2018 Annual Groundwater Monitoring and Corrective Action Report

Prairie Creek Generating Station
Cedar Rapids, Iowa

Prepared for:

Alliant Energy

SCS ENGINEERS

25216074.18 | January 31, 2019

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

Table of Contents

Section Page

Tables

Figures

Appendix A – Laboratory Reports

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1.0 INTRODUCTION

This 2018 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 CFR 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2018 Annual Groundwater Monitoring and Corrective Action Report for the CCR units.

This report covers the period of groundwater monitoring from January 1, 2018, through December 31, 2018.

The groundwater monitoring system at the Prairie Creek Generating Station (PCS) was established as a multiunit system to monitor 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.

All CCR units at PCS were closed in 2018, so these units are no longer existing. CCR was consolidated capped in accordance with §257.102(d), and closure certification was completed in December 2018. Going forward, the groundwater monitoring system will monitor the closure area.

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;

Two new monitoring wells were installed on November 26 through 27, 2018, during closure of the CCR units. The new wells (MW-307 and MW-308) will be added to the monitoring system, and well documentation will be placed in the operating record in 2019. No wells were decommissioned as part of the groundwater monitoring program for the CCR units in 2018.

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;

Three groundwater sampling events were completed for the CCR units at PCS in 2018. As described in **Section 2.4**, the site transitioned to an assessment monitoring program in 2018. The first round of assessment monitoring samples were collected in May 2018 and the second round was collected in August 2018. All of the CCR monitoring wells were sampled in October 2018 to continue the semiannual monitoring schedule established for the site.

Groundwater samples collected in the May, August, and October 2018 sampling events 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 **A3**.

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);

Detection monitoring for PCS was initiated in October 2017. The statistical evaluation of the October 2017 detection monitoring results, completed on January 15, 2018, identified statistically significant increases (SSIs) in detection monitoring constituents at the downgradient wells. SSIs were identified for boron, fluoride, field pH, and sulfate at one or more wells based on the October 2017 detection monitoring event. IPL collected the first round of assessment samples in May 2018 and established an assessment monitoring program on July 16, 2018, in accordance with §257.95(b).

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 2018 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 assessment monitoring.

Summary of Key Actions Completed.

- Statistical evaluation and determination of SSIs for the October 2017 monitoring event, completed January 15, 2018.
- Alternative source evaluation for the SSIs identified for the October 2017 detection monitoring event, completed April 16, 2018.
- Establishment of assessment monitoring program, completed July 16, 2018
- Establishment of Groundwater Protection Standards (GPSs) for all detected Appendix IV constituents, completed October 15, 2018
- Two semiannual groundwater sampling and analysis events (May and October 2018) plus the additional groundwater sampling event in August 2018 as specified in § 257.95(d)(1).

Description of Any Problems Encountered. No problems were encountered during the groundwater sampling events in 2018.

Discussion of Actions to Resolve the Problems. Not applicable.

Projection of Key Activities for the Upcoming Year (2019):

- Statistical evaluation and determination of any statistically significant levels exceeding the GPS for the April, August, and October 2018 monitoring events (by 1/14/19).
- Statistical evaluation and determination of any statistically significant levels exceeding the GPS for the April 2019 monitoring event (by 7/15/19).

- If one or more Appendix IV constituents is detected at a statistically significant level above the GPS, then within 30 days IPL will prepare a notification in accordance with §257.95(g) and within 90 days complete an alternative source demonstration or initiate an assessment of corrective measures §257.95(g)(3). IPL will also characterize the release §257.95(g)(1) and notify property owners (§257.95(g)(2)).

- Two semiannual groundwater sampling and analysis events (April and October 2019).

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 had 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 2018.

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 been initiated at the site but no alternative assessment monitoring frequency is proposed at this time.

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).

The recorded concentrations for the assessment monitoring events are in the laboratory reports in Appendix A. The background concentrations established under §257.94(b) were provided in Appendix A of the 2017 Annual Groundwater Monitoring and Corrective Action Report for the PCS. The groundwater protection standards established for the PCS are provided in Table 2.

2.5.6 § 257.95(d)(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. No alternative source demonstration evaluation for assessment monitoring was completed in 2018.

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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Tables

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
05/08/18	A	A	A	A	A	A
8/6/2018	A	A	A	A	A	A
10/9/2018	A	A	A	A	A	A
Total Samples	3	3	3	3	3	3

Abbreviations:

A = Required by Assessment Monitoring Program

Created by:	NDK	Date:	1/4/2019
Last revision by:	NDK	Date:	1/4/2019
Checked by:	MDB	Date:	1/4/2019

I:\25216074.00\Deliverables\2018 PCS Annual GW Mon. and CA Report\Table\[GW_Samples_Summary_Table_PGS-1.xlsx]GW Summary

Table 2. Groundwater Protection Standards - CCR Program - Assessment Monitoring
Prairie Creek Generating Station / SCS Engineers Project #25216074.18

Parameter Name	GPS	Source
Antimony, ug/L	6	MCL
Arsenic, ug/L	10	MCL
Barium, ug/L	2000	MCL
Beryllium, ug/L	4	MCL
Cadmium, ug/L	5	MCL
Chromium, ug/L	100	MCL
Cobalt, ug/L	6	40 CFR 257.95(h)(2)
Fluoride, mg/L	4	MCL
Lead, ug/L	15	40 CFR 257.95(h)(2)
Lithium, ug/L	40	40 CFR 257.95(h)(2)
Mercury, ug/L	2	MCL
Molybdenum, ug/L	100	40 CFR 257.95(h)(2)
Selenium, ug/L	50	MCL
Thallium, ug/L	2	MCL
Radium 226/228 Combined, pCi/L	5	MCL

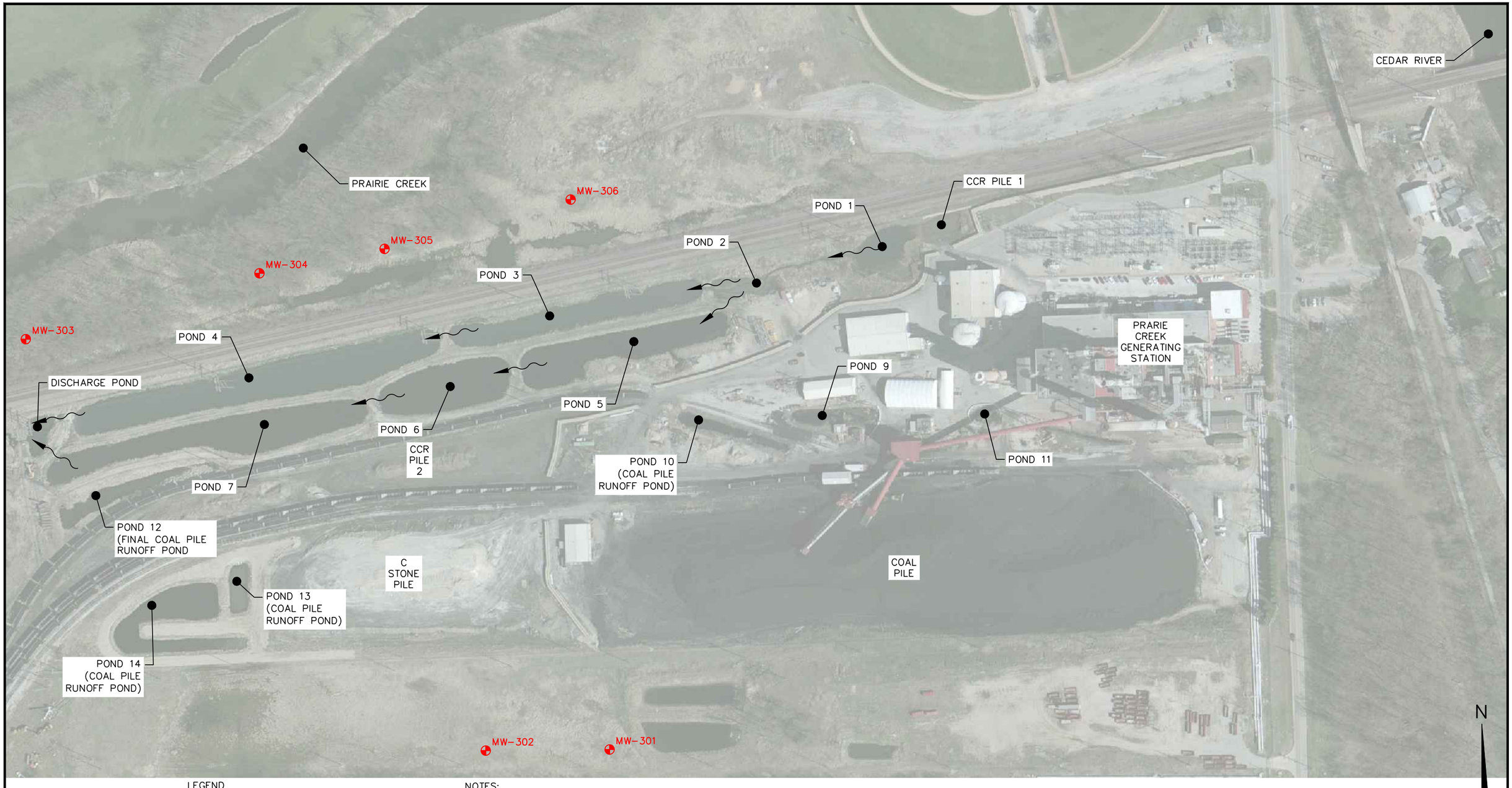
Abbreviations:
GPS = Groundwater Protection Standard
MCL = Maximum Contaminant Level established under 40 CFR 141.62 and 141.66

Created by: NDK, 1/8/2019
Checked by: MDB, 1/9/2019

I:\25216074.00\Deliverables\2018 PCS Annual GW Mon. and CA Report\Table\[Table 2_Groundwater Protection Standards.xlsx]Table

Figure 1

Site Plan and Monitoring Well Locations



LEGEND

FLOW DIRECTION BETWEEN CCR PONDS

CCR MONITORING WELL

NOTES:

1. THE PCS CCR UNITS WERE CLOSED DURING 2018. CCR WAS CONSOLIDATED AND CAPPED IN THE AREA OF FORMER PONDS 3-4 AND 5-7.

PROJECT NO.	25216074.18	DRAWN BY:	AHB/BSS
DRAWN:	01/26/17	CHECKED BY:	NK
REVISED:	01/10/19	APPROVED BY:	

ENGINEER: SCS ENGINEERS
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 1

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Appendix A

Laboratory Reports

A1 Assessment Monitoring Round 1, May 2018

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

May 25, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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CERTIFICATIONS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
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
Missouri Certification Number: 10090

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60269953001	**MW-301**	Water	05/08/18 12:00	05/09/18 08:40
60269953002	**MW-302**	Water	05/08/18 12:45	05/09/18 08:40
60269953003	**MW-303**	Water	05/08/18 08:30	05/09/18 08:40
60269953004	**MW-304**	Water	05/08/18 09:15	05/09/18 08:40
60269953005	**MW-305**	Water	05/08/18 10:55	05/09/18 08:40
60269953006	**MW-306**	Water	05/08/18 10:00	05/09/18 08:40
60269953007	**FIELD BLANK**	Water	05/08/18 12:30	05/09/18 08:40

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SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60269953001	**MW-301**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953002	**MW-302**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953003	**MW-303**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953004	**MW-304**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953005	**MW-305**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953006	**MW-306**	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	OL	3	PASI-K
60269953007	**FIELD BLANK**	EPA 6010	JGP	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

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

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-301 **Lab ID: 60269953001** Collected: 05/08/18 12:00 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 12:00		
Field pH	**7.51**	Std. Units	0.10	0.050	1		05/08/18 12:00		
Field Temperature	**10.5**	deg C	0.50	0.25	1		05/08/18 12:00		
Field Specific Conductance	**1060**	umhos/cm	1.0	1.0	1		05/08/18 12:00		
Field Oxidation Potential	**32.7**	mV			1		05/08/18 12:00		
Oxygen, Dissolved	**38.3**	mg/L			1		05/08/18 12:00	7782-44-7	
Turbidity	**0.72**	NTU	1.0	1.0	1		05/08/18 12:00		
Groundwater Elevation	**713.95**	feet			1		05/08/18 12:00		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**22.8J**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:07	7440-42-8	
Calcium	**155**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:07	7440-70-2	
Lithium	**13.6**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:07	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.041J**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 14:53	7440-36-0	
Arsenic	**0.54J**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 14:53	7440-38-2	
Barium	**282**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 14:53	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 14:53	7440-41-7	
Cadmium	**0.069J**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 14:53	7440-43-9	
Chromium	**4.1**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 14:53	7440-47-3	
Cobalt	**0.028J**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 14:53	7440-48-4	
Lead	**<0.033**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 14:53	7439-92-1	
Molybdenum	**0.35J**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 14:53	7439-98-7	
Selenium	**1.3**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 14:53	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 14:53	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 10:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**784**	mg/L	5.0	5.0	1		05/11/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		05/11/18 10:46		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**51.4**	mg/L	5.0	2.3	5		05/20/18 10:49	16887-00-6	
Fluoride	**0.20J**	mg/L	0.20	0.063	1		05/19/18 15:43	16984-48-8	
Sulfate	**117**	mg/L	10.0	2.4	10		05/20/18 11:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-302 **Lab ID: 60269953002** Collected: 05/08/18 12:45 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 12:45		
Field pH	**6.98**	Std. Units	0.10	0.050	1		05/08/18 12:45		
Field Temperature	**7.5**	deg C	0.50	0.25	1		05/08/18 12:45		
Field Specific Conductance	**708.6**	umhos/cm	1.0	1.0	1		05/08/18 12:45		
Field Oxidation Potential	**-10.9**	mV			1		05/08/18 12:45		
Oxygen, Dissolved	**3.1**	mg/L			1		05/08/18 12:45	7782-44-7	
Turbidity	**1.75**	NTU	1.0	1.0	1		05/08/18 12:45		
Groundwater Elevation	**713.53**	feet			1		05/08/18 12:45		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**22.4J**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:24	7440-42-8	
Calcium	**125**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:24	7440-70-2	
Lithium	**5.4J**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:24	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.048J**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:06	7440-36-0	
Arsenic	**0.79J**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:06	7440-38-2	
Barium	**213**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:06	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:06	7440-41-7	
Cadmium	**0.041J**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:06	7440-43-9	
Chromium	**1.2**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:06	7440-47-3	B
Cobalt	**3.2**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:06	7440-48-4	
Lead	**0.035J**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:06	7439-92-1	
Molybdenum	**0.99J**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:06	7439-98-7	
Selenium	**0.54J**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:06	7782-49-2	
Thallium	**0.039J**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 10:57	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**718**	mg/L	5.0	5.0	1		05/13/18 18:35		D6
9040 pH	Analytical Method: EPA 9040								
pH	**6.9**	Std. Units	0.10	0.10	1		05/11/18 10:47		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**69.4**	mg/L	5.0	2.3	5		05/20/18 11:19	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.063	1		05/19/18 16:57	16984-48-8	
Sulfate	**69.6**	mg/L	5.0	1.2	5		05/20/18 11:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-303 **Lab ID: 60269953003** Collected: 05/08/18 08:30 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 08:30		
Field pH	**7.23**	Std. Units	0.10	0.050	1		05/08/18 08:30		
Field Temperature	**9.5**	deg C	0.50	0.25	1		05/08/18 08:30		
Field Specific Conductance	**836**	umhos/cm	1.0	1.0	1		05/08/18 08:30		
Field Oxidation Potential	**-92.8**	mV			1		05/08/18 08:30		
Oxygen, Dissolved	**1.7**	mg/L			1		05/08/18 08:30	7782-44-7	
Turbidity	**1.08**	NTU	1.0	1.0	1		05/08/18 08:30		
Groundwater Elevation	**705.36**	feet			1		05/08/18 08:30		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**772**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:27	7440-42-8	
Calcium	**102**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:27	7440-70-2	
Lithium	**19.0**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:27	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.61J**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:11	7440-36-0	
Arsenic	**26.9**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:11	7440-38-2	
Barium	**87.5**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:11	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:11	7440-41-7	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:11	7440-43-9	
Chromium	**0.19J**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:11	7440-47-3	B
Cobalt	**0.31J**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:11	7440-48-4	
Lead	**0.078J**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:11	7439-92-1	
Molybdenum	**23.1**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:11	7439-98-7	
Selenium	**0.24J**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:11	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 10:59	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**580**	mg/L	5.0	5.0	1		05/13/18 18:35		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		05/11/18 10:49		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**26.1**	mg/L	2.0	0.92	2		05/20/18 11:34	16887-00-6	
Fluoride	**0.50**	mg/L	0.20	0.063	1		05/19/18 17:27	16984-48-8	
Sulfate	**146**	mg/L	10.0	2.4	10		05/20/18 11:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-304 **Lab ID: 60269953004** Collected: 05/08/18 09:15 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 09:15		
Field pH	**7.31**	Std. Units	0.10	0.050	1		05/08/18 09:15		
Field Temperature	**11.8**	deg C	0.50	0.25	1		05/08/18 09:15		
Field Specific Conductance	**514**	umhos/cm	1.0	1.0	1		05/08/18 09:15		
Field Oxidation Potential	**-151**	mV			1		05/08/18 09:15		
Oxygen, Dissolved	**0.10**	mg/L			1		05/08/18 09:15	7782-44-7	
Turbidity	**3.98**	NTU	1.0	1.0	1		05/08/18 09:15		
Groundwater Elevation	**705.54**	feet			1		05/08/18 09:15		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**384**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:30	7440-42-8	
Calcium	**73.5**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:30	7440-70-2	
Lithium	**10.8**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:30	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.3**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:15	7440-36-0	
Arsenic	**15.0**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:15	7440-38-2	
Barium	**95.0**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:15	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:15	7440-41-7	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:15	7440-43-9	
Chromium	**0.15J**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:15	7440-47-3	B
Cobalt	**0.57J**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:15	7440-48-4	
Lead	**0.045J**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:15	7439-92-1	
Molybdenum	**19.8**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:15	7439-98-7	
Selenium	**0.12J**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:15	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:15	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 11:01	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**423**	mg/L	5.0	5.0	1		05/13/18 18:35		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		05/11/18 10:50		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**24.6**	mg/L	2.0	0.92	2		05/20/18 12:37	16887-00-6	
Fluoride	**0.58**	mg/L	0.20	0.063	1		05/19/18 17:42	16984-48-8	
Sulfate	**77.3**	mg/L	5.0	1.2	5		05/20/18 12:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-305 **Lab ID: 60269953005** Collected: 05/08/18 10:55 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 10:55		
Field pH	**7.65**	Std. Units	0.10	0.050	1		05/08/18 10:55		
Field Temperature	**10.9**	deg C	0.50	0.25	1		05/08/18 10:55		
Field Specific Conductance	**423.7**	umhos/cm	1.0	1.0	1		05/08/18 10:55		
Field Oxidation Potential	**-31.9**	mV			1		05/08/18 10:55		
Oxygen, Dissolved	**0.08**	mg/L			1		05/08/18 10:55	7782-44-7	
Turbidity	**0.65**	NTU	1.0	1.0	1		05/08/18 10:55		
Groundwater Elevation	**705.61**	feet			1		05/08/18 10:55		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**437**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:33	7440-42-8	
Calcium	**61.0**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:33	7440-70-2	
Lithium	**10.7**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:33	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.6**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:20	7440-36-0	
Arsenic	**14.3**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:20	7440-38-2	
Barium	**63.7**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:20	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:20	7440-41-7	
Cadmium	**0.032J**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:20	7440-43-9	
Chromium	**0.18J**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:20	7440-47-3	B
Cobalt	**0.42J**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:20	7440-48-4	
Lead	**<0.033**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:20	7439-92-1	
Molybdenum	**27.9**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:20	7439-98-7	
Selenium	**0.22J**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:20	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:20	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 11:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**348**	mg/L	5.0	5.0	1		05/13/18 18:35		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		05/11/18 10:52		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.9**	mg/L	1.0	0.46	1		05/19/18 17:57	16887-00-6	
Fluoride	**0.61**	mg/L	0.20	0.063	1		05/19/18 17:57	16984-48-8	
Sulfate	**61.9**	mg/L	5.0	1.2	5		05/20/18 13:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: MW-306 **Lab ID: 60269953006** Collected: 05/08/18 10:00 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/08/18 10:00		
Field pH	**7.47**	Std. Units	0.10	0.050	1		05/08/18 10:00		
Field Temperature	**13.6**	deg C	0.50	0.25	1		05/08/18 10:00		
Field Specific Conductance	**663**	umhos/cm	1.0	1.0	1		05/08/18 10:00		
Field Oxidation Potential	**-94**	mV			1		05/08/18 10:00		
Oxygen, Dissolved	**3**	mg/L			1		05/08/18 10:00	7782-44-7	
Turbidity	**0.62**	NTU	1.0	1.0	1		05/08/18 10:00		
Groundwater Elevation	**705.51**	feet			1		05/08/18 10:00		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2930**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:36	7440-42-8	
Calcium	**56.2**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:36	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:36	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.026**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:37	7440-36-0	
Arsenic	**0.58J**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:37	7440-38-2	
Barium	**54.4**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:37	7440-39-3	
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:37	7440-41-7	
Cadmium	**0.043J**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:37	7440-43-9	
Chromium	**0.21J**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:37	7440-47-3	B
Cobalt	**0.071J**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:37	7440-48-4	
Lead	**0.075J**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:37	7439-92-1	
Molybdenum	**271**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:37	7439-98-7	
Selenium	**<0.086**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:37	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 11:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**454**	mg/L	5.0	5.0	1		05/13/18 18:35		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		05/11/18 10:54		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.6**	mg/L	2.0	0.92	2		05/20/18 13:22	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.063	1		05/19/18 18:12	16984-48-8	
Sulfate	**151**	mg/L	10.0	2.4	10		05/20/18 13:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Sample: FIELD BLANK **Lab ID: 60269953007** Collected: 05/08/18 12:30 Received: 05/09/18 08:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**<12.5**	ug/L	100	12.5	1	05/09/18 16:50	05/11/18 18:15	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	05/09/18 16:50	05/11/18 18:15	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	05/09/18 16:50	05/11/18 18:15	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.026**	ug/L	1.0	0.026	1	05/23/18 09:25	05/24/18 15:33	7440-36-0	
Arsenic	**<0.052**	ug/L	1.0	0.052	1	05/23/18 09:25	05/24/18 15:33	7440-38-2	
Barium	**0.14J**	ug/L	1.0	0.095	1	05/23/18 09:25	05/24/18 15:33	7440-39-3	B
Beryllium	**<0.012**	ug/L	0.50	0.012	1	05/23/18 09:25	05/24/18 15:33	7440-41-7	
Cadmium	**<0.018**	ug/L	0.50	0.018	1	05/23/18 09:25	05/24/18 15:33	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.054	1	05/23/18 09:25	05/24/18 15:33	7440-47-3	B
Cobalt	**<0.014**	ug/L	1.0	0.014	1	05/23/18 09:25	05/24/18 15:33	7440-48-4	
Lead	**<0.033**	ug/L	1.0	0.033	1	05/23/18 09:25	05/24/18 15:33	7439-92-1	
Molybdenum	**<0.058**	ug/L	1.0	0.058	1	05/23/18 09:25	05/24/18 15:33	7439-98-7	
Selenium	**<0.086**	ug/L	1.0	0.086	1	05/23/18 09:25	05/24/18 15:33	7782-49-2	
Thallium	**<0.036**	ug/L	1.0	0.036	1	05/23/18 09:25	05/24/18 15:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	05/16/18 15:30	05/17/18 11:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		05/13/18 18:35		
9040 pH	Analytical Method: EPA 9040								
pH	**6.6**	Std. Units	0.10	0.10	1		05/11/18 10:56		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.46**	mg/L	1.0	0.46	1		05/19/18 18:27	16887-00-6	
Fluoride	**<0.063**	mg/L	0.20	0.063	1		05/19/18 18:27	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		05/19/18 18:27	14808-79-8	CH

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 526104 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

METHOD BLANK: 2154261 Matrix: Water
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	05/17/18 10:46	

LABORATORY CONTROL SAMPLE: 2154262

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: 2154263 2154264

Parameter	Units	60269953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.090	5	5	4.7	4.8	94	95	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 525177 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

METHOD BLANK: 2150176 Matrix: Water
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	05/11/18 18:04	
Calcium	mg/L	<0.054	0.20	0.054	05/11/18 18:04	
Lithium	ug/L	<4.6	10.0	4.6	05/11/18 18:04	

LABORATORY CONTROL SAMPLE: 2150177

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	973	97	80-120	
Calcium	mg/L	10	10.0	100	80-120	
Lithium	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2150178 2150179

Parameter	Units	60269953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	22.8J	1000	1000	1000	1020	98	99	75-125	1	20	
Calcium	mg/L	155	10	10	165	164	98	87	75-125	1	20	
Lithium	ug/L	13.6	1000	1000	1010	1020	100	101	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 526941 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

METHOD BLANK: 2158346 Matrix: Water
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.026	1.0	0.026	05/24/18 14:40	
Arsenic	ug/L	<0.052	1.0	0.052	05/24/18 14:40	
Barium	ug/L	0.20J	1.0	0.095	05/24/18 14:40	
Beryllium	ug/L	<0.012	0.50	0.012	05/24/18 14:40	
Cadmium	ug/L	<0.018	0.50	0.018	05/24/18 14:40	
Chromium	ug/L	0.14J	1.0	0.054	05/24/18 14:40	
Cobalt	ug/L	<0.014	1.0	0.014	05/24/18 14:40	
Lead	ug/L	<0.033	1.0	0.033	05/24/18 14:40	
Molybdenum	ug/L	<0.058	1.0	0.058	05/24/18 14:40	
Selenium	ug/L	<0.086	1.0	0.086	05/24/18 14:40	
Thallium	ug/L	<0.036	1.0	0.036	05/24/18 14:40	

LABORATORY CONTROL SAMPLE: 2158347

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.4	99	80-120	
Arsenic	ug/L	40	39.3	98	80-120	
Barium	ug/L	40	39.0	98	80-120	
Beryllium	ug/L	40	40.2	101	80-120	
Cadmium	ug/L	40	40.3	101	80-120	
Chromium	ug/L	40	40.1	100	80-120	
Cobalt	ug/L	40	38.8	97	80-120	
Lead	ug/L	40	38.5	96	80-120	
Molybdenum	ug/L	40	39.5	99	80-120	
Selenium	ug/L	40	39.5	99	80-120	
Thallium	ug/L	40	36.9	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2158348 2158349

Parameter	Units	60269953002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.048J	40	40	39.2	39.6	98	99	75-125	1	20	
Arsenic	ug/L	0.79J	40	40	39.5	39.9	97	98	75-125	1	20	
Barium	ug/L	213	40	40	257	258	110	113	75-125	1	20	
Beryllium	ug/L	<0.012	40	40	39.4	39.0	98	98	75-125	1	20	
Cadmium	ug/L	0.041J	40	40	38.3	38.8	96	97	75-125	1	20	
Chromium	ug/L	1.2	40	40	40.2	40.2	98	98	75-125	0	20	
Cobalt	ug/L	3.2	40	40	40.6	40.8	94	94	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2158348 2158349

Parameter	Units	60269953002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.035J	40	40	40.4	40.5	101	101	75-125	0	20	
Molybdenum	ug/L	0.99J	40	40	42.3	41.7	103	102	75-125	2	20	
Selenium	ug/L	0.54J	40	40	37.0	37.4	91	92	75-125	1	20	
Thallium	ug/L	0.039J	40	40	39.1	39.3	98	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 525314 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60269953001

METHOD BLANK: 2150944 Matrix: Water
Associated Lab Samples: 60269953001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/11/18 14:00	

LABORATORY CONTROL SAMPLE: 2150945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2150946

Parameter	Units	60269829003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	391	418	7	10	

SAMPLE DUPLICATE: 2150947

Parameter	Units	60269829008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	469	473	1	10	

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 525584 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

METHOD BLANK: 2152569 Matrix: Water
Associated Lab Samples: 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/13/18 18:35	

LABORATORY CONTROL SAMPLE: 2152570

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

SAMPLE DUPLICATE: 2152571

Parameter	Units	60269953002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	718	643	11	10	D6

SAMPLE DUPLICATE: 2152572

Parameter	Units	60269957004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	580	611	5	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 525365 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

SAMPLE DUPLICATE: 2151154

Parameter	Units	60269494001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	2.4	2.4	0	10	H6

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 526459 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

METHOD BLANK: 2156189 Matrix: Water
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006, 60269953007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	05/19/18 15:13	
Fluoride	mg/L	<0.063	0.20	0.063	05/19/18 15:13	
Sulfate	mg/L	<0.24	1.0	0.24	05/19/18 15:13	

LABORATORY CONTROL SAMPLE: 2156190

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	80-120	
Fluoride	mg/L	2.5	2.5	99	80-120	
Sulfate	mg/L	5	5.2	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2156191 2156192

Parameter	Units	60269953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.20J	2.5	2.5	2.7	2.8	101	103	80-120	2	15	

SAMPLE DUPLICATE: 2156193

Parameter	Units	60269953002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.23	0.23	1	15	

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QUALITY CONTROL DATA

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

QC Batch: 526490 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006

METHOD BLANK: 2156666 Matrix: Water
Associated Lab Samples: 60269953001, 60269953002, 60269953003, 60269953004, 60269953005, 60269953006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	05/20/18 09:00	
Sulfate	mg/L	<0.24	1.0	0.24	05/20/18 09:00	

LABORATORY CONTROL SAMPLE: 2156667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	80-120	
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2156668 2156669

Parameter	Units	60270064002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	553	250	250	804	803	101	100	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

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.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60269953001	**MW-301**		525951		
60269953002	**MW-302**		525951		
60269953003	**MW-303**		525951		
60269953004	**MW-304**		525951		
60269953005	**MW-305**		525951		
60269953006	**MW-306**		525951		
60269953001	**MW-301**	EPA 3010	525177	EPA 6010	525221
60269953002	**MW-302**	EPA 3010	525177	EPA 6010	525221
60269953003	**MW-303**	EPA 3010	525177	EPA 6010	525221
60269953004	**MW-304**	EPA 3010	525177	EPA 6010	525221
60269953005	**MW-305**	EPA 3010	525177	EPA 6010	525221
60269953006	**MW-306**	EPA 3010	525177	EPA 6010	525221
60269953007	**FIELD BLANK**	EPA 3010	525177	EPA 6010	525221
60269953001	**MW-301**	EPA 3010	526941	EPA 6020	526987
60269953002	**MW-302**	EPA 3010	526941	EPA 6020	526987
60269953003	**MW-303**	EPA 3010	526941	EPA 6020	526987
60269953004	**MW-304**	EPA 3010	526941	EPA 6020	526987
60269953005	**MW-305**	EPA 3010	526941	EPA 6020	526987
60269953006	**MW-306**	EPA 3010	526941	EPA 6020	526987
60269953007	**FIELD BLANK**	EPA 3010	526941	EPA 6020	526987
60269953001	**MW-301**	EPA 7470	526104	EPA 7470	526112
60269953002	**MW-302**	EPA 7470	526104	EPA 7470	526112
60269953003	**MW-303**	EPA 7470	526104	EPA 7470	526112
60269953004	**MW-304**	EPA 7470	526104	EPA 7470	526112
60269953005	**MW-305**	EPA 7470	526104	EPA 7470	526112
60269953006	**MW-306**	EPA 7470	526104	EPA 7470	526112
60269953007	**FIELD BLANK**	EPA 7470	526104	EPA 7470	526112
60269953001	**MW-301**	SM 2540C	525314		
60269953002	**MW-302**	SM 2540C	525584		
60269953003	**MW-303**	SM 2540C	525584		
60269953004	**MW-304**	SM 2540C	525584		
60269953005	**MW-305**	SM 2540C	525584		
60269953006	**MW-306**	SM 2540C	525584		
60269953007	**FIELD BLANK**	SM 2540C	525584		
60269953001	**MW-301**	EPA 9040	525365		
60269953002	**MW-302**	EPA 9040	525365		
60269953003	**MW-303**	EPA 9040	525365		
60269953004	**MW-304**	EPA 9040	525365		
60269953005	**MW-305**	EPA 9040	525365		
60269953006	**MW-306**	EPA 9040	525365		
60269953007	**FIELD BLANK**	EPA 9040	525365		
60269953001	**MW-301**	EPA 9056	526459		
60269953001	**MW-301**	EPA 9056	526490		
60269953002	**MW-302**	EPA 9056	526459		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60269953002	**MW-302**	EPA 9056	526490		
60269953003	**MW-303**	EPA 9056	526459		
60269953003	**MW-303**	EPA 9056	526490		
60269953004	**MW-304**	EPA 9056	526459		
60269953004	**MW-304**	EPA 9056	526490		
60269953005	**MW-305**	EPA 9056	526459		
60269953005	**MW-305**	EPA 9056	526490		
60269953006	**MW-306**	EPA 9056	526459		
60269953006	**MW-306**	EPA 9056	526490		
60269953007	**FIELD BLANK**	EPA 9056	526459		

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Sample Condition Upon Receipt

WO# : 60269953

60269953

Client Name: SCS Engineers

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

Tracking #: 4122 4945 6380 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-297 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.5 **Corr. Factor** +0.9 **Corrected** 2.4

Date and initials of person examining contents: PE 5/9

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	pH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒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: 5-9-18

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		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
	Madison WI 53718			Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	IPL Prairie Creek	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216074.18	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Hg	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
	Requested Analysis Filtered (Y/N)																	N	N	N											
1	MW-301	WT	G	xxx	xxx	5/8/18	1200		3	1		2						X	X	X	X	X	X	BP2U	2BR3N						a01
2	MW-302	WT	G	xxx	xxx		1245		3	1		2						X	X	X	X	X	X								a02
3	MW-303	WT	G	xxx	xxx		0830		3	1		2						X	X	X	X	X	X								a03
4	MW-304	WT	G	xxx	xxx		0915		3	1		2						X	X	X	X	X	X								a04
5	MW-305	WT	G	xxx	xxx		1055		3	1		2						X	X	X	X	X	X								a05
6	MW-306	WT	G	xxx	xxx		1000		3	1		2						X	X	X	X	X	X								a06
7	FIELD BLANK	WT	G	xxx	xxx		1230		3	1		2						X	X	X	X	X	X								a07
8																															
9																															
10																															
11																															
12																															

6069953

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219		5/8/18	1345		5/9/18	0840	2.4	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Kyle Kramer					
SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YY): 5/8/18				

*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.

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

June 04, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60269964001	**MW-301**	Water	05/08/18 12:00	05/09/18 08:40
60269964002	**MW-302**	Water	05/08/18 12:45	05/09/18 08:40
60269964003	**MW-303**	Water	05/08/18 08:30	05/09/18 08:40
60269964004	**MW-304**	Water	05/08/18 09:15	05/09/18 08:40
60269964005	**MW-305**	Water	05/08/18 10:55	05/09/18 08:40
60269964006	**MW-306**	Water	05/08/18 10:00	05/09/18 08:40
60269964007	**FIELD BLANK**	Water	05/08/18 12:30	05/09/18 08:40

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SAMPLE ANALYTE COUNT

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60269964001	**MW-301**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964002	**MW-302**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964003	**MW-303**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964004	**MW-304**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964005	**MW-305**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964006	**MW-306**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60269964007	**FIELD BLANK**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-301 **Lab ID: 60269964001** Collected: 05/08/18 12:00 Received: 05/09/18 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	**0.484 ± 0.412 (0.579) C:NA T:90%**	pCi/L	05/31/18 11:07	13982-63-3	
Radium-228	EPA 904.0	**0.516 ± 0.445 (0.909) C:79% T:84%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**1.000 ± 0.857 (1.49)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-302 **Lab ID: 60269964002** Collected: 05/08/18 12:45 Received: 05/09/18 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	**0.507 ± 0.459 (0.677) C:NA T:93%**	pCi/L	05/31/18 11:07	13982-63-3	
Radium-228	EPA 904.0	**0.192 ± 0.430 (0.949) C:78% T:81%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**0.699 ± 0.889 (1.63)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-303 **Lab ID: 60269964003** Collected: 05/08/18 08:30 Received: 05/09/18 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	**0.242 ± 0.412 (0.727) C:NA T:85%**	pCi/L	05/31/18 11:46	13982-63-3	
Radium-228	EPA 904.0	**1.02 ± 0.481 (0.836) C:80% T:79%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**1.26 ± 0.893 (1.56)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-304 **Lab ID: 60269964004** Collected: 05/08/18 09:15 Received: 05/09/18 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	**0.589 ± 0.437 (0.547) C:NA T:86%**	pCi/L	05/31/18 11:46	13982-63-3	
Radium-228	EPA 904.0	**0.666 ± 0.485 (0.966) C:80% T:80%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**1.26 ± 0.922 (1.51)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-305 **Lab ID: 60269964005** Collected: 05/08/18 10:55 Received: 05/09/18 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	**0.108 ± 0.259 (0.500) C:NA T:92%**	pCi/L	05/31/18 11:46	13982-63-3	
Radium-228	EPA 904.0	**1.96 ± 0.641 (0.932) C:84% T:81%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**2.07 ± 0.900 (1.43)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: MW-306 **Lab ID: 60269964006** Collected: 05/08/18 10:00 Received: 05/09/18 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	**0.394 ± 0.334 (0.415) C:NA T:87%**	pCi/L	05/31/18 11:46	13982-63-3	
Radium-228	EPA 904.0	**0.251 ± 0.450 (0.982) C:83% T:81%**	pCi/L	05/30/18 12:22	15262-20-1	
Total Radium	Total Radium Calculation	**0.645 ± 0.784 (1.40)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Sample: FIELD BLANK **Lab ID: 60269964007** Collected: 05/08/18 12:30 Received: 05/09/18 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	**0.0611 ± 0.317 (0.658) C:NA T:81%**	pCi/L	05/31/18 11:46	13982-63-3	
Radium-228	EPA 904.0	**-0.403 ± 0.370 (0.959) C:84% T:76%**	pCi/L	05/30/18 15:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.0611 ± 0.687 (1.62)**	pCi/L	06/04/18 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

QC Batch: 298302 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60269964001, 60269964002, 60269964003, 60269964004, 60269964005, 60269964006, 60269964007

METHOD BLANK: 1460475 Matrix: Water
Associated Lab Samples: 60269964001, 60269964002, 60269964003, 60269964004, 60269964005, 60269964006, 60269964007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.430 ± 0.402 (0.570) C:NA T:83%	pCi/L	05/31/18 10:48	

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/25216074.18
Pace Project No.: 60269964

QC Batch: 298322 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60269964001, 60269964002, 60269964003, 60269964004, 60269964005, 60269964006, 60269964007

METHOD BLANK: 1460508 Matrix: Water
Associated Lab Samples: 60269964001, 60269964002, 60269964003, 60269964004, 60269964005, 60269964006, 60269964007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.795 ± 0.419 (0.740) C:82% T:72%	pCi/L	05/30/18 12:20	

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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QUALIFIERS

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

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

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL Prairie Creek/25216074.18
Pace Project No.: 60269964

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60269964001	**MW-301**	EPA 903.1	298302		
60269964002	**MW-302**	EPA 903.1	298302		
60269964003	**MW-303**	EPA 903.1	298302		
60269964004	**MW-304**	EPA 903.1	298302		
60269964005	**MW-305**	EPA 903.1	298302		
60269964006	**MW-306**	EPA 903.1	298302		
60269964007	**FIELD BLANK**	EPA 903.1	298302		
60269964001	**MW-301**	EPA 904.0	298322		
60269964002	**MW-302**	EPA 904.0	298322		
60269964003	**MW-303**	EPA 904.0	298322		
60269964004	**MW-304**	EPA 904.0	298322		
60269964005	**MW-305**	EPA 904.0	298322		
60269964006	**MW-306**	EPA 904.0	298322		
60269964007	**FIELD BLANK**	EPA 904.0	298322		
60269964001	**MW-301**	Total Radium Calculation	300615		
60269964002	**MW-302**	Total Radium Calculation	300615		
60269964003	**MW-303**	Total Radium Calculation	300615		
60269964004	**MW-304**	Total Radium Calculation	300615		
60269964005	**MW-305**	Total Radium Calculation	300615		
60269964006	**MW-306**	Total Radium Calculation	300615		
60269964007	**FIELD BLANK**	Total Radium Calculation	300615		

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Sample Condition Upon Receipt

WO# : 60269964

60269964

Client Name: SCS Engineers

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

Tracking #: 4122 4945 1965 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-297 **Type of Ice:** (Wet) Blue None

TG

Date and initials of person examining contents: AC 5/9

Cooler Temperature (°C): **As-read** 2.0 **Corr. Factor** +0.9 **Corrected** 2.9

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	Sub
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒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: _____ Date: 5.10.18

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		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
	Madison WI 53718			Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	IPL Prairie Creek	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216074.18	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	5/8/18	1200		2			2							X	X	X		002694969
2	MW-302	WT	G	xxx	xxx		1245		2			2							X	X	X		001
3	MW-303	WT	G	xxx	xxx		0830		2			2							X	X	X		002
4	MW-304	WT	G	xxx	xxx		0915		2			2							X	X	X		003
5	MW-305	WT	G	xxx	xxx		1055		2			2							X	X	X		004
6	MW-306	WT	G	xxx	xxx		1000		2			2							X	X	X		005
7	FIELD BLANK	WT	G	xxx	xxx		1230		2			2							X	X	X		006
8																							
9																							
10																							
11																							
12																							

Requested Analysis Filtered (Y/N)

2BPin

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219		5/8/18	1345		5/9/18	0810	2.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kyle Kramer

SIGNATURE of SAMPLER: _____ DATE Signed (MM/DD/YY): 5/5/18

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

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA

Workorder: 60269964 **Workorder Name:** IPL Prairie Creek/25216074.18

Owner Received Date: 5/9/2018 **Results Requested By:** 6/4/2018

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

Requested Analysis

WO# : 30252586

30252586

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3	903.1 Radium-226	904.0 Radium-228 & Total Radium	LAB USE ONLY
1	MW-301	PS	5/8/2018 12:00	60269964001	Water	2	X	X	001
2	MW-302	PS	5/8/2018 12:45	60269964002	Water	2	X	X	002
3	MW-303	PS	5/8/2018 08:30	60269964003	Water	2	X	X	003
4	MW-304	PS	5/8/2018 09:15	60269964004	Water	2	X	X	004
5	MW-305	PS	5/8/2018 10:55	60269964005	Water	2	X	X	005
6	MW-306	PS	5/8/2018 10:00	60269964006	Water	2	X	X	006
7	FIELD BLANK	PS	5/8/2018 12:30	60269964007	Water	2	X	X	007

Transfers	Released By	Date/Time	Received By	Date/Time
1	EBrockett / Pasi	5/10/18 1645	[signature]	5/11/18 1015
2				
3				

Comments

Cooler Temperature on Receipt ___ °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.*

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Pace Kansas

Project # 30252586

Label

LIMS Login

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

Tracking #: 4360 7274 8864

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

pH paper Lot# 100371

Date and Initials of person examining contents: BAM 5-11-18

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: -Includes date/time/ID Matrix: WT	✓			5.
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: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓ ✓			16. pH<2 Initial when completed: BAM Date/time of preservation: Lot # of added preservative:
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: BAM Date: 5-11-18

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.

A2 Assessment Monitoring Round 2, August 2018

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 24, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
9608 Loiret Blvd.
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CERTIFICATIONS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
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
Missouri Certification Number: 10090

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60277188001	**MW-301**	Water	08/06/18 16:36	08/09/18 08:45
60277188002	**MW-302**	Water	08/06/18 15:46	08/09/18 08:45
60277188003	**MW-303**	Water	08/06/18 11:56	08/09/18 08:45
60277188004	**MW-304**	Water	08/06/18 13:21	08/09/18 08:45
60277188005	**MW-305**	Water	08/06/18 14:06	08/09/18 08:45
60277188006	**MW-306**	Water	08/06/18 14:56	08/09/18 08:45
60277188007	**FIELD BLANK**	Water	08/06/18 16:50	08/09/18 08:45

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60277188001	**MW-301**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188002	**MW-302**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188003	**MW-303**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188004	**MW-304**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188005	**MW-305**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188006	**MW-306**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60277188007	**FIELD BLANK**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	9	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-301 **Lab ID: 60277188001** Collected: 08/06/18 16:36 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 16:36		
Collected Date	**08/06/2018**				1		08/06/18 16:36		
Collected Time	**1636**				1		08/06/18 16:36		
Field pH	**6.81**	Std. Units	0.10	0.050	1		08/06/18 16:36		
Field Temperature	**12.3**	deg C	0.50	0.25	1		08/06/18 16:36		
Field Specific Conductance	**1105**	umhos/cm	1.0	1.0	1		08/06/18 16:36		
Oxygen, Dissolved	**3.6**	mg/L			1		08/06/18 16:36	7782-44-7	
REDOX	**237**	mV			1		08/06/18 16:36		
Turbidity	**17.05**	NTU	1.0	1.0	1		08/06/18 16:36		
Groundwater Elevation	**714.30**	feet			1		08/06/18 16:36		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**30.9J**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:25	7440-42-8	
Calcium	**154**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:25	7440-70-2	
Lithium	**5.4J**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:25	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:49	7440-36-0	
Arsenic	**1.1**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:49	7440-38-2	B
Barium	**281**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 13:49	7440-39-3	M1
Cadmium	**0.096J**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 13:49	7440-43-9	B
Chromium	**5.8**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 13:49	7440-47-3	
Cobalt	**0.52J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:49	7440-48-4	B
Lead	**0.66J**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 13:49	7439-92-1	B
Molybdenum	**0.44J**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 13:49	7439-98-7	B
Selenium	**1.3**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 13:49	7782-49-2	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**747**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.1**	Std. Units	0.10	0.10	1		08/15/18 15:30		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**57.4**	mg/L	10.0	4.6	10		08/19/18 16:33	16887-00-6	
Fluoride	**0.16J**	mg/L	0.20	0.063	1		08/18/18 13:52	16984-48-8	
Sulfate	**113**	mg/L	10.0	2.4	10		08/19/18 16:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-302 **Lab ID: 60277188002** Collected: 08/06/18 15:46 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 15:46		
Collected Date	**08/06/2018**				1		08/06/18 15:46		
Collected Time	**1546**				1		08/06/18 15:46		
Field pH	**6.55**	Std. Units	0.10	0.050	1		08/06/18 15:46		
Field Temperature	**16.0**	deg C	0.50	0.25	1		08/06/18 15:46		
Field Specific Conductance	**786**	umhos/cm	1.0	1.0	1		08/06/18 15:46		
Oxygen, Dissolved	**1.7**	mg/L			1		08/06/18 15:46	7782-44-7	
REDOX	**61**	mV			1		08/06/18 15:46		
Turbidity	**8.95**	NTU	1.0	1.0	1		08/06/18 15:46		
Groundwater Elevation	**713.83**	feet			1		08/06/18 15:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**38.1J**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:27	7440-42-8	
Calcium	**106**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:27	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:27	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.17J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:54	7440-36-0	B
Arsenic	**9.0**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:54	7440-38-2	
Barium	**254**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 13:54	7440-39-3	
Cadmium	**0.084J**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 13:54	7440-43-9	B
Chromium	**4.4**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 13:54	7440-47-3	
Cobalt	**1.6**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:54	7440-48-4	B
Lead	**1.2**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 13:54	7439-92-1	B
Molybdenum	**0.78J**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 13:54	7439-98-7	B
Selenium	**1.4**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 13:54	7782-49-2	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**503**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**6.9**	Std. Units	0.10	0.10	1		08/15/18 15:29		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**33.6**	mg/L	5.0	2.3	5		08/19/18 17:16	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.063	1		08/18/18 15:03	16984-48-8	
Sulfate	**72.2**	mg/L	5.0	1.2	5		08/19/18 17:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-303 **Lab ID: 60277188003** Collected: 08/06/18 11:56 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 11:56		
Collected Date	**08/06/2018**				1		08/06/18 11:56		
Collected Time	**1156**				1		08/06/18 11:56		
Field pH	**7.20**	Std. Units	0.10	0.050	1		08/06/18 11:56		
Field Temperature	**16.0**	deg C	0.50	0.25	1		08/06/18 11:56		
Field Specific Conductance	**764**	umhos/cm	1.0	1.0	1		08/06/18 11:56		
Oxygen, Dissolved	**0.1**	mg/L			1		08/06/18 11:56	7782-44-7	
REDOX	**-126**	mV			1		08/06/18 11:56		
Turbidity	**4.99**	NTU	1.0	1.0	1		08/06/18 11:56		
Groundwater Elevation	**702.62**	feet			1		08/06/18 11:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**753**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:29	7440-42-8	
Calcium	**85.4**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:29	7440-70-2	
Lithium	**15.4**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:29	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.1**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:56	7440-36-0	B
Arsenic	**35.1**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:56	7440-38-2	
Barium	**82.7**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 13:56	7440-39-3	
Cadmium	**0.24J**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 13:56	7440-43-9	B
Chromium	**0.62J**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 13:56	7440-47-3	B
Cobalt	**0.66J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:56	7440-48-4	B
Lead	**0.48J**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 13:56	7439-92-1	B
Molybdenum	**20.7**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 13:56	7439-98-7	
Selenium	**0.46J**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 13:56	7782-49-2	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**475**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		08/15/18 15:23		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**20.2**	mg/L	2.0	0.92	2		08/19/18 18:12	16887-00-6	
Fluoride	**0.60**	mg/L	0.20	0.063	1		08/18/18 15:32	16984-48-8	
Sulfate	**83.3**	mg/L	10.0	2.4	10		08/19/18 18:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-304 **Lab ID: 60277188004** Collected: 08/06/18 13:21 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 13:21		
Collected Date	**08/06/2018**				1		08/06/18 13:21		
Collected Time	**1321**				1		08/06/18 13:21		
Field pH	**6.92**	Std. Units	0.10	0.050	1		08/06/18 13:21		
Field Temperature	**18.1**	deg C	0.50	0.25	1		08/06/18 13:21		
Field Specific Conductance	**934**	umhos/cm	1.0	1.0	1		08/06/18 13:21		
Oxygen, Dissolved	**0.2**	mg/L			1		08/06/18 13:21	7782-44-7	
REDOX	**-89**	mV			1		08/06/18 13:21		
Turbidity	**10.26**	NTU	1.0	1.0	1		08/06/18 13:21		
Groundwater Elevation	**702.62**	feet			1		08/06/18 13:21		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**841**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:31	7440-42-8	
Calcium	**93.0**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:31	7440-70-2	
Lithium	**6.9J**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:31	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.3**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:57	7440-36-0	B
Arsenic	**12.3**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:57	7440-38-2	
Barium	**121**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 13:57	7440-39-3	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 13:57	7440-43-9	
Chromium	**0.34J**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 13:57	7440-47-3	B
Cobalt	**1.1**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:57	7440-48-4	B
Lead	**0.24J**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 13:57	7439-92-1	B
Molybdenum	**25.4**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 13:57	7439-98-7	
Selenium	**0.23J**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 13:57	7782-49-2	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**630**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		08/15/18 15:25		
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**36.6**	mg/L	5.0	2.3	5		08/19/18 18:41	16887-00-6	
Fluoride	**0.55**	mg/L	0.20	0.063	1		08/18/18 15:46	16984-48-8	
Sulfate	**193**	mg/L	20.0	4.7	20		08/19/18 18:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-305 **Lab ID: 60277188005** Collected: 08/06/18 14:06 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 14:06		
Collected Date	**08/06/2018**				1		08/06/18 14:06		
Collected Time	**1406**				1		08/06/18 14:06		
Field pH	**7.12**	Std. Units	0.10	0.050	1		08/06/18 14:06		
Field Temperature	**18.5**	deg C	0.50	0.25	1		08/06/18 14:06		
Field Specific Conductance	**679**	umhos/cm	1.0	1.0	1		08/06/18 14:06		
Oxygen, Dissolved	**0.19**	mg/L			1		08/06/18 14:06	7782-44-7	
REDOX	**-80**	mV			1		08/06/18 14:06		
Turbidity	**3.43**	NTU	1.0	1.0	1		08/06/18 14:06		
Groundwater Elevation	**702.56**	feet			1		08/06/18 14:06		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**589**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:33	7440-42-8	
Calcium	**71.1**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:33	7440-70-2	
Lithium	**9.5J**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:33	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.6**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:59	7440-36-0	B
Arsenic	**13.0**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:59	7440-38-2	
Barium	**90.3**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 13:59	7440-39-3	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 13:59	7440-43-9	
Chromium	**0.28J**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 13:59	7440-47-3	B
Cobalt	**0.64J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 13:59	7440-48-4	B
Lead	**0.42J**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 13:59	7439-92-1	B
Molybdenum	**29.0**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 13:59	7439-98-7	
Selenium	**0.24J**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 13:59	7782-49-2	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**434**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		08/15/18 15:26		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.9**	mg/L	1.0	0.46	1		08/18/18 16:00	16887-00-6	
Fluoride	**0.62**	mg/L	0.20	0.063	1		08/18/18 16:00	16984-48-8	
Sulfate	**98.2**	mg/L	10.0	2.4	10		08/19/18 19:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: MW-306 **Lab ID: 60277188006** Collected: 08/06/18 14:56 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/06/18 14:56		
Collected Date	**08/06/2018**				1		08/06/18 14:56		
Collected Time	**1456**				1		08/06/18 14:56		
Field pH	**7.45**	Std. Units	0.10	0.050	1		08/06/18 14:56		
Field Temperature	**16.4**	deg C	0.50	0.25	1		08/06/18 14:56		
Field Specific Conductance	**731**	umhos/cm	1.0	1.0	1		08/06/18 14:56		
Oxygen, Dissolved	**1.4**	mg/L			1		08/06/18 14:56	7782-44-7	
REDOX	**-81**	mV			1		08/06/18 14:56		
Turbidity	**14.59**	NTU	1.0	1.0	1		08/06/18 14:56		
Groundwater Elevation	**702.68**	feet			1		08/06/18 14:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2770**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:36	7440-42-8	
Calcium	**58.7**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:36	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:36	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:06	7440-36-0	
Arsenic	**0.70J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:06	7440-38-2	B
Barium	**59.3**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 14:06	7440-39-3	
Cadmium	**0.085J**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 14:06	7440-43-9	B
Chromium	**0.55J**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 14:06	7440-47-3	B
Cobalt	**0.43J**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:06	7440-48-4	B
Lead	**1.0**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 14:06	7439-92-1	B
Molybdenum	**234**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 14:06	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 14:06	7782-49-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**506**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		08/15/18 15:27		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.9**	mg/L	2.0	0.92	2		08/19/18 19:23	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.063	1		08/18/18 16:14	16984-48-8	
Sulfate	**195**	mg/L	20.0	4.7	20		08/19/18 19:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Sample: FIELD BLANK **Lab ID: 60277188007** Collected: 08/06/18 16:50 Received: 08/09/18 08:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**13.4J**	ug/L	100	12.5	1	08/13/18 16:31	08/16/18 12:38	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	08/13/18 16:31	08/16/18 12:38	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/13/18 16:31	08/16/18 12:38	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:01	7440-36-0	
Arsenic	**<0.15**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:01	7440-38-2	
Barium	**<0.34**	ug/L	1.0	0.34	1	08/13/18 16:31	08/16/18 14:01	7440-39-3	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	08/13/18 16:31	08/16/18 14:01	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	08/13/18 16:31	08/16/18 14:01	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	08/13/18 16:31	08/16/18 14:01	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	08/13/18 16:31	08/16/18 14:01	7439-92-1	
Molybdenum	**<0.13**	ug/L	1.0	0.13	1	08/13/18 16:31	08/16/18 14:01	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	08/13/18 16:31	08/16/18 14:01	7782-49-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**8.0**	mg/L	5.0	5.0	1		08/13/18 14:00		
9040 pH	Analytical Method: EPA 9040								
pH	**5.6**	Std. Units	0.10	0.10	1		08/15/18 15:32		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.46**	mg/L	1.0	0.46	1		08/18/18 16:29	16887-00-6	
Fluoride	**<0.063**	mg/L	0.20	0.063	1		08/18/18 16:29	16984-48-8	
Sulfate	**0.51J**	mg/L	1.0	0.24	1		08/18/18 16:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 539154 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

METHOD BLANK: 2209025 Matrix: Water
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	08/16/18 12:20	
Calcium	mg/L	<0.054	0.20	0.054	08/16/18 12:20	
Lithium	ug/L	<4.6	10.0	4.6	08/16/18 12:20	

LABORATORY CONTROL SAMPLE: 2209026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	985	98	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	ug/L	1000	959	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2209027 2209028

Parameter	Units	60277357001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	10700	1000	1000	12400	11300	172	60	75-125	9	20	M1
Calcium	mg/L	643000 ug/L	10	10	682	668	382	251	75-125	2	20	M1
Lithium	ug/L	242	1000	1000	1230	1240	99	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 539144 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

METHOD BLANK: 2208997 Matrix: Water
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	0.21J	1.0	0.15	08/16/18 13:45	
Arsenic	ug/L	0.19J	1.0	0.15	08/16/18 13:45	
Barium	ug/L	<0.34	1.0	0.34	08/16/18 13:45	
Cadmium	ug/L	0.11J	0.50	0.070	08/16/18 13:45	
Chromium	ug/L	0.33J	1.0	0.19	08/16/18 13:45	
Cobalt	ug/L	0.21J	1.0	0.15	08/16/18 13:45	
Lead	ug/L	0.22J	1.0	0.12	08/16/18 13:45	
Molybdenum	ug/L	<0.13	1.0	0.13	08/17/18 10:13	
Selenium	ug/L	0.20J	1.0	0.16	08/16/18 13:45	

LABORATORY CONTROL SAMPLE: 2208998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.8	97	80-120	
Arsenic	ug/L	40	39.6	99	80-120	
Barium	ug/L	40	38.1	95	80-120	
Cadmium	ug/L	40	38.8	97	80-120	
Chromium	ug/L	40	39.6	99	80-120	
Cobalt	ug/L	40	38.0	95	80-120	
Lead	ug/L	40	38.7	97	80-120	
Molybdenum	ug/L	40	39.4	99	80-120	
Selenium	ug/L	40	37.8	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2208999 2209000

Parameter	Units	60277188001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.15	40	40	35.6	37.6	89	94	75-125	5	20	
Arsenic	ug/L	1.1	40	40	38.1	40.0	92	97	75-125	5	20	
Barium	ug/L	281	40	40	306	323	62	105	75-125	5	20	M1
Cadmium	ug/L	0.096J	40	40	35.3	37.3	88	93	75-125	5	20	
Chromium	ug/L	5.8	40	40	40.9	43.1	88	93	75-125	5	20	
Cobalt	ug/L	0.52J	40	40	34.7	36.5	85	90	75-125	5	20	
Lead	ug/L	0.66J	40	40	38.3	40.1	94	99	75-125	4	20	
Molybdenum	ug/L	0.44J	40	40	40.4	41.9	100	104	75-125	4	20	
Selenium	ug/L	1.3	40	40	36.3	37.9	87	91	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 538993 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

METHOD BLANK: 2208621 Matrix: Water
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	08/13/18 14:00	

LABORATORY CONTROL SAMPLE: 2208622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	997	100	80-120	

SAMPLE DUPLICATE: 2208623

Parameter	Units	60276986001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	338	334	1	10	

SAMPLE DUPLICATE: 2208624

Parameter	Units	60277217002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	563	559	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 539571 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

SAMPLE DUPLICATE: 2210605

Parameter	Units	60277189005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	5.5	5.4	3	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 540163 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

METHOD BLANK: 2213328 Matrix: Water
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006, 60277188007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	08/18/18 13:23	
Fluoride	mg/L	<0.063	0.20	0.063	08/18/18 13:23	
Sulfate	mg/L	<0.24	1.0	0.24	08/18/18 13:23	

LABORATORY CONTROL SAMPLE: 2213329

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	101	80-120	
Sulfate	mg/L	5	4.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2213330 2213331

Parameter	Units	60277188001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.16J	2.5	2.5	2.8	2.9	106	108	80-120	2	15	

SAMPLE DUPLICATE: 2213332

Parameter	Units	60277188002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.17J	0.16J		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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

QC Batch: 540196 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006

METHOD BLANK: 2213638 Matrix: Water
Associated Lab Samples: 60277188001, 60277188002, 60277188003, 60277188004, 60277188005, 60277188006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	08/19/18 16:05	
Sulfate	mg/L	<0.24	1.0	0.24	08/19/18 16:05	

LABORATORY CONTROL SAMPLE: 2213639

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2213640 2213641

Parameter	Units	60277188001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	57.4	50	50	107	108	99	102	80-120	1	15	
Sulfate	mg/L	113	50	50	164	165	102	104	80-120	1	15	

SAMPLE DUPLICATE: 2213642

Parameter	Units	60277188002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	33.6	33.6	0	15	
Sulfate	mg/L	72.2	72.4	0	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
Pace Project No.: 60277188

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

WORKORDER QUALIFIERS

WO: 60277188

[1]	Rev.1 8/24/2018
[2]	Removed unneccessary qualifer on MW-301 for pH

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60277188001	**MW-301**		539083		
60277188002	**MW-302**		539083		
60277188003	**MW-303**		539083		
60277188004	**MW-304**		539083		
60277188005	**MW-305**		539083		
60277188006	**MW-306**		539083		
60277188001	**MW-301**	EPA 3010	539154	EPA 6010	539240
60277188002	**MW-302**	EPA 3010	539154	EPA 6010	539240
60277188003	**MW-303**	EPA 3010	539154	EPA 6010	539240
60277188004	**MW-304**	EPA 3010	539154	EPA 6010	539240
60277188005	**MW-305**	EPA 3010	539154	EPA 6010	539240
60277188006	**MW-306**	EPA 3010	539154	EPA 6010	539240
60277188007	**FIELD BLANK**	EPA 3010	539154	EPA 6010	539240
60277188001	**MW-301**	EPA 3010	539144	EPA 6020	539241
60277188002	**MW-302**	EPA 3010	539144	EPA 6020	539241
60277188003	**MW-303**	EPA 3010	539144	EPA 6020	539241
60277188004	**MW-304**	EPA 3010	539144	EPA 6020	539241
60277188005	**MW-305**	EPA 3010	539144	EPA 6020	539241
60277188006	**MW-306**	EPA 3010	539144	EPA 6020	539241
60277188007	**FIELD BLANK**	EPA 3010	539144	EPA 6020	539241
60277188001	**MW-301**	SM 2540C	538993		
60277188002	**MW-302**	SM 2540C	538993		
60277188003	**MW-303**	SM 2540C	538993		
60277188004	**MW-304**	SM 2540C	538993		
60277188005	**MW-305**	SM 2540C	538993		
60277188006	**MW-306**	SM 2540C	538993		
60277188007	**FIELD BLANK**	SM 2540C	538993		
60277188001	**MW-301**	EPA 9040	539571		
60277188002	**MW-302**	EPA 9040	539571		
60277188003	**MW-303**	EPA 9040	539571		
60277188004	**MW-304**	EPA 9040	539571		
60277188005	**MW-305**	EPA 9040	539571		
60277188006	**MW-306**	EPA 9040	539571		
60277188007	**FIELD BLANK**	EPA 9040	539571		
60277188001	**MW-301**	EPA 9056	540163		
60277188001	**MW-301**	EPA 9056	540196		
60277188002	**MW-302**	EPA 9056	540163		
60277188002	**MW-302**	EPA 9056	540196		
60277188003	**MW-303**	EPA 9056	540163		
60277188003	**MW-303**	EPA 9056	540196		
60277188004	**MW-304**	EPA 9056	540163		
60277188004	**MW-304**	EPA 9056	540196		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277188

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60277188005	**MW-305**	EPA 9056	540163		
60277188005	**MW-305**	EPA 9056	540196		
60277188006	**MW-306**	EPA 9056	540163		
60277188006	**MW-306**	EPA 9056	540196		
60277188007	**FIELD BLANK**	EPA 9056	540163		

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Sample Condition Upon Receipt

WO# : 60277188

60277188

Client Name: SCS

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

Tracking #: 4542 2779 1463 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-298 **Type of Ice:** Wet Blue None

HK

Date and initials of person examining contents: JDE 8-9-18

Cooler Temperature (°C): As-read -0.1 Corr. Factor +1.1 Corrected 1.0

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑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: REVIEWED By Hank Kapka at 1:30 pm, 8/10/18 Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	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:	25216074.18

Section C Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Hank Kapka 913-563-1404
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Section D Required Client Information

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Hg	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH									Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		N	N	N											6277188
1	MW-301	WT	G	xxx	xxx	8/6/18	1636	12.3	3	1		2						X	X	X	X	X	X	BP2U, BP3N (2)							001
2	MW-302	WT	G	xxx	xxx	8/6/18	1546	16.0	3	1		2						X	X	X	X	X	X								002
3	MW-303	WT	G	xxx	xxx	8/6/18	1156	16.0	3	1		2						X	X	X	X	X	X								003
4	MW-304	WT	G	xxx	xxx	8/6/18	1321	18.1	3	1		2						X	X	X	X	X	X								004
5	MW-305	WT	G	xxx	xxx	8/6/18	1406	18.5	3	1		2						X	X	X	X	X	X								005
6	MW-306	WT	G	xxx	xxx	8/6/18	1456	16.9	3	1		2						X	X	X	X	X	X								006
7	FIELD BLANK	WT	G	xxx	xxx	8/6/18	1450		3	1		2						X	X	X	X	X	X								007
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	SCS Engineers	8/8/18	1700	Pace	8-9-18	0845	1.0	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Starkel

SIGNATURE of SAMPLER: Gary Starkel

DATE Signed (MM/DD/YY): 8/8/18

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 28, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on August 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60277119001	**MW-301**	Water	08/06/18 16:36	08/09/18 08:45
60277119002	**MW-302**	Water	08/06/18 15:46	08/09/18 08:45
60277119003	**MW-303**	Water	08/06/18 11:56	08/09/18 08:45
60277119004	**MW-304**	Water	08/06/18 13:21	08/09/18 08:45
60277119005	**MW-305**	Water	08/06/18 14:06	08/09/18 08:45
60277119006	**MW-306**	Water	08/06/18 14:56	08/09/18 08:45
60277119007	**FIELD BLANK**	Water	08/06/18 16:50	08/09/18 08:45

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SAMPLE ANALYTE COUNT

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60277119001	**MW-301**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119002	**MW-302**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119003	**MW-303**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119004	**MW-304**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119005	**MW-305**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119006	**MW-306**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60277119007	**FIELD BLANK**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-301 **Lab ID: 60277119001** Collected: 08/06/18 16:36 Received: 08/09/18 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	**0.429 ± 0.322 (0.166) C:NA T:87%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**0.643 ± 0.516 (1.03) C:70% T:76%**	pCi/L	08/24/18 15:54	15262-20-1	
Total Radium	Total Radium Calculation	**1.07 ± 0.838 (1.20)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-302 **Lab ID: 60277119002** Collected: 08/06/18 15:46 Received: 08/09/18 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	**2.15 ± 0.875 (0.890) C:NA T:80%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**1.46 ± 0.611 (0.940) C:72% T:57%**	pCi/L	08/24/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	**3.61 ± 1.49 (1.83)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-303 **Lab ID: 60277119003** Collected: 08/06/18 11:56 Received: 08/09/18 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	**-0.126 ± 0.349 (0.825) C:NA T:86%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**0.847 ± 0.450 (0.791) C:71% T:78%**	pCi/L	08/24/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	**0.847 ± 0.799 (1.62)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-304 **Lab ID: 60277119004** Collected: 08/06/18 13:21 Received: 08/09/18 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	**0.271 ± 0.327 (0.499) C:NA T:75%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**0.497 ± 0.311 (0.562) C:73% T:85%**	pCi/L	08/24/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	**0.768 ± 0.638 (1.06)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-305 **Lab ID: 60277119005** Collected: 08/06/18 14:06 Received: 08/09/18 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	**0.172 ± 0.263 (0.423) C:NA T:89%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**1.21 ± 0.443 (0.597) C:74% T:78%**	pCi/L	08/24/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	**1.38 ± 0.706 (1.02)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: MW-306 **Lab ID: 60277119006** Collected: 08/06/18 14:56 Received: 08/09/18 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	**0.541 ± 0.506 (0.717) C:NA T:77%**	pCi/L	08/24/18 19:42	13982-63-3	
Radium-228	EPA 904.0	**0.669 ± 0.392 (0.715) C:74% T:79%**	pCi/L	08/24/18 14:40	15262-20-1	
Total Radium	Total Radium Calculation	**1.21 ± 0.898 (1.43)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Sample: FIELD BLANK **Lab ID: 60277119007** Collected: 08/06/18 16:50 Received: 08/09/18 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	**0.000 ± 0.283 (0.575) C:NA T:85%**	pCi/L	08/24/18 19:56	13982-63-3	
Radium-228	EPA 904.0	**0.716 ± 0.426 (0.785) C:72% T:82%**	pCi/L	08/24/18 11:35	15262-20-1	
Total Radium	Total Radium Calculation	**0.716 ± 0.709 (1.36)**	pCi/L	08/27/18 15:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

QC Batch: 309685 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60277119001, 60277119002, 60277119003, 60277119004, 60277119005, 60277119006, 60277119007

METHOD BLANK: 1513128 Matrix: Water
Associated Lab Samples: 60277119001, 60277119002, 60277119003, 60277119004, 60277119005, 60277119006, 60277119007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.561 ± 0.413 (0.798) C:72% T:72%	pCi/L	08/24/18 11:34	

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

QC Batch: 309677 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60277119001, 60277119002, 60277119003, 60277119004, 60277119005, 60277119006, 60277119007

METHOD BLANK: 1513119 Matrix: Water
Associated Lab Samples: 60277119001, 60277119002, 60277119003, 60277119004, 60277119005, 60277119006, 60277119007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.271 (0.437) C:NA T:92%	pCi/L	08/24/18 19:15	

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL PRAIRIE CREEK
Pace Project No.: 60277119

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60277119001	**MW-301**	EPA 903.1	309677		
60277119002	**MW-302**	EPA 903.1	309677		
60277119003	**MW-303**	EPA 903.1	309677		
60277119004	**MW-304**	EPA 903.1	309677		
60277119005	**MW-305**	EPA 903.1	309677		
60277119006	**MW-306**	EPA 903.1	309677		
60277119007	**FIELD BLANK**	EPA 903.1	309677		
60277119001	**MW-301**	EPA 904.0	309685		
60277119002	**MW-302**	EPA 904.0	309685		
60277119003	**MW-303**	EPA 904.0	309685		
60277119004	**MW-304**	EPA 904.0	309685		
60277119005	**MW-305**	EPA 904.0	309685		
60277119006	**MW-306**	EPA 904.0	309685		
60277119007	**FIELD BLANK**	EPA 904.0	309685		
60277119001	**MW-301**	Total Radium Calculation	311075		
60277119002	**MW-302**	Total Radium Calculation	311075		
60277119003	**MW-303**	Total Radium Calculation	311075		
60277119004	**MW-304**	Total Radium Calculation	311075		
60277119005	**MW-305**	Total Radium Calculation	311075		
60277119006	**MW-306**	Total Radium Calculation	311075		
60277119007	**FIELD BLANK**	Total Radium Calculation	311075		

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Sample Condition Upon Receipt

WO#: 60277119

60277119

Client Name: SCS

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

Tracking #: 4542 2779 1485 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-298 **Type of Ice:** Wet Blue (None)

Cooler Temperature (°C): **As-read** 23.3 **Corr. Factor** +1.1 **Corrected** 24.4

Date and initials of person examining contents: JDG 8-9-18

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes	☐No	☐N/A	
Chain of Custody relinquished:	☑Yes	☐No	☐N/A	
Samples arrived within holding time:	☑Yes	☐No	☐N/A	
Short Hold Time analyses (<72hr):	☐Yes	☑No	☐N/A	
Rush Turn Around Time requested:	☐Yes	☑No	☐N/A	
Sufficient volume:	☑Yes	☐No	☐N/A	
Correct containers used:	☑Yes	☐No	☐N/A	
Pace containers used:	☑Yes	☐No	☐N/A	
Containers intact:	☑Yes	☐No	☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes	☐No	☑N/A	
Filtered volume received for dissolved tests?	☐Yes	☐No	☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes	☐No	☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes	☑No	☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes	☐No	☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:				
Lead acetate strip turns dark? (Record only)	☐Yes	☐No		
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes	☐No		
Trip Blank present:	☐Yes	☐No	☑N/A	
Headspace in VOA vials (>6mm):	☐Yes	☐No	☑N/A	
Samples from USDA Regulated Area: State:	☐Yes	☐No	☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes	☐No	☑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] for HWK Date: 8/9/18

F-KS-C-003-Rev.11, February 28, 2018

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:		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
	Madison WI 53718			Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	IPL Prairie Creek	Pace Project Manager:	Hank Kapka 913-563-1404
Requested Due Date/TAT:		Project Number:	25216074.18	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Requested Analysis Filtered (Y/N)

Section D Required Client Information

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

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	8/6/18	1636	12.3	2			2						Y	X	X	X		001
2	MW-302	WT	G	xxx	xxx	8/6/18	1346	16.0	2			2						Y	X	X	X		002
3	MW-303	WT	G	xxx	xxx	8/6/18	1156	16.5	2			2						Y	X	X	X		003
4	MW-304	WT	G	xxx	xxx	8/6/18	1321	12.1	2			2						Y	X	X	X		004
5	MW-305	WT	G	xxx	xxx	8/6/18	1406	12.5	2			2						Y	X	X	X		005
6	MW-306	WT	G	xxx	xxx	8/6/18	1456	16.4	2			2						Y	X	X	X		006
7	FIELD BLANK	WT	G	xxx	xxx	8/6/18	1650		2			2						Y	X	X	X		007
8																							
9																							
10																							
11																							
12																							

DSP (2)

60277119

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Gary Stukel SCS Engineers	8/8/18	1700	PACE	8-9-18	0845	24.4	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Stukel

SIGNATURE of SAMPLER: Gary Stukel DATE Signed (MM/DD/YY): 8/8/18

*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

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA

Pace Analytical®
www.pacelabs.com

Workorder: 60277119 **Workorder Name:** IPL PRAIRIE CREEK

Owner Received Date: 8/9/2018 **Results Requested By:** 8/30/2018

Report To	Subcontract To
Hank Kapka 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# : 30262148

30262148

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3	Ra 226/228	Total Ra	LAB USE ONLY
1	MW-301	PS	8/6/2018 16:36	60277119001	Water	2	X	X	001
2	MW-302	PS	8/6/2018 15:46	60277119002	Water	2	X	X	002
3	MW-303	PS	8/6/2018 11:56	60277119003	Water	2	X	X	003
4	MW-304	PS	8/6/2018 13:21	60277119004	Water	2	X	X	004
5	MW-305	PS	8/6/2018 14:06	60277119005	Water	2	X	X	005
6	MW-306	PS	8/6/2018 14:56	60277119006	Water	2	X	X	006
7	FIELD BLANK	PS	8/6/2018 16:50	60277119007	Water	2	X	X	007

Transfers	Released By	Date/Time	Received By	Date/Time
1	E Brackett / Pace	8/13/18 1600	[signature]	8-14-18 0940
2				
3				

Comments

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.*

Pittsburgh Lab Sample Condition Upon Receipt

Face Analytical

Client Name: PACE LS

Project # 30262148

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

Label ET

Tracking #: 4542 2779 9199

LIMS Login [illegible]

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

pH paper Lot# 10D3071 Date and Initials of person examining contents: ET 8-14-18

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: -Includes date/time/ID Matrix: WT	✓			5.
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: -Pace Containers Used:	✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓			16. pH <2 Initial when completed ET Date/time of preservation Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present		✓		
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: ET Date: 8-14-18

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 Assessment Monitoring Semiannual, October 2018

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 05, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
Arkansas Drinking Water
WY STR Certification #: 2456.01
Arkansas Certification #: 18-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60283561001	**MW-301**	Water	10/09/18 12:06	10/12/18 10:10
60283561002	**MW-302**	Water	10/09/18 12:06	10/12/18 10:10
60283561003	**MW-303**	Water	10/09/18 11:01	10/12/18 10:10
60283561004	**MW-304**	Water	10/09/18 10:46	10/12/18 10:10
60283561005	**MW-305**	Water	10/09/18 09:56	10/12/18 10:10
60283561006	**MW-306**	Water	10/09/18 09:24	10/12/18 10:10
60283561007	**FIELD BLANK**	Water	10/09/18 12:06	10/12/18 10:10

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60283561001	**MW-301**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561002	**MW-302**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561003	**MW-303**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561004	**MW-304**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561005	**MW-305**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561006	**MW-306**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60283561007	**FIELD BLANK**	EPA 6010	CTR	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CTR	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-301 **Lab ID: 60283561001** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 12:06		
Collected Date	**10/09/2018**				1		10/09/18 12:06		
Collected Time	**12:06**				1		10/09/18 12:06		
Field pH	**7.63**	Std. Units	0.10	0.050	1		10/09/18 12:06		
Field Temperature	**14.9**	deg C	0.50	0.25	1		10/09/18 12:06		
Field Specific Conductance	**1,052**	umhos/cm	1.0	1.0	1		10/09/18 12:06		
Oxygen, Dissolved	**4.03**	mg/L			1		10/09/18 12:06	7782-44-7	
REDOX	**60**	mV			1		10/09/18 12:06		
Turbidity	**9.97**	NTU	1.0	1.0	1		10/09/18 12:06		
Groundwater Elevation	**715.74**	feet			1		10/09/18 12:06		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**30.6J**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:44	7440-42-8	
Calcium	**163**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:44	7440-70-2	
Lithium	**13.3**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:44	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:27	7440-36-0	
Arsenic	**0.67J**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:27	7440-38-2	
Barium	**261**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:27	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:27	7440-41-7	
Cadmium	**0.075J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:27	7440-43-9	
Chromium	**5.2**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:27	7440-47-3	
Cobalt	**0.084J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:27	7440-48-4	
Lead	**0.17J**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:27	7439-92-1	
Molybdenum	**<0.57**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:27	7439-98-7	
Selenium	**0.95J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:27	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:27	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**743**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.1**	Std. Units	0.10	0.10	1		10/16/18 09:12		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**62.0**	mg/L	5.0	1.4	5		10/22/18 12:59	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.19	1		10/22/18 12:43	16984-48-8	
Sulfate	**131**	mg/L	50.0	12.0	50		10/22/18 13:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-302 **Lab ID: 60283561002** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 12:06		
Collected Date	**10/09/2018**				1		10/09/18 12:06		
Collected Time	**12:06**				1		10/09/18 12:06		
Field pH	**6.50**	Std. Units	0.10	0.050	1		10/09/18 12:06		
Field Temperature	**16.7**	deg C	0.50	0.25	1		10/09/18 12:06		
Field Specific Conductance	**515**	umhos/cm	1.0	1.0	1		10/09/18 12:06		
Oxygen, Dissolved	**0.5**	mg/L			1		10/09/18 12:06	7782-44-7	
REDOX	**-32**	mV			1		10/09/18 12:06		
Turbidity	**10.52**	NTU	1.0	1.0	1		10/09/18 12:06		
Groundwater Elevation	**716.72**	feet			1		10/09/18 12:06		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**65.0J**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:47	7440-42-8	
Calcium	**63.3**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:47	7440-70-2	
Lithium	**4.6J**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:47	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.092J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:29	7440-36-0	
Arsenic	**4.5**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:29	7440-38-2	
Barium	**141**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:29	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:29	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:29	7440-43-9	
Chromium	**0.78J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:29	7440-47-3	
Cobalt	**3.2**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:29	7440-48-4	
Lead	**0.13J**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:29	7439-92-1	
Molybdenum	**0.67J**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:29	7439-98-7	
Selenium	**0.37J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:29	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**314**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		10/16/18 09:14		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**20.2**	mg/L	5.0	1.4	5		10/22/18 13:48	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.19	1		10/22/18 13:32	16984-48-8	
Sulfate	**55.1**	mg/L	5.0	1.2	5		10/22/18 13:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-303 **Lab ID: 60283561003** Collected: 10/09/18 11:01 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 11:01		
Collected Date	**10/09/2018**				1		10/09/18 11:01		
Collected Time	**11:01**				1		10/09/18 11:01		
Field pH	**7.13**	Std. Units	0.10	0.050	1		10/09/18 11:01		
Field Temperature	**17.4**	deg C	0.50	0.25	1		10/09/18 11:01		
Field Specific Conductance	**881**	umhos/cm	1.0	1.0	1		10/09/18 11:01		
Oxygen, Dissolved	**0.2**	mg/L			1		10/09/18 11:01	7782-44-7	
REDOX	**-87**	mV			1		10/09/18 11:01		
Turbidity	**17.20**	NTU	1.0	1.0	1		10/09/18 11:01		
Groundwater Elevation	**707.86**	feet			1		10/09/18 11:01		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**932**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:49	7440-42-8	
Calcium	**99.9**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:49	7440-70-2	
Lithium	**19.9**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:49	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.72J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:31	7440-36-0	
Arsenic	**44.5**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:31	7440-38-2	
Barium	**94.3**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:31	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:31	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:31	7440-43-9	
Chromium	**0.55J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:31	7440-47-3	
Cobalt	**0.43J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:31	7440-48-4	
Lead	**0.31J**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:31	7439-92-1	
Molybdenum	**21.7**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:31	7439-98-7	
Selenium	**0.21J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:31	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:16	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**515**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.5**	Std. Units	0.10	0.10	1		10/16/18 09:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**23.9**	mg/L	5.0	1.4	5		10/22/18 14:37	16887-00-6	
Fluoride	**0.71**	mg/L	0.20	0.19	1		10/22/18 14:21	16984-48-8	
Sulfate	**74.7**	mg/L	5.0	1.2	5		10/22/18 14:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-304 **Lab ID: 60283561004** Collected: 10/09/18 10:46 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 10:46		
Collected Date	**10/09/2018**				1		10/09/18 10:46		
Collected Time	**10:46**				1		10/09/18 10:46		
Field pH	**7.50**	Std. Units	0.10	0.050	1		10/09/18 10:46		
Field Temperature	**18.8**	deg C	0.50	0.25	1		10/09/18 10:46		
Field Specific Conductance	**812**	umhos/cm	1.0	1.0	1		10/09/18 10:46		
Oxygen, Dissolved	**0.21**	mg/L			1		10/09/18 10:46	7782-44-7	
REDOX	**-18.1**	mV			1		10/09/18 10:46		
Turbidity	**9.07**	NTU	1.0	1.0	1		10/09/18 10:46		
Groundwater Elevation	**707.81**	feet			1		10/09/18 10:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**661**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:51	7440-42-8	
Calcium	**89.0**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:51	7440-70-2	
Lithium	**13.4**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:51	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.4**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:33	7440-36-0	
Arsenic	**14.4**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:33	7440-38-2	
Barium	**110**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:33	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:33	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:33	7440-43-9	
Chromium	**0.31J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:33	7440-47-3	
Cobalt	**0.75J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:33	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:33	7439-92-1	
Molybdenum	**27.6**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:33	7439-98-7	
Selenium	**0.16J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:33	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:33	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**541**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		10/16/18 09:09		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**33.6**	mg/L	10.0	2.9	10		10/22/18 15:59	16887-00-6	
Fluoride	**0.61**	mg/L	0.20	0.19	1		10/22/18 15:43	16984-48-8	
Sulfate	**167**	mg/L	10.0	2.4	10		10/22/18 15:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-305 **Lab ID: 60283561005** Collected: 10/09/18 09:56 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 09:56		
Collected Date	**10/09/2018**				1		10/09/18 09:56		
Collected Time	**09:56**				1		10/09/18 09:56		
Field pH	**7.05**	Std. Units	0.10	0.050	1		10/09/18 09:56		
Field Temperature	**18.3**	deg C	0.50	0.25	1		10/09/18 09:56		
Field Specific Conductance	**719**	umhos/cm	1.0	1.0	1		10/09/18 09:56		
Oxygen, Dissolved	**0.2**	mg/L			1		10/09/18 09:56	7782-44-7	
REDOX	**168**	mV			1		10/09/18 09:56		
Turbidity	**9.54**	NTU	1.0	1.0	1		10/09/18 09:56		
Groundwater Elevation	**707.73**	feet			1		10/09/18 09:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**634**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:53	7440-42-8	
Calcium	**82.7**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:53	7440-70-2	
Lithium	**13.3**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:53	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**1.1**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:35	7440-36-0	
Arsenic	**6.6**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:35	7440-38-2	
Barium	**95.6**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:35	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:35	7440-41-7	
Cadmium	**0.040J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:35	7440-43-9	
Chromium	**0.14J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:35	7440-47-3	
Cobalt	**0.60J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:35	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:35	7439-92-1	
Molybdenum	**32.0**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:35	7439-98-7	
Selenium	**0.23J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:35	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**424**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		10/16/18 09:08		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.3**	mg/L	1.0	0.29	1		10/22/18 16:32	16887-00-6	
Fluoride	**0.61**	mg/L	0.20	0.19	1		10/22/18 16:32	16984-48-8	
Sulfate	**98.9**	mg/L	10.0	2.4	10		10/22/18 16:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: MW-306 **Lab ID: 60283561006** Collected: 10/09/18 09:24 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/09/18 09:24		
Collected Date	**10/09/2018**				1		10/09/18 09:24		
Collected Time	**09:24**				1		10/09/18 09:24		
Field pH	**7.40**	Std. Units	0.10	0.050	1		10/09/18 09:24		
Field Temperature	**15.6**	deg C	0.50	0.25	1		10/09/18 09:24		
Field Specific Conductance	**736**	umhos/cm	1.0	1.0	1		10/09/18 09:24		
Oxygen, Dissolved	**0.45**	mg/L			1		10/09/18 09:24	7782-44-7	
REDOX	**-41.1**	mV			1		10/09/18 09:24		
Turbidity	**1.74**	NTU	1.0	1.0	1		10/09/18 09:24		
Groundwater Elevation	**707.88**	feet			1		10/09/18 09:24		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2890**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 14:00	7440-42-8	
Calcium	**65.1**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 14:00	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 14:00	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:37	7440-36-0	
Arsenic	**0.72J**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:37	7440-38-2	
Barium	**62.1**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:37	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:37	7440-41-7	
Cadmium	**0.075J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:37	7440-43-9	
Chromium	**0.11J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:37	7440-47-3	
Cobalt	**0.079J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:37	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:37	7439-92-1	
Molybdenum	**235**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:37	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:37	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:30	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**494**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		10/16/18 09:04		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**30.3**	mg/L	5.0	1.4	5		10/22/18 17:38	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.19	1		10/22/18 17:21	16984-48-8	
Sulfate	**233**	mg/L	50.0	12.0	50		10/22/18 17:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Sample: FIELD BLANK **Lab ID: 60283561007** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**<12.5**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 14:02	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 14:02	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 14:02	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:46	7440-36-0	
Arsenic	**<0.065**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:46	7440-38-2	
Barium	**<0.28**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:46	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:46	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:46	7440-43-9	
Chromium	**0.10J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:46	7440-47-3	
Cobalt	**<0.062**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:46	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:46	7439-92-1	
Molybdenum	**<0.57**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:46	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:46	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	10/24/18 06:40	10/26/18 10:32	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		10/15/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**5.7**	Std. Units	0.10	0.10	1		10/16/18 09:16		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**0.31J**	mg/L	1.0	0.29	1		10/22/18 18:11	16887-00-6	M1
Fluoride	**<0.19**	mg/L	0.20	0.19	1		10/22/18 18:11	16984-48-8	M1
Sulfate	**<0.24**	mg/L	1.0	0.24	1		10/22/18 18:11	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 551414 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

METHOD BLANK: 2261403 Matrix: Water
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	10/26/18 10:02	

LABORATORY CONTROL SAMPLE: 2261404

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2261405 2261406

Parameter	Units	60283561001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.090	5	5	5.0	4.8	99	96	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 549876 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

METHOD BLANK: 2254710 Matrix: Water
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	10/17/18 13:07	
Calcium	mg/L	<0.054	0.20	0.054	10/17/18 13:07	
Lithium	ug/L	<4.6	10.0	4.6	10/17/18 13:07	

LABORATORY CONTROL SAMPLE: 2254711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	972	97	80-120	
Calcium	mg/L	10	10.2	102	80-120	
Lithium	ug/L	1000	959	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2254712 2254713

Parameter	Units	60282950001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	3620	1000	1000	4610	4580	100	97	75-125	1	20	
Calcium	mg/L	114	10	10	125	125	109	105	75-125	0	20	
Lithium	ug/L	5.8J	1000	1000	991	995	98	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 550090 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

METHOD BLANK: 2255522 Matrix: Water
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.078	1.0	0.078	11/02/18 16:57	
Arsenic	ug/L	<0.065	1.0	0.065	11/02/18 16:57	
Barium	ug/L	<0.28	1.0	0.28	11/02/18 16:57	
Beryllium	ug/L	<0.089	0.50	0.089	11/02/18 16:57	
Cadmium	ug/L	<0.033	0.50	0.033	11/02/18 16:57	
Chromium	ug/L	<0.079	1.0	0.079	11/02/18 16:57	
Cobalt	ug/L	<0.062	1.0	0.062	11/02/18 16:57	
Lead	ug/L	<0.13	1.0	0.13	11/02/18 16:57	
Molybdenum	ug/L	<0.57	1.0	0.57	11/02/18 16:57	
Selenium	ug/L	<0.085	1.0	0.085	11/02/18 16:57	
Thallium	ug/L	<0.099	1.0	0.099	11/02/18 16:57	

LABORATORY CONTROL SAMPLE: 2255523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.8	97	80-120	
Arsenic	ug/L	40	38.9	97	80-120	
Barium	ug/L	40	37.9	95	80-120	
Beryllium	ug/L	40	37.6	94	80-120	
Cadmium	ug/L	40	38.6	96	80-120	
Chromium	ug/L	40	39.8	99	80-120	
Cobalt	ug/L	40	39.1	98	80-120	
Lead	ug/L	40	37.6	94	80-120	
Molybdenum	ug/L	40	39.6	99	80-120	
Selenium	ug/L	40	38.6	97	80-120	
Thallium	ug/L	40	36.2	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2255524 2255525

Parameter	Units	60282950002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.25J	40	40	39.4	39.6	98	98	75-125	1	20	
Arsenic	ug/L	8.7	40	40	49.6	49.2	102	101	75-125	1	20	
Barium	ug/L	42.3	40	40	81.5	81.5	98	98	75-125	0	20	
Beryllium	ug/L	<0.089	40	40	38.5	38.7	96	97	75-125	1	20	
Cadmium	ug/L	0.087J	40	40	38.0	37.9	95	95	75-125	0	20	
Chromium	ug/L	0.29J	40	40	41.7	42.7	104	106	75-125	2	20	
Cobalt	ug/L	0.12J	40	40	40.0	39.9	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2255524 2255525

Parameter	Units	60282950002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	<0.13	40	40	35.1	35.3	88	88	75-125	1	20	
Molybdenum	ug/L	212	40	40	264	263	129	127	75-125	0	20	M1
Selenium	ug/L	0.40J	40	40	38.2	38.0	94	94	75-125	0	20	
Thallium	ug/L	<0.099	40	40	34.2	34.2	86	86	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 549610 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

METHOD BLANK: 2253887 Matrix: Water
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	10/15/18 16:08	

LABORATORY CONTROL SAMPLE: 2253888

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 2253889

Parameter	Units	60283556004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	918	919	0	10	

SAMPLE DUPLICATE: 2253890

Parameter	Units	60283561003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	515	507	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 549702 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

SAMPLE DUPLICATE: 2254190

Parameter	Units	60283561006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.6	7.6	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

QC Batch: 550860 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

METHOD BLANK: 2258997 Matrix: Water
Associated Lab Samples: 60283561001, 60283561002, 60283561003, 60283561004, 60283561005, 60283561006, 60283561007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.29	1.0	0.29	10/22/18 11:37	
Fluoride	mg/L	<0.19	0.20	0.19	10/22/18 11:37	
Sulfate	mg/L	<0.24	1.0	0.24	10/22/18 11:37	

LABORATORY CONTROL SAMPLE: 2258998

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	80-120	
Fluoride	mg/L	2.5	2.7	106	80-120	
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2258999 2259000

Parameter	Units	60283561007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.31J	5	5	6.5	6.7	124	127	80-120	2	15	M1
Fluoride	mg/L	<0.19	2.5	2.5	3.6	3.7	145	149	80-120	3	15	M1
Sulfate	mg/L	<0.24	5	5	6.9	6.9	139	139	80-120	0	15	M1

SAMPLE DUPLICATE: 2259001

Parameter	Units	60283589006 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	<0.29	<0.29		15	
Fluoride	mg/L	<0.19	<0.19		15	
Sulfate	mg/L	<0.24	<0.24		15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

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
Pace Project No.: 60283561

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60283561001	MW-301		551317		
60283561002	MW-302		551317		
60283561003	MW-303		551317		
60283561004	MW-304		551317		
60283561005	MW-305		551317		
60283561006	MW-306		551317		
60283561001	MW-301	EPA 3010	549876	EPA 6010	550031
60283561002	MW-302	EPA 3010	549876	EPA 6010	550031
60283561003	MW-303	EPA 3010	549876	EPA 6010	550031
60283561004	MW-304	EPA 3010	549876	EPA 6010	550031
60283561005	MW-305	EPA 3010	549876	EPA 6010	550031
60283561006	MW-306	EPA 3010	549876	EPA 6010	550031
60283561007	FIELD BLANK	EPA 3010	549876	EPA 6010	550031
60283561001	MW-301	EPA 3010	550090	EPA 6020	550198
60283561002	MW-302	EPA 3010	550090	EPA 6020	550198
60283561003	MW-303	EPA 3010	550090	EPA 6020	550198
60283561004	MW-304	EPA 3010	550090	EPA 6020	550198
60283561005	MW-305	EPA 3010	550090	EPA 6020	550198
60283561006	MW-306	EPA 3010	550090	EPA 6020	550198
60283561007	FIELD BLANK	EPA 3010	550090	EPA 6020	550198
60283561001	MW-301	EPA 7470	551414	EPA 7470	551476
60283561002	MW-302	EPA 7470	551414	EPA 7470	551476
60283561003	MW-303	EPA 7470	551414	EPA 7470	551476
60283561004	MW-304	EPA 7470	551414	EPA 7470	551476
60283561005	MW-305	EPA 7470	551414	EPA 7470	551476
60283561006	MW-306	EPA 7470	551414	EPA 7470	551476
60283561007	FIELD BLANK	EPA 7470	551414	EPA 7470	551476
60283561001	MW-301	SM 2540C	549610		
60283561002	MW-302	SM 2540C	549610		
60283561003	MW-303	SM 2540C	549610		
60283561004	MW-304	SM 2540C	549610		
60283561005	MW-305	SM 2540C	549610		
60283561006	MW-306	SM 2540C	549610		
60283561007	FIELD BLANK	SM 2540C	549610		
60283561001	MW-301	EPA 9040	549702		
60283561002	MW-302	EPA 9040	549702		
60283561003	MW-303	EPA 9040	549702		
60283561004	MW-304	EPA 9040	549702		
60283561005	MW-305	EPA 9040	549702		
60283561006	MW-306	EPA 9040	549702		
60283561007	FIELD BLANK	EPA 9040	549702		
60283561001	MW-301	EPA 9056	550860		
60283561002	MW-302	EPA 9056	550860		
60283561003	MW-303	EPA 9056	550860		
60283561004	MW-304	EPA 9056	550860		
60283561005	MW-305	EPA 9056	550860		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL PRAIRIE CREEK
Pace Project No.: 60283561

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60283561006	**MW-306**	EPA 9056	550860		
60283561007	**FIELD BLANK**	EPA 9056	550860		

HLIK

WO# : 60283561

60283561

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Sample Condition Upon Receipt

Client Name: SCS Engineers

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

Tracking #: 4542 2783 3018 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-297 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.6 **Corr. Factor** -0.2 **Corrected** 2.4

Date and initials of person examining contents: AC 10/12

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	pH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Hank
09:28 am,Oct 15,2018
Kapka

Project Manager Review: _____ Date: _____

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A
Required Client Information:

Company:	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:	25216074.18

Section C
Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Hank Kapka 913-563-1404
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: IA

Section D
Required Client Information

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

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

Requested Analysis Filtered (Y/N): N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Hg	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60283561
1	MW-301	WT	G	xxx	xxx	10/9/18	1206	4.9	3	1		2						X	X	X	X	X	X	BP2U	2BP3N	001
2	MW-302	WT	G	xxx	xxx	10/9/18	1206	16.7	3	1		2						X	X	X	X	X	X			002
3	MW-303	WT	G	xxx	xxx	10/9/18	1101	17.4	3	1		2						X	X	X	X	X	X			003
4	MW-304	WT	G	xxx	xxx	10/9/18	1046	18.8	3	1		2						X	X	X	X	X	X			004
5	MW-305	WT	G	xxx	xxx	10/9/18	0956	18.3	3	1		2						X	X	X	X	X	X			005
6	MW-306	WT	G	xxx	xxx	10/9/18	0924	15.6	3	1		2						X	X	X	X	X	X			006
7	FIELD BLANK	WT	G	xxx	xxx	10/9/18	1206		3	1		2						X	X	X	X	X	X			007
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	[signature]	10/11/18	1700	[signature] PASI	10/12/18	10:10	2.4	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*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

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October 31, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60283554001	**MW-301**	Water	10/09/18 12:06	10/12/18 10:10
60283554002	**MW-302**	Water	10/09/18 12:06	10/12/18 10:10
60283554003	**MW-303**	Water	10/09/18 11:01	10/12/18 10:10
60283554004	**MW-304**	Water	10/09/18 10:46	10/12/18 10:10
60283554005	**MW-305**	Water	10/09/18 09:56	10/12/18 10:10
60283554006	**MW-306**	Water	10/09/18 09:24	10/12/18 10:10
60283554007	**FIELD BLANK**	Water	10/09/18 12:06	10/12/18 10:10

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SAMPLE ANALYTE COUNT

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60283554001	**MW-301**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554002	**MW-302**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554003	**MW-303**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554004	**MW-304**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554005	**MW-305**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554006	**MW-306**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60283554007	**FIELD BLANK**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-301 **Lab ID: 60283554001** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.478 ± 0.486 (0.735) C:NA T:81%**	pCi/L	10/26/18 21:23	13982-63-3	
Radium-228	EPA 904.0	**0.612 ± 0.451 (0.890) C:73% T:89%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.09 ± 0.937 (1.63)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-302 **Lab ID: 60283554002** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.540 ± 0.874 (1.52) C:NA T:46%**	pCi/L	10/26/18 21:23	13982-63-3	
Radium-228	EPA 904.0	**0.554 ± 0.394 (0.765) C:70% T:94%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.09 ± 1.27 (2.29)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-303 **Lab ID: 60283554003** Collected: 10/09/18 11:01 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.620 ± 0.427 (0.456) C:NA T:84%**	pCi/L	10/26/18 21:39	13982-63-3	
Radium-228	EPA 904.0	**0.457 ± 0.448 (0.923) C:67% T:84%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.08 ± 0.875 (1.38)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-304 **Lab ID: 60283554004** Collected: 10/09/18 10:46 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.175 ± 0.380 (0.701) C:NA T:89%**	pCi/L	10/26/18 21:39	13982-63-3	
Radium-228	EPA 904.0	**1.13 ± 0.593 (1.07) C:62% T:85%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.31 ± 0.973 (1.77)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-305 **Lab ID: 60283554005** Collected: 10/09/18 09:56 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.512 ± 0.464 (0.683) C:NA T:91%**	pCi/L	10/26/18 21:39	13982-63-3	
Radium-228	EPA 904.0	**0.864 ± 0.578 (1.11) C:62% T:80%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.38 ± 1.04 (1.79)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: MW-306 **Lab ID: 60283554006** Collected: 10/09/18 09:24 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.157 ± 0.371 (0.688) C:NA T:96%**	pCi/L	10/26/18 21:39	13982-63-3	
Radium-228	EPA 904.0	**1.26 ± 0.554 (0.908) C:65% T:84%**	pCi/L	10/25/18 16:21	15262-20-1	
Total Radium	Total Radium Calculation	**1.42 ± 0.925 (1.60)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Sample: FIELD BLANK **Lab ID: 60283554007** Collected: 10/09/18 12:06 Received: 10/12/18 10:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.104 ± 0.352 (0.679) C:NA T:95%**	pCi/L	10/26/18 21:39	13982-63-3	
Radium-228	EPA 904.0	**0.677 ± 0.495 (0.975) C:67% T:89%**	pCi/L	10/25/18 16:22	15262-20-1	
Total Radium	Total Radium Calculation	**0.781 ± 0.847 (1.65)**	pCi/L	10/31/18 12:06	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

QC Batch: 316964 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60283554001, 60283554002, 60283554003, 60283554004, 60283554005, 60283554006, 60283554007

METHOD BLANK: 1546500 Matrix: Water
Associated Lab Samples: 60283554001, 60283554002, 60283554003, 60283554004, 60283554005, 60283554006, 60283554007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.512 ± 0.380 (0.475) C:NA T:97%	pCi/L	10/26/18 21:23	

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 25216074.18
Pace Project No.: 60283554

QC Batch: 316967 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60283554001, 60283554002, 60283554003, 60283554004, 60283554005, 60283554006, 60283554007

METHOD BLANK: 1546503 Matrix: Water
Associated Lab Samples: 60283554001, 60283554002, 60283554003, 60283554004, 60283554005, 60283554006, 60283554007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.523 ± 0.446 (0.893) C:71% T:73%	pCi/L	10/25/18 16:18	

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: IPL PRAIRIE CREEK 25216074.18
Pace Project No.: 60283554

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60283554001	**MW-301**	EPA 903.1	316964		
60283554002	**MW-302**	EPA 903.1	316964		
60283554003	**MW-303**	EPA 903.1	316964		
60283554004	**MW-304**	EPA 903.1	316964		
60283554005	**MW-305**	EPA 903.1	316964		
60283554006	**MW-306**	EPA 903.1	316964		
60283554007	**FIELD BLANK**	EPA 903.1	316964		
60283554001	**MW-301**	EPA 904.0	316967		
60283554002	**MW-302**	EPA 904.0	316967		
60283554003	**MW-303**	EPA 904.0	316967		
60283554004	**MW-304**	EPA 904.0	316967		
60283554005	**MW-305**	EPA 904.0	316967		
60283554006	**MW-306**	EPA 904.0	316967		
60283554007	**FIELD BLANK**	EPA 904.0	316967		
60283554001	**MW-301**	Total Radium Calculation	318649		
60283554002	**MW-302**	Total Radium Calculation	318649		
60283554003	**MW-303**	Total Radium Calculation	318649		
60283554004	**MW-304**	Total Radium Calculation	318649		
60283554005	**MW-305**	Total Radium Calculation	318649		
60283554006	**MW-306**	Total Radium Calculation	318649		
60283554007	**FIELD BLANK**	Total Radium Calculation	318649		

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www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60283554

60283554

Client Name: SCS Engineers

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

Tracking #: 4542 2783 2880 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 ☑ Zplc

Thermometer Used: T-299 **Type of Ice:** Wet Blue None ☑

Cooler Temperature (°C): As-read 13.3 Corr. Factor +0.1 Corrected 13.4

Date and initials of person examining contents: 10/12/18 HF

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☑No ☐N/A	
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑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: HWK Date: 10-12-2018

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

Section A Required Client Information:

Company:	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:	25216074.18

Section C Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Hank Kapka 913-563-1404
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

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

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	903.1 Radium-226	904.0 Radium-228	Total Radium		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60283554
1	MW-301	WT	G	xxx	xxx	10/9/18	1206	14.9	2			2							X	X	X	2BPIN		001
2	MW-302	WT	G	xxx	xxx	10/9/18	1206	16.7	2			2							X	X	X	↓		002
3	MW-303	WT	G	xxx	xxx	10/9/18	1101	17.4	2			2							X	X	X	↓		003
4	MW-304	WT	G	xxx	xxx	10/9/18	1046	18.8	2			2							X	X	X	↓		004
5	MW-305	WT	G	xxx	xxx	10/9/18	0956	18.3	2			2							X	X	X	↓		005
6	MW-306	WT	G	xxx	xxx	10/9/18	0924	15.6	2			2							X	X	X	↓		006
7	FIELD BLANK	WT	G	xxx	xxx	10/9/18	1206		2			2							X	X	X	↓		007
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Gary Strubel	10/11/18	1200	Holly Fowlapasi	10/12/18	1010	13.4	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*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

Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA
Cert. Needed: ☒ Yes ☐ No

Workorder: 60283554 **Workorder Name:** IPL PRAIRIE CREEK 25216074.18

Owner Received Date: 10/12/2018 Results Requested By: 11/2/2018

Report To	Subcontract To
Hank Kapka 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# : 30268448

30268448

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Combined Ra	Ra 226/ Ra 228											LAB USE ONLY
1	MW-301	PS	10/9/2018 12:06	60283554001	Water	2						X	X											001
2	MW-302	PS	10/9/2018 12:06	60283554002	Water	2						X	X											002
3	MW-303	PS	10/9/2018 11:01	60283554003	Water	2						X	X											003
4	MW-304	PS	10/9/2018 10:46	60283554004	Water	2						X	X											004
5	MW-305	PS	10/9/2018 09:56	60283554005	Water	2						X	X											005
6	MW-306	PS	10/9/2018 09:24	60283554006	Water	2						X	X											006
7	FIELD BLANK	PS	10/9/2018 12:06	60283554007	Water	2						X	X											007

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] pasl	10/15/18 1700	Emily [signature]	10-16-18 1000
2				
3				

Comments

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.*

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: Pace KS

Project # 30268448

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

Label ET
LIMS Login ET

Tracking #: 454278426 08

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

pH paper Lot# 10D4671 | Date and Initials of person examining contents: ET 10-16-18

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: -Includes date/time/ID Matrix: WT	✓			5.
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: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation.	✓ ✓			16. pH<2
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed ET / Date/time of preservation / Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present: Trip Blank Custody Seals Present		✓		18.
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: ET / Date: 10-16-18

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.