____ Lot # of added preservative _____
Headspace in VOA Vials (>6mm):	/			16.
Trip Blank Present:	/			17.
Trip Blank Custody Seals Present	/			Initial when completed: <u>ARM</u> Date: <u>4/5/17</u>
Rad Aqueous Samples Screened > 0.5 mrem/hr	/			

Client Notification/ Resolution: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_  
 Person Contacted: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)  
 \*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

April 07, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074  
Pace Project No.: 60240832

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on March 30, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60240832001	MW-301	Water	03/28/17 13:40	03/30/17 08:45
60240832002	MW-302	Water	03/28/17 14:35	03/30/17 08:45
60240832003	MW-303	Water	03/28/17 15:45	03/30/17 08:45
60240832004	MW-304	Water	03/28/17 16:30	03/30/17 08:45
60240832005	MW-305	Water	03/28/17 18:00	03/30/17 08:45
60240832006	MW-306	Water	03/28/17 17:15	03/30/17 08:45
60240832007	FIELD BLANK	Water	03/28/17 12:40	03/30/17 08:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60240832001	MW-301	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832002	MW-302	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832003	MW-303	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832004	MW-304	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832005	MW-305	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832006	MW-306	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60240832007	FIELD BLANK	EPA 6010	ZBM	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: MW-301**      **Lab ID: 60240832001**      Collected: 03/28/17 13:40      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		03/28/17 13:40		
Field pH	<b>6.9</b>	Std. Units	0.10	0.050	1		03/28/17 13:40		
Field Temperature	<b>10.2</b>	deg C	0.50	0.25	1		03/28/17 13:40		
Field Specific Conductance	<b>1350</b>	umhos/cm	1.0	1.0	1		03/28/17 13:40		
Field Oxidation Potential	<b>120.8</b>	mV			1		03/28/17 13:40		
Oxygen, Dissolved	<b>3.22</b>	mg/L			1		03/28/17 13:40	7782-44-7	
Turbidity	<b>11.36</b>	NTU	1.0	1.0	1		03/28/17 13:40		
Groundwater Elevation	<b>715.8</b>	feet			1		03/28/17 13:40		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>23.8J</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:09	7440-42-8	
Calcium	<b>144</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:09	7440-70-2	
Lithium	<b>12.6</b>	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:09	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.060J</b>	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:44	7440-36-0	
Arsenic	<b>0.54J</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:44	7440-38-2	
Barium	<b>264</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:44	7440-39-3	
Beryllium	<b>0.012J</b>	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:44	7440-41-7	B
Cadmium	<b>0.072J</b>	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:44	7440-43-9	
Chromium	<b>4.4</b>	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:44	7440-47-3	
Cobalt	<b>0.11J</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:44	7440-48-4	
Lead	<b>0.086J</b>	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:44	7439-92-1	B
Molybdenum	<b>0.45J</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:44	7439-98-7	
Selenium	<b>1.0</b>	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:44	7782-49-2	
Thallium	<b>ND</b>	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:44	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 12:51	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>615</b>	mg/L	5.0	5.0	1		03/31/17 14:28		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>6.8</b>	Std. Units	0.10	0.10	1		03/31/17 11:08		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>23.3</b>	mg/L	2.0	1.0	2		04/04/17 15:04	16887-00-6	
Fluoride	<b>0.10J</b>	mg/L	0.20	0.10	1		04/04/17 14:35	16984-48-8	
Sulfate	<b>107</b>	mg/L	10.0	5.0	10		04/04/17 15:34	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: MW-302**      **Lab ID: 60240832002**      Collected: 03/28/17 14:35      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		03/28/17 14:35		
Field pH	<b>6.66</b>	Std. Units	0.10	0.050	1		03/28/17 14:35		
Field Temperature	<b>6.4</b>	deg C	0.50	0.25	1		03/28/17 14:35		
Field Specific Conductance	<b>1053</b>	umhos/cm	1.0	1.0	1		03/28/17 14:35		
Field Oxidation Potential	<b>-44.7</b>	mV			1		03/28/17 14:35		
Oxygen, Dissolved	<b>2.22</b>	mg/L			1		03/28/17 14:35	7782-44-7	
Turbidity	<b>4.89</b>	NTU	1.0	1.0	1		03/28/17 14:35		
Groundwater Elevation	<b>715.45</b>	feet			1		03/28/17 14:35		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>33.7J</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:20	7440-42-8	
Calcium	<b>95.0</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:20	7440-70-2	
Lithium	<b>5.3J</b>	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:20	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.067J</b>	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:05	7440-36-0	
Arsenic	<b>2.7</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:05	7440-38-2	
Barium	<b>187</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:05	7440-39-3	
Beryllium	<b>0.023J</b>	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:05	7440-41-7	B
Cadmium	<b>0.036J</b>	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:05	7440-43-9	
Chromium	<b>1.4</b>	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:05	7440-47-3	
Cobalt	<b>4.7</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:05	7440-48-4	
Lead	<b>0.20J</b>	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:05	7439-92-1	B
Molybdenum	<b>0.38J</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:05	7439-98-7	
Selenium	<b>0.43J</b>	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:05	7782-49-2	
Thallium	<b>0.044J</b>	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:05	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 12:58	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>432</b>	mg/L	5.0	5.0	1		03/31/17 14:30		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>6.4</b>	Std. Units	0.10	0.10	1		03/31/17 11:10		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>21.6</b>	mg/L	2.0	1.0	2		04/04/17 17:04	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		04/04/17 16:49	16984-48-8	
Sulfate	<b>72.9</b>	mg/L	5.0	2.5	5		04/04/17 16:04	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Sample: MW-303		Lab ID: 60240832003		Collected: 03/28/17 15:45		Received: 03/30/17 08:45		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		03/28/17 15:45		
Field pH	<b>7.57</b>	Std. Units	0.10	0.050	1		03/28/17 15:45		
Field Temperature	<b>11.3</b>	deg C	0.50	0.25	1		03/28/17 15:45		
Field Specific Conductance	<b>1024</b>	umhos/cm	1.0	1.0	1		03/28/17 15:45		
Field Oxidation Potential	<b>-118.3</b>	mV			1		03/28/17 15:45		
Oxygen, Dissolved	<b>0.12</b>	mg/L			1		03/28/17 15:45	7782-44-7	
Turbidity	<b>0.01</b>	NTU	1.0	1.0	1		03/28/17 15:45		
Groundwater Elevation	<b>703.81</b>	feet			1		03/28/17 15:45		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>852</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:22	7440-42-8	
Calcium	<b>82.7</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:22	7440-70-2	
Lithium	<b>19.8</b>	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:22	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>1.0</b>	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 16:01	7440-36-0	
Arsenic	<b>25.0</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 16:01	7440-38-2	
Barium	<b>74.6</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 16:01	7440-39-3	
Beryllium	<b>0.013J</b>	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 16:01	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 16:01	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 16:01	7440-47-3	
Cobalt	<b>0.30J</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 16:01	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 16:01	7439-92-1	
Molybdenum	<b>26.7</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 16:01	7439-98-7	
Selenium	<b>0.14J</b>	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 16:01	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 16:01	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 13:00	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>414</b>	mg/L	5.0	5.0	1		03/31/17 14:30		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		03/31/17 11:11		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>18.9</b>	mg/L	1.0	0.50	1		04/04/17 17:19	16887-00-6	
Fluoride	<b>0.48</b>	mg/L	0.20	0.10	1		04/04/17 17:19	16984-48-8	
Sulfate	<b>80.4</b>	mg/L	10.0	5.0	10		04/04/17 17:48	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: MW-304**      **Lab ID: 60240832004**      Collected: 03/28/17 16:30      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		03/28/17 16:30		
Field pH	<b>7.58</b>	Std. Units	0.10	0.050	1		03/28/17 16:30		
Field Temperature	<b>9.9</b>	deg C	0.50	0.25	1		03/28/17 16:30		
Field Specific Conductance	<b>1028</b>	umhos/cm	1.0	1.0	1		03/28/17 16:30		
Field Oxidation Potential	<b>-111.7</b>	mV			1		03/28/17 16:30		
Oxygen, Dissolved	<b>0.15</b>	mg/L			1		03/28/17 16:30	7782-44-7	
Turbidity	<b>1.13</b>	NTU	1.0	1.0	1		03/28/17 16:30		
Groundwater Elevation	<b>703.99</b>	feet			1		03/28/17 16:30		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>224</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:24	7440-42-8	
Calcium	<b>63.6</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:24	7440-70-2	
Lithium	<b>8.2J</b>	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:24	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.9</b>	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:18	7440-36-0	
Arsenic	<b>10.1</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:18	7440-38-2	
Barium	<b>51.6</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:18	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:18	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:18	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:18	7440-47-3	
Cobalt	<b>0.83J</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:18	7440-48-4	
Lead	<b>0.043J</b>	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:18	7439-92-1	B
Molybdenum	<b>28.4</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:18	7439-98-7	
Selenium	<b>1.2</b>	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:18	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:18	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 13:02	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>411</b>	mg/L	5.0	5.0	1		03/31/17 14:31		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		03/31/17 11:13		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>23.7</b>	mg/L	2.0	1.0	2		04/04/17 18:18	16887-00-6	
Fluoride	<b>0.78</b>	mg/L	0.20	0.10	1		04/04/17 18:03	16984-48-8	
Sulfate	<b>109</b>	mg/L	10.0	5.0	10		04/04/17 18:33	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: MW-305**      **Lab ID: 60240832005**      Collected: 03/28/17 18:00      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		03/28/17 18:00		
Field pH	<b>7.65</b>	Std. Units	0.10	0.050	1		03/28/17 18:00		
Field Temperature	<b>10.8</b>	deg C	0.50	0.25	1		03/28/17 18:00		
Field Specific Conductance	<b>938</b>	umhos/cm	1.0	1.0	1		03/28/17 18:00		
Field Oxidation Potential	<b>-52.8</b>	mV			1		03/28/17 18:00		
Oxygen, Dissolved	<b>0.19</b>	mg/L			1		03/28/17 18:00	7782-44-7	
Turbidity	<b>0.46</b>	NTU	1.0	1.0	1		03/28/17 18:00		
Groundwater Elevation	<b>704.09</b>	feet			1		03/28/17 18:00		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>274</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:27	7440-42-8	
Calcium	<b>58.4</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:27	7440-70-2	
Lithium	<b>8.6J</b>	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:27	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.0</b>	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:22	7440-36-0	
Arsenic	<b>15.2</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:22	7440-38-2	
Barium	<b>60.1</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:22	7440-39-3	
Beryllium	<b>0.016J</b>	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:22	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:22	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:22	7440-47-3	
Cobalt	<b>0.60J</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:22	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:22	7439-92-1	
Molybdenum	<b>28.3</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:22	7439-98-7	
Selenium	<b>1.0</b>	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:22	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:22	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 13:04	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>383</b>	mg/L	5.0	5.0	1		03/31/17 14:31		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		03/31/17 11:15		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>21.0</b>	mg/L	2.0	1.0	2		04/04/17 18:48	16887-00-6	
Fluoride	<b>0.55</b>	mg/L	0.20	0.10	1		04/04/17 19:48	16984-48-8	
Sulfate	<b>88.7</b>	mg/L	10.0	5.0	10		04/04/17 19:03	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: MW-306**      **Lab ID: 60240832006**      Collected: 03/28/17 17:15      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		03/28/17 17:50		
Field pH	<b>7.84</b>	Std. Units	0.10	0.050	1		03/28/17 17:50		
Field Temperature	<b>13.6</b>	deg C	0.50	0.25	1		03/28/17 17:50		
Field Specific Conductance	<b>1023</b>	umhos/cm	1.0	1.0	1		03/28/17 17:50		
Field Oxidation Potential	<b>-140.5</b>	mV			1		03/28/17 17:50		
Oxygen, Dissolved	<b>0.12</b>	mg/L			1		03/28/17 17:50	7782-44-7	
Turbidity	<b>0.77</b>	NTU	1.0	1.0	1		03/28/17 17:50		
Groundwater Elevation	<b>703.99</b>	feet			1		03/28/17 17:50		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>3060</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:29	7440-42-8	
Calcium	<b>48.8</b>	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:29	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:29	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:27	7440-36-0	
Arsenic	<b>0.61J</b>	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:27	7440-38-2	
Barium	<b>47.2</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:27	7440-39-3	
Beryllium	<b>0.021J</b>	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:27	7440-41-7	B
Cadmium	ND	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:27	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:27	7440-47-3	
Cobalt	<b>0.11J</b>	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:27	7440-48-4	
Lead	<b>0.13J</b>	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:27	7439-92-1	B
Molybdenum	<b>287</b>	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:27	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:27	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:27	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 13:07	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>421</b>	mg/L	5.0	5.0	1		03/31/17 14:32		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		03/31/17 11:14		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>38.1</b>	mg/L	5.0	2.5	5		04/04/17 20:17	16887-00-6	
Fluoride	<b>0.25</b>	mg/L	0.20	0.10	1		04/04/17 20:03	16984-48-8	
Sulfate	<b>133</b>	mg/L	10.0	5.0	10		04/04/17 20:32	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

**Sample: FIELD BLANK**      **Lab ID: 60240832007**      Collected: 03/28/17 12:40      Received: 03/30/17 08:45      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>3.6J</b>	ug/L	100	3.5	1	04/05/17 10:50	04/06/17 17:31	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	04/05/17 10:50	04/06/17 17:31	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/05/17 10:50	04/06/17 17:31	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	04/05/17 10:50	04/06/17 15:40	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	04/05/17 10:50	04/06/17 15:40	7440-38-2	
Barium	<b>0.24J</b>	ug/L	1.0	0.095	1	04/05/17 10:50	04/06/17 15:40	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.012	1	04/05/17 10:50	04/06/17 15:40	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	04/05/17 10:50	04/06/17 15:40	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	04/05/17 10:50	04/06/17 15:40	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	04/05/17 10:50	04/06/17 15:40	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	04/05/17 10:50	04/06/17 15:40	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	04/05/17 10:50	04/06/17 15:40	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	04/05/17 10:50	04/06/17 15:40	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/05/17 10:50	04/06/17 15:40	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	03/31/17 09:15	03/31/17 13:13	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>9.0</b>	mg/L	5.0	5.0	1		03/31/17 14:32		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>5.3</b>	Std. Units	0.10	0.10	1		03/31/17 11:07		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		04/04/17 20:47	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		04/04/17 20:47	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/04/17 20:47	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

QC Batch: 470874 Analysis Method: EPA 7470  
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
 Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

METHOD BLANK: 1927697 Matrix: Water  
 Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	03/31/17 12:47	

LABORATORY CONTROL SAMPLE: 1927698

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.6	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1927699 1927700

Parameter	Units	60240832001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.2	5.5	105	110	75-125	4	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

QC Batch:	471392	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET
Associated Lab Samples:	60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007		

METHOD BLANK: 1930109 Matrix: Water  
Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	04/06/17 17:06	
Calcium	mg/L	ND	0.10	0.036	04/06/17 17:06	
Lithium	ug/L	ND	10.0	2.9	04/06/17 17:06	

LABORATORY CONTROL SAMPLE: 1930110

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1010	101	80-120	
Calcium	mg/L	10	10.4	104	80-120	
Lithium	ug/L	1000	1080	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1930111 1930112

Parameter	Units	60240832001		60240832002		60240832003		60240832004		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.				
Boron	ug/L	23.8J	1000	1000	1090	1070	107	105	75-125	2	20		
Calcium	mg/L	144	10	10	156	154	115	99	75-125	1	20		
Lithium	ug/L	12.6	1000	1000	1100	1090	108	108	75-125	1	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

QC Batch: 471393 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

METHOD BLANK: 1930113 Matrix: Water  
 Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	04/06/17 14:57	
Arsenic	ug/L	ND	1.0	0.052	04/06/17 14:57	
Barium	ug/L	0.38J	1.0	0.095	04/06/17 14:57	
Beryllium	ug/L	0.014J	0.50	0.012	04/06/17 14:57	
Cadmium	ug/L	ND	0.50	0.018	04/06/17 14:57	
Chromium	ug/L	ND	1.0	0.054	04/06/17 14:57	
Cobalt	ug/L	ND	1.0	0.014	04/06/17 14:57	
Lead	ug/L	0.073J	1.0	0.033	04/06/17 14:57	
Molybdenum	ug/L	ND	1.0	0.058	04/06/17 14:57	
Selenium	ug/L	ND	1.0	0.086	04/06/17 14:57	
Thallium	ug/L	ND	1.0	0.036	04/06/17 14:57	

LABORATORY CONTROL SAMPLE: 1930114

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.2	101	80-120	
Arsenic	ug/L	40	40.2	101	80-120	
Barium	ug/L	40	40.2	101	80-120	
Beryllium	ug/L	40	39.8	99	80-120	
Cadmium	ug/L	40	39.9	100	80-120	
Chromium	ug/L	40	41.1	103	80-120	
Cobalt	ug/L	40	40.8	102	80-120	
Lead	ug/L	40	39.3	98	80-120	
Molybdenum	ug/L	40	42.1	105	80-120	
Selenium	ug/L	40	40.1	100	80-120	
Thallium	ug/L	40	37.2	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1930115 1930116

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Antimony	ug/L	0.067J	40	40	41.3	41.3	103	103	75-125	0	20	
Arsenic	ug/L	2.7	40	40	43.2	44.1	101	104	75-125	2	20	
Barium	ug/L	187	40	40	231	230	111	109	75-125	0	20	
Beryllium	ug/L	0.023J	40	40	38.6	38.3	96	96	75-125	1	20	
Cadmium	ug/L	0.036J	40	40	40.2	40.3	100	101	75-125	0	20	
Chromium	ug/L	1.4	40	40	42.5	43.4	103	105	75-125	2	20	
Cobalt	ug/L	4.7	40	40	44.7	44.7	100	100	75-125	0	20	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Parameter	Units	60240832002		1930115		1930116		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Lead	ug/L	0.20J	40	40	40.1	40.2	100	100	75-125	0	20			
Molybdenum	ug/L	0.38J	40	40	43.8	43.6	109	108	75-125	1	20			
Selenium	ug/L	0.43J	40	40	39.1	39.8	97	98	75-125	2	20			
Thallium	ug/L	0.044J	40	40	38.0	38.1	95	95	75-125	0	20			

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

QC Batch: 470924

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

METHOD BLANK: 1927872

Matrix: Water

Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	03/31/17 14:27	

LABORATORY CONTROL SAMPLE: 1927873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	983	98	80-120	

SAMPLE DUPLICATE: 1927874

Parameter	Units	60240832001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	615	632	3	10	

SAMPLE DUPLICATE: 1927875

Parameter	Units	60240816001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2430	2340	4	10	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

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QC Batch:	470887	Analysis Method:	EPA 9040
QC Batch Method:	EPA 9040	Analysis Description:	9040 pH

Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

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SAMPLE DUPLICATE: 1927741

Parameter	Units	60240845001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	5.4	5.5	2	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

QC Batch:	471148	Analysis Method:	EPA 9056
QC Batch Method:	EPA 9056	Analysis Description:	9056 IC Anions
Associated Lab Samples:	60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007		

METHOD BLANK: 1929041 Matrix: Water  
Associated Lab Samples: 60240832001, 60240832002, 60240832003, 60240832004, 60240832005, 60240832006, 60240832007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	04/04/17 08:21	
Fluoride	mg/L	ND	0.20	0.10	04/04/17 08:21	
Sulfate	mg/L	ND	1.0	0.50	04/04/17 08:21	

LABORATORY CONTROL SAMPLE: 1929042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1929043 1929044

Parameter	Units	60240821001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	5	5	5.3	5.3	95	94	80-120	0	15	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.7	105	105	80-120	0	15	
Sulfate	mg/L	1.6	5	5	6.7	6.7	102	102	80-120	0	15	

SAMPLE DUPLICATE: 1929045

Parameter	Units	60240832001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	23.3	23.5	1	15	
Fluoride	mg/L	0.10J	ND		15	
Sulfate	mg/L	107	101	6	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

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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 adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60240832001	MW-301		471693		
60240832002	MW-302		471693		
60240832003	MW-303		471693		
60240832004	MW-304		471693		
60240832005	MW-305		471693		
60240832006	MW-306		471693		
60240832001	MW-301	EPA 3010	471392	EPA 6010	471457
60240832002	MW-302	EPA 3010	471392	EPA 6010	471457
60240832003	MW-303	EPA 3010	471392	EPA 6010	471457
60240832004	MW-304	EPA 3010	471392	EPA 6010	471457
60240832005	MW-305	EPA 3010	471392	EPA 6010	471457
60240832006	MW-306	EPA 3010	471392	EPA 6010	471457
60240832007	FIELD BLANK	EPA 3010	471392	EPA 6010	471457
60240832001	MW-301	EPA 3010	471393	EPA 6020	471456
60240832002	MW-302	EPA 3010	471393	EPA 6020	471456
60240832003	MW-303	EPA 3010	471393	EPA 6020	471456
60240832004	MW-304	EPA 3010	471393	EPA 6020	471456
60240832005	MW-305	EPA 3010	471393	EPA 6020	471456
60240832006	MW-306	EPA 3010	471393	EPA 6020	471456
60240832007	FIELD BLANK	EPA 3010	471393	EPA 6020	471456
60240832001	MW-301	EPA 7470	470874	EPA 7470	470890
60240832002	MW-302	EPA 7470	470874	EPA 7470	470890
60240832003	MW-303	EPA 7470	470874	EPA 7470	470890
60240832004	MW-304	EPA 7470	470874	EPA 7470	470890
60240832005	MW-305	EPA 7470	470874	EPA 7470	470890
60240832006	MW-306	EPA 7470	470874	EPA 7470	470890
60240832007	FIELD BLANK	EPA 7470	470874	EPA 7470	470890
60240832001	MW-301	SM 2540C	470924		
60240832002	MW-302	SM 2540C	470924		
60240832003	MW-303	SM 2540C	470924		
60240832004	MW-304	SM 2540C	470924		
60240832005	MW-305	SM 2540C	470924		
60240832006	MW-306	SM 2540C	470924		
60240832007	FIELD BLANK	SM 2540C	470924		
60240832001	MW-301	EPA 9040	470887		
60240832002	MW-302	EPA 9040	470887		
60240832003	MW-303	EPA 9040	470887		
60240832004	MW-304	EPA 9040	470887		
60240832005	MW-305	EPA 9040	470887		
60240832006	MW-306	EPA 9040	470887		
60240832007	FIELD BLANK	EPA 9040	470887		
60240832001	MW-301	EPA 9056	471148		
60240832002	MW-302	EPA 9056	471148		
60240832003	MW-303	EPA 9056	471148		
60240832004	MW-304	EPA 9056	471148		
60240832005	MW-305	EPA 9056	471148		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074

Pace Project No.: 60240832

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60240832006	MW-306	EPA 9056	471148		
60240832007	FIELD BLANK	EPA 9056	471148		

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Sample Condition Upon Receipt

WO#: 60240832



60240832

TDG

Client Name: SCS Eng.

Courier: FedEx [checked] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7014 6660 5481/5512 Pace Shipping Label Used? Yes [checked] No [ ]

Custody Seal on Cooler/Box Present: Yes [checked] No [ ] Seals intact: Yes [checked] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [checked] Other [ ]

Thermometer Used: -266 / T-239 Type of Ice: Wet [checked] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 3.7 Corr. Factor CF +1.5 CF +0.9 Corrected 5.1

Date and initials of person examining contents: GW 3/30/17

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and handwritten notes (e.g., PH, WT, N/A).

Client Notification/ Resolution: Copy COC to Client? Y / [checked] N Field Data Required? [checked] Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 3.30-17



## A5 Round 5 Background Sampling, Analytical Laboratory Report

May 09, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60243033

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60243033001	MW-301	Water	04/26/17 16:50	04/28/17 10:15
60243033002	MW-302	Water	04/26/17 18:10	04/28/17 10:15
60243033003	MW-303	Water	04/26/17 19:00	04/28/17 10:15
60243033004	MW-304	Water	04/26/17 19:40	04/28/17 10:15
60243033005	MW-305	Water	04/27/17 10:10	04/28/17 10:15
60243033006	MW-306	Water	04/27/17 09:45	04/28/17 10:15
60243033007	FIELD BLANK	Water	04/26/17 17:30	04/28/17 10:15

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60243033001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60243033007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: MW-301		Lab ID: 60243033001		Collected: 04/26/17 16:50		Received: 04/28/17 10:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		04/26/17 16:50		
Field pH	<b>6.41</b>	Std. Units	0.10	0.050	1		04/26/17 16:50		
Field Temperature	<b>9.9</b>	deg C	0.50	0.25	1		04/26/17 16:50		
Field Specific Conductance	<b>1400</b>	umhos/cm	1.0	1.0	1		04/26/17 16:50		
Field Oxidation Potential	<b>141.5</b>	mV			1		04/26/17 16:50		
Oxygen, Dissolved	<b>3.88</b>	mg/L			1		04/26/17 16:50	7782-44-7	
Turbidity	<b>1.61</b>	NTU	1.0	1.0	1		04/26/17 16:50		
Groundwater Elevation	<b>716.70</b>	feet			1		04/26/17 16:50		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>37.3J</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:37	7440-42-8	
Calcium	<b>112</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:37	7440-70-2	
Lithium	<b>8.6J</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:37	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.034J</b>	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:00	7440-36-0	
Arsenic	<b>0.55J</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:00	7440-38-2	
Barium	<b>211</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:00	7440-39-3	
Beryllium	<b>0.023J</b>	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:00	7440-41-7	
Cadmium	<b>0.063J</b>	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:00	7440-43-9	
Chromium	<b>4.7</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:00	7440-47-3	
Cobalt	<b>0.28J</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:00	7440-48-4	
Lead	<b>0.40J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:00	7439-92-1	
Molybdenum	<b>0.23J</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:00	7439-98-7	
Selenium	<b>0.72J</b>	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:00	7782-49-2	
Thallium	<b>0.12J</b>	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:00	7440-28-0	B
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:21	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>495</b>	mg/L	5.0	5.0	1		05/01/17 10:05		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>6.8</b>	Std. Units	0.10	0.10	1		05/01/17 17:15		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.2</b>	mg/L	1.0	0.50	1		05/01/17 11:33	16887-00-6	
Fluoride	<b>0.10J</b>	mg/L	0.20	0.10	1		05/01/17 11:33	16984-48-8	
Sulfate	<b>82.5</b>	mg/L	10.0	5.0	10		05/01/17 13:01	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: MW-302		Lab ID: 60243033002		Collected: 04/26/17 18:10		Received: 04/28/17 10:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		04/26/17 18:10		
Field pH	<b>6.44</b>	Std. Units	0.10	0.050	1		04/26/17 18:10		
Field Temperature	<b>8.1</b>	deg C	0.50	0.25	1		04/26/17 18:10		
Field Specific Conductance	<b>1283</b>	umhos/cm	1.0	1.0	1		04/26/17 18:10		
Field Oxidation Potential	<b>54.5</b>	mV			1		04/26/17 18:10		
Oxygen, Dissolved	<b>2.43</b>	mg/L			1		04/26/17 18:10	7782-44-7	
Turbidity	<b>0.82</b>	NTU	1.0	1.0	1		04/26/17 18:10		
Groundwater Elevation	<b>716.07</b>	feet			1		04/26/17 18:10		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>36.5J</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:43	7440-42-8	
Calcium	<b>102</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:43	7440-70-2	
Lithium	<b>4.9J</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:43	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.028J</b>	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:04	7440-36-0	
Arsenic	<b>2.4</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:04	7440-38-2	
Barium	<b>176</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:04	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:04	7440-41-7	
Cadmium	<b>0.042J</b>	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:04	7440-43-9	
Chromium	<b>1.5</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:04	7440-47-3	
Cobalt	<b>2.1</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:04	7440-48-4	
Lead	<b>0.083J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:04	7439-92-1	
Molybdenum	<b>0.52J</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:04	7439-98-7	
Selenium	<b>0.44J</b>	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:04	7782-49-2	
Thallium	<b>0.058J</b>	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:04	7440-28-0	B
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:28	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>445</b>	mg/L	5.0	5.0	1		05/01/17 10:05		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>6.8</b>	Std. Units	0.10	0.10	1		05/01/17 17:20		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.9</b>	mg/L	2.0	1.0	2		05/01/17 14:29	16887-00-6	
Fluoride	<b>0.12J</b>	mg/L	0.20	0.10	1		05/01/17 14:14	16984-48-8	
Sulfate	<b>66.4</b>	mg/L	5.0	2.5	5		05/01/17 14:44	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: MW-303      Lab ID: 60243033003      Collected: 04/26/17 19:00      Received: 04/28/17 10:15      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b> Analytical Method:									
Collected By	<b>Client</b>				1		04/26/17 19:00		
Field pH	<b>7.18</b>	Std. Units	0.10	0.050	1		04/26/17 19:00		
Field Temperature	<b>11.7</b>	deg C	0.50	0.25	1		04/26/17 19:00		
Field Specific Conductance	<b>1107</b>	umhos/cm	1.0	1.0	1		04/26/17 19:00		
Field Oxidation Potential	<b>-6.4</b>	mV			1		04/26/17 19:00		
Oxygen, Dissolved	<b>0.13</b>	mg/L			1		04/26/17 19:00	7782-44-7	
Turbidity	<b>0.19</b>	NTU	1.0	1.0	1		04/26/17 19:00		
Groundwater Elevation	<b>705.07</b>	feet			1		04/26/17 19:00		
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>705</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:46	7440-42-8	
Calcium	<b>71.5</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:46	7440-70-2	
Lithium	<b>14.6</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:46	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.0</b>	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:08	7440-36-0	
Arsenic	<b>22.9</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:08	7440-38-2	
Barium	<b>67.6</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:08	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:08	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:08	7440-43-9	
Chromium	<b>0.14J</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:08	7440-47-3	
Cobalt	<b>0.30J</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:08	7440-48-4	
Lead	<b>0.095J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:08	7439-92-1	
Molybdenum	<b>23.2</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:08	7439-98-7	
Selenium	<b>0.15J</b>	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:08	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:08	7440-28-0	B
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:30	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>372</b>	mg/L	5.0	5.0	1		05/01/17 10:06		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		05/01/17 17:22		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	<b>20.2</b>	mg/L	2.0	1.0	2		05/01/17 15:13	16887-00-6	
Fluoride	<b>0.54</b>	mg/L	0.20	0.10	1		05/01/17 14:59	16984-48-8	
Sulfate	<b>65.1</b>	mg/L	10.0	5.0	10		05/01/17 15:28	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

**Sample: MW-304**      **Lab ID: 60243033004**      Collected: 04/26/17 19:40      Received: 04/28/17 10:15      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		04/26/17 19:40		
Field pH	<b>7.23</b>	Std. Units	0.10	0.050	1		04/26/17 19:40		
Field Temperature	<b>10.3</b>	deg C	0.50	0.25	1		04/26/17 19:40		
Field Specific Conductance	<b>1144</b>	umhos/cm	1.0	1.0	1		04/26/17 19:40		
Field Oxidation Potential	<b>-15.1</b>	mV			1		04/26/17 19:40		
Oxygen, Dissolved	<b>0.13</b>	mg/L			1		04/26/17 19:40	7782-44-7	
Turbidity	<b>2.23</b>	NTU	1.0	1.0	1		04/26/17 19:40		
Groundwater Elevation	<b>705.08</b>	feet			1		04/26/17 19:40		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>218</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:48	7440-42-8	
Calcium	<b>66.6</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:48	7440-70-2	
Lithium	<b>9.6J</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:48	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>1.9</b>	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:21	7440-36-0	
Arsenic	<b>9.4</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:21	7440-38-2	
Barium	<b>46.6</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:21	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:21	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:21	7440-43-9	
Chromium	<b>0.99J</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:21	7440-47-3	
Cobalt	<b>0.63J</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:21	7440-48-4	
Lead	<b>0.061J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:21	7439-92-1	
Molybdenum	<b>28.3</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:21	7439-98-7	
Selenium	<b>1.5</b>	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:21	7782-49-2	
Thallium	<b>0.12J</b>	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:21	7440-28-0	B
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:32	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>406</b>	mg/L	5.0	5.0	1		05/01/17 10:06		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		05/01/17 17:24		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>21.7</b>	mg/L	2.0	1.0	2		05/01/17 15:43	16887-00-6	
Fluoride	<b>0.87</b>	mg/L	0.20	0.10	1		05/01/17 16:41	16984-48-8	
Sulfate	<b>111</b>	mg/L	10.0	5.0	10		05/01/17 15:57	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: MW-305		Lab ID: 60243033005		Collected: 04/27/17 10:10		Received: 04/28/17 10:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		04/27/17 10:16		
Field pH	<b>7.42</b>	Std. Units	0.10	0.050	1		04/27/17 10:16		
Field Temperature	<b>11.2</b>	deg C	0.50	0.25	1		04/27/17 10:16		
Field Specific Conductance	<b>1107</b>	umhos/cm	1.0	1.0	1		04/27/17 10:16		
Field Oxidation Potential	<b>-31.4</b>	mV			1		04/27/17 10:16		
Oxygen, Dissolved	<b>0.16</b>	mg/L			1		04/27/17 10:16	7782-44-7	
Turbidity	<b>0.66</b>	NTU	1.0	1.0	1		04/27/17 10:16		
Groundwater Elevation	<b>705.04</b>	feet			1		04/27/17 10:16		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>229</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:50	7440-42-8	
Calcium	<b>65.0</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:50	7440-70-2	
Lithium	<b>9.6J</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:50	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>2.1</b>	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:25	7440-36-0	
Arsenic	<b>13.9</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:25	7440-38-2	
Barium	<b>56.5</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:25	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:25	7440-41-7	
Cadmium	<b>0.034J</b>	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:25	7440-43-9	
Chromium	<b>1.9</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:25	7440-47-3	
Cobalt	<b>0.43J</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:25	7440-48-4	
Lead	<b>0.058J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:25	7439-92-1	
Molybdenum	<b>28.3</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:25	7439-98-7	
Selenium	<b>1.5</b>	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:25	7782-49-2	
Thallium	<b>0.051J</b>	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:25	7440-28-0	B
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:34	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>383</b>	mg/L	5.0	5.0	1		05/01/17 10:07		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.5</b>	Std. Units	0.10	0.10	1		05/01/17 17:27		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.5</b>	mg/L	2.0	1.0	2		05/01/17 17:10	16887-00-6	
Fluoride	<b>0.66</b>	mg/L	0.20	0.10	1		05/01/17 16:56	16984-48-8	
Sulfate	<b>104</b>	mg/L	10.0	5.0	10		05/01/17 17:25	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: MW-306		Lab ID: 60243033006		Collected: 04/27/17 09:45		Received: 04/28/17 10:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		04/27/17 09:45		
Field pH	<b>7.50</b>	Std. Units	0.10	0.050	1		04/27/17 09:45		
Field Temperature	<b>13.1</b>	deg C	0.50	0.25	1		04/27/17 09:45		
Field Specific Conductance	<b>1165</b>	umhos/cm	1.0	1.0	1		04/27/17 09:45		
Field Oxidation Potential	<b>-64.3</b>	mV			1		04/27/17 09:45		
Oxygen, Dissolved	<b>0.17</b>	mg/L			1		04/27/17 09:45	7782-44-7	
Turbidity	<b>0.43</b>	NTU	1.0	1.0	1		04/27/17 09:45		
Groundwater Elevation	<b>704.98</b>	feet			1		04/27/17 09:45		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>3080</b>	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:53	7440-42-8	
Calcium	<b>52.8</b>	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:53	7440-70-2	
Lithium	<b>3.5J</b>	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:53	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	ND	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:30	7440-36-0	
Arsenic	<b>0.55J</b>	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:30	7440-38-2	
Barium	<b>47.8</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:30	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:30	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:30	7440-43-9	
Chromium	<b>0.14J</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:30	7440-47-3	
Cobalt	<b>0.077J</b>	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:30	7440-48-4	
Lead	<b>0.15J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:30	7439-92-1	
Molybdenum	<b>278</b>	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:30	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:30	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:30	7440-28-0	B
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>426</b>	mg/L	5.0	5.0	1		05/01/17 10:07		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.4</b>	Std. Units	0.10	0.10	1		05/01/17 17:25		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>32.4</b>	mg/L	5.0	2.5	5		05/01/17 17:54	16887-00-6	
Fluoride	<b>0.29</b>	mg/L	0.20	0.10	1		05/01/17 17:40	16984-48-8	
Sulfate	<b>137</b>	mg/L	10.0	5.0	10		05/01/17 18:09	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Sample: FIELD BLANK      Lab ID: 60243033007      Collected: 04/26/17 17:30      Received: 04/28/17 10:15      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	ND	ug/L	100	3.5	1	05/05/17 08:20	05/09/17 14:59	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	05/05/17 08:20	05/09/17 14:59	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	05/05/17 08:20	05/09/17 14:59	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	05/05/17 08:30	05/09/17 11:43	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	05/05/17 08:30	05/09/17 11:43	7440-38-2	
Barium	<b>0.41J</b>	ug/L	1.0	0.095	1	05/05/17 08:30	05/09/17 11:43	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.012	1	05/05/17 08:30	05/09/17 11:43	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/05/17 08:30	05/09/17 11:43	7440-43-9	
Chromium	<b>0.093J</b>	ug/L	1.0	0.054	1	05/05/17 08:30	05/09/17 11:43	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	05/05/17 08:30	05/09/17 11:43	7440-48-4	
Lead	<b>0.041J</b>	ug/L	1.0	0.033	1	05/05/17 08:30	05/09/17 11:43	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	05/05/17 08:30	05/09/17 11:43	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	05/05/17 08:30	05/09/17 11:43	7782-49-2	
Thallium	<b>0.042J</b>	ug/L	1.0	0.036	1	05/05/17 08:30	05/09/17 11:43	7440-28-0	B
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	05/05/17 15:50	05/08/17 09:43	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		05/01/17 10:06		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>6.4</b>	Std. Units	0.10	0.10	1		05/01/17 17:19		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		05/01/17 11:18	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		05/01/17 11:18	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		05/01/17 11:18	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

QC Batch: 475693 Analysis Method: EPA 7470  
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
 Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

METHOD BLANK: 1948223 Matrix: Water  
 Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	05/08/17 09:17	

LABORATORY CONTROL SAMPLE: 1948224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1948225 1948226

Parameter	Units	60243033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.3	5.2	105	103	75-125	2	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60243033

QC Batch: 475512 Analysis Method: EPA 6010  
QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

METHOD BLANK: 1947295 Matrix: Water  
Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	05/09/17 14:32	
Calcium	mg/L	ND	0.10	0.036	05/09/17 14:32	
Lithium	ug/L	ND	10.0	2.9	05/09/17 14:32	

LABORATORY CONTROL SAMPLE: 1947296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	989	99	80-120	
Calcium	mg/L	10	10.3	103	80-120	
Lithium	ug/L	1000	986	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1947297 1947298

Parameter	Units	60243033001		60243033002		60243033003		60243033004		% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Boron	ug/L	37.3J	1000	1000	1040	1020	100	99	75-125	1	20		
Calcium	mg/L	112	10	10	120	119	80	79	75-125	0	20		
Lithium	ug/L	8.6J	1000	1000	1020	994	101	99	75-125	2	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

QC Batch: 475511 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

METHOD BLANK: 1947285 Matrix: Water  
 Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	05/09/17 10:51	
Arsenic	ug/L	ND	1.0	0.052	05/09/17 10:51	
Barium	ug/L	0.30J	1.0	0.095	05/09/17 10:51	
Beryllium	ug/L	ND	0.50	0.012	05/09/17 10:51	
Cadmium	ug/L	ND	0.50	0.018	05/09/17 10:51	
Chromium	ug/L	ND	1.0	0.054	05/09/17 10:51	
Cobalt	ug/L	ND	1.0	0.014	05/09/17 10:51	
Lead	ug/L	ND	1.0	0.033	05/09/17 10:51	
Molybdenum	ug/L	ND	1.0	0.058	05/09/17 10:51	
Selenium	ug/L	ND	1.0	0.086	05/09/17 10:51	
Thallium	ug/L	0.051J	1.0	0.036	05/09/17 10:51	

LABORATORY CONTROL SAMPLE: 1947286

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	80-120	
Arsenic	ug/L	40	39.9	100	80-120	
Barium	ug/L	40	39.5	99	80-120	
Beryllium	ug/L	40	38.9	97	80-120	
Cadmium	ug/L	40	39.2	98	80-120	
Chromium	ug/L	40	40.5	101	80-120	
Cobalt	ug/L	40	40.0	100	80-120	
Lead	ug/L	40	39.3	98	80-120	
Molybdenum	ug/L	40	41.7	104	80-120	
Selenium	ug/L	40	38.7	97	80-120	
Thallium	ug/L	40	37.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1947287 1947288

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Antimony	ug/L	1.0	40	40	40.0	40.0	97	97	75-125	0	20	
Arsenic	ug/L	22.9	40	40	61.8	62.7	97	100	75-125	2	20	
Barium	ug/L	67.6	40	40	104	107	92	98	75-125	2	20	
Beryllium	ug/L	ND	40	40	36.1	36.2	90	91	75-125	0	20	
Cadmium	ug/L	ND	40	40	38.0	37.8	95	94	75-125	1	20	
Chromium	ug/L	0.14J	40	40	38.7	39.7	96	99	75-125	3	20	
Cobalt	ug/L	0.30J	40	40	38.1	38.7	95	96	75-125	1	20	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Parameter	Units	60243033003		1947287		1947288		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec							
Lead	ug/L	0.095J	40	40	39.8	40.1	99	100	75-125	1	20			
Molybdenum	ug/L	23.2	40	40	65.0	66.0	104	107	75-125	2	20			
Selenium	ug/L	0.15J	40	40	37.0	37.1	92	92	75-125	0	20			
Thallium	ug/L	ND	40	40	38.3	38.8	96	97	75-125	1	20			

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

QC Batch: 474857

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

METHOD BLANK: 1945034

Matrix: Water

Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	05/01/17 10:04	

LABORATORY CONTROL SAMPLE: 1945035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 1945036

Parameter	Units	60243033001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	495	503	2	10	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

QC Batch: 474880 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

SAMPLE DUPLICATE: 1945085

Parameter	Units	60243033001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.8	6.8	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60243033

QC Batch: 474825 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

METHOD BLANK: 1944962 Matrix: Water  
Associated Lab Samples: 60243033001, 60243033002, 60243033003, 60243033004, 60243033005, 60243033006, 60243033007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	05/01/17 10:49	
Fluoride	mg/L	ND	0.20	0.10	05/01/17 10:49	
Sulfate	mg/L	ND	1.0	0.50	05/01/17 10:49	

LABORATORY CONTROL SAMPLE: 1944963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	80-120	
Fluoride	mg/L	2.5	2.6	102	80-120	
Sulfate	mg/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1944964 1944965

Parameter	Units	60243033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	19.2	5	5	24.8	25.0	113	115	80-120	1	15	
Fluoride	mg/L	0.10J	2.5	2.5	2.9	3.0	113	116	80-120	2	15	
Sulfate	mg/L	82.5	50	50	136	135	107	105	80-120	1	15	

SAMPLE DUPLICATE: 1944966

Parameter	Units	40148922002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	230000 ug/L	228	1	15	
Fluoride	mg/L	<1.0	ND		15	
Sulfate	mg/L	64000 ug/L	63.2	1	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

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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 adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60243033001	MW-301		475949		
60243033002	MW-302		475949		
60243033003	MW-303		475949		
60243033004	MW-304		475949		
60243033005	MW-305		475949		
60243033006	MW-306		475949		
60243033001	MW-301	EPA 3010	475512	EPA 6010	475705
60243033002	MW-302	EPA 3010	475512	EPA 6010	475705
60243033003	MW-303	EPA 3010	475512	EPA 6010	475705
60243033004	MW-304	EPA 3010	475512	EPA 6010	475705
60243033005	MW-305	EPA 3010	475512	EPA 6010	475705
60243033006	MW-306	EPA 3010	475512	EPA 6010	475705
60243033007	FIELD BLANK	EPA 3010	475512	EPA 6010	475705
60243033001	MW-301	EPA 3010	475511	EPA 6020	475688
60243033002	MW-302	EPA 3010	475511	EPA 6020	475688
60243033003	MW-303	EPA 3010	475511	EPA 6020	475688
60243033004	MW-304	EPA 3010	475511	EPA 6020	475688
60243033005	MW-305	EPA 3010	475511	EPA 6020	475688
60243033006	MW-306	EPA 3010	475511	EPA 6020	475688
60243033007	FIELD BLANK	EPA 3010	475511	EPA 6020	475688
60243033001	MW-301	EPA 7470	475693	EPA 7470	475731
60243033002	MW-302	EPA 7470	475693	EPA 7470	475731
60243033003	MW-303	EPA 7470	475693	EPA 7470	475731
60243033004	MW-304	EPA 7470	475693	EPA 7470	475731
60243033005	MW-305	EPA 7470	475693	EPA 7470	475731
60243033006	MW-306	EPA 7470	475693	EPA 7470	475731
60243033007	FIELD BLANK	EPA 7470	475693	EPA 7470	475731
60243033001	MW-301	SM 2540C	474857		
60243033002	MW-302	SM 2540C	474857		
60243033003	MW-303	SM 2540C	474857		
60243033004	MW-304	SM 2540C	474857		
60243033005	MW-305	SM 2540C	474857		
60243033006	MW-306	SM 2540C	474857		
60243033007	FIELD BLANK	SM 2540C	474857		
60243033001	MW-301	EPA 9040	474880		
60243033002	MW-302	EPA 9040	474880		
60243033003	MW-303	EPA 9040	474880		
60243033004	MW-304	EPA 9040	474880		
60243033005	MW-305	EPA 9040	474880		
60243033006	MW-306	EPA 9040	474880		
60243033007	FIELD BLANK	EPA 9040	474880		
60243033001	MW-301	EPA 9056	474825		
60243033002	MW-302	EPA 9056	474825		
60243033003	MW-303	EPA 9056	474825		
60243033004	MW-304	EPA 9056	474825		
60243033005	MW-305	EPA 9056	474825		

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243033

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60243033006	MW-306	EPA 9056	474825		
60243033007	FIELD BLANK	EPA 9056	474825		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60243033



60243033

Client Name: SCS Engineers

Courier: FedEx [X] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7285 6991 8330 Pace Shipping Label Used? Yes [ ] No [ ]

Custody Seal on Cooler/Box Present: Yes [X] No [ ] Seals intact: Yes [X] No [ ]

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

Thermometer Used: T-266 [ ] T-239 [X] Type of Ice: Wet [X] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 0.4 Corr. Factor CF +2.9 CF +0.2 Corrected 0.6

Date and initials of person examining contents: JB 4/28/17

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and handwritten notes. Rows include Chain of Custody, Samples arrived, Short Hold Time, Rush Turn Around Time, Sufficient volume, Containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels, Multiple phases, pH preservation, Cyanide water checks, Lead acetate strip, Potassium iodide test strip, Trip Blank, Headspace, and USDA Regulated Area.

Client Notification/ Resolution: Copy COC to Client? Y / [N] Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 4-28-17



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

**Section A**  
Required Client Information:

**Section B**  
Required Project Information:

**Section C**  
Invoice Information:

Company: **SCS Engineers** Report To: **Meghan Blodgett** Attention: **Meghan Blodgett/Jess Valcheff**

Address: **2830 Dairy Drive** Copy To: **Tom Karwaski** Company Name: **SCS Engineers**

Address: **Madison WI 53718** Purchase Order No.: **Reference:** **Trudy Gipson 913-563-1405**

Email To: **mblodgett@scsenigneers.com** Project Name: **IPL Prairie Creek** Pace Project Manager:

Phone: **608-216-7362** Fax: **Project Number: 25216074.17** Pace Profile #: **6696 Line 2**

Requested Due Date/TAI: **Requested Analysis Filtered (Y/N)**

**REGULATORY AGENCY**

NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location: IA STATE: \_\_\_\_\_

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OI WIPE AIR WP OTHER AR TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Analysis Test	Requested Analysis Filtered (Y/N)	
1	MW-301		WT G	G	4-27-17	1650	1810	1810		2	1	1								6010 Total Metals: B-Ca-Li	X
2	MW-302		WT G	G			1940	1940		2	1	1								6020 Total Metals *	X
3	MW-303		WT G	G			1940	1940		2	1	1								7470 Total Hg	X
4	MW-304		WT G	G			0945	0945		2	1	1								9056 Chloride-Fluoride-Sulfate	X
5	MW-305		WT G	G						2	1	1								2540C TDS	X
6	MW-306		WT G	G						2	1	1								9040 pH	X
7	FIELD BLANK		WT G	G						1	1										
8																					
9																					
10																					
11																					
12																					

Ship To: 9608 Latral Boulevard, Lenexa, KS 66279

RELINQUISHED BY / AFFILIATION: *MW-301*

DATE: 4-27-17 TIME: 1400

ACCEPTED BY / AFFILIATION: *[Signature]*

DATE: 4/28/17 TIME: 1005

Temp in °C: 016

Received on Ice (Y/N): Y

Custody Sealed Cooler (Y/N): Y

Samples Intact (Y/N): Y

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

May 18, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60243047

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

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### Pennsylvania Certification IDs

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60243047001	MW-301	Water	04/26/17 16:50	04/28/17 10:15
60243047002	MW-302	Water	04/26/17 18:10	04/28/17 10:15
60243047003	MW-303	Water	04/26/17 19:00	04/28/17 10:15
60243047004	MW-304	Water	04/26/17 19:40	04/28/17 10:15
60243047005	MW-305	Water	04/27/17 10:10	04/28/17 10:15
60243047006	MW-306	Water	04/27/17 09:45	04/28/17 10:15
60243047007	FIELD BLANK	Water	04/26/17 17:30	04/28/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60243047001	MW-301	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047002	MW-302	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047003	MW-303	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047004	MW-304	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047005	MW-305	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047006	MW-306	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60243047007	FIELD BLANK	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-301**      **Lab ID: 60243047001**      Collected: 04/26/17 16:50      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.479 ± 0.336 (0.162)</b> <b>C:NA T:88%</b>	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.662 ± 0.421 (0.787)</b> <b>C:72% T:80%</b>	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.14 ± 0.757 (0.949)</b>	pCi/L	05/18/17 18:03	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-302**      **Lab ID: 60243047002**      Collected: 04/26/17 18:10      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.311 ± 0.286 (0.169)</b> C:NA T:97%	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.402 ± 0.355 (0.714)</b> C:74% T:86%	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.713 ± 0.641 (0.883)</b>	pCi/L	05/18/17 18:03	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-303**      **Lab ID: 60243047003**      Collected: 04/26/17 19:00      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.0625 ± 0.285 (0.460)</b> C:NA T:91%	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.647 ± 0.471 (0.918)</b> C:69% T:79%	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.710 ± 0.756 (1.38)</b>	pCi/L	05/18/17 18:03	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-304**      **Lab ID: 60243047004**      Collected: 04/26/17 19:40      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.497 ± 0.349 (0.168)</b> <b>C:NA T:89%</b>	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.135 ± 0.381 (0.854)</b> <b>C:69% T:86%</b>	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.632 ± 0.730 (1.02)</b>	pCi/L	05/18/17 18:03	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-305**      **Lab ID: 60243047005**      Collected: 04/27/17 10:10      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.000 ± 0.304 (0.682)</b> C:NA T:90%	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.463 ± 0.402 (0.810)</b> C:72% T:82%	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.463 ± 0.706 (1.49)</b>	pCi/L	05/18/17 18:03	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: MW-306**      **Lab ID: 60243047006**      Collected: 04/27/17 09:45      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.525 ± 0.411 (0.483)</b> C:NA T:86%	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>0.260 ± 0.414 (0.899)</b> C:72% T:81%	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.785 ± 0.825 (1.38)</b>	pCi/L	05/18/17 18:03	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

**Sample: FIELD BLANK**      **Lab ID: 60243047007**      Collected: 04/26/17 17:30      Received: 04/28/17 10:15      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.199 ± 0.568 (1.05)</b> <b>C:NA T:79%</b>	pCi/L	05/15/17 10:26	13982-63-3	
Radium-228	EPA 904.0	<b>-0.171 ± 0.327 (0.806)</b> <b>C:72% T:82%</b>	pCi/L	05/15/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.199 ± 0.895 (1.86)</b>	pCi/L	05/18/17 18:03	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

QC Batch: 257743

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Associated Lab Samples: 60243047001, 60243047002, 60243047003, 60243047004, 60243047005, 60243047006, 60243047007

METHOD BLANK: 1269721

Matrix: Water

Associated Lab Samples: 60243047001, 60243047002, 60243047003, 60243047004, 60243047005, 60243047006, 60243047007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.119 ± 0.294 (0.657) C:75% T:84%	pCi/L	05/15/17 11:27	

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

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

---

QC Batch:	257591	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	60243047001, 60243047002, 60243047003, 60243047004, 60243047005, 60243047006, 60243047007		

---

METHOD BLANK:	1268852	Matrix:	Water
Associated Lab Samples:	60243047001, 60243047002, 60243047003, 60243047004, 60243047005, 60243047006, 60243047007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0625 ± 0.285 (0.580) C:NA T:89%	pCi/L	05/15/17 10:26	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60243047

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60243047001	MW-301	EPA 903.1	257591		
60243047002	MW-302	EPA 903.1	257591		
60243047003	MW-303	EPA 903.1	257591		
60243047004	MW-304	EPA 903.1	257591		
60243047005	MW-305	EPA 903.1	257591		
60243047006	MW-306	EPA 903.1	257591		
60243047007	FIELD BLANK	EPA 903.1	257591		
60243047001	MW-301	EPA 904.0	257743		
60243047002	MW-302	EPA 904.0	257743		
60243047003	MW-303	EPA 904.0	257743		
60243047004	MW-304	EPA 904.0	257743		
60243047005	MW-305	EPA 904.0	257743		
60243047006	MW-306	EPA 904.0	257743		
60243047007	FIELD BLANK	EPA 904.0	257743		
60243047001	MW-301	Total Radium Calculation	259004		
60243047002	MW-302	Total Radium Calculation	259004		
60243047003	MW-303	Total Radium Calculation	259004		
60243047004	MW-304	Total Radium Calculation	259004		
60243047005	MW-305	Total Radium Calculation	259004		
60243047006	MW-306	Total Radium Calculation	259004		
60243047007	FIELD BLANK	Total Radium Calculation	259004		

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Sample Condition Upon Receipt

WO#: 60243047



60243047

Client Name: SCS Eng.

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7285 6591 8271 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 8.6 Corr. Factor CF +2.0 CF +0.7 Corrected 8.8

Date and initials of person examining contents: SB 4/25/17

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Cyanide water sample checks: <input checked="" type="checkbox"/> N/A	
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: SCS Date: 4.28.17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

**Section A**  
 Required Client Information:  
 Company: SCS Engineers  
 Address: 2830 Dairy Drive  
 Madison WI 53718  
 Email To: mblodgett@scsengineers.com  
 Phone: 608-216-7362  
 Fax:  
 Requested Due Date/TAT:

**Section B**  
 Required Project Information:  
 Report To: Meghan Blodgett  
 Copy To: Tom Karwaski  
 Purchase Order No.:  
 Project Name: IPL Prairie Creek  
 Project Number: 25216074.17

**Section C**  
 Invoice Information:  
 Attention: Meghan Blodgett/Jess Valcheff  
 Company Name: SCS Engineers  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager: Trudy Gipson 913-563-1405  
 Pace Profile #: 6696 Line 2

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location: IA  
 STATE: IA

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID S OIL SL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Unpreserved	Preservatives	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB								
1	MW-301		DATE: xxx	TIME: 1650	G	WT	2	H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other				001
2	MW-302		DATE: xxx	TIME: 1800	G	WT	2					002
3	MW-303		DATE: xxx	TIME: 1900	G	WT	2					003
4	MW-304		DATE: xxx	TIME: 1940	G	WT	2					004
5	MW-305		DATE: xxx	TIME: 1010	G	WT	2					005
6	MW-306		DATE: xxx	TIME: 0945	G	WT	2					006
7	FIELD BLANK		DATE: xxx	TIME: 1730	G	WT	2					007
8												
9												
10												
11												
12												

**ADDITIONAL COMMENTS**  
 Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219  
 RELINQUISHED BY / AFFILIATION: *Kyle Krzymer*  
 DATE: 4-27-17  
 TIME: 1400  
 ACCEPTED BY / AFFILIATION: *[Signature]*  
 DATE: 4/27/17  
 TIME: 1015  
 SAMPLE CONDITIONS:  
 Received on Ice (Y/N): Y  
 Cooled (Y/N): Y  
 Samples Intact (Y/N): Y

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Kyle Krzymer  
 SIGNATURE of SAMPLER: *[Signature]*  
 DATE Signed (MM/DD/YYYY): 4-27-17

Chain of Custody

WO#: 30217672



30217672



Owner Received Date: 4/28/2017 Results Requested By: 5/23/2017

Workorder Name: IPL Prairie Creek/25216074.17

Workorder: 60243047

Report To: Subcontract To

Requested Analysis

Trudy Gipson  
Pace Analytical Kansas  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone 1(913)563-1405

Pace Analytical Pittsburgh  
1638 Roseytown Road  
Suites 2,3, & 4  
Greensburg, PA 15601  
Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers							LAB USE ONLY		
						903.1 Radium-226	904.0 Radium-228								
1	MW-301	PS	4/26/2017 16:50	60243047001	Water	2	X	X							001
2	MW-302	PS	4/26/2017 18:10	60243047002	Water	2	X	X							002
3	MW-303	PS	4/26/2017 19:00	60243047003	Water	2	X	X							003
4	MW-304	PS	4/26/2017 19:40	60243047004	Water	2	X	X							004
5	MW-305	PS	4/27/2017 10:10	60243047005	Water	2	X	X							005
6	MW-306	PS	4/27/2017 09:45	60243047006	Water	2	X	X							006
7	FIELD BLANK	PS	4/26/2017 17:30	60243047007	Water	2	X	X							007

Transfers	Released By	Date/Time	Received	Date/Time	Comments
1	<i>[Signature]</i>	5/11/17 12:00	<i>[Signature]</i>	5-2-17 11:30	
2					
3					

Cooler Temperature on Receipt	NA °C	Custody Seal	<input checked="" type="radio"/> Y or <input checked="" type="radio"/> N	Received on Ice	Y or <input checked="" type="radio"/> N	Samples Intact	Y or <input checked="" type="radio"/> N
-------------------------------	-------	--------------	--	-----------------	---	----------------	---

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh

KEH



Client Name: Pace, KS

Project # 30217672

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: 7285 6592 9715 09985217

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

Thermometer Used N/A Type of Ice: Wet Blue  None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
 Temp should be above freezing to 6°C

Date and initials of person examining contents: 09/18 5-2-17

Comments:

	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC:	X			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.	X			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed <u>09/18</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present		X		
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed <u>09/18</u> Date: <u>5-2-17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, The review is in the Status section of the Workorder Edit Screen.

## A6 Round 6 Background Sampling, Analytical Laboratory Report



July 25, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60245271

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on May 27, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended Report, Revision 1 on 7/25/17, Field Data

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60245271001	MW-301	Water	05/25/17 14:50	05/27/17 09:05
60245271002	MW-302	Water	05/25/17 15:50	05/27/17 09:05
60245271003	MW-303	Water	05/25/17 17:20	05/27/17 09:05
60245271004	MW-304	Water	05/25/17 18:25	05/27/17 09:05
60245271005	MW-305	Water	05/25/17 19:25	05/27/17 09:05
60245271006	MW-306	Water	05/25/17 20:00	05/27/17 09:05
60245271007	FIELD BLANK	Water	05/25/17 14:30	05/27/17 09:05

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60245271001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60245271007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	LDF	1	PASI-K
		EPA 9056	RAD	3	PASI-K

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: MW-301</b>									
<b>Lab ID: 60245271001</b>									
Collected: 05/25/17 14:50 Received: 05/27/17 09:05 Matrix: Water									
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		05/25/17 14:50		
Field pH	<b>6.41</b>	Std. Units	0.10	0.050	1		05/25/17 14:50		
Field Temperature	<b>10.45</b>	deg C	0.50	0.25	1		05/25/17 14:50		
Field Specific Conductance	<b>694</b>	umhos/cm	1.0	1.0	1		05/25/17 14:50		
Field Oxidation Potential	<b>155</b>	mV			1		05/25/17 14:50		
Oxygen, Dissolved	<b>4.19</b>	mg/L			1		05/25/17 14:50	7782-44-7	
Turbidity	<b>0.78</b>	NTU	1.0	1.0	1		05/25/17 14:50		
Groundwater Elevation	<b>717.08</b>	feet			1		05/25/17 14:50		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Boron	<b>40.8J</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 15:54	7440-42-8	
Calcium	<b>106</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 15:54	7440-70-2	
Lithium	<b>6.1J</b>	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 15:54	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	<b>0.065J</b>	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 13:29	7440-36-0	
Arsenic	<b>0.50J</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 13:29	7440-38-2	
Barium	<b>205</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 13:29	7440-39-3	
Beryllium	<b>0.016J</b>	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 13:29	7440-41-7	
Cadmium	<b>0.061J</b>	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 13:29	7440-43-9	
Chromium	<b>3.4</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 13:29	7440-47-3	
Cobalt	<b>0.18J</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 13:29	7440-48-4	
Lead	<b>0.25J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 13:29	7439-92-1	
Molybdenum	<b>0.26J</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 13:29	7439-98-7	
Selenium	<b>0.69J</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 13:29	7782-49-2	
Thallium	<b>0.043J</b>	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 13:29	7440-28-0	B
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:34	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>479</b>	mg/L	5.0	5.0	1		05/31/17 09:33		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.1</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>19.1</b>	mg/L	2.0	1.0	2		05/31/17 13:08	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		05/31/17 12:53	16984-48-8	
Sulfate	<b>74.7</b>	mg/L	10.0	5.0	10		05/31/17 13:24	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

**Sample: MW-302**      **Lab ID: 60245271002**      Collected: 05/25/17 15:50      Received: 05/27/17 09:05      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		05/25/17 15:50		
Field pH	<b>6.27</b>	Std. Units	0.10	0.050	1		05/25/17 15:50		
Field Temperature	<b>10.59</b>	deg C	0.50	0.25	1		05/25/17 15:50		
Field Specific Conductance	<b>317</b>	umhos/cm	1.0	1.0	1		05/25/17 15:50		
Field Oxidation Potential	<b>29.2</b>	mV			1		05/25/17 15:50		
Oxygen, Dissolved	<b>0.90</b>	mg/L			1		05/25/17 15:50	7782-44-7	
Turbidity	<b>1.52</b>	NTU	1.0	1.0	1		05/25/17 15:50		
Groundwater Elevation	<b>716.27</b>	feet			1		05/25/17 15:50		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>51.6J</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 15:57	7440-42-8	
Calcium	<b>41.4</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 15:57	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 15:57	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.077J</b>	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 13:33	7440-36-0	
Arsenic	<b>3.2</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 13:33	7440-38-2	
Barium	<b>109</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 13:33	7440-39-3	
Beryllium	<b>0.019J</b>	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 13:33	7440-41-7	
Cadmium	<b>0.021J</b>	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 13:33	7440-43-9	
Chromium	<b>0.80J</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 13:33	7440-47-3	
Cobalt	<b>2.1</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 13:33	7440-48-4	
Lead	<b>0.16J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 13:33	7439-92-1	
Molybdenum	<b>0.28J</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 13:33	7439-98-7	
Selenium	<b>0.28J</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 13:33	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 13:33	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>203</b>	mg/L	5.0	5.0	1		05/31/17 09:34		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>6.9</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>8.1</b>	mg/L	1.0	0.50	1		05/31/17 13:39	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		05/31/17 13:39	16984-48-8	
Sulfate	<b>28.9</b>	mg/L	2.0	1.0	2		05/31/17 13:54	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

**Sample: MW-303**      **Lab ID: 60245271003**      Collected: 05/25/17 17:20      Received: 05/27/17 09:05      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		05/25/17 17:20		
Field pH	<b>7.11</b>	Std. Units	0.10	0.050	1		05/25/17 17:20		
Field Temperature	<b>13.26</b>	deg C	0.50	0.25	1		05/25/17 17:20		
Field Specific Conductance	<b>549</b>	umhos/cm	1.0	1.0	1		05/25/17 17:20		
Field Oxidation Potential	<b>-12.2</b>	mV			1		05/25/17 17:20		
Oxygen, Dissolved	<b>0.26</b>	mg/L			1		05/25/17 17:20	7782-44-7	
Turbidity	<b>0.34</b>	NTU	1.0	1.0	1		05/25/17 17:20		
Groundwater Elevation	<b>705.37</b>	feet			1		05/25/17 17:20		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>644</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 15:59	7440-42-8	
Calcium	<b>67.8</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 15:59	7440-70-2	
Lithium	<b>15.4</b>	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 15:59	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.86J</b>	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 13:46	7440-36-0	
Arsenic	<b>23.6</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 13:46	7440-38-2	
Barium	<b>66.6</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 13:46	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 13:46	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 13:46	7440-43-9	
Chromium	<b>0.21J</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 13:46	7440-47-3	
Cobalt	<b>0.30J</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 13:46	7440-48-4	
Lead	<b>0.12J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 13:46	7439-92-1	
Molybdenum	<b>20.6</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 13:46	7439-98-7	
Selenium	<b>0.11J</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 13:46	7782-49-2	
Thallium	<b>0.089J</b>	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 13:46	7440-28-0	B
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:43	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>367</b>	mg/L	5.0	5.0	1		05/31/17 09:35		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.4</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>21.0</b>	mg/L	2.0	1.0	2		05/31/17 15:11	16887-00-6	
Fluoride	<b>0.45</b>	mg/L	0.20	0.10	1		05/31/17 14:56	16984-48-8	
Sulfate	<b>56.0</b>	mg/L	5.0	2.5	5		05/31/17 15:27	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

**Sample: MW-304**      **Lab ID: 60245271004**      Collected: 05/25/17 18:25      Received: 05/27/17 09:05      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		05/25/17 18:25		
Field pH	<b>7.23</b>	Std. Units	0.10	0.050	1		05/25/17 18:25		
Field Temperature	<b>11.90</b>	deg C	0.50	0.25	1		05/25/17 18:25		
Field Specific Conductance	<b>602</b>	umhos/cm	1.0	1.0	1		05/25/17 18:25		
Field Oxidation Potential	<b>-17.7</b>	mV			1		05/25/17 18:25		
Oxygen, Dissolved	<b>0.20</b>	mg/L			1		05/25/17 18:25	7782-44-7	
Turbidity	<b>1.40</b>	NTU	1.0	1.0	1		05/25/17 18:25		
Groundwater Elevation	<b>705.37</b>	feet			1		05/25/17 18:25		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>212</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 16:06	7440-42-8	
Calcium	<b>63.5</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 16:06	7440-70-2	
Lithium	<b>8.6J</b>	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 16:06	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.1</b>	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 13:51	7440-36-0	
Arsenic	<b>16.6</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 13:51	7440-38-2	
Barium	<b>95.0</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 13:51	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 13:51	7440-41-7	
Cadmium	<b>0.018J</b>	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 13:51	7440-43-9	
Chromium	<b>0.20J</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 13:51	7440-47-3	
Cobalt	<b>0.74J</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 13:51	7440-48-4	
Lead	<b>0.10J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 13:51	7439-92-1	
Molybdenum	<b>28.5</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 13:51	7439-98-7	
Selenium	<b>1.8</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 13:51	7782-49-2	
Thallium	<b>0.037J</b>	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 13:51	7440-28-0	B
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:50	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>418</b>	mg/L	5.0	5.0	1		05/31/17 09:36		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>22.1</b>	mg/L	2.0	1.0	2		05/31/17 15:58	16887-00-6	
Fluoride	<b>0.79</b>	mg/L	0.20	0.10	1		05/31/17 15:42	16984-48-8	
Sulfate	<b>115</b>	mg/L	10.0	5.0	10		05/31/17 16:13	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Sample: MW-305		Lab ID: 60245271005		Collected: 05/25/17 19:25		Received: 05/27/17 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		05/25/17 19:25		
Field pH	<b>7.42</b>	Std. Units	0.10	0.050	1		05/25/17 19:25		
Field Temperature	<b>12.23</b>	deg C	0.50	0.25	1		05/25/17 19:25		
Field Specific Conductance	<b>605</b>	umhos/cm	1.0	1.0	1		05/25/17 19:25		
Field Oxidation Potential	<b>3.9</b>	mV			1		05/25/17 19:25		
Oxygen, Dissolved	<b>0.17</b>	mg/L			1		05/25/17 19:25	7782-44-7	
Turbidity	<b>0.22</b>	NTU	1.0	1.0	1		05/25/17 19:25		
Groundwater Elevation	<b>705.29</b>	feet			1		05/25/17 19:25		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>243</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 16:08	7440-42-8	
Calcium	<b>68.5</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 16:08	7440-70-2	
Lithium	<b>7.1J</b>	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 16:08	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>2.5</b>	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 13:55	7440-36-0	
Arsenic	<b>14.7</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 13:55	7440-38-2	
Barium	<b>60.7</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 13:55	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 13:55	7440-41-7	
Cadmium	<b>0.038J</b>	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 13:55	7440-43-9	
Chromium	<b>0.20J</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 13:55	7440-47-3	
Cobalt	<b>0.34J</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 13:55	7440-48-4	
Lead	<b>0.080J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 13:55	7439-92-1	
Molybdenum	<b>28.2</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 13:55	7439-98-7	
Selenium	<b>2.0</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 13:55	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 13:55	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:52	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>400</b>	mg/L	5.0	5.0	1		05/31/17 09:36		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.7</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.8</b>	mg/L	2.0	1.0	2		05/31/17 16:44	16887-00-6	
Fluoride	<b>0.57</b>	mg/L	0.20	0.10	1		05/31/17 16:28	16984-48-8	
Sulfate	<b>104</b>	mg/L	10.0	5.0	10		05/31/17 16:59	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

**Sample: MW-306**      **Lab ID: 60245271006**      Collected: 05/25/17 20:00      Received: 05/27/17 09:05      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		05/25/17 20:00		
Field pH	<b>7.53</b>	Std. Units	0.10	0.050	1		05/25/17 20:00		
Field Temperature	<b>13.49</b>	deg C	0.50	0.25	1		05/25/17 20:00		
Field Specific Conductance	<b>624</b>	umhos/cm	1.0	1.0	1		05/25/17 20:00		
Field Oxidation Potential	<b>-111.6</b>	mV			1		05/25/17 20:00		
Oxygen, Dissolved	<b>0.15</b>	mg/L			1		05/25/17 20:00	7782-44-7	
Turbidity	<b>0.30</b>	NTU	1.0	1.0	1		05/25/17 20:00		
Groundwater Elevation	<b>705.34</b>	feet			1		05/25/17 20:00		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>2890</b>	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 16:10	7440-42-8	
Calcium	<b>49.1</b>	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 16:10	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 16:10	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 14:12	7440-36-0	
Arsenic	<b>0.60J</b>	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 14:12	7440-38-2	
Barium	<b>50.1</b>	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 14:12	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 14:12	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 14:12	7440-43-9	
Chromium	<b>0.16J</b>	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 14:12	7440-47-3	
Cobalt	<b>0.068J</b>	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 14:12	7440-48-4	
Lead	<b>0.30J</b>	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 14:12	7439-92-1	
Molybdenum	<b>275</b>	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 14:12	7439-98-7	
Selenium	<b>0.091J</b>	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 14:12	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 14:12	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:54	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>430</b>	mg/L	5.0	5.0	1		05/31/17 09:37		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.7</b>	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>34.5</b>	mg/L	5.0	2.5	5		05/31/17 18:16	16887-00-6	
Fluoride	<b>0.24</b>	mg/L	0.20	0.10	1		05/31/17 18:01	16984-48-8	
Sulfate	<b>136</b>	mg/L	10.0	5.0	10		05/31/17 17:15	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Sample: FIELD BLANK									
Lab ID: 60245271007									
Collected: 05/25/17 14:30									
Received: 05/27/17 09:05									
Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Boron	6.1J	ug/L	100	3.5	1	05/31/17 10:39	06/05/17 16:12	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	05/31/17 10:39	06/05/17 16:12	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	05/31/17 10:39	06/05/17 16:12	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	05/31/17 10:39	06/05/17 14:08	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	05/31/17 10:39	06/05/17 14:08	7440-38-2	
Barium	0.35J	ug/L	1.0	0.095	1	05/31/17 10:39	06/05/17 14:08	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	05/31/17 10:39	06/05/17 14:08	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	05/31/17 10:39	06/05/17 14:08	7440-43-9	
Chromium	0.076J	ug/L	1.0	0.054	1	05/31/17 10:39	06/05/17 14:08	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	05/31/17 10:39	06/05/17 14:08	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	05/31/17 10:39	06/05/17 14:08	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	05/31/17 10:39	06/05/17 14:08	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	05/31/17 10:39	06/05/17 14:08	7782-49-2	
Thallium	0.037J	ug/L	1.0	0.036	1	05/31/17 10:39	06/05/17 14:08	7440-28-0	B
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	06/05/17 11:13	06/05/17 15:56	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		05/31/17 09:37		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	5.4	Std. Units	0.10	0.10	1		06/06/17 10:45		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		05/31/17 18:32	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		05/31/17 18:32	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		05/31/17 18:32	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

QC Batch: 479642

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

METHOD BLANK: 1964685

Matrix: Water

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	06/05/17 15:24	

LABORATORY CONTROL SAMPLE: 1964686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.7	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1964687 1964688

Parameter	Units	60245271002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.8	5.7	115	114	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

QC Batch: 478978 Analysis Method: EPA 6010

QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

METHOD BLANK: 1961935 Matrix: Water

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	06/05/17 15:52	
Calcium	mg/L	ND	0.10	0.036	06/05/17 15:52	
Lithium	ug/L	ND	10.0	2.9	06/05/17 15:52	

LABORATORY CONTROL SAMPLE: 1961936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	984	98	80-120	
Calcium	mg/L	10	10.2	102	80-120	
Lithium	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1961937 1961938

Parameter	Units	60245271003		1961937		1961938		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MS Result	MS Spike Conc.						
Boron	ug/L	644	1000	1640	1000	1620	1000	99	98	75-125	1	20	
Calcium	mg/L	67.8	10	77.6	10	76.3	10	98	84	75-125	2	20	
Lithium	ug/L	15.4	1000	1040	1000	1030	1000	102	101	75-125	1	20	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

QC Batch: 478975 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

METHOD BLANK: 1961926 Matrix: Water  
 Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	06/05/17 13:16	
Arsenic	ug/L	ND	1.0	0.052	06/05/17 13:16	
Barium	ug/L	ND	1.0	0.095	06/05/17 13:16	
Beryllium	ug/L	ND	0.50	0.012	06/05/17 13:16	
Cadmium	ug/L	ND	0.50	0.018	06/05/17 13:16	
Chromium	ug/L	ND	1.0	0.054	06/05/17 13:16	
Cobalt	ug/L	ND	1.0	0.014	06/05/17 13:16	
Lead	ug/L	ND	1.0	0.033	06/05/17 13:16	
Molybdenum	ug/L	ND	1.0	0.058	06/05/17 13:16	
Selenium	ug/L	ND	1.0	0.086	06/05/17 13:16	
Thallium	ug/L	ND	1.0	0.036	06/05/17 13:16	

LABORATORY CONTROL SAMPLE: 1961927

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.8	99	80-120	
Arsenic	ug/L	40	39.2	98	80-120	
Barium	ug/L	40	39.4	98	80-120	
Beryllium	ug/L	40	39.2	98	80-120	
Cadmium	ug/L	40	39.4	98	80-120	
Chromium	ug/L	40	40.3	101	80-120	
Cobalt	ug/L	40	39.8	99	80-120	
Lead	ug/L	40	39.4	98	80-120	
Molybdenum	ug/L	40	41.9	105	80-120	
Selenium	ug/L	40	38.0	95	80-120	
Thallium	ug/L	40	37.8	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1961928 1961929

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Antimony	ug/L	0.077J	40	40	39.6	39.7	99	99	75-125	0	20	
Arsenic	ug/L	3.2	40	40	40.9	40.5	94	93	75-125	1	20	
Barium	ug/L	109	40	40	150	149	102	101	75-125	0	20	
Beryllium	ug/L	0.019J	40	40	34.1	34.3	85	86	75-125	1	20	
Cadmium	ug/L	0.021J	40	40	38.3	38.2	96	95	75-125	0	20	
Chromium	ug/L	0.80J	40	40	40.6	41.0	100	101	75-125	1	20	
Cobalt	ug/L	2.1	40	40	39.8	39.7	94	94	75-125	0	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Parameter	Units	1961928		1961929		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		60245271002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Lead	ug/L	0.16J	40	40	40.0	40.2	100	100	75-125	0	20		
Molybdenum	ug/L	0.28J	40	40	42.1	42.2	105	105	75-125	0	20		
Selenium	ug/L	0.28J	40	40	37.2	36.9	92	92	75-125	1	20		
Thallium	ug/L	ND	40	40	38.5	38.7	96	97	75-125	1	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

QC Batch: 478945

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

METHOD BLANK: 1961877

Matrix: Water

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	05/31/17 09:32	

LABORATORY CONTROL SAMPLE: 1961878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	937	94	80-120	

SAMPLE DUPLICATE: 1961879

Parameter	Units	60245271001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	479	484	1	10	

SAMPLE DUPLICATE: 1961880

Parameter	Units	60245290003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3740	3750	0	10	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

QC Batch: 479730 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

SAMPLE DUPLICATE: 1964893

Parameter	Units	60245243001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.7	6.8	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60245271

QC Batch: 478931 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

METHOD BLANK: 1961799 Matrix: Water  
Associated Lab Samples: 60245271001, 60245271002, 60245271003, 60245271004, 60245271005, 60245271006, 60245271007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	05/31/17 09:03	
Fluoride	mg/L	ND	0.20	0.10	05/31/17 09:03	
Sulfate	mg/L	ND	1.0	0.50	05/31/17 09:03	

LABORATORY CONTROL SAMPLE: 1961800

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	80-120	
Fluoride	mg/L	2.5	2.7	107	80-120	
Sulfate	mg/L	5	5.3	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1961802 1961803

Parameter	Units	60245180001		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	71.9	50	50	128	128	112	113	80-120	0	15			
Fluoride	mg/L	ND	25	25	19.2	19.3	76	76	80-120	0	15	M1		
Sulfate	mg/L	136	50	50	190	189	107	106	80-120	0	15			

SAMPLE DUPLICATE: 1961801

Parameter	Units	60245177003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	18.6	18.6	0	15	
Fluoride	mg/L	0.25	0.19J		15	
Sulfate	mg/L	16.3	16.3	0	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

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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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245271001	MW-301		480257		
60245271002	MW-302		480257		
60245271003	MW-303		480257		
60245271004	MW-304		480257		
60245271005	MW-305		480257		
60245271006	MW-306		480257		
60245271001	MW-301	EPA 3010	478978	EPA 6010	479080
60245271002	MW-302	EPA 3010	478978	EPA 6010	479080
60245271003	MW-303	EPA 3010	478978	EPA 6010	479080
60245271004	MW-304	EPA 3010	478978	EPA 6010	479080
60245271005	MW-305	EPA 3010	478978	EPA 6010	479080
60245271006	MW-306	EPA 3010	478978	EPA 6010	479080
60245271007	FIELD BLANK	EPA 3010	478978	EPA 6010	479080
60245271001	MW-301	EPA 3010	478975	EPA 6020	479081
60245271002	MW-302	EPA 3010	478975	EPA 6020	479081
60245271003	MW-303	EPA 3010	478975	EPA 6020	479081
60245271004	MW-304	EPA 3010	478975	EPA 6020	479081
60245271005	MW-305	EPA 3010	478975	EPA 6020	479081
60245271006	MW-306	EPA 3010	478975	EPA 6020	479081
60245271007	FIELD BLANK	EPA 3010	478975	EPA 6020	479081
60245271001	MW-301	EPA 7470	479642	EPA 7470	479667
60245271002	MW-302	EPA 7470	479642	EPA 7470	479667
60245271003	MW-303	EPA 7470	479642	EPA 7470	479667
60245271004	MW-304	EPA 7470	479642	EPA 7470	479667
60245271005	MW-305	EPA 7470	479642	EPA 7470	479667
60245271006	MW-306	EPA 7470	479642	EPA 7470	479667
60245271007	FIELD BLANK	EPA 7470	479642	EPA 7470	479667
60245271001	MW-301	SM 2540C	478945		
60245271002	MW-302	SM 2540C	478945		
60245271003	MW-303	SM 2540C	478945		
60245271004	MW-304	SM 2540C	478945		
60245271005	MW-305	SM 2540C	478945		
60245271006	MW-306	SM 2540C	478945		
60245271007	FIELD BLANK	SM 2540C	478945		
60245271001	MW-301	EPA 9040	479730		
60245271002	MW-302	EPA 9040	479730		
60245271003	MW-303	EPA 9040	479730		
60245271004	MW-304	EPA 9040	479730		
60245271005	MW-305	EPA 9040	479730		
60245271006	MW-306	EPA 9040	479730		
60245271007	FIELD BLANK	EPA 9040	479730		
60245271001	MW-301	EPA 9056	478931		
60245271002	MW-302	EPA 9056	478931		
60245271003	MW-303	EPA 9056	478931		
60245271004	MW-304	EPA 9056	478931		
60245271005	MW-305	EPA 9056	478931		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245271

---

<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
60245271006	MW-306	EPA 9056	478931		
60245271007	FIELD BLANK	EPA 9056	478931		

### REPORT OF LABORATORY ANALYSIS

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**Sample Condition Upon Receipt**

**WO# : 60245271**  
  
 60245271

Client Name: SCS

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7866 9961 6506 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3.0 Corr. Factor CF +2.9 CF +0.7 Corrected 3.2

Date and initials of person examining contents: 5/27/17

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>PH</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks:		<u>N/A</u>
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 5-26-17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: \_\_\_\_\_ of \_\_\_\_\_

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Address: 2830 Dairy Drive	Report To: Meghan Blodgett	Copy To: Tom Karwaski	Attention: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers
Email To: mblodgett@scsengineers.com	Madison WI 53718	Purchase Order No.:		Address:	REGULATORY AGENCY
Phone: 608-216-7362	Fax:	Project Name: IPL Prairie Creek		Pace Quote Reference:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Requested Due Date/TAT:		Project Number: 25216074.17		Pace Project Manager:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
				Trudy Gipson 913-563-1405	Site Location STATE: IA
				Pace Profile #: 6696 Line 2	

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	MATRIX (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives						Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
						COMPOSITE START	COMPOSITE END/GRAB				HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol				
1			MW-301	WT G	G	DATE	TIME	DATE	TIME	2	1									0245271
2			MW-302	WT G	G	5/25/17	1450			2	1									02
3			MW-303	WT G	G		1550			2	1									003
4			MW-304	WT G	G		1720			2	1									04
5			MW-305	WT G	G		1825			2	1									05
6			MW-306	WT G	G		1925			3	1									06
7			FIELD BLANK	WT G	G		2000			2	1									07
8				WT G	G	1430	1430			2	1									
9																				
10																				
11																				
12																				

<b>ADDITIONAL COMMENTS</b>		<b>RELINQUISHED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>	<b>ACCEPTED BY / AFFILIATION</b>	<b>DATE</b>	<b>TIME</b>	<b>SAMPLE CONDITIONS</b>
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219		Kyle Krumpholtz	5/26/17	0930	[Signature]	5/27/17	0905	Y Y Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl								
<b>SAMPLER NAME AND SIGNATURE</b>		<b>Temp in °C</b>						
PRINT Name of SAMPLER: Kyle Krumpholtz		Received on						
SIGNATURE of SAMPLER: [Signature]		Cooler Sealed						
DATE Signed (MM/DD/YYYY): 5/26/17		Samples Intact (Y/N)						



June 15, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

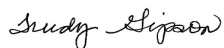
RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60245273

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on May 27, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

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### **Pennsylvania Certification IDs**

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60245273001	MW-301	Water	05/25/17 14:50	05/27/17 09:05
60245273002	MW-302	Water	05/25/17 15:50	05/27/17 09:05
60245273003	MW-303	Water	05/25/17 17:20	05/27/17 09:05
60245273004	MW-304	Water	05/25/17 18:25	05/27/17 09:05
60245273005	MW-305	Water	05/25/17 19:25	05/27/17 09:05
60245273006	MW-306	Water	05/25/17 20:00	05/27/17 09:05
60245273007	FIELD BLANK	Water	05/25/17 14:30	05/27/17 09:05

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60245273001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60245273007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-301**      **Lab ID: 60245273001**      Collected: 05/25/17 14:50      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.379 ± 0.413 (0.650)</b> C:NA T:94%	pCi/L	06/13/17 22:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.498 ± 0.335 (0.626)</b> C:75% T:82%	pCi/L	06/14/17 14:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.877 ± 0.748 (1.28)</b>	pCi/L	06/15/17 12:46	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-302**      **Lab ID: 60245273002**      Collected: 05/25/17 15:50      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.490 ± 0.358 (0.400)</b> C:NA T:95%	pCi/L	06/13/17 22:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.809 ± 0.388 (0.655)</b> C:76% T:88%	pCi/L	06/14/17 14:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.30 ± 0.746 (1.06)</b>	pCi/L	06/15/17 12:46	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-303**      **Lab ID: 60245273003**      Collected: 05/25/17 17:20      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.112 ± 0.268 (0.519)</b> <b>C:NA T:88%</b>	pCi/L	06/13/17 22:01	13982-63-3	
Radium-228	EPA 904.0	<b>0.865 ± 0.387 (0.635)</b> <b>C:78% T:89%</b>	pCi/L	06/14/17 14:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.977 ± 0.655 (1.15)</b>	pCi/L	06/15/17 12:46	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-304**      **Lab ID: 60245273004**      Collected: 05/25/17 18:25      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.412 ± 0.381 (0.555)</b> <b>C:NA T:100%</b>	pCi/L	06/13/17 22:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.552 ± 0.357 (0.669)</b> <b>C:78% T:83%</b>	pCi/L	06/14/17 14:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.964 ± 0.738 (1.22)</b>	pCi/L	06/15/17 12:46	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-305**      **Lab ID: 60245273005**      Collected: 05/25/17 19:25      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.215 ± 0.259 (0.395)</b> C:NA T:97%	pCi/L	06/13/17 22:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.124 ± 0.251 (0.556)</b> C:78% T:86%	pCi/L	06/14/17 14:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.339 ± 0.510 (0.951)</b>	pCi/L	06/15/17 12:46	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: MW-306**      **Lab ID: 60245273006**      Collected: 05/25/17 20:00      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.452 ± 0.423 (0.600)</b> C:NA T:83%	pCi/L	06/13/17 22:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.379 ± 0.298 (0.586)</b> C:77% T:92%	pCi/L	06/14/17 14:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.831 ± 0.721 (1.19)</b>	pCi/L	06/15/17 12:46	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

**Sample: FIELD BLANK**      **Lab ID: 60245273007**      Collected: 05/25/17 14:30      Received: 05/27/17 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.0581 ± 0.265 (0.540)</b> C:NA T:89%	pCi/L	06/13/17 22:16	13982-63-3	
Radium-228	EPA 904.0	<b>0.196 ± 0.310 (0.672)</b> C:77% T:83%	pCi/L	06/14/17 14:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.254 ± 0.575 (1.21)</b>	pCi/L	06/15/17 12:46	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

---

QC Batch:	260595	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	60245273001, 60245273002, 60245273003, 60245273004, 60245273005, 60245273006, 60245273007		

---

METHOD BLANK:	1283375	Matrix:	Water
Associated Lab Samples:	60245273001, 60245273002, 60245273003, 60245273004, 60245273005, 60245273006, 60245273007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.269 (0.603) C:NA T:94%	pCi/L	06/13/17 21:45	

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

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

---

QC Batch:	260868	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
Associated Lab Samples:	60245273001, 60245273002, 60245273003, 60245273004, 60245273005, 60245273006, 60245273007		

---

METHOD BLANK:	1284605	Matrix:	Water
Associated Lab Samples:	60245273001, 60245273002, 60245273003, 60245273004, 60245273005, 60245273006, 60245273007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.409 ± 0.296 (0.562) C:78% T:83%	pCi/L	06/14/17 10:50	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60245273

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60245273001	MW-301	EPA 903.1	260595		
60245273002	MW-302	EPA 903.1	260595		
60245273003	MW-303	EPA 903.1	260595		
60245273004	MW-304	EPA 903.1	260595		
60245273005	MW-305	EPA 903.1	260595		
60245273006	MW-306	EPA 903.1	260595		
60245273007	FIELD BLANK	EPA 903.1	260595		
60245273001	MW-301	EPA 904.0	260868		
60245273002	MW-302	EPA 904.0	260868		
60245273003	MW-303	EPA 904.0	260868		
60245273004	MW-304	EPA 904.0	260868		
60245273005	MW-305	EPA 904.0	260868		
60245273006	MW-306	EPA 904.0	260868		
60245273007	FIELD BLANK	EPA 904.0	260868		
60245273001	MW-301	Total Radium Calculation	261901		
60245273002	MW-302	Total Radium Calculation	261901		
60245273003	MW-303	Total Radium Calculation	261901		
60245273004	MW-304	Total Radium Calculation	261901		
60245273005	MW-305	Total Radium Calculation	261901		
60245273006	MW-306	Total Radium Calculation	261901		
60245273007	FIELD BLANK	Total Radium Calculation	261901		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60245273



Client Name: SCS

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 7866 9961 6506 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 21.4 Corr. Factor CF +2.9 ~~CF +0.7~~ Corrected 21.6

Date and initials of person examining contents: 5/27/17

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks:		<u>N/A</u>
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 5-30-17





# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: \_\_\_\_\_ of \_\_\_\_\_

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Address: 2830 Dairy Drive Madison WI 53718	Report To: Meghan Blodgett	Copy To: Tom Karwaski	Attention: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers
Email To: mblodgett@scsengineers.com	Phone: 608-216-7362	Purchase Order No.:	Project Name: IPL Prairie Creek	Address:	Regulatory Agency: <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Requested Due Date/TAT:		Project Number: 25216074.17		Pace Quote Reference: Trudy Gipson 913-563-1405	Site Location: IA
				Pace Profile #: 6896 Line 2	STATE: _____

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	Section D Required Client Information	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.	
			COMPOSITE START	COMPOSITE END/GRAB									DATE
1	MW-301		WT	G	xxx	xxx	5/25/17	1450	2	X	X	903.1 Radium-226	60245273
2	MW-302		WT	G	xxx	xxx	5/25/17	1550	2	X	X	904.0 Radium-226	60245273
3	MW-303		WT	G	xxx	xxx	5/25/17	1720	2	X	X	Total Radium	60245273
4	MW-304		WT	G	xxx	xxx	5/25/17	1825	2	X	X		60245273
5	MW-305		WT	G	xxx	xxx	5/25/17	1925	2	X	X		60245273
6	MW-306		WT	G	xxx	xxx	5/25/17	2000	2	X	X		60245273
7	FIELD BLANK		WT	G	xxx	xxx	5/25/17	1430	2	X	X		60245273
8													
9													
10													
11													
12													

<b>ADDITIONAL COMMENTS</b>		<b>RELINQUISHED BY / AFFILIATION</b>		<b>ACCEPTED BY / AFFILIATION</b>		<b>SAMPLE CONDITIONS</b>	
Ship To: 6808 Loreet Boulevard, Lenexa, KS 66219		Kyle Kramer		Kyle Kramer		Temp in °C	
		5/26/17 0930		5/27/17 0905		Received on Ice (Y/N)	
						Cooler (Y/N)	
						Custody Sealed (Y/N)	
						Samples Intact (Y/N)	

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

# Chain of Custody



Workorder: 60245273    Workorder Name: IPL Prairie Creek/25216074.17    Owner Received Date: 5/27/2017 Results Requested By: 6/22/2017

Report To		Subcontract To		Requested Analysis					
Trudy Gipson Pace Analytical Kansas 9608 Loret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405		Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600		903.1 Radium-226 904.0 Radium-228 Total Radium					
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	Preserved Containers	LAB USE ONLY	
1	MW-301	PS	5/25/2017 14:50	60245273001	Water	2		001	
2	MW-302	PS	5/25/2017 15:50	60245273002	Water	2		002	
3	MW-303	PS	5/25/2017 17:20	60245273003	Water	2		003	
4	MW-304	PS	5/25/2017 18:25	60245273004	Water	2		004	
5	MW-305	PS	5/25/2017 19:25	60245273005	Water	2		005	
6	MW-306	PS	5/25/2017 20:00	60245273006	Water	2		006	
7	FIELD BLANK	PS	5/25/2017 14:30	60245273007	Water	2		007	
Transfers		Released By	Date/Time	Received	Date/Time	Comments			
1		<i>[Signature]</i>	5/27/17 12:00	KAREN HUN	5/31/17 09:55				
2									
3									
Cooler Temperature on Receipt		N/A	°C	Custody Seal	Y or <input checked="" type="radio"/> N	Received on Ice	Y or <input checked="" type="radio"/> N	Samples Intact	Y or <input checked="" type="radio"/> N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh

30220222

117



Client Name: Pace Kansas

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

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7285 0592 8397

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 5/31/17

Comments:

	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>W+</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Organic Samples checked for dechlorination:			/	13.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15. <u>PH &lt; 2</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>KH</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			/	16.
Trip Blank Present:			/	17.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr		/		Initial when completed: <u>KH</u> Date: <u>5/31/17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

## A7 Round 7 Background Sampling, Analytical Laboratory Report

July 12, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60247636

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 29, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

---

### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60247636001	MW-301	Water	06/28/17 12:05	06/29/17 08:55
60247636002	MW-302	Water	06/28/17 13:40	06/29/17 08:55
60247636003	MW-303	Water	06/28/17 08:45	06/29/17 08:55
60247636004	MW-304	Water	06/28/17 11:20	06/29/17 08:55
60247636005	MW-305	Water	06/28/17 12:55	06/29/17 08:55
60247636006	MW-306	Water	06/28/17 14:30	06/29/17 08:55
60247636007	FIELD BLANK	Water	06/28/17 10:15	06/29/17 08:55

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60247636001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60247636007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Sample: MW-301		Lab ID: 60247636001		Collected: 06/28/17 12:05		Received: 06/29/17 08:55		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		06/28/17 12:05		
Field pH	<b>7.00</b>	Std. Units	0.10	0.050	1		06/28/17 12:05		
Field Temperature	<b>11.10</b>	deg C	0.50	0.25	1		06/28/17 12:05		
Field Specific Conductance	<b>901.0</b>	umhos/cm	1.0	1.0	1		06/28/17 12:05		
Field Oxidation Potential	<b>143.1</b>	mV			1		06/28/17 12:05		
Oxygen, Dissolved	<b>2.46</b>	mg/L			1		06/28/17 12:05	7782-44-7	
Turbidity	<b>0.61</b>	NTU	1.0	1.0	1		06/28/17 12:05		
Groundwater Elevation	<b>716.10</b>	feet			1		06/28/17 12:05		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>24.6J</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 11:49	7440-42-8	
Calcium	<b>136</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 11:49	7440-70-2	
Lithium	<b>8.9J</b>	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 11:49	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.088J</b>	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 18:56	7440-36-0	
Arsenic	<b>0.62J</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 18:56	7440-38-2	
Barium	<b>265</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 18:56	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 18:56	7440-41-7	
Cadmium	<b>0.073J</b>	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 18:56	7440-43-9	
Chromium	<b>3.9</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 18:56	7440-47-3	
Cobalt	<b>0.057J</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 18:56	7440-48-4	
Lead	<b>0.058J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 18:56	7439-92-1	
Molybdenum	<b>0.33J</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 18:56	7439-98-7	
Selenium	<b>1.1</b>	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 18:56	7782-49-2	
Thallium	<b>0.081J</b>	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 18:56	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:26	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>642</b>	mg/L	5.0	5.0	1		07/03/17 11:22		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		07/12/17 14:00		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>26.2</b>	mg/L	2.0	1.0	2		07/08/17 10:25	16887-00-6	
Fluoride	<b>0.15J</b>	mg/L	0.20	0.10	1		07/07/17 19:35	16984-48-8	M1
Sulfate	<b>108</b>	mg/L	10.0	5.0	10		07/08/17 10:39	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Sample: MW-302		Lab ID: 60247636002		Collected: 06/28/17 13:40		Received: 06/29/17 08:55		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		06/28/17 13:40		
Field pH	<b>6.60</b>	Std. Units	0.10	0.050	1		06/28/17 13:40		
Field Temperature	<b>12.80</b>	deg C	0.50	0.25	1		06/28/17 13:40		
Field Specific Conductance	<b>481.6</b>	umhos/cm	1.0	1.0	1		06/28/17 13:40		
Field Oxidation Potential	<b>53.3</b>	mV			1		06/28/17 13:40		
Oxygen, Dissolved	<b>1.23</b>	mg/L			1		06/28/17 13:40	7782-44-7	
Turbidity	<b>0.50</b>	NTU	1.0	1.0	1		06/28/17 13:40		
Groundwater Elevation	<b>715.22</b>	feet			1		06/28/17 13:40		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>51.8J</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 11:51	7440-42-8	
Calcium	<b>66.7</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 11:51	7440-70-2	
Lithium	<b>ND</b>	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 11:51	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.067J</b>	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 19:04	7440-36-0	
Arsenic	<b>1.6</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 19:04	7440-38-2	
Barium	<b>133</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 19:04	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 19:04	7440-41-7	
Cadmium	<b>0.035J</b>	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 19:04	7440-43-9	
Chromium	<b>0.91J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 19:04	7440-47-3	
Cobalt	<b>1.2</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 19:04	7440-48-4	
Lead	<b>0.034J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 19:04	7439-92-1	
Molybdenum	<b>0.38J</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 19:04	7439-98-7	
Selenium	<b>0.44J</b>	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 19:04	7782-49-2	
Thallium	<b>ND</b>	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 19:04	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:28	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>341</b>	mg/L	5.0	5.0	1		07/05/17 15:46		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		07/12/17 14:05		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>9.6</b>	mg/L	1.0	0.50	1		07/07/17 20:19	16887-00-6	
Fluoride	<b>0.15J</b>	mg/L	0.20	0.10	1		07/07/17 20:19	16984-48-8	
Sulfate	<b>49.5</b>	mg/L	5.0	2.5	5		07/08/17 10:54	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

**Sample: MW-303**      **Lab ID: 60247636003**      Collected: 06/28/17 08:45      Received: 06/29/17 08:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		06/28/17 08:45		
Field pH	<b>7.20</b>	Std. Units	0.10	0.050	1		06/28/17 08:45		
Field Temperature	<b>13.90</b>	deg C	0.50	0.25	1		06/28/17 08:45		
Field Specific Conductance	<b>941.0</b>	umhos/cm	1.0	1.0	1		06/28/17 08:45		
Field Oxidation Potential	<b>192.3</b>	mV			1		06/28/17 08:45		
Oxygen, Dissolved	<b>0.27</b>	mg/L			1		06/28/17 08:45	7782-44-7	
Turbidity	<b>2.72</b>	NTU	1.0	1.0	1		06/28/17 08:45		
Groundwater Elevation	<b>703.96</b>	feet			1		06/28/17 08:45		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>603</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 12:02	7440-42-8	
Calcium	<b>63.5</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 12:02	7440-70-2	
Lithium	<b>13.1</b>	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 12:02	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>0.84J</b>	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 19:09	7440-36-0	
Arsenic	<b>24.2</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 19:09	7440-38-2	
Barium	<b>65.8</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 19:09	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 19:09	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 19:09	7440-43-9	
Chromium	<b>0.18J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 19:09	7440-47-3	B
Cobalt	<b>0.35J</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 19:09	7440-48-4	
Lead	<b>0.12J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 19:09	7439-92-1	
Molybdenum	<b>25.6</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 19:09	7439-98-7	
Selenium	<b>0.11J</b>	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 19:09	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 19:09	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:30	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>365</b>	mg/L	5.0	5.0	1		07/05/17 15:47		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.8</b>	Std. Units	0.10	0.10	1		07/12/17 13:51		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>19.7</b>	mg/L	1.0	0.50	1		07/07/17 20:49	16887-00-6	
Fluoride	<b>0.53</b>	mg/L	0.20	0.10	1		07/07/17 20:49	16984-48-8	
Sulfate	<b>76.2</b>	mg/L	10.0	5.0	10		07/08/17 12:11	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

**Sample: MW-304**      **Lab ID: 60247636004**      Collected: 06/28/17 11:20      Received: 06/29/17 08:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		06/28/17 11:20		
Field pH	<b>7.40</b>	Std. Units	0.10	0.050	1		06/28/17 11:20		
Field Temperature	<b>14.40</b>	deg C	0.50	0.25	1		06/28/17 11:20		
Field Specific Conductance	<b>1124.0</b>	umhos/cm	1.0	1.0	1		06/28/17 11:20		
Field Oxidation Potential	<b>79.1</b>	mV			1		06/28/17 11:20		
Oxygen, Dissolved	<b>0.23</b>	mg/L			1		06/28/17 11:20	7782-44-7	
Turbidity	<b>1.76</b>	NTU	1.0	1.0	1		06/28/17 11:20		
Groundwater Elevation	<b>704.16</b>	feet			1		06/28/17 11:20		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>310</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 12:05	7440-42-8	
Calcium	<b>62.9</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 12:05	7440-70-2	
Lithium	<b>9.9J</b>	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 12:05	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.2</b>	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 19:43	7440-36-0	
Arsenic	<b>10.2</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 19:43	7440-38-2	
Barium	<b>51.1</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 19:43	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 19:43	7440-41-7	
Cadmium	<b>0.023J</b>	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 19:43	7440-43-9	
Chromium	<b>0.16J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 19:43	7440-47-3	B
Cobalt	<b>0.83J</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 19:43	7440-48-4	
Lead	<b>0.042J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 19:43	7439-92-1	
Molybdenum	<b>32.6</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 19:43	7439-98-7	
Selenium	<b>1.7</b>	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 19:43	7782-49-2	
Thallium	<b>0.068J</b>	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 19:43	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:32	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>468</b>	mg/L	5.0	5.0	1		07/05/17 15:47		D6
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>8.0</b>	Std. Units	0.10	0.10	1		07/12/17 13:56		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>20.1</b>	mg/L	2.0	1.0	2		07/08/17 12:40	16887-00-6	
Fluoride	<b>0.86</b>	mg/L	0.20	0.10	1		07/07/17 21:03	16984-48-8	
Sulfate	<b>132</b>	mg/L	10.0	5.0	10		07/08/17 12:55	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

**Sample: MW-305**      **Lab ID: 60247636005**      Collected: 06/28/17 12:55      Received: 06/29/17 08:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		06/28/17 12:55		
Field pH	<b>7.49</b>	Std. Units	0.10	0.050	1		06/28/17 12:55		
Field Temperature	<b>14.60</b>	deg C	0.50	0.25	1		06/28/17 12:55		
Field Specific Conductance	<b>1063.0</b>	umhos/cm	1.0	1.0	1		06/28/17 12:55		
Field Oxidation Potential	<b>110.2</b>	mV			1		06/28/17 12:55		
Oxygen, Dissolved	<b>0.20</b>	mg/L			1		06/28/17 12:55	7782-44-7	
Turbidity	<b>1.16</b>	NTU	1.0	1.0	1		06/28/17 12:55		
Groundwater Elevation	<b>704.11</b>	feet			1		06/28/17 12:55		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>342</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 12:07	7440-42-8	
Calcium	<b>61.4</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 12:07	7440-70-2	
Lithium	<b>8.1J</b>	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 12:07	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.4</b>	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 19:47	7440-36-0	
Arsenic	<b>14.9</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 19:47	7440-38-2	
Barium	<b>61.9</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 19:47	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 19:47	7440-41-7	
Cadmium	<b>0.030J</b>	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 19:47	7440-43-9	
Chromium	<b>0.20J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 19:47	7440-47-3	B
Cobalt	<b>0.53J</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 19:47	7440-48-4	
Lead	<b>0.061J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 19:47	7439-92-1	
Molybdenum	<b>32.2</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 19:47	7439-98-7	
Selenium	<b>2.4</b>	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 19:47	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 19:47	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:34	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>416</b>	mg/L	5.0	5.0	1		07/05/17 15:48		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.8</b>	Std. Units	0.10	0.10	1		07/12/17 14:02		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>19.3</b>	mg/L	1.0	0.50	1		07/07/17 21:18	16887-00-6	
Fluoride	<b>0.68</b>	mg/L	0.20	0.10	1		07/07/17 21:18	16984-48-8	
Sulfate	<b>112</b>	mg/L	10.0	5.0	10		07/08/17 13:10	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

**Sample: MW-306**      **Lab ID: 60247636006**      Collected: 06/28/17 14:30      Received: 06/29/17 08:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		06/28/17 14:30		
Field pH	<b>7.77</b>	Std. Units	0.10	0.050	1		06/28/17 14:30		
Field Temperature	<b>13.50</b>	deg C	0.50	0.25	1		06/28/17 14:30		
Field Specific Conductance	<b>1067.0</b>	umhos/cm	1.0	1.0	1		06/28/17 14:30		
Field Oxidation Potential	<b>36.6</b>	mV			1		06/28/17 14:30		
Oxygen, Dissolved	<b>0.21</b>	mg/L			1		06/28/17 14:30	7782-44-7	
Turbidity	<b>0.59</b>	NTU	1.0	1.0	1		06/28/17 14:30		
Groundwater Elevation	<b>703.94</b>	feet			1		06/28/17 14:30		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>3080</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 12:09	7440-42-8	
Calcium	<b>47.5</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 12:09	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 12:09	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 19:51	7440-36-0	
Arsenic	<b>0.59J</b>	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 19:51	7440-38-2	
Barium	<b>48.8</b>	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 19:51	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 19:51	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 19:51	7440-43-9	
Chromium	<b>0.18J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 19:51	7440-47-3	B
Cobalt	<b>0.078J</b>	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 19:51	7440-48-4	
Lead	<b>0.068J</b>	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 19:51	7439-92-1	
Molybdenum	<b>272</b>	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 19:51	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 19:51	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 19:51	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:37	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>421</b>	mg/L	5.0	5.0	1		07/05/17 15:49		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.8</b>	Std. Units	0.10	0.10	1		07/12/17 14:07		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>32.6</b>	mg/L	5.0	2.5	5		07/08/17 13:25	16887-00-6	
Fluoride	<b>0.28</b>	mg/L	0.20	0.10	1		07/07/17 21:33	16984-48-8	
Sulfate	<b>144</b>	mg/L	10.0	5.0	10		07/08/17 13:39	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

**Sample: FIELD BLANK**      **Lab ID: 60247636007**      Collected: 06/28/17 10:15      Received: 06/29/17 08:55      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>4.5J</b>	ug/L	100	3.5	1	07/10/17 15:10	07/11/17 12:12	7440-42-8	
Calcium	<b>0.045J</b>	mg/L	0.10	0.036	1	07/10/17 15:10	07/11/17 12:12	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	07/10/17 15:10	07/11/17 12:12	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	07/10/17 15:10	07/11/17 20:04	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	07/10/17 15:10	07/11/17 20:04	7440-38-2	
Barium	ND	ug/L	1.0	0.095	1	07/10/17 15:10	07/11/17 20:04	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	07/10/17 15:10	07/11/17 20:04	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	07/10/17 15:10	07/11/17 20:04	7440-43-9	
Chromium	<b>0.17J</b>	ug/L	1.0	0.054	1	07/10/17 15:10	07/11/17 20:04	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.014	1	07/10/17 15:10	07/11/17 20:04	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	07/10/17 15:10	07/11/17 20:04	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	07/10/17 15:10	07/11/17 20:04	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	07/10/17 15:10	07/11/17 20:04	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	07/10/17 15:10	07/11/17 20:04	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	07/10/17 12:47	07/11/17 10:39	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>5.0</b>	mg/L	5.0	5.0	1		07/05/17 15:49		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>6.4</b>	Std. Units	0.10	0.10	1		07/12/17 13:54		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	<b>0.67J</b>	mg/L	1.0	0.50	1		07/07/17 22:17	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		07/07/17 22:17	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		07/07/17 22:17	14808-79-8	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 484461

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

METHOD BLANK: 1984313

Matrix: Water

Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	07/11/17 09:44	

LABORATORY CONTROL SAMPLE: 1984314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1984315 1984316

Parameter	Units	60247642001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Spike Conc.	MSD Result						
Mercury	ug/L	ND	5	5	5	4.9	4.7	98	95	75-125	4	20

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

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QC Batch: 484633 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

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METHOD BLANK: 1985047 Matrix: Water  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	07/11/17 11:47	
Calcium	mg/L	ND	0.10	0.036	07/11/17 11:47	
Lithium	ug/L	ND	10.0	2.9	07/11/17 11:47	

LABORATORY CONTROL SAMPLE: 1985048

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1050	105	80-120	
Calcium	mg/L	10	9.7	97	80-120	
Lithium	ug/L	1000	1120	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1985049 1985050

Parameter	Units	60247636002		1985049		1985050		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
Boron	ug/L	51.8J	1000	1000	1100	1100	105	105	75-125	0	20		
Calcium	mg/L	66.7	10	10	75.5	75.6	89	89	75-125	0	20		
Lithium	ug/L	ND	1000	1000	1130	1130	113	113	75-125	0	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 484634 Analysis Method: EPA 6020  
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

METHOD BLANK: 1985051 Matrix: Water  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	07/11/17 18:47	
Arsenic	ug/L	ND	1.0	0.052	07/11/17 18:47	
Barium	ug/L	ND	1.0	0.095	07/11/17 18:47	
Beryllium	ug/L	ND	0.50	0.012	07/11/17 18:47	
Cadmium	ug/L	ND	0.50	0.018	07/11/17 18:47	
Chromium	ug/L	0.067J	1.0	0.054	07/11/17 18:47	
Cobalt	ug/L	ND	1.0	0.014	07/11/17 18:47	
Lead	ug/L	ND	1.0	0.033	07/11/17 18:47	
Molybdenum	ug/L	ND	1.0	0.058	07/11/17 18:47	
Selenium	ug/L	ND	1.0	0.086	07/11/17 18:47	
Thallium	ug/L	ND	1.0	0.036	07/11/17 18:47	

LABORATORY CONTROL SAMPLE: 1985052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	80-120	
Arsenic	ug/L	40	41.3	103	80-120	
Barium	ug/L	40	40.4	101	80-120	
Beryllium	ug/L	40	39.7	99	80-120	
Cadmium	ug/L	40	40.9	102	80-120	
Chromium	ug/L	40	41.2	103	80-120	
Cobalt	ug/L	40	40.5	101	80-120	
Lead	ug/L	40	40.2	101	80-120	
Molybdenum	ug/L	40	42.4	106	80-120	
Selenium	ug/L	40	40.4	101	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1985053 1985054

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60247636003 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	ug/L	0.84J	40	40	41.8	42.0	102	103	75-125	1	20	
Arsenic	ug/L	24.2	40	40	65.0	65.7	102	104	75-125	1	20	
Barium	ug/L	65.8	40	40	106	107	100	102	75-125	1	20	
Beryllium	ug/L	ND	40	40	38.0	38.2	95	95	75-125	0	20	
Cadmium	ug/L	ND	40	40	39.5	39.6	99	99	75-125	0	20	
Chromium	ug/L	0.18J	40	40	40.1	41.0	100	102	75-125	2	20	
Cobalt	ug/L	0.35J	40	40	39.6	39.8	98	99	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Parameter	Units	60247636003		1985053		1985054		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Lead	ug/L	0.12J	40	40	41.6	41.8	104	104	75-125	1	20			
Molybdenum	ug/L	25.6	40	40	69.4	69.4	110	110	75-125	0	20			
Selenium	ug/L	0.11J	40	40	37.9	38.1	94	95	75-125	1	20			
Thallium	ug/L	ND	40	40	39.8	40.2	99	100	75-125	1	20			

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 483738	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60247636001	

METHOD BLANK: 1981962 Matrix: Water  
Associated Lab Samples: 60247636001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	07/03/17 11:12	

LABORATORY CONTROL SAMPLE: 1981963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	964	96	80-120	

SAMPLE DUPLICATE: 1981964

Parameter	Units	60247514002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	899	945	5	10	

SAMPLE DUPLICATE: 1981965

Parameter	Units	60247587002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1380	1380	0	10	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 483904

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

METHOD BLANK: 1982353

Matrix: Water

Associated Lab Samples: 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	07/05/17 15:44	

LABORATORY CONTROL SAMPLE: 1982354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	951	95	80-120	

SAMPLE DUPLICATE: 1982355

Parameter	Units	60247636004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	468	419	11	10	D6

SAMPLE DUPLICATE: 1982356

Parameter	Units	60247916001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	1000	0	10	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 485033

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

SAMPLE DUPLICATE: 1986470

Parameter	Units	60247649001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.2	1	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60247636

QC Batch: 484274 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

METHOD BLANK: 1983594 Matrix: Water  
Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006, 60247636007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	07/07/17 18:36	
Fluoride	mg/L	ND	0.20	0.10	07/07/17 18:36	
Sulfate	mg/L	ND	1.0	0.50	07/07/17 18:36	

LABORATORY CONTROL SAMPLE: 1983595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	80-120	
Fluoride	mg/L	2.5	2.6	102	80-120	
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1983596 1983597

Parameter	Units	60247636001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.15J	2.5	2.5	3.4	3.0	129	112	80-120	13	15	M1

SAMPLE DUPLICATE: 1983598

Parameter	Units	60247636002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	9.6	9.6	0	15	
Fluoride	mg/L	0.15J	0.15J		15	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

QC Batch: 484482 Analysis Method: EPA 9056  
 QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006

METHOD BLANK: 1984631 Matrix: Water  
 Associated Lab Samples: 60247636001, 60247636002, 60247636003, 60247636004, 60247636005, 60247636006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	07/08/17 08:51	
Sulfate	mg/L	ND	1.0	0.50	07/08/17 08:51	

LABORATORY CONTROL SAMPLE: 1984632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	80-120	
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1984633 1984634

Parameter	Units	60247636002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	49.5	25	25	74.5	74.0	100	98	80-120	1	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

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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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

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

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60247636001	MW-301		484116		
60247636002	MW-302		484116		
60247636003	MW-303		484116		
60247636004	MW-304		484116		
60247636005	MW-305		484116		
60247636006	MW-306		484116		
60247636001	MW-301	EPA 3010	484633	EPA 6010	484733
60247636002	MW-302	EPA 3010	484633	EPA 6010	484733
60247636003	MW-303	EPA 3010	484633	EPA 6010	484733
60247636004	MW-304	EPA 3010	484633	EPA 6010	484733
60247636005	MW-305	EPA 3010	484633	EPA 6010	484733
60247636006	MW-306	EPA 3010	484633	EPA 6010	484733
60247636007	FIELD BLANK	EPA 3010	484633	EPA 6010	484733
60247636001	MW-301	EPA 3010	484634	EPA 6020	484732
60247636002	MW-302	EPA 3010	484634	EPA 6020	484732
60247636003	MW-303	EPA 3010	484634	EPA 6020	484732
60247636004	MW-304	EPA 3010	484634	EPA 6020	484732
60247636005	MW-305	EPA 3010	484634	EPA 6020	484732
60247636006	MW-306	EPA 3010	484634	EPA 6020	484732
60247636007	FIELD BLANK	EPA 3010	484634	EPA 6020	484732
60247636001	MW-301	EPA 7470	484461	EPA 7470	484643
60247636002	MW-302	EPA 7470	484461	EPA 7470	484643
60247636003	MW-303	EPA 7470	484461	EPA 7470	484643
60247636004	MW-304	EPA 7470	484461	EPA 7470	484643
60247636005	MW-305	EPA 7470	484461	EPA 7470	484643
60247636006	MW-306	EPA 7470	484461	EPA 7470	484643
60247636007	FIELD BLANK	EPA 7470	484461	EPA 7470	484643
60247636001	MW-301	SM 2540C	483738		
60247636002	MW-302	SM 2540C	483904		
60247636003	MW-303	SM 2540C	483904		
60247636004	MW-304	SM 2540C	483904		
60247636005	MW-305	SM 2540C	483904		
60247636006	MW-306	SM 2540C	483904		
60247636007	FIELD BLANK	SM 2540C	483904		
60247636001	MW-301	EPA 9040	485033		
60247636002	MW-302	EPA 9040	485033		
60247636003	MW-303	EPA 9040	485033		
60247636004	MW-304	EPA 9040	485033		
60247636005	MW-305	EPA 9040	485033		
60247636006	MW-306	EPA 9040	485033		
60247636007	FIELD BLANK	EPA 9040	485033		
60247636001	MW-301	EPA 9056	484274		
60247636001	MW-301	EPA 9056	484482		
60247636002	MW-302	EPA 9056	484274		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247636

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60247636002	MW-302	EPA 9056	484482		
60247636003	MW-303	EPA 9056	484274		
60247636003	MW-303	EPA 9056	484482		
60247636004	MW-304	EPA 9056	484274		
60247636004	MW-304	EPA 9056	484482		
60247636005	MW-305	EPA 9056	484274		
60247636005	MW-305	EPA 9056	484482		
60247636006	MW-306	EPA 9056	484274		
60247636006	MW-306	EPA 9056	484482		
60247636007	FIELD BLANK	EPA 9056	484274		

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Sample Condition Upon Receipt

WO#: 60247636
Barcode
60247636

Client Name: SCS

Courier: FedEx [checked] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7870 2976 1424 Pace Shipping Label Used? Yes [ ] No [ ]

Custody Seal on Cooler/Box Present: Yes [checked] No [ ] Seals intact: Yes [checked] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [checked] Other [ ]

Thermometer Used: T-266 / T-239 Type of Ice: Wet [checked] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 3.4 Corr. Factor CF +2.9 CF +0.2 Corrected 3.6

Date and initials of person examining contents: [Signature] 6/29/17

Temperature should be above freezing to 6°C

Table with 2 columns: Question/Field and Answer (Yes/No/N/A). Rows include Chain of Custody present, Samples arrived within holding time, Short Hold Time analyses (<72hr):, Rush Turn Around Time requested, Sufficient volume, Correct containers used, Pace containers used, Containers intact, Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?, Filtered volume received for dissolved tests?, Sample labels match COC: Date / time / ID / analyses, Samples contain multiple phases? Matrix: WT, Containers requiring pH preservation in compliance?, Cyanide water sample checks: [checked] N/A, Lead acetate strip turns dark? (Record only), Potassium iodide test strip turns blue/purple? (Preserve), Trip Blank present, Headspace in VOA vials (>6mm), Samples from USDA Regulated Area: State: [checked] N/A, Additional labels attached to 5035A / TX1005 vials in the field? [checked] N/A

Client Notification/ Resolution: Copy COC to Client? Y / [checked] N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 6.29.17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 7

**Section A**  
**Required Client Information:**  
 Company: SCS Engineers  
 Address: 2830 Dairy Drive  
 Madison WI 53718  
 Email To: mblodgett@scsengineers.com  
 Phone: 608-216-7362 Fax:  
**Requested Due Date/TAT:**

**Section B**  
**Required Project Information:**  
 Report To: Meghan Blodgett  
 Copy To: Tom Karwaski  
 Purchase Order No.:  
 Project Name: IPL Prairie Creek  
 Project Number: 25216074.17

**Section C**  
**Invoice Information:**  
 Attention: Meghan Blodgett/Jess Valcheff  
 Company Name: SCS Engineers  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager: Trudy Gipson 913-563-1405  
 Pace Profile #: 6696 Line 2

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER  
 Site Location STATE: IA

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOLID S OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.								
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	5010 Total Metals: B-Ca-Li			5020 Total Metals *	7470 Total Hg	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH			
1	MW-301	G	xxx	xxx	6/24/17	12:05	3	1	2							X	X	X	X	X	X	X	X	X	X	2 (OPEN) <sup>15</sup> 6020 001
2	MW-302	G	xxx	xxx	6/24/17	13:40	3	1	2							X	X	X	X	X	X	X	X	X	X	002
3	MW-303	G	xxx	xxx	6/24/17	08:45	3	1	2							X	X	X	X	X	X	X	X	X	X	003
4	MW-304	G	xxx	xxx	6/24/17	11:20	3	1	2							X	X	X	X	X	X	X	X	X	X	004
5	MW-305	G	xxx	xxx	6/24/17	12:55	3	1	2							X	X	X	X	X	X	X	X	X	X	005
6	MW-306	G	xxx	xxx	6/24/17	14:30	3	1	2							X	X	X	X	X	X	X	X	X	X	006
7	FIELD BLANK	G	xxx	xxx	6/24/17	10:15	3	1	2							X	X	X	X	X	X	X	X	X	X	007
8																										
9																										
10																										
11																										
12																										

**ADDITIONAL COMMENTS**  
 Ship To: 9608 Lorret Boulevard, Lenexa, KS 66219  
 \* Sp-As-Ba-Be-Cd-Cr-Cu-Pb-Mn-Se-Tl

**RELINQUISHED BY / AFFILIATION** **DATE** **TIME** **ACCEPTED BY / AFFILIATION** **DATE** **TIME** **SAMPLE CONDITIONS**

11/24/17 16:30 6/24/17 08:55 3-6 Y Y Y Y

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Kyle Krume  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed (MM/DD/YYYY): 6/24/17

Temp In °C Received on Ice (Y/N) Custody Sealed (Y/N) Samples Intact (Y/N)

July 20, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60247646

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on June 29, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

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### **Pennsylvania Certification IDs**

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60247646001	MW-301	Water	06/28/17 12:05	06/29/17 08:55
60247646002	MW-302	Water	06/28/17 13:40	06/29/17 08:55
60247646003	MW-303	Water	06/28/17 08:45	06/29/17 08:55
60247646004	MW-304	Water	06/28/17 11:20	06/29/17 08:55
60247646005	MW-305	Water	06/28/17 12:55	06/29/17 08:55
60247646006	MW-306	Water	06/28/17 14:30	06/29/17 08:55
60247646007	FIELD BLANK	Water	06/28/17 10:15	06/29/17 08:55

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60247646001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247646007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-301**      **Lab ID: 60247646001**      Collected: 06/28/17 12:05      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.793 ± 0.526 (0.614)</b> C:NA T:91%	pCi/L	07/13/17 10:28	13982-63-3	
Radium-228	EPA 904.0	<b>1.74 ± 0.541 (0.702)</b> C:78% T:86%	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.53 ± 1.07 (1.32)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-302**      **Lab ID: 60247646002**      Collected: 06/28/17 13:40      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.265 ± 0.411 (0.712)</b> C:NA T:91%	pCi/L	07/13/17 10:28	13982-63-3	
Radium-228	EPA 904.0	<b>0.852 ± 0.397 (0.669)</b> C:76% T:86%	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.12 ± 0.808 (1.38)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-303**      **Lab ID: 60247646003**      Collected: 06/28/17 08:45      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.383 ± 0.398 (0.592)</b> C:NA T:90%	pCi/L	07/13/17 10:47	13982-63-3	
Radium-228	EPA 904.0	<b>1.17 ± 0.488 (0.792)</b> C:77% T:78%	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.55 ± 0.886 (1.38)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-304**      **Lab ID: 60247646004**      Collected: 06/28/17 11:20      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.0708 ± 0.572 (1.12)</b> <b>C:NA T:88%</b>	pCi/L	07/13/17 10:47	13982-63-3	
Radium-228	EPA 904.0	<b>1.08 ± 0.491 (0.845)</b> <b>C:78% T:81%</b>	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.15 ± 1.06 (1.97)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-305**      **Lab ID: 60247646005**      Collected: 06/28/17 12:55      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.431 ± 0.403 (0.572)</b> C:NA T:92%	pCi/L	07/13/17 10:47	13982-63-3	
Radium-228	EPA 904.0	<b>2.16 ± 0.599 (0.641)</b> C:78% T:82%	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.59 ± 1.00 (1.21)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: MW-306**      **Lab ID: 60247646006**      Collected: 06/28/17 14:30      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.370 ± 0.420 (0.663)</b> C:NA T:93%	pCi/L	07/13/17 10:47	13982-63-3	
Radium-228	EPA 904.0	<b>0.774 ± 0.392 (0.687)</b> C:80% T:83%	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.14 ± 0.812 (1.35)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

**Sample: FIELD BLANK**      **Lab ID: 60247646007**      Collected: 06/28/17 10:15      Received: 06/29/17 08:55      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.127 ± 0.305 (0.590)</b> <b>C:NA T:95%</b>	pCi/L	07/13/17 10:58	13982-63-3	
Radium-228	EPA 904.0	<b>0.117 ± 0.307 (0.687)</b> <b>C:78% T:80%</b>	pCi/L	07/18/17 11:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.244 ± 0.612 (1.28)</b>	pCi/L	07/20/17 16:45	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

QC Batch: 264518 Analysis Method: EPA 904.0

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

Associated Lab Samples: 60247646001, 60247646002, 60247646003, 60247646004, 60247646005, 60247646006, 60247646007

METHOD BLANK: 1302878 Matrix: Water

Associated Lab Samples: 60247646001, 60247646002, 60247646003, 60247646004, 60247646005, 60247646006, 60247646007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.545 ± 0.370 (0.714) C:78% T:85%	pCi/L	07/18/17 11:31	

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

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

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QC Batch:	264174	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
Associated Lab Samples:	60247646001, 60247646002, 60247646003, 60247646004, 60247646005, 60247646006, 60247646007		

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METHOD BLANK:	1301274	Matrix:	Water
Associated Lab Samples:	60247646001, 60247646002, 60247646003, 60247646004, 60247646005, 60247646006, 60247646007		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.065 ± 0.340 (0.787) C:NA T:90%	pCi/L	07/13/17 10:10	

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: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60247646

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60247646001	MW-301	EPA 903.1	264174		
60247646002	MW-302	EPA 903.1	264174		
60247646003	MW-303	EPA 903.1	264174		
60247646004	MW-304	EPA 903.1	264174		
60247646005	MW-305	EPA 903.1	264174		
60247646006	MW-306	EPA 903.1	264174		
60247646007	FIELD BLANK	EPA 903.1	264174		
60247646001	MW-301	EPA 904.0	264518		
60247646002	MW-302	EPA 904.0	264518		
60247646003	MW-303	EPA 904.0	264518		
60247646004	MW-304	EPA 904.0	264518		
60247646005	MW-305	EPA 904.0	264518		
60247646006	MW-306	EPA 904.0	264518		
60247646007	FIELD BLANK	EPA 904.0	264518		
60247646001	MW-301	Total Radium Calculation	265753		
60247646002	MW-302	Total Radium Calculation	265753		
60247646003	MW-303	Total Radium Calculation	265753		
60247646004	MW-304	Total Radium Calculation	265753		
60247646005	MW-305	Total Radium Calculation	265753		
60247646006	MW-306	Total Radium Calculation	265753		
60247646007	FIELD BLANK	Total Radium Calculation	265753		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60247646
Barcode
60247646

Client Name: SCS Eng.

Courier: FedEx [X] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 7870 2476 1413 Pace Shipping Label Used? Yes [ ] No [X]

Custody Seal on Cooler/Box Present: Yes [X] No [ ] Seals intact: Yes [X] No [ ]

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

Thermometer Used: T-266 [ ] T-239 [X] Type of Ice: Wet [ ] Blue [X] None [ ]

Cooler Temperature (°C): As-read 11.0 Corr. Factor CF +2.9 CF +0.7 Corrected 11.2

Date and initials of person examining contents: JB/29/17

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and a blank column for notes. Rows include Chain of Custody, Samples arrived, Short Hold Time, Rush Turn Around Time, Sufficient volume, Containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels, Samples contain multiple phases, Containers requiring pH preservation, Cyanide water sample checks, Trip Blank present, Headspace in VOA vials, Samples from USDA Regulated Area, and Additional labels attached.

Client Notification/ Resolution: Copy COC to Client? Y / [N] Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 6-29-17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: SCS Engineers	Report To: Meghan Blodgett	Report To: Meghan Blodgett/Jess Valcheff	Company Name: SCS Engineers	Regulatory Agency:	
Address: 2830 Dairy Drive	Copy To: Tom Karwaski	Company Name: SCS Engineers	Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
Madison WI 53718	Purchase Order No.:	Address:	Pace Quote Reference:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Email To: mblodgett@scsengineers.com	Project Name: IPL Prairie Creek	Pace Project Manager:	Trudy Gipson 913-563-1405	Site Location:	IA
Phone: 608-216-7362	Project Number: 25216074.17	Pace Profile #:	6696 Line 2	STATE:	
Requested Due Date/TAT:					

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLER TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB						
1	(ZIPPIN)	MW-301	DW	G	DATE: 9/28/17	TIME: 1205		2	Unpreserved	Y		60247646
2		MW-302	WT	G	DATE: 9/28/17	TIME: 1340		2	HCl	X	X	collected @ 1205
3		MW-303	WT	G	DATE: 9/28/17	TIME: 0845		2	NaOH	X	X	
4		MW-304	WT	G	DATE: 9/28/17	TIME: 1120		2	HNO3	X	X	
5		MW-305	WT	G	DATE: 9/28/17	TIME: 1255		2	H2O4	X	X	
6		MW-306	WT	G	DATE: 9/28/17	TIME: 1430		2	Other	X	X	
7		FIELD BLANK	WT	G	DATE: 9/28/17	TIME: 1615		2	Methanol	X	X	
8												
9												
10												
11												
12												

Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Temp in °C	Received on	Cooler (Y/N)	Samples Intact (Y/N)
	Dyde Pinn	9/28/17	1630	[Signature]	10/2/17	0855	N Y Y	16.2			
<b>SAMPLER NAME AND SIGNATURE</b>											
PRINT Name of SAMPLER: Kyle Krause											
SIGNATURE of SAMPLER: [Signature]											
DATE Signed (MM/DD/YYYY): 9/28/17											

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

# Chain of Custody



**Workorder:** 60247646    **Workorder Name:** IPL Prairie Creek/25216074.17    **Owner Received Date:** 6/29/2017    **Results Requested By:** 7/25/2017  
**Report To:**    **Subcontract To:**

**Trudy Gipson**  
 Pace Analytical Kansas  
 9608 Loiret Blvd.  
 Lenexa, KS 66219  
 Phone 1(913)563-1405

Pace Analytical Pittsburgh  
 1638 Roseytown Road  
 Suites 2,3, & 4  
 Greensburg, PA 15601  
 Phone (724)850-5600

**WO#: 30223098**



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY	
						903.1 Radium-226	904.0 Radium-228		
1	MW-301	PS	6/28/2017 12:05	60247646001	Water	2	X	X	001
2	MW-302	PS	6/28/2017 13:40	60247646002	Water	2	X	X	002
3	MW-303	PS	6/28/2017 08:45	60247646003	Water	2	X	X	003
4	MW-304	PS	6/28/2017 11:20	60247646004	Water	2	X	X	004
5	MW-305	PS	6/28/2017 12:55	60247646005	Water	2	X	X	005
6	MW-306	PS	6/28/2017 14:30	60247646006	Water	2	X	X	006
7	FIELD BLANK	PS	6/28/2017 10:15	60247646007	Water	2	X	X	007

Transfers	Released By	Date/Time	Received	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	<i>[Signature]</i>	6/29/17 00	<i>[Signature]</i>	6/29/17		N		N
2								
3								

**Cooler Temperature on Receipt:** NA °C    **Custody Seal:** Y or N    **Received on Ice:** Y or N    **Samples Intact:** Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.



Sample Condition Upon Receipt Pittsburgh

30223098

AM



Client Name: DALE - KANSAS

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

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 734070878160

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

Thermometer Used N/A Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ZH 6/30/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:		/		
Containers Intact:	/			11.
Orthophosphate field filtered			/	12.
Organic Samples checked for dechlorination:			/	13.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed: <u>ZH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	16.
Trip Blank Present:			/	17.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr		/		Initial when completed: <u>ZH</u> Date: <u>6/30/17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

A8 Round 8 Background Sampling, Analytical Laboratory Report

August 31, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60251263

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Kyle Kramer, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60251263001	MW-301	Water	08/17/17 14:15	08/18/17 09:20
60251263002	MW-302	Water	08/17/17 13:35	08/18/17 09:20
60251263003	MW-303	Water	08/17/17 10:25	08/18/17 09:20
60251263004	MW-304	Water	08/17/17 11:15	08/18/17 09:20
60251263005	MW-305	Water	08/17/17 12:55	08/18/17 09:20
60251263006	MW-306	Water	08/17/17 11:50	08/18/17 09:20
60251263007	FIELD BLANK	Water	08/17/17 13:55	08/18/17 09:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60251263001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251263007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: MW-301		Lab ID: 60251263001		Collected: 08/17/17 14:15		Received: 08/18/17 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		08/17/17 14:15		
Field pH	<b>6.97</b>	Std. Units	0.10	0.050	1		08/17/17 14:15		
Field Temperature	<b>12.2</b>	deg C	0.50	0.25	1		08/17/17 14:15		
Field Specific Conductance	<b>1326</b>	umhos/cm	1.0	1.0	1		08/17/17 14:15		
Field Oxidation Potential	<b>90.3</b>	mV			1		08/17/17 14:15		
Oxygen, Dissolved	<b>3.21</b>	mg/L			1		08/17/17 14:15	7782-44-7	
Turbidity	<b>95.83</b>	NTU	1.0	1.0	1		08/17/17 14:15		
Groundwater Elevation	<b>715.35</b>	feet			1		08/17/17 14:15		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>28.9J</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:20	7440-42-8	B
Calcium	<b>142</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:20	7440-70-2	M1
Lithium	<b>16.8</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:20	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.18J</b>	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 21:54	7440-36-0	
Arsenic	<b>1.8</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 21:54	7440-38-2	
Barium	<b>291</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 21:54	7440-39-3	
Beryllium	<b>0.14J</b>	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 21:54	7440-41-7	
Cadmium	<b>0.12J</b>	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 21:54	7440-43-9	
Chromium	<b>9.9</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 21:54	7440-47-3	
Cobalt	<b>2.1</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 21:54	7440-48-4	
Lead	<b>1.9</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 21:54	7439-92-1	
Molybdenum	<b>0.44J</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 21:54	7439-98-7	
Selenium	<b>1.2</b>	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 21:54	7782-49-2	
Thallium	<b>0.30J</b>	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 21:54	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:14	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>640</b>	mg/L	5.0	5.0	1		08/21/17 17:01		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.2</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>30.4</b>	mg/L	4.0	2.0	4		08/30/17 01:52	16887-00-6	
Fluoride	<b>0.21</b>	mg/L	0.20	0.10	1		08/30/17 01:36	16984-48-8	
Sulfate	<b>101</b>	mg/L	10.0	5.0	10		08/30/17 16:22	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: MW-302		Lab ID: 60251263002		Collected: 08/17/17 13:35		Received: 08/18/17 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		08/17/17 13:35		
Field pH	<b>6.23</b>	Std. Units	0.10	0.050	1		08/17/17 13:35		
Field Temperature	<b>15.3</b>	deg C	0.50	0.25	1		08/17/17 13:35		
Field Specific Conductance	<b>876</b>	umhos/cm	1.0	1.0	1		08/17/17 13:35		
Field Oxidation Potential	<b>90.2</b>	mV			1		08/17/17 13:35		
Oxygen, Dissolved	<b>1.69</b>	mg/L			1		08/17/17 13:35	7782-44-7	
Turbidity	<b>0.61</b>	NTU	1.0	1.0	1		08/17/17 13:35		
Groundwater Elevation	<b>714.47</b>	feet			1		08/17/17 13:35		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>45.1J</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:38	7440-42-8	B
Calcium	<b>93.1</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:38	7440-70-2	
Lithium	<b>11.9</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:38	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>0.11J</b>	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 21:59	7440-36-0	
Arsenic	<b>1.9</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 21:59	7440-38-2	
Barium	<b>175</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 21:59	7440-39-3	
Beryllium	<b>ND</b>	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 21:59	7440-41-7	
Cadmium	<b>0.030J</b>	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 21:59	7440-43-9	
Chromium	<b>1.5</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 21:59	7440-47-3	
Cobalt	<b>1.4</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 21:59	7440-48-4	
Lead	<b>ND</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 21:59	7439-92-1	
Molybdenum	<b>0.38J</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 21:59	7439-98-7	
Selenium	<b>0.46J</b>	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 21:59	7782-49-2	
Thallium	<b>0.18J</b>	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 21:59	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	<b>ND</b>	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:21	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>432</b>	mg/L	5.0	5.0	1		08/21/17 17:02		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>6.6</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>20.7</b>	mg/L	5.0	2.5	5		08/30/17 02:40	16887-00-6	B
Fluoride	<b>0.20J</b>	mg/L	0.20	0.10	1		08/30/17 02:24	16984-48-8	
Sulfate	<b>70.0</b>	mg/L	5.0	2.5	5		08/30/17 02:40	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: MW-303		Lab ID: 60251263003		Collected: 08/17/17 10:25		Received: 08/18/17 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		08/17/17 10:25		
Field pH	<b>7.22</b>	Std. Units	0.10	0.050	1		08/17/17 10:25		
Field Temperature	<b>15.1</b>	deg C	0.50	0.25	1		08/17/17 10:25		
Field Specific Conductance	<b>834</b>	umhos/cm	1.0	1.0	1		08/17/17 10:25		
Field Oxidation Potential	<b>79.8</b>	mV			1		08/17/17 10:25		
Oxygen, Dissolved	<b>0.05</b>	mg/L			1		08/17/17 10:25	7782-44-7	
Turbidity	<b>0.11</b>	NTU	1.0	1.0	1		08/17/17 10:25		
Groundwater Elevation	<b>702.83</b>	feet			1		08/17/17 10:25		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>650</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:41	7440-42-8	
Calcium	<b>66.2</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:41	7440-70-2	
Lithium	<b>18.8</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:41	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>1.6</b>	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:11	7440-36-0	
Arsenic	<b>30.0</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:11	7440-38-2	
Barium	<b>62.5</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:11	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:11	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:11	7440-43-9	
Chromium	<b>0.29J</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:11	7440-47-3	
Cobalt	<b>0.30J</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:11	7440-48-4	
Lead	<b>0.057J</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:11	7439-92-1	
Molybdenum	<b>35.2</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:11	7439-98-7	
Selenium	<b>0.33J</b>	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:11	7782-49-2	
Thallium	<b>0.18J</b>	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:11	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:23	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>397</b>	mg/L	5.0	5.0	1		08/21/17 17:02		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.5</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>19.4</b>	mg/L	1.0	0.50	1		08/30/17 03:45	16887-00-6	
Fluoride	<b>0.70</b>	mg/L	0.20	0.10	1		08/30/17 03:45	16984-48-8	
Sulfate	<b>83.5</b>	mg/L	10.0	5.0	10		08/30/17 04:01	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: MW-304      Lab ID: 60251263004      Collected: 08/17/17 11:15      Received: 08/18/17 09:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b> Analytical Method:									
Collected By	<b>Client</b>				1		08/17/17 11:15		
Field pH	<b>7.34</b>	Std. Units	0.10	0.050	1		08/17/17 11:15		
Field Temperature	<b>18.7</b>	deg C	0.50	0.25	1		08/17/17 11:15		
Field Specific Conductance	<b>856</b>	umhos/cm	1.0	1.0	1		08/17/17 11:15		
Field Oxidation Potential	<b>-40.9</b>	mV			1		08/17/17 11:15		
Oxygen, Dissolved	<b>0.18</b>	mg/L			1		08/17/17 11:15	7782-44-7	
Field Residual Chlorine	<b>3.90</b>	mg/L	0.050	0.050	1		08/17/17 11:15		
Groundwater Elevation	<b>702.96</b>	feet			1		08/17/17 11:15		
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>412</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:45	7440-42-8	
Calcium	<b>55.4</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:45	7440-70-2	
Lithium	<b>14.4</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:45	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	<b>2.6</b>	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:16	7440-36-0	
Arsenic	<b>8.6</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:16	7440-38-2	
Barium	<b>48.7</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:16	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:16	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:16	7440-43-9	
Chromium	<b>0.32J</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:16	7440-47-3	
Cobalt	<b>0.55J</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:16	7440-48-4	
Lead	<b>0.034J</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:16	7439-92-1	
Molybdenum	<b>33.8</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:16	7439-98-7	
Selenium	<b>0.85J</b>	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:16	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:16	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:25	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>359</b>	mg/L	5.0	5.0	1		08/21/17 17:03		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>7.3</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	<b>22.9</b>	mg/L	10.0	5.0	10		08/30/17 04:49	16887-00-6	B
Fluoride	<b>0.84</b>	mg/L	0.20	0.10	1		08/30/17 04:33	16984-48-8	
Sulfate	<b>85.9</b>	mg/L	10.0	5.0	10		08/30/17 04:49	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: MW-305		Lab ID: 60251263005		Collected: 08/17/17 12:55		Received: 08/18/17 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		08/17/17 12:55		
Field pH	<b>7.58</b>	Std. Units	0.10	0.050	1		08/17/17 12:55		
Field Temperature	<b>18.0</b>	deg C	0.50	0.25	1		08/17/17 12:55		
Field Specific Conductance	<b>831</b>	umhos/cm	1.0	1.0	1		08/17/17 12:55		
Field Oxidation Potential	<b>-6.8</b>	mV			1		08/17/17 12:55		
Oxygen, Dissolved	<b>0.16</b>	mg/L			1		08/17/17 12:55	7782-44-7	
Turbidity	<b>0.29</b>	NTU	1.0	1.0	1		08/17/17 12:55		
Groundwater Elevation	<b>702.91</b>	feet			1		08/17/17 12:55		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>537</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:49	7440-42-8	
Calcium	<b>58.7</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:49	7440-70-2	
Lithium	<b>16.4</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:49	7439-93-2	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Antimony	<b>2.6</b>	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:20	7440-36-0	
Arsenic	<b>16.7</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:20	7440-38-2	
Barium	<b>59.0</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:20	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:20	7440-41-7	
Cadmium	<b>0.024J</b>	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:20	7440-43-9	
Chromium	<b>0.50J</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:20	7440-47-3	
Cobalt	<b>0.36J</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:20	7440-48-4	
Lead	<b>0.048J</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:20	7439-92-1	
Molybdenum	<b>33.2</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:20	7439-98-7	
Selenium	<b>1.4</b>	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:20	7782-49-2	
Thallium	<b>0.38J</b>	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:20	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:28	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>347</b>	mg/L	5.0	5.0	1		08/21/17 17:03		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.5</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>18.0</b>	mg/L	1.0	0.50	1		08/30/17 05:21	16887-00-6	
Fluoride	<b>0.65</b>	mg/L	0.20	0.10	1		08/30/17 05:21	16984-48-8	
Sulfate	<b>59.4</b>	mg/L	5.0	2.5	5		08/30/17 05:54	14808-79-8	

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### ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

**Sample: MW-306**      **Lab ID: 60251263006**      Collected: 08/17/17 11:50      Received: 08/18/17 09:20      Matrix: Water

Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>Field Data</b>									
Analytical Method:									
Collected By	<b>Client</b>				1		08/17/17 11:50		
Field pH	<b>7.36</b>	Std. Units	0.10	0.050	1		08/17/17 11:50		
Field Temperature	<b>13.6</b>	deg C	0.50	0.25	1		08/17/17 11:50		
Field Specific Conductance	<b>828</b>	umhos/cm	1.0	1.0	1		08/17/17 11:50		
Field Oxidation Potential	<b>-31.2</b>	mV			1		08/17/17 11:50		
Oxygen, Dissolved	<b>0.04</b>	mg/L			1		08/17/17 11:50	7782-44-7	
Turbidity	<b>1.04</b>	NTU	1.0	1.0	1		08/17/17 11:50		
Groundwater Elevation	<b>702.74</b>	feet			1		08/17/17 11:50		
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>2850</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:53	7440-42-8	
Calcium	<b>47.7</b>	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:53	7440-70-2	
Lithium	<b>4.0J</b>	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:53	7439-93-2	
<b>6020 MET ICPMS</b>									
Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:24	7440-36-0	
Arsenic	<b>0.57J</b>	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:24	7440-38-2	
Barium	<b>46.1</b>	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:24	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:24	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:24	7440-43-9	
Chromium	<b>0.46J</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:24	7440-47-3	
Cobalt	<b>0.065J</b>	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:24	7440-48-4	
Lead	<b>0.037J</b>	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:24	7439-92-1	
Molybdenum	<b>278</b>	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:24	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:24	7782-49-2	
Thallium	<b>0.22J</b>	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:24	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:30	7439-97-6	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>402</b>	mg/L	5.0	5.0	1		08/21/17 17:03		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b>									
Analytical Method: EPA 9056									
Chloride	<b>31.7</b>	mg/L	4.0	2.0	4		08/30/17 06:58	16887-00-6	
Fluoride	<b>0.33</b>	mg/L	0.20	0.10	1		08/30/17 06:42	16984-48-8	
Sulfate	<b>132</b>	mg/L	20.0	10.0	20		08/30/17 07:14	14808-79-8	

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Sample: <b>FIELD BLANK</b> Lab ID: <b>60251263007</b> Collected: 08/17/17 13:55      Received: 08/18/17 09:20      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b> Analytical Method: EPA 6010      Preparation Method: EPA 3010									
Boron	<b>5.5J</b>	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 18:56	7440-42-8	B
Calcium	ND	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 18:56	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 18:56	7439-93-2	
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020      Preparation Method: EPA 3010									
Antimony	ND	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:37	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:37	7440-38-2	
Barium	ND	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:37	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:37	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:37	7440-43-9	
Chromium	<b>0.51J</b>	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:37	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:37	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:37	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:37	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:37	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:37	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470      Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 10:50	08/29/17 15:32	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		08/21/17 17:04		
<b>9040 pH</b> Analytical Method: EPA 9040									
pH	<b>5.5</b>	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
<b>9056 IC Anions</b> Analytical Method: EPA 9056									
Chloride	ND	mg/L	1.0	0.50	1		08/30/17 07:30	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		08/30/17 07:30	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/30/17 07:30	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

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QC Batch: 491869 Analysis Method: EPA 7470  
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury  
 Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

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METHOD BLANK: 2013062 Matrix: Water  
 Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	08/29/17 14:57	

LABORATORY CONTROL SAMPLE: 2013063

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2013064 2013065

Parameter	Units	60250408001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.1	4.9	102	98	75-125	4	20	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

QC Batch: 491612 Analysis Method: EPA 6010

QC Batch Method: EPA 3010 Analysis Description: 6010 MET

Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

METHOD BLANK: 2012299 Matrix: Water

Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	5.3J	100	3.5	08/28/17 18:16	
Calcium	mg/L	ND	0.10	0.036	08/28/17 18:16	
Lithium	ug/L	ND	10.0	2.9	08/28/17 18:16	

LABORATORY CONTROL SAMPLE: 2012300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	957	96	80-120	
Calcium	mg/L	10	9.6	96	80-120	
Lithium	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2012301 2012302

Parameter	Units	60251263001		60251263002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Boron	ug/L	28.9J	1000	1000	995	1000	97	97	75-125	1	20		
Calcium	mg/L	142	10	10	148	148	68	64	75-125	0	20	M1	
Lithium	ug/L	16.8	1000	1000	1040	1030	102	102	75-125	0	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60251263

QC Batch: 491614 Analysis Method: EPA 6020  
QC Batch Method: EPA 3010 Analysis Description: 6020 MET  
Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

METHOD BLANK: 2012309 Matrix: Water  
Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	08/27/17 21:46	
Arsenic	ug/L	ND	1.0	0.052	08/27/17 21:46	
Barium	ug/L	0.18J	1.0	0.095	08/27/17 21:46	
Beryllium	ug/L	ND	0.50	0.012	08/27/17 21:46	
Cadmium	ug/L	ND	0.50	0.018	08/27/17 21:46	
Chromium	ug/L	ND	1.0	0.054	08/27/17 21:46	
Cobalt	ug/L	ND	1.0	0.014	08/27/17 21:46	
Lead	ug/L	ND	1.0	0.033	08/27/17 21:46	
Molybdenum	ug/L	ND	1.0	0.058	08/27/17 21:46	
Selenium	ug/L	ND	1.0	0.086	08/27/17 21:46	
Thallium	ug/L	ND	1.0	0.036	08/27/17 21:46	

LABORATORY CONTROL SAMPLE: 2012310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.3	98	80-120	
Arsenic	ug/L	40	39.9	100	80-120	
Barium	ug/L	40	39.4	98	80-120	
Beryllium	ug/L	40	40.6	101	80-120	
Cadmium	ug/L	40	39.5	99	80-120	
Chromium	ug/L	40	39.9	100	80-120	
Cobalt	ug/L	40	39.0	97	80-120	
Lead	ug/L	40	37.6	94	80-120	
Molybdenum	ug/L	40	39.7	99	80-120	
Selenium	ug/L	40	38.8	97	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2012311 2012312

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60251263002 Result	Spike Conc.	Spike Conc.	Result							
Antimony	ug/L	0.11J	40	40	39.3	39.7	98	99	75-125	1	20	
Arsenic	ug/L	1.9	40	40	42.4	42.4	101	101	75-125	0	20	
Barium	ug/L	175	40	40	212	214	93	97	75-125	1	20	
Beryllium	ug/L	ND	40	40	38.9	38.6	97	96	75-125	1	20	
Cadmium	ug/L	0.030J	40	40	38.6	38.5	96	96	75-125	0	20	
Chromium	ug/L	1.5	40	40	41.5	41.4	100	100	75-125	0	20	
Cobalt	ug/L	1.4	40	40	39.8	39.3	96	95	75-125	1	20	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Parameter	Units	2012311		2012312		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Lead	ug/L	ND	40	40	39.5	39.6	99	99	75-125	0	20		
Molybdenum	ug/L	0.38J	40	40	41.9	42.0	104	104	75-125	0	20		
Selenium	ug/L	0.46J	40	40	38.3	38.0	95	94	75-125	1	20		
Thallium	ug/L	0.18J	40	40	39.1	39.8	97	99	75-125	2	20		

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

QC Batch: 490816

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

METHOD BLANK: 2009127

Matrix: Water

Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	08/21/17 16:53	

LABORATORY CONTROL SAMPLE: 2009128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 2009129

Parameter	Units	60251369001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	285	294	3	10	

SAMPLE DUPLICATE: 2009130

Parameter	Units	60251362004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	360	373	4	10	

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

QC Batch: 491088 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60251263003

SAMPLE DUPLICATE: 2010056

Parameter	Units	60251317001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.5	4	10	H6

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

QC Batch: 491090 Analysis Method: EPA 9040

QC Batch Method: EPA 9040 Analysis Description: 9040 pH

Associated Lab Samples: 60251263001, 60251263002, 60251263004, 60251263005, 60251263006, 60251263007

SAMPLE DUPLICATE: 2010060

Parameter	Units	60251263004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.3	7.3	0	10	H6

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60251263

QC Batch: 491943 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

METHOD BLANK: 2013297 Matrix: Water  
Associated Lab Samples: 60251263001, 60251263002, 60251263003, 60251263004, 60251263005, 60251263006, 60251263007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.61J	1.0	0.50	08/29/17 22:07	
Fluoride	mg/L	ND	0.20	0.10	08/29/17 22:07	
Sulfate	mg/L	ND	1.0	0.50	08/29/17 22:07	

LABORATORY CONTROL SAMPLE: 2013298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	80-120	
Fluoride	mg/L	2.5	2.5	100	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2013299 2013300

Parameter	Units	7572181005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	2790	1250	1250	4100	4100	105	105	80-120	0	15		
Fluoride	mg/L	1.1			619	622				0	15		
Sulfate	mg/L	3380	1250	1250	4640	4640	101	101	80-120	0	15		

MATRIX SPIKE SAMPLE: 2014469

Parameter	Units	7572531001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	275	250	532	103	80-120	
Fluoride	mg/L	13.2	125	133	96	80-120	
Sulfate	mg/L	63.0	250	307	98	80-120	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

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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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60251263001	MW-301		492192		
60251263002	MW-302		492192		
60251263003	MW-303		492192		
60251263004	MW-304		492192		
60251263005	MW-305		492192		
60251263006	MW-306		492192		
60251263001	MW-301	EPA 3010	491612	EPA 6010	491631
60251263002	MW-302	EPA 3010	491612	EPA 6010	491631
60251263003	MW-303	EPA 3010	491612	EPA 6010	491631
60251263004	MW-304	EPA 3010	491612	EPA 6010	491631
60251263005	MW-305	EPA 3010	491612	EPA 6010	491631
60251263006	MW-306	EPA 3010	491612	EPA 6010	491631
60251263007	FIELD BLANK	EPA 3010	491612	EPA 6010	491631
60251263001	MW-301	EPA 3010	491614	EPA 6020	491633
60251263002	MW-302	EPA 3010	491614	EPA 6020	491633
60251263003	MW-303	EPA 3010	491614	EPA 6020	491633
60251263004	MW-304	EPA 3010	491614	EPA 6020	491633
60251263005	MW-305	EPA 3010	491614	EPA 6020	491633
60251263006	MW-306	EPA 3010	491614	EPA 6020	491633
60251263007	FIELD BLANK	EPA 3010	491614	EPA 6020	491633
60251263001	MW-301	EPA 7470	491869	EPA 7470	492013
60251263002	MW-302	EPA 7470	491869	EPA 7470	492013
60251263003	MW-303	EPA 7470	491869	EPA 7470	492013
60251263004	MW-304	EPA 7470	491869	EPA 7470	492013
60251263005	MW-305	EPA 7470	491869	EPA 7470	492013
60251263006	MW-306	EPA 7470	491869	EPA 7470	492013
60251263007	FIELD BLANK	EPA 7470	491869	EPA 7470	492013
60251263001	MW-301	SM 2540C	490816		
60251263002	MW-302	SM 2540C	490816		
60251263003	MW-303	SM 2540C	490816		
60251263004	MW-304	SM 2540C	490816		
60251263005	MW-305	SM 2540C	490816		
60251263006	MW-306	SM 2540C	490816		
60251263007	FIELD BLANK	SM 2540C	490816		
60251263001	MW-301	EPA 9040	491090		
60251263002	MW-302	EPA 9040	491090		
60251263003	MW-303	EPA 9040	491088		
60251263004	MW-304	EPA 9040	491090		
60251263005	MW-305	EPA 9040	491090		
60251263006	MW-306	EPA 9040	491090		
60251263007	FIELD BLANK	EPA 9040	491090		
60251263001	MW-301	EPA 9056	491943		
60251263002	MW-302	EPA 9056	491943		
60251263003	MW-303	EPA 9056	491943		
60251263004	MW-304	EPA 9056	491943		

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251263

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60251263005	MW-305	EPA 9056	491943		
60251263006	MW-306	EPA 9056	491943		
60251263007	FIELD BLANK	EPA 9056	491943		

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**Sample Condition Upon Receipt**

**WO# : 60251263**  
  
 60251263

Client Name: SCS Engineers

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 778565954615 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: We Blue None

Cooler Temperature (°C): As-read 0.8 Corr. Factor 0.0 CF +0.3 Corrected 0.8

Date and initials of person examining contents: 8-18-17 MR

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>PH</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WI</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Cyanide water sample checks: <u>N/A</u>		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: Joel

Date: 8-19-17



September 10, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60251326

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on August 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Kyle Kramer, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

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### Pennsylvania Certification IDs

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

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

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60251326001	MW-301	Water	08/17/17 14:15	08/18/17 09:20
60251326002	MW-302	Water	08/17/17 13:35	08/18/17 09:20
60251326003	MW-303	Water	08/17/17 10:25	08/18/17 09:20
60251326004	MW-304	Water	08/17/17 11:15	08/18/17 09:20
60251326005	MW-305	Water	08/17/17 12:55	08/18/17 09:20
60251326006	MW-306	Water	08/17/17 11:50	08/18/17 09:20
60251326007	FIELD BLANK	Water	08/17/17 13:55	08/18/17 09:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60251326001	MW-301	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326002	MW-302	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326003	MW-303	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326004	MW-304	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326005	MW-305	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326006	MW-306	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251326007	FIELD BLANK	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-301**      **Lab ID: 60251326001**      Collected: 08/17/17 14:15      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.576 ± 0.451 (0.530)</b> <b>C:NA T:83%</b>	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.946 ± 0.447 (0.760)</b> <b>C:74% T:82%</b>	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.52 ± 0.898 (1.29)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-302**      **Lab ID: 60251326002**      Collected: 08/17/17 13:35      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.211 ± 0.322 (0.517)</b> <b>C:NA T:84%</b>	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.997 ± 0.404 (0.623)</b> <b>C:78% T:87%</b>	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.21 ± 0.726 (1.14)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-303**      **Lab ID: 60251326003**      Collected: 08/17/17 10:25      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.537 ± 0.420 (0.494)</b> <b>C:NA T:86%</b>	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.458 ± 0.368 (0.728)</b> <b>C:65% T:91%</b>	pCi/L	09/05/17 15:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.995 ± 0.788 (1.22)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-304**      **Lab ID: 60251326004**      Collected: 08/17/17 11:15      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.355 ± 0.420 (0.660)</b> C:NA T:85%	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.0285 ± 0.282 (0.653)</b> C:74% T:87%	pCi/L	09/05/17 15:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.384 ± 0.702 (1.31)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-305**      **Lab ID: 60251326005**      Collected: 08/17/17 12:55      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>-0.062 ± 0.323 (0.747)</b> C:NA T:89%	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.492 ± 0.334 (0.634)</b> C:77% T:87%	pCi/L	09/05/17 15:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.492 ± 0.657 (1.38)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: MW-306**      **Lab ID: 60251326006**      Collected: 08/17/17 11:50      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.652 ± 0.477 (0.533)</b> C:NA T:80%	pCi/L	08/30/17 12:04	13982-63-3	
Radium-228	EPA 904.0	<b>0.398 ± 0.331 (0.659)</b> C:70% T:93%	pCi/L	09/05/17 15:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.05 ± 0.808 (1.19)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

**Sample: FIELD BLANK**      **Lab ID: 60251326007**      Collected: 08/17/17 13:55      Received: 08/18/17 09:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	<b>0.353 ± 0.461 (0.760)</b> C:NA T:80%	pCi/L	08/30/17 12:24	13982-63-3	
Radium-228	EPA 904.0	<b>0.651 ± 0.347 (0.603)</b> C:77% T:84%	pCi/L	09/05/17 15:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.00 ± 0.808 (1.36)</b>	pCi/L	09/10/17 13:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

QC Batch: 269249 Analysis Method: EPA 903.1

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

Associated Lab Samples: 60251326001, 60251326002, 60251326003, 60251326004, 60251326005, 60251326006, 60251326007

METHOD BLANK: 1325045 Matrix: Water

Associated Lab Samples: 60251326001, 60251326002, 60251326003, 60251326004, 60251326005, 60251326006, 60251326007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.398 ± 0.321 (0.180) C:NA T:87%	pCi/L	08/30/17 11:43	

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

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

QC Batch: 269268 Analysis Method: EPA 904.0

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

Associated Lab Samples: 60251326001, 60251326002, 60251326003, 60251326004, 60251326005, 60251326006, 60251326007

METHOD BLANK: 1325072 Matrix: Water

Associated Lab Samples: 60251326001, 60251326002, 60251326003, 60251326004, 60251326005, 60251326006, 60251326007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.288 ± 0.379 (0.808) C:72% T:83%	pCi/L	09/05/17 15:11	

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

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

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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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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 (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60251326

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60251326001	MW-301	EPA 903.1	269249		
60251326002	MW-302	EPA 903.1	269249		
60251326003	MW-303	EPA 903.1	269249		
60251326004	MW-304	EPA 903.1	269249		
60251326005	MW-305	EPA 903.1	269249		
60251326006	MW-306	EPA 903.1	269249		
60251326007	FIELD BLANK	EPA 903.1	269249		
60251326001	MW-301	EPA 904.0	269268		
60251326002	MW-302	EPA 904.0	269268		
60251326003	MW-303	EPA 904.0	269268		
60251326004	MW-304	EPA 904.0	269268		
60251326005	MW-305	EPA 904.0	269268		
60251326006	MW-306	EPA 904.0	269268		
60251326007	FIELD BLANK	EPA 904.0	269268		
60251326001	MW-301	Total Radium Calculation	271121		
60251326002	MW-302	Total Radium Calculation	271121		
60251326003	MW-303	Total Radium Calculation	271121		
60251326004	MW-304	Total Radium Calculation	271121		
60251326005	MW-305	Total Radium Calculation	271121		
60251326006	MW-306	Total Radium Calculation	271121		
60251326007	FIELD BLANK	Total Radium Calculation	271121		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60251326  
60251326

TDA

Client Name: SCS

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: 728565954729 Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-266 / T-239 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 17.6 Corr. Factor CF 0.0 CF +0.3 Corrected 17.6

Date and initials of person examining contents: 28-18-17

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Sufficient volume:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Correct containers used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Sample labels match COC: Date / time / ID / analyses	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Cyanide water sample checks:	<input checked="" type="checkbox"/> N/A
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Client Notification/ Resolution: Copy COC to Client? Y /  N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 8-19-17



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: ( of (

**Section A**  
 Required Client Information:  
 Company: SCS Engineers  
 Address: 2830 Dairy Drive  
 Madison WI 53718  
 Email To: mblodgett@scsengineers.com  
 Phone: 608-216-7362 Fax:  
 Requested Due Date/TAT:

**Section B**  
 Required Project Information:  
 Report To: Meghan Blodgett  
 Copy To: Tom Karwaski  
 Purchase Order No.:  
 Project Name: IPL Prairie Creek  
 Project Number: 25216074.17

**Section C**  
 Invoice Information:  
 Attention: Meghan Blodgett/Jess Valcheff  
 Company Name: SCS Engineers  
 Address:  
 Pace Quote Reference:  
 Pace Project Manager:  
 Pace Profile #: 6696 Line 2

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

Site Location: IA  
 STATE:

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WIPE WP AIR AR OTHER OT TISSUE TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB							
1	MW-301		xxx	8/17/17	G	WT	2	Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other		60251826	
2	MW-302		xxx	1335	G	WT	2			2-572W	
3	MW-303		xxx	1025	G	WT	2			602	
4	MW-304		xxx	1115	G	WT	2			603	
5	MW-305		xxx	1255	G	WT	2			604	
6	MW-306		xxx	1150	G	WT	2			605	
7	FIELD BLANK		xxx	1355	G	WT	2			606	
8										607	
9											
10											
11											
12											

**ADDITIONAL COMMENTS**  
 Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219

RELINQUISHED BY / AFFILIATION: *Myr...* DATE: 8/17/17 TIME: 1630  
 ACCEPTED BY / AFFILIATION: *Jack Pace* DATE: 8-15-17 TIME: 0920

SAMPLE CONDITIONS  
 Received on Ice (Y/N):  
 Custody Sealed Cooler (Y/N):  
 Samples Intact (Y/N):

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: *Boyle Klummed*  
 SIGNATURE of SAMPLER: *Boyle Klummed* DATE Signed (MM/DD/YY): 8/17/17

# Chain of Custody

30227849



Workorder: 60251326    Workorder Name: IPL Prairie Creek/25216074.17    Owner Received Date: 8/18/2017 Results Requested By: 9/13/2017

Report To: **Trudy Gipson**    Subcontract To: **Pace Analytical Pittsburgh**    Requested Analysis: **903.1 Radium-226**

Pace Analytical Kansas  
9608 Loiret Blvd.  
Lenexa, KS 66219  
Phone 1(913)563-1405

1638 Roseytown Road  
Suites 2,3, & 4  
Greensburg, PA 15601  
Phone (724)850-5600

WO# : 30227849



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY	
						HNO3			
1	MW-301	PS	8/17/2017 14:15	60251326001	Water	2		X	001
2	MW-302	PS	8/17/2017 13:35	60251326002	Water	2		X	002
3	MW-303	PS	8/17/2017 10:25	60251326003	Water	2		X	003
4	MW-304	PS	8/17/2017 11:15	60251326004	Water	2		X	004
5	MW-305	PS	8/17/2017 12:55	60251326005	Water	2		X	005
6	MW-306	PS	8/17/2017 11:50	60251326006	Water	2		X	006
7	FIELD BLANK	PS	8/17/2017 13:55	60251326007	Water	2		X	007

Transfers	Released By	Date/Time	Received	Date/Time	Comments
1	<i>[Signature]</i>	8/21/17 11:00	<i>[Signature]</i>	8/22/17 10:05	
2					
3					

Cooler Temperature on Receipt: 21A °C    Custody Seal: N    Received on Ice: Y    Samples Intact: Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Condition Upon Receipt Pittsburgh

30227849

Face Analytical

Client Name: PACE, KS

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

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 77856596080

Label	<u>AM</u>
LIMS Login	<u>ARM</u>

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

Thermometer Used N/A      Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C      Correction Factor: \_\_\_\_\_ °C      Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/22/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:		/		4.
Sample Labels match COC:	/			5.
-Includes date/time/ID      Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered				12.
Organic Samples checked for dechlorination:			/	13.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15. <u>PHCZ</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed: <u>PH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			/	16.
Trip Blank Present:			/	17.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr		/		Initial when completed: <u>PH</u> Date: <u>8/22/17</u>

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted By: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, The review is in the Status section of the Workorder Edit Screen.

A9 Fall 2017 Detection Sampling, Analytical Laboratory Report

October 31, 2017

Meghan Blodgett  
SCS Engineers  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60255981

Dear Meghan Blodgett:

Enclosed are the analytical results for sample(s) received by the laboratory on October 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Trudy Gipson  
trudy.gipson@pacelabs.com  
1(913)563-1405  
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers  
Kyle Kramer, SCS Engineers  
Jeff Maxted, Alliant Energy



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

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### **Kansas Certification IDs**

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 17-016-0

Illinois Certification #: 200030

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212018-1

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

Missouri Certification: 10070

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60255981001	MW-301	Water	10/17/17 11:16	10/19/17 08:40
60255981002	MW-302	Water	10/17/17 12:11	10/19/17 08:40
60255981003	MW-303	Water	10/17/17 15:26	10/19/17 08:40
60255981004	MW-304	Water	10/17/17 14:46	10/19/17 08:40
60255981005	MW-305	Water	10/17/17 13:01	10/19/17 08:40
60255981006	MW-306	Water	10/17/17 14:01	10/19/17 08:40
60255981007	FIELD BLANK	Water	10/17/17 15:30	10/19/17 08:40

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60255981001	MW-301	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981002	MW-302	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981003	MW-303	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981004	MW-304	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981005	MW-305	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981006	MW-306	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60255981007	FIELD BLANK	EPA 6010	TDS	2	PASI-K
		SM 2540C	JMC1	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-301		Lab ID: 60255981001		Collected: 10/17/17 11:16		Received: 10/19/17 08:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>		Analytical Method:							
Collected By	<b>Client</b>				1		10/17/17 11:16		
Field pH	<b>7.46</b>	Std. Units	0.10	0.050	1		10/17/17 11:16		
Field Temperature	<b>12.6</b>	deg C	0.50	0.25	1		10/17/17 11:16		
Field Specific Conductance	<b>949</b>	umhos/cm	1.0	1.0	1		10/17/17 11:16		
Field Oxidation Potential	<b>191.0</b>	mV			1		10/17/17 11:16		
Oxygen, Dissolved	<b>2.4</b>	mg/L			1		10/17/17 11:16	7782-44-7	
Turbidity	<b>124.2</b>	NTU	1.0	1.0	1		10/17/17 11:16		
Groundwater Elevation	<b>714.36</b>	feet			1		10/17/17 11:16		
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>26.8J</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:35	7440-42-8	
Calcium	<b>139</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:35	7440-70-2	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>621</b>	mg/L	5.0	5.0	1		10/20/17 15:49		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>7.4</b>	Std. Units	0.10	0.10	1		10/21/17 10:30		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	<b>33.6</b>	mg/L	2.0	1.0	2		10/31/17 08:04	16887-00-6	
Fluoride	<b>0.17J</b>	mg/L	0.20	0.10	1		10/29/17 20:59	16984-48-8	
Sulfate	<b>95.5</b>	mg/L	10.0	5.0	10		10/31/17 08:19	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-302		Lab ID: 60255981002		Collected: 10/17/17 12:11	Received: 10/19/17 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>Field Data</b>		Analytical Method:								
Collected By	<b>Client</b>				1		10/17/17 12:11			
Field pH	<b>7.71</b>	Std. Units	0.10	0.050	1		10/17/17 12:11			
Field Temperature	<b>15.0</b>	deg C	0.50	0.25	1		10/17/17 12:11			
Field Specific Conductance	<b>824</b>	umhos/cm	1.0	1.0	1		10/17/17 12:11			
Field Oxidation Potential	<b>181</b>	mV			1		10/17/17 12:11			
Oxygen, Dissolved	<b>1.4</b>	mg/L			1		10/17/17 12:11	7782-44-7		
Turbidity	<b>4.75</b>	NTU	1.0	1.0	1		10/17/17 12:11			
Groundwater Elevation	<b>713.92</b>	feet			1		10/17/17 12:11			
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	<b>36.5J</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:42	7440-42-8		
Calcium	<b>109</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:42	7440-70-2		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>505</b>	mg/L	5.0	5.0	1		10/20/17 15:49			
<b>9040 pH</b>		Analytical Method: EPA 9040								
pH	<b>6.8</b>	Std. Units	0.10	0.10	1		10/21/17 10:32		H6	
<b>9056 IC Anions</b>		Analytical Method: EPA 9056								
Chloride	<b>36.4</b>	mg/L	5.0	2.5	5		10/31/17 08:34	16887-00-6		
Fluoride	<b>0.19J</b>	mg/L	0.20	0.10	1		10/29/17 21:44	16984-48-8		
Sulfate	<b>82.9</b>	mg/L	5.0	2.5	5		10/31/17 08:34	14808-79-8		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-303		Lab ID: 60255981003		Collected: 10/17/17 15:26	Received: 10/19/17 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>Field Data</b>		Analytical Method:								
Collected By	<b>Client</b>				1		10/17/17 15:26			
Field pH	<b>7.94</b>	Std. Units	0.10	0.050	1		10/17/17 15:26			
Field Temperature	<b>16.4</b>	deg C	0.50	0.25	1		10/17/17 15:26			
Field Specific Conductance	<b>564</b>	umhos/cm	1.0	1.0	1		10/17/17 15:26			
Field Oxidation Potential	<b>-85.0</b>	mV			1		10/17/17 15:26			
Oxygen, Dissolved	<b>0</b>	mg/L			1		10/17/17 15:26	7782-44-7		
Turbidity	<b>3.58</b>	NTU	1.0	1.0	1		10/17/17 15:26			
Groundwater Elevation	<b>702.95</b>	feet			1		10/17/17 15:26			
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	<b>598</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:44	7440-42-8		
Calcium	<b>59.9</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:44	7440-70-2		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>329</b>	mg/L	5.0	5.0	1		10/20/17 15:49			
<b>9040 pH</b>		Analytical Method: EPA 9040								
pH	<b>7.5</b>	Std. Units	0.10	0.10	1		10/21/17 10:33		H6	
<b>9056 IC Anions</b>		Analytical Method: EPA 9056								
Chloride	<b>19.9</b>	mg/L	2.0	1.0	2		10/31/17 09:04	16887-00-6		
Fluoride	<b>0.80</b>	mg/L	0.20	0.10	1		10/29/17 22:14	16984-48-8		
Sulfate	<b>60.0</b>	mg/L	5.0	2.5	5		10/31/17 09:52	14808-79-8		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-304		Lab ID: 60255981004		Collected: 10/17/17 14:46	Received: 10/19/17 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>Field Data</b>		Analytical Method:								
Collected By	<b>Client</b>				1		10/17/17 14:46			
Field pH	<b>8.16</b>	Std. Units	0.10	0.050	1		10/17/17 14:46			
Field Temperature	<b>20.6</b>	deg C	0.50	0.25	1		10/17/17 14:46			
Field Specific Conductance	<b>532</b>	umhos/cm	1.0	1.0	1		10/17/17 14:46			
Field Oxidation Potential	<b>-123.0</b>	mV			1		10/17/17 14:46			
Oxygen, Dissolved	<b>0</b>	mg/L			1		10/17/17 14:46	7782-44-7		
Turbidity	<b>12.65</b>	NTU	1.0	1.0	1		10/17/17 14:46			
Groundwater Elevation	<b>703.17</b>	feet			1		10/17/17 14:46			
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	<b>386</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:51	7440-42-8		
Calcium	<b>49.3</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:51	7440-70-2		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>298</b>	mg/L	5.0	5.0	1		10/20/17 15:49			
<b>9040 pH</b>		Analytical Method: EPA 9040								
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		10/21/17 10:35		H6	
<b>9056 IC Anions</b>		Analytical Method: EPA 9056								
Chloride	<b>23.4</b>	mg/L	2.0	1.0	2		10/31/17 10:07	16887-00-6		
Fluoride	<b>0.78</b>	mg/L	0.20	0.10	1		10/29/17 22:30	16984-48-8		
Sulfate	<b>55.1</b>	mg/L	5.0	2.5	5		10/31/17 10:22	14808-79-8		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-305		Lab ID: 60255981005		Collected: 10/17/17 13:01	Received: 10/19/17 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>Field Data</b>		Analytical Method:								
Collected By	<b>Client</b>				1		10/17/17 13:01			
Field pH	<b>8.08</b>	Std. Units	0.10	0.050	1		10/17/17 13:01			
Field Temperature	<b>19.9</b>	deg C	0.50	0.25	1		10/17/17 13:01			
Field Specific Conductance	<b>537</b>	umhos/cm	1.0	1.0	1		10/17/17 13:01			
Field Oxidation Potential	<b>-11.0</b>	mV			1		10/17/17 13:01			
Oxygen, Dissolved	<b>0</b>	mg/L			1		10/17/17 13:01	7782-44-7		
Turbidity	<b>2.29</b>	NTU	1.0	1.0	1		10/17/17 13:01			
Groundwater Elevation	<b>703.21</b>	feet			1		10/17/17 13:01			
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	<b>462</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:53	7440-42-8		
Calcium	<b>51.4</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:53	7440-70-2		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>307</b>	mg/L	5.0	5.0	1		10/20/17 15:50			
<b>9040 pH</b>		Analytical Method: EPA 9040								
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		10/21/17 10:38		H6	
<b>9056 IC Anions</b>		Analytical Method: EPA 9056								
Chloride	<b>18.6</b>	mg/L	2.0	1.0	2		10/31/17 10:37	16887-00-6		
Fluoride	<b>0.63</b>	mg/L	0.20	0.10	1		10/29/17 22:45	16984-48-8		
Sulfate	<b>44.0</b>	mg/L	5.0	2.5	5		10/31/17 10:52	14808-79-8		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: MW-306		Lab ID: 60255981006		Collected: 10/17/17 14:01	Received: 10/19/17 08:40	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>Field Data</b>		Analytical Method:								
Collected By	<b>Client</b>				1		10/17/17 14:01			
Field pH	<b>8.45</b>	Std. Units	0.10	0.050	1		10/17/17 14:01			
Field Temperature	<b>14.7</b>	deg C	0.50	0.25	1		10/17/17 14:01			
Field Specific Conductance	<b>636</b>	umhos/cm	1.0	1.0	1		10/17/17 14:01			
Field Oxidation Potential	<b>-128.0</b>	mV			1		10/17/17 14:01			
Oxygen, Dissolved	<b>0.80</b>	mg/L			1		10/17/17 14:01	7782-44-7		
Turbidity	<b>3.45</b>	NTU	1.0	1.0	1		10/17/17 14:01			
Groundwater Elevation	<b>703.16</b>	feet			1		10/17/17 14:01			
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	<b>2910</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:55	7440-42-8		
Calcium	<b>48.1</b>	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:55	7440-70-2		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>403</b>	mg/L	5.0	5.0	1		10/20/17 15:50			
<b>9040 pH</b>		Analytical Method: EPA 9040								
pH	<b>7.6</b>	Std. Units	0.10	0.10	1		10/21/17 10:39		H6	
<b>9056 IC Anions</b>		Analytical Method: EPA 9056								
Chloride	<b>28.7</b>	mg/L	2.0	1.0	2		10/31/17 11:06	16887-00-6		
Fluoride	<b>0.30</b>	mg/L	0.20	0.10	1		10/29/17 23:30	16984-48-8		
Sulfate	<b>139</b>	mg/L	10.0	5.0	10		10/31/17 11:21	14808-79-8		

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Sample: FIELD BLANK		Lab ID: 60255981007		Collected: 10/17/17 15:30		Received: 10/19/17 08:40		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>		Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	<b>6.5J</b>	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 11:58	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 11:58	7440-70-2	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		10/24/17 16:29		
<b>9040 pH</b>		Analytical Method: EPA 9040							
pH	<b>5.2</b>	Std. Units	0.10	0.10	1		10/21/17 10:41		H6
<b>9056 IC Anions</b>		Analytical Method: EPA 9056							
Chloride	ND	mg/L	1.0	0.50	1		10/29/17 23:46	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		10/29/17 23:46	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/29/17 23:46	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

QC Batch: 500307 Analysis Method: EPA 6010  
 QC Batch Method: EPA 3010 Analysis Description: 6010 MET  
 Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006, 60255981007

METHOD BLANK: 2047621 Matrix: Water  
 Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006, 60255981007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	10/27/17 11:33	
Calcium	mg/L	0.14	0.10	0.036	10/27/17 11:33	

LABORATORY CONTROL SAMPLE: 2047622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	976	98	80-120	
Calcium	mg/L	10	9.7	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2047623 2047624

Parameter	Units	60255981001		2047624		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	26.8J	1000	1020	1030	99	100	75-125	1	20	
Calcium	mg/L	139	10	149	147	99	80	75-125	1	20	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

QC Batch: 499660

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006

METHOD BLANK: 2044774

Matrix: Water

Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	10/20/17 15:38	

LABORATORY CONTROL SAMPLE: 2044775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 2044776

Parameter	Units	60255667001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	212000	281	199	10	D6

SAMPLE DUPLICATE: 2044777

Parameter	Units	60255888003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4950	4810	3	10	

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### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

QC Batch:	500112	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	60255981007		

METHOD BLANK: 2046818 Matrix: Water  
Associated Lab Samples: 60255981007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	10/24/17 16:28	

LABORATORY CONTROL SAMPLE: 2046819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	

SAMPLE DUPLICATE: 2046820

Parameter	Units	60255997001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	610	573	6	10	

SAMPLE DUPLICATE: 2046821

Parameter	Units	60256072008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	889	889	0	10	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

QC Batch: 499690

Analysis Method: EPA 9040

QC Batch Method: EPA 9040

Analysis Description: 9040 pH

Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006, 60255981007

SAMPLE DUPLICATE: 2045310

Parameter	Units	60255827001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.7	6	10	H6

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**QUALITY CONTROL DATA**

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

QC Batch: 500738 Analysis Method: EPA 9056  
 QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
 Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006, 60255981007

METHOD BLANK: 2050307 Matrix: Water  
 Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006, 60255981007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	10/29/17 20:28	
Fluoride	mg/L	ND	0.20	0.10	10/29/17 20:28	
Sulfate	mg/L	ND	1.0	0.50	10/29/17 20:28	

LABORATORY CONTROL SAMPLE: 2050308

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	80-120	
Fluoride	mg/L	2.5	2.5	98	80-120	
Sulfate	mg/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2050309 2050310

Parameter	Units	60255981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.17J	2.5	2.5	2.7	2.7	100	100	80-120	1	15	

SAMPLE DUPLICATE: 2050311

Parameter	Units	60255981002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.19J	0.19J		15	

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### QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.17  
Pace Project No.: 60255981

QC Batch: 500974 Analysis Method: EPA 9056  
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions  
Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006

METHOD BLANK: 2050910 Matrix: Water  
Associated Lab Samples: 60255981001, 60255981002, 60255981003, 60255981004, 60255981005, 60255981006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	10/31/17 07:29	
Sulfate	mg/L	ND	1.0	0.50	10/31/17 07:29	

LABORATORY CONTROL SAMPLE: 2050911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	80-120	
Sulfate	mg/L	5	5.2	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2050912 2050913

Parameter	Units	60256012001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	52.7	25	25	79.3	78.9	106	105	80-120	0	15	

SAMPLE DUPLICATE: 2050914

Parameter	Units	60256012003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	69.9	70.0	0	15	

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## QUALIFIERS

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

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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 adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.17

Pace Project No.: 60255981

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60255981001	MW-301		500933		
60255981002	MW-302		500933		
60255981003	MW-303		500933		
60255981004	MW-304		500933		
60255981005	MW-305		500933		
60255981006	MW-306		500933		
60255981001	MW-301	EPA 3010	500307	EPA 6010	500398
60255981002	MW-302	EPA 3010	500307	EPA 6010	500398
60255981003	MW-303	EPA 3010	500307	EPA 6010	500398
60255981004	MW-304	EPA 3010	500307	EPA 6010	500398
60255981005	MW-305	EPA 3010	500307	EPA 6010	500398
60255981006	MW-306	EPA 3010	500307	EPA 6010	500398
60255981007	FIELD BLANK	EPA 3010	500307	EPA 6010	500398
60255981001	MW-301	SM 2540C	499660		
60255981002	MW-302	SM 2540C	499660		
60255981003	MW-303	SM 2540C	499660		
60255981004	MW-304	SM 2540C	499660		
60255981005	MW-305	SM 2540C	499660		
60255981006	MW-306	SM 2540C	499660		
60255981007	FIELD BLANK	SM 2540C	500112		
60255981001	MW-301	EPA 9040	499690		
60255981002	MW-302	EPA 9040	499690		
60255981003	MW-303	EPA 9040	499690		
60255981004	MW-304	EPA 9040	499690		
60255981005	MW-305	EPA 9040	499690		
60255981006	MW-306	EPA 9040	499690		
60255981007	FIELD BLANK	EPA 9040	499690		
60255981001	MW-301	EPA 9056	500738		
60255981001	MW-301	EPA 9056	500974		
60255981002	MW-302	EPA 9056	500738		
60255981002	MW-302	EPA 9056	500974		
60255981003	MW-303	EPA 9056	500738		
60255981003	MW-303	EPA 9056	500974		
60255981004	MW-304	EPA 9056	500738		
60255981004	MW-304	EPA 9056	500974		
60255981005	MW-305	EPA 9056	500738		
60255981005	MW-305	EPA 9056	500974		
60255981006	MW-306	EPA 9056	500738		
60255981006	MW-306	EPA 9056	500974		
60255981007	FIELD BLANK	EPA 9056	500738		

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Sample Condition Upon Receipt

WO#: 60255981
Barcode
60255981

Client Name: SCS Engineers

Courier: FedEx [X] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: 72856597 9067 Pace Shipping Label Used? Yes [ ] No [ ]

Custody Seal on Cooler/Box Present: Yes [X] No [ ] Seals intact: Yes [X] No [ ]

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

Thermometer Used: T-266 / T-239 Type of Ice: Wet [X] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 20 Corr. Factor CF 0.0 CF +0.3 Corrected 2.0

Date and initials of person examining contents: Rlt 10-19-17 TG

Temperature should be above freezing to 6°C

Table with 2 columns: Question/Field and Answer (Yes/No/N/A). Rows include Chain of Custody, Samples arrived, Short Hold Time, Rush Turn Around Time, Sufficient volume, Containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels, Samples contain multiple phases, Containers requiring pH preservation, Cyanide water sample checks, Lead acetate strip, Potassium iodide test strip, Trip Blank present, Headspace in VOA vials, Samples from USDA Regulated Area, Additional labels attached.

Client Notification/ Resolution: Copy COC to Client? Y / [X] N Field Data Required? [X] / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature] Date: 10-20-17

