SCS ENGINEERS

2017 Annual Groundwater Monitoring and Corrective Action Report

Lansing Generating Station
Lansing, Iowa

Prepared for:

Alliant Energy

Prepared by:

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

January 31, 2018
File No. 25216070.17

Offices Nationwide
www.scsengineers.com

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Appendix A – Analytical Laboratory Reports

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1.0 INTRODUCTION

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

This report covers the period of groundwater monitoring from December 10, 2015 through December 31, 2017. December 10, 2015 is the date of the first background sampling round. All future annual reports will cover the period from January 1 through December 31 of the previous year.

The system is a multi-unit network designed to detect monitored constituents at the waste boundary of the Landfill (existing CCR landfill) and Upper Ash Pond (existing CCR surface impoundment) located at Lansing Generating Station, as required by 40 CFR 257.91(d). The groundwater monitoring system consists of one upgradient and three downgradient monitoring wells.

2.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:*

2.1 §257.90(E)(1) SITE MAP

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

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

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

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

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the CCR units in 2017. The downgradient monitoring wells, MW-301, MW-302 and MW-303, were installed between November 2 through 4, 2015. The upgradient monitoring well, MW-6, was installed prior to October 2015.

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

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

Eight groundwater samples were collected from each CCR monitoring well for the establishment of background. Background sampling began in December 2015 and concluded in August 2017. Background samples were analyzed for both Appendix III and Appendix IV constituents. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs is included in **Table 1**. The results of the analytical laboratory analyses are provided in the laboratory reports in **Appendices A1** through **A8**.

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

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

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

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

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

2.5 §257.90(E)(5) OTHER REQUIREMENTS

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

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

2.5.1 §257.90(e) General Requirements

For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year.

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

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

Description of Any Problems Encountered. No problems were encountered.

Discussion of Actions to Resolve the Problems. Not applicable.

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

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

2.5.2 §257.94(d) Alternative Detection Monitoring Frequency

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

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

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

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

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

2.5.4 §257.95(c) Alternative Assessment Monitoring Frequency

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

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

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

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

Not Applicable. Assessment monitoring was not performed in 2017.

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

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

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

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

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

Not Applicable. Corrective measures assessment has not been initiated.

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TABLE 1

CCR Rule Groundwater Samples Summary

Table 1. CCR Rule Groundwater Samples Summary
Lansing Generating Station /SCS Engineers Project #25216070

Sample Dates	Downgradient Wells			Background Well
	MW-301	MW-302	MW-303	MW-6
12/10/2015	B	B	B	B
4/29/2016	B	B	B	B
7/20/2016	B	B	B	B
10/26-27/2016	B	B	B	B
1/17-18/2017	B	B	B	B
4/19/2017	B	B	B	B
6/19-20/2017	B	B	B	B
8/15/2017	B	B	B	B
10/16/2017	D	D	D	D
Total Samples	9	9	9	9

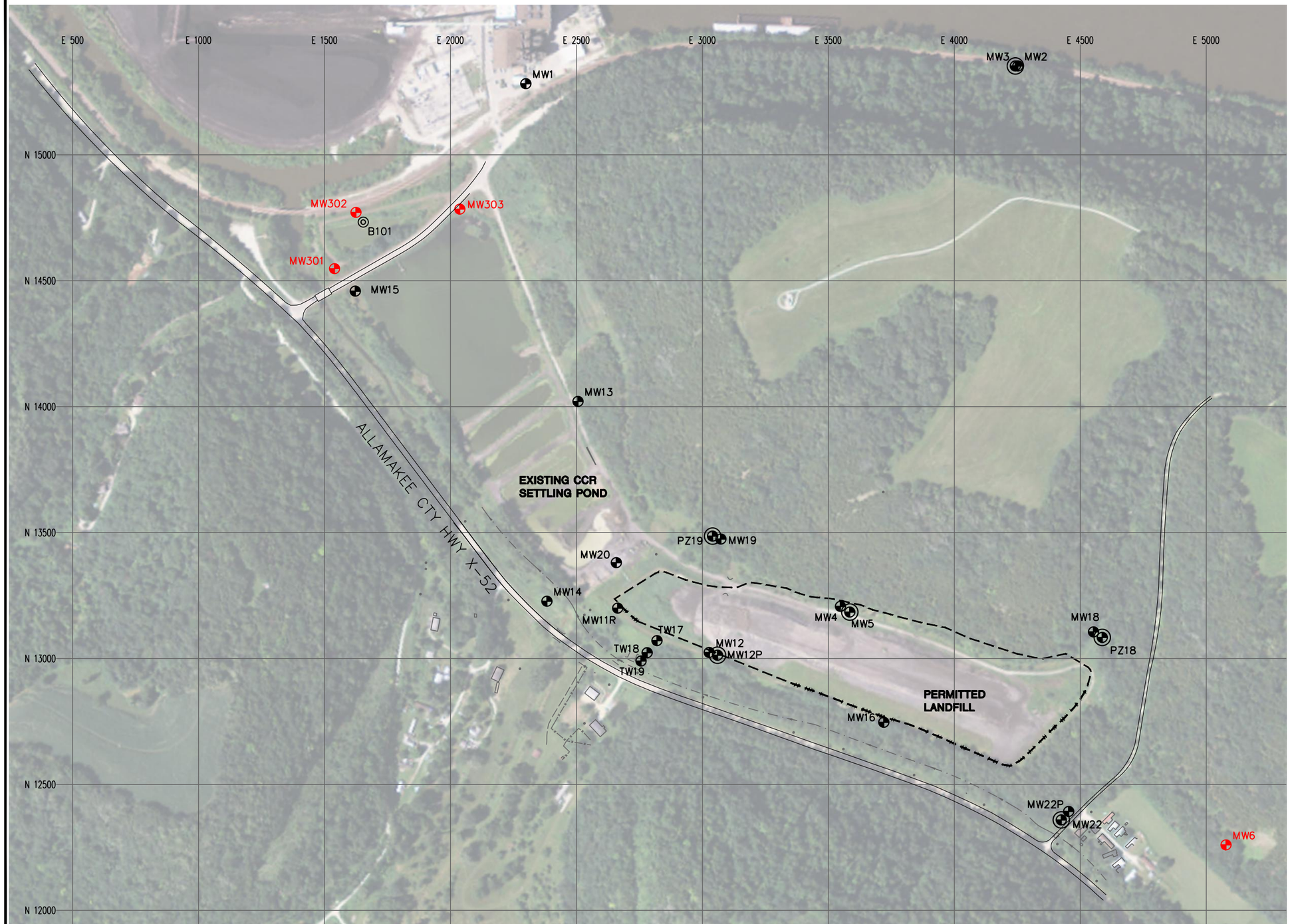
Abbreviations:
B = Background Sample
D = Required by Detection Monitoring Program

Created by: NDK Date: 1/8/2018
Last revision by: NDK Date: 1/9/2018
Checked by: JD Date: 1/9/2018

I:\25216070.00\Reports\2017 Annual Report\[GW_Samples_Summary_Table_LAN-1.xlsx]GW Summary

FIGURE 1

Site Plan and Monitoring Well Locations



NORTH GRID

400 0 400

SCALE: 1" = 400'

LEGEND

– – – – – –	APPROVED LIMITS OF WASTE
MW17	EXISTING MONITORING WELL
MW12P	EXISTING PIEZOMETER
B101	SOIL & BEDROCK BORING
MW6	CCR MONITORING WELL

NOTES:

1. MONITORING WELL LOCATIONS ARE APPROXIMATE.

PROJECT NO.	25216070.00	DRAWN BY:	BJM
DRAWN:	10/24/16	CHECKED BY:	NK
REVISED:	01/18/18	APPROVED BY:	

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

CLIENT: ALLIANT ENERGY INTERSTATE POWER AND LIGHT
2320 POWER PLANT DRIVE
LANSING, IA 52151-9733

SITE: INTERSTATE POWER AND LIGHT
LANSING POWER STATION
COAL COMBUSTION RESIDUE LANDFILL
LANSING, IOWA

MONITORING WELL LOCATION MAP

FIGURE 1

I:\25216070.00\Drawings\2017 Annual Rpt.dwg, 1/18/2018 10:52:49 AM

APPENDIX A

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

A1 Round 1 Background Sampling, Analytical Laboratory Report

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

December 29, 2015

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers

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CERTIFICATIONS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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SAMPLE SUMMARY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60209439001	**MW 301**	Water	12/10/15 11:15	12/14/15 08:50
60209439002	**MW 302**	Water	12/10/15 12:40	12/14/15 08:50
60209439003	**MW 303**	Water	12/10/15 14:00	12/14/15 08:50
60209439004	**MW 20**	Water	12/10/15 15:15	12/14/15 08:50
60209439005	**MW 20 DUP**	Water	12/10/15 15:15	12/14/15 08:50
60209439006	**MW 6**	Water	12/10/15 16:25	12/14/15 08:50
60209439007	**FIELD BLANK**	Water	12/10/15 15:30	12/14/15 08:50

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60209439001	**MW 301**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439002	**MW 302**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439003	**MW 303**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439004	**MW 20**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439005	**MW 20 DUP**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439006	**MW 6**	EPA 6010	SMW	11	PASI-K
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K
60209439007	**FIELD BLANK**	EPA 6010	SMW	11	PASI-K

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	SMW	3	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	RAB	3	PASI-K

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 301 **Lab ID: 60209439001** Collected: 12/10/15 11:15 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:18	7440-38-2	
Barium	**146**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:18	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:18	7440-41-7	
Boron	**739**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:18	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:18	7440-43-9	
Calcium	**41000**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:18	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:18	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:18	7439-92-1	
Lithium	**5.0J**	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:18	7439-93-2	
Molybdenum	**2.5J**	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:18	7439-98-7	
Selenium	ND	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:18	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.078J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 17:59	7440-36-0	
Cobalt	**0.13J**	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 17:59	7440-48-4	
Thallium	**0.064J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 17:59	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**280**	mg/L	5.0	5.0	1		12/15/15 15:15		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**25.5**	mg/L	5.0	2.5	5		12/18/15 23:16	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.066	1		12/18/15 22:59	16984-48-8	
Sulfate	**62.2**	mg/L	5.0	1.2	5		12/18/15 23:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 302 **Lab ID: 60209439002** Collected: 12/10/15 12:40 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	**33.9**	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:21	7440-38-2	
Barium	**483**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:21	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:21	7440-41-7	
Boron	**564**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:21	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:21	7440-43-9	
Calcium	**95100**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:21	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:21	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:21	7439-92-1	
Lithium	ND	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:21	7439-93-2	
Molybdenum	ND	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:21	7439-98-7	
Selenium	ND	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:21	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.091J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:03	7440-36-0	
Cobalt	**1.6**	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:03	7440-48-4	
Thallium	**0.25J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:03	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**503**	mg/L	5.0	5.0	1		12/15/15 15:15		
9040 pH	Analytical Method: EPA 9040								
pH	**7.3**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.0**	mg/L	1.0	0.50	1		12/17/15 23:28	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.066	1		12/17/15 23:28	16984-48-8	
Sulfate	**9.8**	mg/L	1.0	0.24	1		12/17/15 23:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(913)599-5665

ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 303 **Lab ID: 60209439003** Collected: 12/10/15 14:00 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:23	7440-38-2	
Barium	**102**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:23	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:23	7440-41-7	
Boron	**178**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:23	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:23	7440-43-9	
Calcium	**38200**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:23	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:23	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:23	7439-92-1	
Lithium	**5.1J**	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:23	7439-93-2	
Molybdenum	ND	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:23	7439-98-7	
Selenium	ND	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:23	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.22J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:07	7440-36-0	
Cobalt	**0.14J**	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:07	7440-48-4	
Thallium	**0.14J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:07	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:19	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**240**	mg/L	5.0	5.0	1		12/15/15 15:15		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.7**	mg/L	1.0	0.50	1		12/18/15 23:51	16887-00-6	
Fluoride	**0.43**	mg/L	0.20	0.066	1		12/18/15 23:51	16984-48-8	
Sulfate	**30.8**	mg/L	5.0	1.2	5		12/19/15 00:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 20 **Lab ID: 60209439004** Collected: 12/10/15 15:15 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:25	7440-38-2	
Barium	**113**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:25	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:25	7440-41-7	
Boron	**3550**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:25	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:25	7440-43-9	
Calcium	**174000**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:25	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:25	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:25	7439-92-1	
Lithium	**5.0J**	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:25	7439-93-2	
Molybdenum	**52.2**	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:25	7439-98-7	
Selenium	**30.6**	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:25	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.20J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:12	7440-36-0	
Cobalt	**1.3**	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:12	7440-48-4	
Thallium	ND	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1130**	mg/L	5.0	5.0	1		12/15/15 15:16		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**5.2**	mg/L	1.0	0.50	1		12/19/15 00:26	16887-00-6	
Fluoride	**0.47**	mg/L	0.20	0.066	1		12/19/15 00:26	16984-48-8	
Sulfate	**578**	mg/L	100	23.7	100		12/19/15 00:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 20 DUP **Lab ID: 60209439005** Collected: 12/10/15 15:15 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:27	7440-38-2	
Barium	**103**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:27	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:27	7440-41-7	
Boron	**3440**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:27	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:27	7440-43-9	
Calcium	**167000**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:27	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:27	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:27	7439-92-1	
Lithium	**6.5J**	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:27	7439-93-2	
Molybdenum	**50.0**	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:27	7439-98-7	
Selenium	**32.5**	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:27	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.15J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:34	7440-36-0	
Cobalt	**1.3**	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:34	7440-48-4	
Thallium	**0.14J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:34	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1260**	mg/L	5.0	5.0	1		12/15/15 15:16		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**5.4**	mg/L	1.0	0.50	1		12/19/15 01:01	16887-00-6	
Fluoride	**0.48**	mg/L	0.20	0.066	1		12/19/15 01:01	16984-48-8	
Sulfate	**600**	mg/L	100	23.7	100		12/19/15 01:18	14808-79-8	

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: MW 6 **Lab ID: 60209439006** Collected: 12/10/15 16:25 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:29	7440-38-2	
Barium	**45.5**	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:29	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:29	7440-41-7	
Boron	**25.7J**	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:29	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:29	7440-43-9	
Calcium	**64000**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:29	7440-70-2	
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:29	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:29	7439-92-1	
Lithium	ND	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:29	7439-93-2	
Molybdenum	ND	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:29	7439-98-7	
Selenium	ND	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:29	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.18J**	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:38	7440-36-0	
Cobalt	ND	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:38	7440-48-4	
Thallium	**0.18J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:38	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:26	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**382**	mg/L	5.0	5.0	1		12/15/15 15:17		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**7.5**	mg/L	1.0	0.50	1		12/19/15 02:28	16887-00-6	
Fluoride	**0.094J**	mg/L	0.20	0.066	1		12/19/15 02:28	16984-48-8	
Sulfate	**23.0**	mg/L	5.0	1.2	5		12/19/15 01:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Sample: FIELD BLANK **Lab ID: 60209439007** Collected: 12/10/15 15:30 Received: 12/14/15 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	ND	ug/L	10.0	4.5	1	12/16/15 15:30	12/17/15 19:32	7440-38-2	
Barium	ND	ug/L	10.0	0.52	1	12/16/15 15:30	12/17/15 19:32	7440-39-3	
Beryllium	ND	ug/L	1.0	0.17	1	12/16/15 15:30	12/17/15 19:32	7440-41-7	
Boron	ND	ug/L	100	3.1	1	12/16/15 15:30	12/17/15 19:32	7440-42-8	
Cadmium	ND	ug/L	5.0	0.56	1	12/16/15 15:30	12/17/15 19:32	7440-43-9	
Calcium	**25.0J**	ug/L	100	5.2	1	12/16/15 15:30	12/17/15 19:32	7440-70-2	B
Chromium	ND	ug/L	5.0	0.96	1	12/16/15 15:30	12/17/15 19:32	7440-47-3	
Lead	ND	ug/L	5.0	1.9	1	12/16/15 15:30	12/17/15 19:32	7439-92-1	
Lithium	ND	ug/L	10.0	2.5	1	12/16/15 15:30	12/17/15 19:32	7439-93-2	
Molybdenum	ND	ug/L	20.0	1.5	1	12/16/15 15:30	12/17/15 19:32	7439-98-7	
Selenium	ND	ug/L	15.0	5.8	1	12/16/15 15:30	12/17/15 19:32	7782-49-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.055	1	12/19/15 13:00	12/24/15 18:42	7440-36-0	
Cobalt	ND	ug/L	1.0	0.10	1	12/19/15 13:00	12/24/15 18:42	7440-48-4	
Thallium	**0.067J**	ug/L	1.0	0.052	1	12/19/15 13:00	12/24/15 18:42	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.012	1	12/16/15 09:00	12/16/15 13:28	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**49.0**	mg/L	5.0	5.0	1		12/15/15 15:18		
9040 pH	Analytical Method: EPA 9040								
pH	**6.4**	Std. Units	0.10	0.10	1		12/23/15 13:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		12/18/15 02:57	16887-00-6	
Fluoride	ND	mg/L	0.20	0.066	1		12/18/15 02:57	16984-48-8	
Sulfate	ND	mg/L	1.0	0.24	1		12/18/15 02:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: MERP/10188 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

METHOD BLANK: 1684977 Matrix: Water
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.024J	0.20	0.012	12/16/15 12:28	

LABORATORY CONTROL SAMPLE: 1684978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1684979 1684980

Parameter	Units	60209191017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	1.8	5	5	6.7	6.5	99	94	75-125	3	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: MPRP/34283 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

METHOD BLANK: 1685362 Matrix: Water
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	ND	10.0	4.5	12/17/15 18:37	
Barium	ug/L	ND	10.0	0.52	12/17/15 18:37	
Beryllium	ug/L	ND	1.0	0.17	12/17/15 18:37	
Boron	ug/L	ND	100	3.1	12/17/15 18:37	
Cadmium	ug/L	ND	5.0	0.56	12/17/15 18:37	
Calcium	ug/L	7.1J	100	5.2	12/17/15 18:37	
Chromium	ug/L	ND	5.0	0.96	12/17/15 18:37	
Lead	ug/L	ND	5.0	1.9	12/17/15 18:37	
Lithium	ug/L	ND	10.0	2.5	12/17/15 18:37	
Molybdenum	ug/L	ND	20.0	1.5	12/17/15 18:37	
Selenium	ug/L	ND	15.0	5.8	12/17/15 18:37	

LABORATORY CONTROL SAMPLE: 1685363

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1000	1020	102	80-120	
Barium	ug/L	1000	1040	104	80-120	
Beryllium	ug/L	1000	1030	103	80-120	
Boron	ug/L	1000	1000	100	80-120	
Cadmium	ug/L	1000	1030	103	80-120	
Calcium	ug/L	10000	9980	100	80-120	
Chromium	ug/L	1000	1040	104	80-120	
Lead	ug/L	1000	1040	104	80-120	
Lithium	ug/L	1000	1020	102	80-120	
Molybdenum	ug/L	1000	1100	110	80-120	
Selenium	ug/L	1000	1030	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1685364 1685365

Parameter	Units	60209081008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	ND	1000	1000	1080	1050	108	105	75-125	2	20	
Barium	ug/L	71.6	1000	1000	1110	1090	104	102	75-125	2	20	
Beryllium	ug/L	ND	1000	1000	1030	1020	103	102	75-125	1	20	
Boron	ug/L	181	1000	1000	1220	1210	104	103	75-125	1	20	
Cadmium	ug/L	ND	1000	1000	1050	1030	105	103	75-125	2	20	
Calcium	ug/L	93400	10000	10000	104000	103000	105	99	75-125	1	20	
Chromium	ug/L	ND	1000	1000	1010	1010	100	101	75-125	0	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1685364 1685365

Parameter	Units	60209081008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	1000	1000	1020	1010	102	101	75-125	1	20	
Lithium	ug/L	29.4	1000	1000	1110	1090	108	106	75-125	2	20	
Molybdenum	ug/L	ND	1000	1000	1110	1090	111	109	75-125	2	20	
Selenium	ug/L	ND	1000	1000	1070	1040	107	104	75-125	3	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: MPRP/34337 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

METHOD BLANK: 1688036 Matrix: Water
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.055	12/24/15 17:37	
Cobalt	ug/L	ND	1.0	0.10	12/24/15 17:37	
Thallium	ug/L	0.10J	1.0	0.052	12/24/15 17:37	

LABORATORY CONTROL SAMPLE: 1688037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.5	104	80-120	
Cobalt	ug/L	40	41.1	103	80-120	
Thallium	ug/L	40	40.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1688038 1688039

Parameter	Units	60209439004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.20J	40	40	43.0	43.0	107	107	75-125	0	20	
Cobalt	ug/L	1.3	40	40	40.0	40.6	97	98	75-125	1	20	
Thallium	ug/L	ND	40	40	40.2	40.8	101	102	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: WET/58991 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005

METHOD BLANK: 1684142 Matrix: Water
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	12/15/15 15:06	

LABORATORY CONTROL SAMPLE: 1684143

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 1684144

Parameter	Units	60209343006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1460	1410	3	10	

SAMPLE DUPLICATE: 1684145

Parameter	Units	60209427003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	35.0	37.0	6	10	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: WET/58997 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60209439006, 60209439007

METHOD BLANK: 1684204 Matrix: Water
Associated Lab Samples: 60209439006, 60209439007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	12/15/15 15:17	

LABORATORY CONTROL SAMPLE: 1684205

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1070	107	80-120	

SAMPLE DUPLICATE: 1684214

Parameter	Units	60209427009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1250	1230	1	10	

SAMPLE DUPLICATE: 1684215

Parameter	Units	60209413004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	844	856	1	10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: WET/59176 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60209439001, 60209439002, 60209439003, 60209439004, 60209439005, 60209439006, 60209439007

SAMPLE DUPLICATE: 1688840

Parameter	Units	60209368001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.4	7.4	1	10	H6

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

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: WETA/37385 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60209439002, 60209439007

METHOD BLANK: 1686491 Matrix: Water
Associated Lab Samples: 60209439002, 60209439007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	12/17/15 21:43	
Fluoride	mg/L	ND	0.20	0.066	12/17/15 21:43	
Sulfate	mg/L	ND	1.0	0.24	12/17/15 21:43	

LABORATORY CONTROL SAMPLE: 1686492

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	2.4	97	80-120	
Sulfate	mg/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1686494 1686495

Parameter	Units	60209604001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	94.9	50	50	143	143	96	97	80-120	0	15	
Fluoride	mg/L	ND	25	25	26.1	26.1	100	100	80-120	0	15	
Sulfate	mg/L	66.3	50	50	116	115	100	98	80-120	1	15	

SAMPLE DUPLICATE: 1686493

Parameter	Units	60209454001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	21.7	21.6	0	15	
Fluoride	mg/L	ND	0.28J		15	
Sulfate	mg/L	210	209	0	15	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

QC Batch: WETA/37392 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60209439001, 60209439003, 60209439004, 60209439005, 60209439006

METHOD BLANK: 1686837 Matrix: Water
Associated Lab Samples: 60209439001, 60209439003, 60209439004, 60209439005, 60209439006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	12/18/15 21:49	
Fluoride	mg/L	ND	0.20	0.066	12/18/15 21:49	
Sulfate	mg/L	ND	1.0	0.24	12/18/15 21:49	

LABORATORY CONTROL SAMPLE: 1686838

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	80-120	
Fluoride	mg/L	2.5	2.4	95	80-120	
Sulfate	mg/L	5	4.6	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1686840 1686841

Parameter	Units	60209716001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.5	50	50	65.4	67.4	88	92	80-120	3	15	
Fluoride	mg/L	ND	25	25	25.1	26.2	96	101	80-120	4	15	
Sulfate	mg/L	74.7	50	50	123	123	97	98	80-120	0	15	

SAMPLE DUPLICATE: 1686839

Parameter	Units	60209727002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L		48.9			
Fluoride	mg/L		17.7			
Sulfate	mg/L	120	120	0	15	

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.

Pace Analytical Services, Inc.
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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/2521535
Pace Project No.: 60209439

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60209439001	**MW 301**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439002	**MW 302**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439003	**MW 303**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439004	**MW 20**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439005	**MW 20 DUP**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439006	**MW 6**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439007	**FIELD BLANK**	EPA 3010	MPRP/34283	EPA 6010	ICP/25174
60209439001	**MW 301**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439002	**MW 302**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439003	**MW 303**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439004	**MW 20**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439005	**MW 20 DUP**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439006	**MW 6**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439007	**FIELD BLANK**	EPA 3010	MPRP/34337	EPA 6020	ICPM/3991
60209439001	**MW 301**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439002	**MW 302**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439003	**MW 303**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439004	**MW 20**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439005	**MW 20 DUP**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439006	**MW 6**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439007	**FIELD BLANK**	EPA 7470	MERP/10188	EPA 7470	MERC/10137
60209439001	**MW 301**	SM 2540C	WET/58991		
60209439002	**MW 302**	SM 2540C	WET/58991		
60209439003	**MW 303**	SM 2540C	WET/58991		
60209439004	**MW 20**	SM 2540C	WET/58991		
60209439005	**MW 20 DUP**	SM 2540C	WET/58991		
60209439006	**MW 6**	SM 2540C	WET/58997		
60209439007	**FIELD BLANK**	SM 2540C	WET/58997		
60209439001	**MW 301**	EPA 9040	WET/59176		
60209439002	**MW 302**	EPA 9040	WET/59176		
60209439003	**MW 303**	EPA 9040	WET/59176		
60209439004	**MW 20**	EPA 9040	WET/59176		
60209439005	**MW 20 DUP**	EPA 9040	WET/59176		
60209439006	**MW 6**	EPA 9040	WET/59176		
60209439007	**FIELD BLANK**	EPA 9040	WET/59176		
60209439001	**MW 301**	EPA 9056	WETA/37392		
60209439002	**MW 302**	EPA 9056	WETA/37385		
60209439003	**MW 303**	EPA 9056	WETA/37392		
60209439004	**MW 20**	EPA 9056	WETA/37392		
60209439005	**MW 20 DUP**	EPA 9056	WETA/37392		
60209439006	**MW 6**	EPA 9056	WETA/37392		
60209439007	**FIELD BLANK**	EPA 9056	WETA/37385		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60209439

60209439

Client Name: SCS Aguadera

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 7751 8143 6624 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: CF +0.8 T-239 / (CF +0.7 T-262) **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 2.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 12/14

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☒N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☒N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [signature] Date: 12-14-15

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Alliant-Lansing
Project Number:	2521535

Section C — Invoice Information:

Attention:	Meghan Blodgett
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

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

Site Location STATE: IA

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 *	6020 Total Metals: Sb-Co-Tl	7470 Total Hg	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 6020 9439
																		N	N	N					
1	MW 301	WT	G	xxx	xxx	12-10-15	11:15	13.6	2	1		1						X	X	X	X	X	X		001
2	MW 302	WT	G	xxx	xxx		12:40	12.7	2	1		1						X	X	X	X	X	X		002
3	MW 303	WT	G	xxx	xxx		14:00	8.5	2	1		1						X	X	X	X	X	X		003
4	MW 20	WT	G	xxx	xxx		15:15	12.1	2	1		1						X	X	X	X	X	X		004
5	MW 20 Dup	WT	G	xxx	xxx		15:15	12.1	2	1		1						X	X	X	X	X	X		005
6	MW 6	WT	G	xxx	xxx		16:25	9.6	2	1		1						X	X	X	X	X	X		006
7	Field Blank	WT	G	x	x		15:30	—	2	1		1						X	X	X	X	X	X		007
8																									
9																									
10																									
11																									
12																									

BPCN BPCN 20

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Paul A. Grover	12/10/15	21:00		12/14	0850	2.7	Y	Y	Y
* As-Ba-Be-B-Cd-Ca-Cr-Pb-Li-Mo-Se										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Paul A. Grover

SIGNATURE of SAMPLER: Paul A. Grover DATE Signed (MM/DD/YY): 12-10-2015

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

January 26, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended Report, Revision 2 on 1/26/18, Total Radium Concentration

This report has been reissued on January 7, 2016 to report total radium calculation.

Revision 2 - This report replaces the January 7, 2016 report. This report has been reissued on January 26, 2018. In 2017, the process for calculating Total Radium concentration using results from individual Ra-226 and Ra-228 analyses was standardized. At the client's request, this project from 2016 has been revised to include a Total Radium concentration using the standardized method.

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

Sincerely,

Trudy Gipson

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

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

Enclosures

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

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

CERTIFICATIONS

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60209434001	**MW 301**	Water	12/10/15 11:15	12/14/15 08:50
60209434002	**MW 302**	Water	12/10/15 12:40	12/14/15 08:50
60209434003	**MW 303**	Water	12/10/15 14:00	12/14/15 08:50
60209434004	**MW 20**	Water	12/10/15 15:15	12/14/15 08:50
60209434005	**MW 20 DUP**	Water	12/10/15 15:15	12/14/15 08:50
60209434006	**MW 6**	Water	12/10/15 16:25	12/14/15 08:50
60209434007	**FIELD BLANK**	Water	12/10/15 15:30	12/14/15 08:50

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60209434001	**MW 301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60209434002	**MW 302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60209434003	**MW 303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60209434004	**MW 20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60209434005	**MW 20 DUP**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60209434006	**MW 6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60209434007	**FIELD BLANK**	EPA 903.1	WRR	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: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 301 **Lab ID: 60209434001** Collected: 12/10/15 11:15 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.349 ± 0.325 (0.428) C:NA T:90%**	pCi/L	01/06/16 11:47	13982-63-3	
Radium-228	EPA 904.0	**0.0870 ± 0.331 (0.751) C:87% T:73%**	pCi/L	12/30/15 14:27	15262-20-1	
Total Radium	Total Radium Calculation	**0.436 ± 0.656 (1.18)**	pCi/L	01/07/16 08:42	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 302 **Lab ID: 60209434002** Collected: 12/10/15 12:40 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.415 ± 0.389 (0.551) C:NA T:89%**	pCi/L	01/06/16 11:47	13982-63-3	
Radium-228	EPA 904.0	**1.04 ± 0.397 (0.588) C:85% T:84%**	pCi/L	12/30/15 14:27	15262-20-1	
Total Radium	Total Radium Calculation	**1.46 ± 0.786 (1.14)**	pCi/L	01/07/16 08:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 303 **Lab ID: 60209434003** Collected: 12/10/15 14:00 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.132 ± 0.411 (0.934) C:NA T:90%**	pCi/L	01/06/16 11:56	13982-63-3	
Radium-228	EPA 904.0	**0.926 ± 0.388 (0.625) C:84% T:90%**	pCi/L	12/30/15 14:28	15262-20-1	
Total Radium	Total Radium Calculation	**0.926 ± 0.799 (1.56)**	pCi/L	01/07/16 08:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 20 **Lab ID: 60209434004** Collected: 12/10/15 15:15 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.311 ± 0.474 (0.815) C:NA T:90%**	pCi/L	01/06/16 11:56	13982-63-3	
Radium-228	EPA 904.0	**0.485 ± 0.355 (0.692) C:83% T:80%**	pCi/L	12/30/15 14:28	15262-20-1	
Total Radium	Total Radium Calculation	**0.796 ± 0.829 (1.51)**	pCi/L	01/07/16 08:42	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 20 DUP **Lab ID: 60209434005** Collected: 12/10/15 15:15 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.458 ± 0.452 (0.688) C:NA T:93%**	pCi/L	01/06/16 11:56	13982-63-3	
Radium-228	EPA 904.0	**1.22 ± 0.461 (0.688) C:83% T:77%**	pCi/L	12/30/15 14:29	15262-20-1	
Total Radium	Total Radium Calculation	**1.68 ± 0.913 (1.38)**	pCi/L	01/07/16 08:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: MW 6 **Lab ID: 60209434006** Collected: 12/10/15 16:25 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.599 ± 0.475 (0.645) C:NA T:94%**	pCi/L	01/06/16 11:57	13982-63-3	
Radium-228	EPA 904.0	**0.913 ± 0.382 (0.618) C:84% T:92%**	pCi/L	12/30/15 14:30	15262-20-1	
Total Radium	Total Radium Calculation	**1.51 ± 0.857 (1.26)**	pCi/L	01/07/16 08:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

Sample: FIELD BLANK **Lab ID: 60209434007** Collected: 12/10/15 15:30 Received: 12/14/15 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.450 ± 0.386 (0.523) C:NA T:95%**	pCi/L	01/06/16 12:09	13982-63-3	
Radium-228	EPA 904.0	**0.436 ± 0.312 (0.604) C:83% T:89%**	pCi/L	12/30/15 14:30	15262-20-1	
Total Radium	Total Radium Calculation	**0.886 ± 0.698 (1.13)**	pCi/L	01/07/16 08:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/2521535
Pace Project No.: 60209434

QC Batch: 204187 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60209434001, 60209434002, 60209434003, 60209434004, 60209434005, 60209434006, 60209434007

METHOD BLANK: 998794 Matrix: Water
Associated Lab Samples: 60209434001, 60209434002, 60209434003, 60209434004, 60209434005, 60209434006, 60209434007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.563 ± 0.317 (0.573) C:87% T:90%	pCi/L	12/30/15 14:25	

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: Alliant-Lansing/2521535
Pace Project No.: 60209434

QC Batch: 204763 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60209434001, 60209434002, 60209434003, 60209434004, 60209434005, 60209434006, 60209434007

METHOD BLANK: 1001997 Matrix: Water
Associated Lab Samples: 60209434001, 60209434002, 60209434003, 60209434004, 60209434005, 60209434006, 60209434007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.338 ± 0.444 (0.739) C:NA T:99%	pCi/L	01/06/16 11:33	

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: Alliant-Lansing/2521535
Pace Project No.: 60209434

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: Alliant-Lansing/2521535
Pace Project No.: 60209434

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60209434001	**MW 301**	EPA 903.1	204763		
60209434002	**MW 302**	EPA 903.1	204763		
60209434003	**MW 303**	EPA 903.1	204763		
60209434004	**MW 20**	EPA 903.1	204763		
60209434005	**MW 20 DUP**	EPA 903.1	204763		
60209434006	**MW 6**	EPA 903.1	204763		
60209434007	**FIELD BLANK**	EPA 903.1	204763		
60209434001	**MW 301**	EPA 904.0	204187		
60209434002	**MW 302**	EPA 904.0	204187		
60209434003	**MW 303**	EPA 904.0	204187		
60209434004	**MW 20**	EPA 904.0	204187		
60209434005	**MW 20 DUP**	EPA 904.0	204187		
60209434006	**MW 6**	EPA 904.0	204187		
60209434007	**FIELD BLANK**	EPA 904.0	204187		
60209434001	**MW 301**	Total Radium Calculation	205951		
60209434002	**MW 302**	Total Radium Calculation	205951		
60209434003	**MW 303**	Total Radium Calculation	286188		
60209434004	**MW 20**	Total Radium Calculation	205951		
60209434005	**MW 20 DUP**	Total Radium Calculation	205951		
60209434006	**MW 6**	Total Radium Calculation	205951		
60209434007	**FIELD BLANK**	Total Radium Calculation	205951		

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Sample Condition Upon Receipt

WO# : 60209434

60209434

Optional
Proj Due Date:
Proj Name:

Client Name: SCS Engineers

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

Tracking #: 775 1 8143 6808 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: CF +0.8 T-239 / CF +0.7 T-262 (circled) **Type of Ice:** Wet (circled) Blue None (circle one) ☐ Samples received on ice, cooling process has begun.

Cooler Temperature: 3.8

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JM 12/14/15 915

Chain of Custody present:	☑Yes	☐No	☐N/A	1.
Chain of Custody filled out:	☑Yes	☐No	☐N/A	2.
Chain of Custody relinquished:	☑Yes	☐No	☐N/A	3.
Sampler name & signature on COC:	☑Yes	☐No	☐N/A	4.
Samples arrived within holding time:	☑Yes	☐No	☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time requested:	☐Yes	☑No	☐N/A	7.
Sufficient volume:	☑Yes	☐No	☐N/A	8.
Correct containers used:	☑Yes	☐No	☐N/A	
Pace containers used:	☑Yes	☐No	☐N/A	9.
Containers intact:	☑Yes	☐No	☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes	☐No	☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes	☐No	☑N/A	12.
Sample labels match COC:	☑Yes	☐No	☐N/A	
Includes date/time/ID/analyses Matrix: water				13.
All containers needing preservation have been checked.	☐Yes	☐No	☑N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☑N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☑Yes	☐No		Initial when completed: JM / Lot # of added preservative
Trip Blank present:	☐Yes	☐No	☑N/A	
Pace Trip Blank lot # (if purchased): n/a				15.
Headspace in VOA vials (>6mm):	☐Yes	☐No	☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes	☐No	☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes	☐No	☑N/A	18.

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

Person Contacted: ____________ Date/Time: ____________

Comments/ Resolution: ____________

Project Manager Review: [signature] Date: 12-14-15

F-KS-C-003-Rev.9, 30June2015

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	SCS Engineers	Report To:	Meghan Blodgett	Attention:	Meghan Blodgett
Address:	2830 Dairy Drive	Copy To:	Tom Karwaski	Company Name:	SCS Engineers
	Madison WI 53718		NOTE: INTER-REGIONAL PROJECT FOR KS	Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	Alliant-Lansing	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	2521535	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	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW 301	WT	G	xxx	xxx	12-10-15	11:15	13.6	2			2						X	X		6029434 001
2	MW 302	WT	G	xxx	xxx		12:40	12.7	2			2						X	X		002
3	MW 303	WT	G	xxx	xxx		14:00	9.5	2			2						X	X		003
4	MW 20	WT	G	xxx	xxx		15:15	12.1	2			2						X	X		004
5	MW 20 Dup	WT	G	xxx	xxx		15:15	12.1	2			2						X	X		005
6	MW6	WT	G	xxx	xxx		16:25	9.6	2			2						X	X		006
7	Field Blank	WT	G	XX	XX		15:30	-	2			2						X	X		007
8																					
9																					
10																					
11																					
12																					

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 1638 Roseytown Road, Greensburg, PA 15601	Paul A. Grover	12/10/15	21:00		12/14/15	850	3.8	Y	Y	Y

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:	Paul A. Grover					
SIGNATURE of SAMPLER:	Paul A. Grover	DATE Signed (MM/DD/YY): 12/10/2015				

*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.

30168030

Chain of Custody

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Workorder: 60209434 **Workorder Name:** Alliant-Lansing/2521535 **Owner Received Date:** 12/14/2015 **Results Requested By:** 12/24/2015

Report To	Subcontract To
Trudy Gipson Pace Analytical Services, Inc. 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665 Fax (913)599-1759	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	Requested Analysis: 904.0 Radium-228											LAB USE ONLY
1	MW 301	PS	12/10/2015 11:15	60209434001	Water	2						X	X											001
2	MW 302	PS	12/10/2015 12:40	60209434002	Water	2						X	X											002
3	MW 303	PS	12/10/2015 14:00	60209434003	Water	2						X	X											003
4	MW 20	PS	12/10/2015 15:15	60209434004	Water	2						X	X											004
5	MW 20 DUP	PS	12/10/2015 15:15	60209434005	Water	2						X	X											005
6	MW 6	PS	12/10/2015 16:25	60209434006	Water	2						X	X											006
7	FIELD BLANK	PS	12/10/2015 15:30	60209434007	Water	2						X	X											007

Transfers	Released By	Date/Time	Received By	Date/Time
1		12/14/15 1200		12/15/15 0930
2				
3				

Comments

J-Flag Results

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

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

Sample Condition Upon Receipt

30168030

Pace Analytical

Client Name: Pace KS

Project # _____

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

Tracking #: 605088626540

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no **Biological Tissue is Frozen:** Yes No

Packing Material: Bubble Wrap ___ Bubble Bags ___ (None) ___ Other _____

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

Cooler Temp.: Observed Temp.: NA °C Correction Factor: — °C Final Temp: — °C

Date and Initials of person examining contents: AU 12/15/15

Temp should be above freezing to 6°C

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Carina Serrano **Date:** 12/16/15

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)

30168030

Pace Analytical

Project Number: _____

Client Name: Pace ES

Item No.	Matrix Code	Glass Jar (120 / 250 / 500 / 1L)	Soil kit (2 SB, 1M, soil jar)	Chemistry (250 / 500 / 1L)	Organics (1L)	Nutrient (250 / 500)	Phenolics (250 ml)	TOC (40 ml / 250 ml)	TOX (250 ml)	Total Metals	Dissolved Metals preserved Y N	O & G (1L)	TPH (1L)	VOA (40 ml 30 ml)	Cyanide (250 ml)	Sulfide (500 ml)	Bacteria (120 ml)	Wipes / swipe/ smear/ filter	Radchem Nalgene (125 / 250 / 500 / 1L)	Radchem Nalgene (1/2 gal. / 1 gal.L)	Cubitainer (500 ml / 4L)	Ziploc	Other	Other
001	WT																		2+2					
002	WT																		2					

A2 Round 2 Background Sampling, Analytical Laboratory Report

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

May 13, 2016

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 03, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers

Pace Analytical Services, Inc.
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CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60218197001	**MW-6**	Water	04/29/16 10:15	05/03/16 08:30
60218197002	**MW-20**	Water	04/29/16 12:40	05/03/16 08:30
60218197003	**MW-301**	Water	04/29/16 16:25	05/03/16 08:30
60218197004	**MW-302**	Water	04/29/16 15:35	05/03/16 08:30
60218197005	**MW-303**	Water	04/29/16 14:45	05/03/16 08:30
60218197006	**FIELD BLANK**	Water	04/29/16 17:10	05/03/16 08:30

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60218197001	**MW-6**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60218197002	**MW-20**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60218197003	**MW-301**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60218197004	**MW-302**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60218197005	**MW-303**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K
60218197006	**FIELD BLANK**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NDJ	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	CRS	1	PASI-K
		EPA 9056	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: MW-6 **Lab ID: 60218197001** Collected: 04/29/16 10:15 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 11:29	7440-42-8	
Calcium	**72.6**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 11:29	7440-70-2	M1
Lithium	ND	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 11:29	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 14:44	7440-36-0	
Arsenic	**0.28J**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:44	7440-38-2	
Barium	**45.6**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 14:44	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 14:44	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 14:44	7440-43-9	
Chromium	**0.82J**	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 14:44	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:44	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 14:44	7439-92-1	
Molybdenum	**0.25J**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:44	7439-98-7	
Selenium	**0.57J**	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 14:44	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**328**	mg/L	5.0	5.0	1		05/05/16 14:09		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**7.6**	mg/L	1.0	0.50	1		05/04/16 11:00	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.073	1		05/04/16 11:00	16984-48-8	
Sulfate	**22.2**	mg/L	2.0	0.50	2		05/04/16 15:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: MW-20 **Lab ID: 60218197002** Collected: 04/29/16 12:40 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3400**	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 11:43	7440-42-8	
Calcium	**145**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 11:43	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 11:43	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 14:49	7440-36-0	
Arsenic	**5.4**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:49	7440-38-2	
Barium	**68.9**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 14:49	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 14:49	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 14:49	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 14:49	7440-47-3	
Cobalt	**1.0**	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:49	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 14:49	7439-92-1	
Molybdenum	**65.5**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:49	7439-98-7	
Selenium	**15.0**	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 14:49	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:37	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**811**	mg/L	5.0	5.0	1		05/05/16 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**2.9**	mg/L	1.0	0.50	1		05/04/16 12:53	16887-00-6	
Fluoride	**0.51**	mg/L	0.20	0.073	1		05/04/16 12:53	16984-48-8	
Sulfate	**346**	mg/L	50.0	12.4	50		05/04/16 15:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: MW-301 **Lab ID: 60218197003** Collected: 04/29/16 16:25 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**436**	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 11:47	7440-42-8	
Calcium	**39.1**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 11:47	7440-70-2	
Lithium	**5.3J**	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 11:47	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.086J**	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 15:02	7440-36-0	
Arsenic	**2.3**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:02	7440-38-2	
Barium	**139**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 15:02	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 15:02	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 15:02	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 15:02	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:02	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 15:02	7439-92-1	
Molybdenum	**5.5**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:02	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 15:02	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:02	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**176**	mg/L	5.0	5.0	1		05/05/16 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.5**	mg/L	2.0	1.0	2		05/04/16 16:12	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.073	1		05/04/16 13:08	16984-48-8	
Sulfate	**38.8**	mg/L	5.0	1.2	5		05/04/16 16:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: MW-302 **Lab ID: 60218197004** Collected: 04/29/16 15:35 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**468**	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 11:51	7440-42-8	
Calcium	**96.5**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 11:51	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 11:51	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 15:06	7440-36-0	
Arsenic	**30.4**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:06	7440-38-2	
Barium	**479**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 15:06	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 15:06	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 15:06	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 15:06	7440-47-3	
Cobalt	**1.1**	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:06	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 15:06	7439-92-1	
Molybdenum	**0.81J**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:06	7439-98-7	
Selenium	**0.20J**	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 15:06	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**422**	mg/L	5.0	5.0	1		05/05/16 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**14.9**	mg/L	1.0	0.50	1		05/04/16 13:24	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.073	1		05/04/16 13:24	16984-48-8	
Sulfate	**0.72J**	mg/L	1.0	0.25	1		05/04/16 13:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: MW-303 **Lab ID: 60218197005** Collected: 04/29/16 14:45 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**178**	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 12:02	7440-42-8	
Calcium	**48.6**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 12:02	7440-70-2	
Lithium	**6.2J**	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 12:02	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.27J**	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 15:10	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:10	7440-38-2	
Barium	**122**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 15:10	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 15:10	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 15:10	7440-43-9	
Chromium	**0.52J**	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 15:10	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:10	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 15:10	7439-92-1	
Molybdenum	**5.0**	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 15:10	7439-98-7	
Selenium	**1.2**	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 15:10	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 15:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**200**	mg/L	5.0	5.0	1		05/05/16 14:11		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**16.8**	mg/L	1.0	0.50	1		05/04/16 13:39	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.073	1		05/04/16 13:39	16984-48-8	
Sulfate	**35.8**	mg/L	5.0	1.2	5		05/04/16 16:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Sample: FIELD BLANK **Lab ID: 60218197006** Collected: 04/29/16 17:10 Received: 05/03/16 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	05/03/16 14:40	05/04/16 12:05	7440-42-8	
Calcium	**0.027J**	mg/L	0.10	0.0081	1	05/03/16 14:40	05/04/16 12:05	7440-70-2	B
Lithium	ND	ug/L	10.0	4.9	1	05/03/16 14:40	05/04/16 12:05	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	05/03/16 14:40	05/10/16 14:40	7440-36-0	
Arsenic	ND	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:40	7440-38-2	
Barium	**0.20J**	ug/L	1.0	0.14	1	05/03/16 14:40	05/10/16 14:40	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.080	1	05/03/16 14:40	05/10/16 14:40	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	05/03/16 14:40	05/10/16 14:40	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	05/03/16 14:40	05/10/16 14:40	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:40	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	05/03/16 14:40	05/10/16 14:40	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.10	1	05/03/16 14:40	05/10/16 14:40	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	05/03/16 14:40	05/10/16 14:40	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	05/03/16 14:40	05/10/16 14:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	05/10/16 09:45	05/10/16 13:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**9.0**	mg/L	5.0	5.0	1		05/05/16 14:11		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		05/12/16 15:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		05/04/16 13:54	16887-00-6	
Fluoride	ND	mg/L	0.20	0.073	1		05/04/16 13:54	16984-48-8	
Sulfate	ND	mg/L	1.0	0.25	1		05/04/16 13:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: MERP/10588 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

METHOD BLANK: 1755264 Matrix: Water
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	05/10/16 13:22	

LABORATORY CONTROL SAMPLE: 1755265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1755266 1755267

Parameter	Units	60218197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.9	5.0	98	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: MPRP/35754 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

METHOD BLANK: 1750978 Matrix: Water
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	50.0	05/04/16 11:22	
Calcium	mg/L	0.022J	0.10	0.0081	05/04/16 11:22	
Lithium	ug/L	ND	10.0	4.9	05/04/16 11:22	

LABORATORY CONTROL SAMPLE: 1750979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	991	99	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1750980 1750981

Parameter	Units	60218197001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	ND	1000	1000	1010	1010	98	98	75-125	0	20	
Calcium	mg/L	72.6	10	10	79.2	81.3	67	87	75-125	3	20	M1
Lithium	ug/L	ND	1000	1000	998	1000	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: MPRP/35755 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

METHOD BLANK: 1750982 Matrix: Water
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.058	05/10/16 14:31	
Arsenic	ug/L	ND	1.0	0.10	05/10/16 14:31	
Barium	ug/L	0.33J	1.0	0.14	05/10/16 14:31	
Beryllium	ug/L	ND	0.50	0.080	05/10/16 14:31	
Cadmium	ug/L	ND	0.50	0.029	05/10/16 14:31	
Chromium	ug/L	ND	1.0	0.34	05/10/16 14:31	
Cobalt	ug/L	ND	1.0	0.50	05/10/16 14:31	
Lead	ug/L	ND	1.0	0.19	05/10/16 14:31	
Molybdenum	ug/L	ND	1.0	0.10	05/10/16 14:31	
Selenium	ug/L	ND	1.0	0.18	05/10/16 14:31	
Thallium	ug/L	ND	1.0	0.50	05/10/16 14:31	

LABORATORY CONTROL SAMPLE: 1750983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	37.7	94	80-120	
Arsenic	ug/L	40	37.8	94	80-120	
Barium	ug/L	40	37.3	93	80-120	
Beryllium	ug/L	40	37.2	93	80-120	
Cadmium	ug/L	40	37.4	93	80-120	
Chromium	ug/L	40	38.4	96	80-120	
Cobalt	ug/L	40	37.8	95	80-120	
Lead	ug/L	40	37.6	94	80-120	
Molybdenum	ug/L	40	40.2	100	80-120	
Selenium	ug/L	40	37.9	95	80-120	
Thallium	ug/L	40	35.7	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1750984 1750985

Parameter	Units	60218197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	42.5	43.5	106	109	75-125	2	20	
Arsenic	ug/L	5.4	40	40	47.8	49.3	106	110	75-125	3	20	
Barium	ug/L	68.9	40	40	110	110	102	103	75-125	1	20	
Beryllium	ug/L	ND	40	40	36.8	36.3	92	91	75-125	1	20	
Cadmium	ug/L	ND	40	40	39.6	39.7	99	99	75-125	0	20	
Chromium	ug/L	ND	40	40	40.9	41.1	102	102	75-125	1	20	
Cobalt	ug/L	1.0	40	40	40.5	40.4	99	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1750984 1750985

Parameter	Units	60218197002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	40	40	41.0	40.9	102	102	75-125	0	20	
Molybdenum	ug/L	65.5	40	40	110	110	112	111	75-125	0	20	
Selenium	ug/L	15.0	40	40	52.0	53.8	93	97	75-125	3	20	
Thallium	ug/L	ND	40	40	39.5	39.3	99	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: WET/61607 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

METHOD BLANK: 1751919 Matrix: Water
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	05/05/16 14:08	

LABORATORY CONTROL SAMPLE: 1751920

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

SAMPLE DUPLICATE: 1751921

Parameter	Units	60218221003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	601	611	2	10	

SAMPLE DUPLICATE: 1751922

Parameter	Units	60218298004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	1020	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: WET/61738 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

SAMPLE DUPLICATE: 1757050

Parameter	Units	60218197001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.7	7.7	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

QC Batch: WETA/39303 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

METHOD BLANK: 1751492 Matrix: Water
Associated Lab Samples: 60218197001, 60218197002, 60218197003, 60218197004, 60218197005, 60218197006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	05/04/16 09:28	
Fluoride	mg/L	ND	0.20	0.073	05/04/16 09:28	
Sulfate	mg/L	ND	1.0	0.25	05/04/16 09:28	

LABORATORY CONTROL SAMPLE: 1751493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	80-120	
Fluoride	mg/L	2.5	2.3	92	80-120	
Sulfate	mg/L	5	4.7	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1751494 1751495

Parameter	Units	2035878001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1290	500	500	1830	1840	108	109	80-120	0	15	
Fluoride	mg/L	0.22	2.5	2.5	2.5	2.5	93	93	80-120	0	15	
Sulfate	mg/L	16.5	5	5	21.0	20.9	90	89	80-120	0	15	

SAMPLE DUPLICATE: 1751496

Parameter	Units	60218197001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	7.6	7.5	1	15	
Fluoride	mg/L	0.15J	0.15J		15	
Sulfate	mg/L	22.2	23.0	4	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60218197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218197001	**MW-6**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197002	**MW-20**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197003	**MW-301**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197004	**MW-302**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197005	**MW-303**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197006	**FIELD BLANK**	EPA 3010	MPRP/35754	EPA 6010	ICP/26132
60218197001	**MW-6**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197002	**MW-20**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197003	**MW-301**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197004	**MW-302**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197005	**MW-303**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197006	**FIELD BLANK**	EPA 3010	MPRP/35755	EPA 6020	ICPM/4235
60218197001	**MW-6**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197002	**MW-20**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197003	**MW-301**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197004	**MW-302**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197005	**MW-303**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197006	**FIELD BLANK**	EPA 7470	MERP/10588	EPA 7470	MERC/10535
60218197001	**MW-6**	SM 2540C	WET/61607		
60218197002	**MW-20**	SM 2540C	WET/61607		
60218197003	**MW-301**	SM 2540C	WET/61607		
60218197004	**MW-302**	SM 2540C	WET/61607		
60218197005	**MW-303**	SM 2540C	WET/61607		
60218197006	**FIELD BLANK**	SM 2540C	WET/61607		
60218197001	**MW-6**	EPA 9040	WET/61738		
60218197002	**MW-20**	EPA 9040	WET/61738		
60218197003	**MW-301**	EPA 9040	WET/61738		
60218197004	**MW-302**	EPA 9040	WET/61738		
60218197005	**MW-303**	EPA 9040	WET/61738		
60218197006	**FIELD BLANK**	EPA 9040	WET/61738		
60218197001	**MW-6**	EPA 9056	WETA/39303		
60218197002	**MW-20**	EPA 9056	WETA/39303		
60218197003	**MW-301**	EPA 9056	WETA/39303		
60218197004	**MW-302**	EPA 9056	WETA/39303		
60218197005	**MW-303**	EPA 9056	WETA/39303		
60218197006	**FIELD BLANK**	EPA 9056	WETA/39303		

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Sample Condition Upon Receipt

WO# : 60218197

60218197

Client Name: SCS Eng.

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 7829 7093 2206 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: CF +1.0 T-239 / CF 0.0 T-262

Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.7

Temperature should be above freezing to 6°C

Date and initials of person examining contents: 5/3/16

Chain of Custody present:	☑Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☐Yes ☑No ☐N/A	4.
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.
Sufficient volume:	☑Yes ☐No ☐N/A	8.
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	9.
Containers intact:	☑Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	12.
Sample labels match COC:	☑Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☑No ☐N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 5.3.16

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Alliant-Lansing
Project Number:	25216070

Section C
Invoice Information:

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

REGULATORY AGENCY

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

Site Location STATE: IA

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

Pace Project No./ Lab I.D.: 60218197

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	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.
1	MW-6	WT	G	xxx	xxx	4/29/16	10:15	9.7	2	1		1							X	X	X	X	X	X		BRZN 1.5 BRW 01
2	MW-20	WT	G	xxx	xxx		12:40	8.9	2	1		1							X	X	X	X	X	X		02
3	MW-301	WT	G	xxx	xxx		16:25	8.9	2	1		1							X	X	X	X	X	X		03
4	MW-302	WT	G	xxx	xxx		15:30	7.8	2	1		1							X	X	X	X	X	X		04
5	MW-303	WT	G	xxx	xxx		14:45	6.7	2	1		1							X	X	X	X	X	X		05
6	FIELD BLANK	WT	G	xxx	xxx		17:10	—	2	1		1							X	X	X	X	X	X		06
7																										
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	Paul A. Groon SCS	5/2/16	17:00	[signature] PASI	5/3/16	0830	3.7	Y	Y	Y
* Sb-As-Ba-Be-Cd-Co-Cr-Pb-Mo-Se-Tl										

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

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

January 26, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revision 1 - This report replaces the June 2, 2016 report. This report has been reissued on January 25, 2018. In 2017, the process for calculating Total Radium concentration using results from individual Ra-226 and Ra-228 analyses was standardized. At the client's request, this project from 2016 has been revised to include a Total Radium concentration using the standardized method.

Amended Report, Revision 1 on 1/25/18, Total Radium Concentration

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 Kyle Kramer, SCS Engineers

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

cc: Jeff Maxted, Alliant Energy

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

CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60218431001	**MW-6**	Water	04/29/16 10:15	05/05/16 09:25
60218431002	**MW-20**	Water	04/29/16 12:40	05/05/16 09:25
60218431003	**MW-301**	Water	04/29/16 16:25	05/05/16 09:25
60218431004	**MW-302**	Water	04/29/16 15:30	05/05/16 09:25
60218431005	**MW-303**	Water	04/29/16 14:45	05/05/16 09:25
60218431006	**FIELD BLANK**	Water	04/29/16 17:10	05/05/16 09:25

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60218431001	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60218431002	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60218431003	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60218431004	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60218431005	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60218431006	**FIELD BLANK**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: MW-6 **Lab ID: 60218431001** Collected: 04/29/16 10:15 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.232 ± 0.323 (0.540) C:NA T:85%**	pCi/L	06/02/16 11:00	13982-63-3	
Radium-228	EPA 904.0	**0.226 ± 0.380 (0.827) C:77% T:80%**	pCi/L	05/27/16 15:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.458 ± 0.703 (1.37)**	pCi/L	06/02/16 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: MW-20 **Lab ID: 60218431002** Collected: 04/29/16 12:40 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.312 ± 0.326 (0.460) C:NA T:83%**	pCi/L	06/02/16 11:00	13982-63-3	
Radium-228	EPA 904.0	**0.469 ± 0.419 (0.854) C:77% T:79%**	pCi/L	05/27/16 15:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.781 ± 0.745 (1.31)**	pCi/L	06/02/16 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: MW-301 **Lab ID: 60218431003** Collected: 04/29/16 16:25 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.111 ± 0.433 (0.830) C:NA T:92%**	pCi/L	06/02/16 11:12	13982-63-3	
Radium-228	EPA 904.0	**0.414 ± 0.380 (0.775) C:75% T:87%**	pCi/L	05/27/16 15:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.525 ± 0.813 (1.61)**	pCi/L	06/02/16 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: MW-302 **Lab ID: 60218431004** Collected: 04/29/16 15:30 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.985 ± 0.642 (0.870) C:NA T:89%**	pCi/L	06/02/16 11:27	13982-63-3	
Radium-228	EPA 904.0	**1.15 ± 0.466 (0.736) C:78% T:84%**	pCi/L	05/27/16 15:05	15262-20-1	
Total Radium	Total Radium Calculation	**2.14 ± 1.11 (1.61)**	pCi/L	06/02/16 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: MW-303 **Lab ID: 60218431005** Collected: 04/29/16 14:45 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.180 ± 0.353 (0.645) C:NA T:86%**	pCi/L	06/02/16 11:15	13982-63-3	
Radium-228	EPA 904.0	**0.555 ± 0.401 (0.784) C:79% T:81%**	pCi/L	05/27/16 15:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.735 ± 0.754 (1.43)**	pCi/L	06/02/16 13:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Sample: FIELD BLANK **Lab ID: 60218431006** Collected: 04/29/16 17:10 Received: 05/05/16 09:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.058 ± 0.265 (0.539) C:NA T:91%**	pCi/L	06/02/16 11:29	13982-63-3	
Radium-228	EPA 904.0	**0.0572 ± 0.365 (0.834) C:81% T:77%**	pCi/L	05/27/16 19:38	15262-20-1	
Total Radium	Total Radium Calculation	**0.0572 ± 0.630 (1.37)**	pCi/L	06/02/16 11:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

QC Batch: 220236 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60218431001, 60218431002, 60218431003, 60218431004, 60218431005, 60218431006

METHOD BLANK: 1077503 Matrix: Water
Associated Lab Samples: 60218431001, 60218431002, 60218431003, 60218431004, 60218431005, 60218431006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.059 ± 0.268 (0.545) C:NA T:91%	pCi/L	06/02/16 10:10	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

QC Batch: 220241 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60218431001, 60218431002, 60218431003, 60218431004, 60218431005, 60218431006

METHOD BLANK: 1077508 Matrix: Water
Associated Lab Samples: 60218431001, 60218431002, 60218431003, 60218431004, 60218431005, 60218431006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.123 ± 0.369 (0.878) C:77% T:80%	pCi/L	05/27/16 11:57	

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: Alliant-Lansing/25216070
Pace Project No.: 60218431

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60218431

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60218431001	**MW-6**	EPA 903.1	220236		
60218431002	**MW-20**	EPA 903.1	220236		
60218431003	**MW-301**	EPA 903.1	220236		
60218431004	**MW-302**	EPA 903.1	220236		
60218431005	**MW-303**	EPA 903.1	220236		
60218431006	**FIELD BLANK**	EPA 903.1	220236		
60218431001	**MW-6**	EPA 904.0	220241		
60218431002	**MW-20**	EPA 904.0	220241		
60218431003	**MW-301**	EPA 904.0	220241		
60218431004	**MW-302**	EPA 904.0	220241		
60218431005	**MW-303**	EPA 904.0	220241		
60218431006	**FIELD BLANK**	EPA 904.0	220241		
60218431001	**MW-6**	Total Radium Calculation	221929		
60218431002	**MW-20**	Total Radium Calculation	221929		
60218431003	**MW-301**	Total Radium Calculation	221929		
60218431004	**MW-302**	Total Radium Calculation	221929		
60218431005	**MW-303**	Total Radium Calculation	221929		
60218431006	**FIELD BLANK**	Total Radium Calculation	285975		

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60218431

60218431

Client Name: SCS Engr.

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 7829 7044 1027 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: CF +1.0 T-239 / CF 0.0 T-262 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun. (circle one)

Cooler Temperature: 1.5

Date and initials of person examining contents: JB 5/5

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes	☐No	☐N/A	1.
Chain of Custody filled out:	☒Yes	☐No	☐N/A	2.
Chain of Custody relinquished:	☒Yes	☐No	☐N/A	3.
Sampler name & signature on COC:	☐Yes	☒No	☐N/A	4.
Samples arrived within holding time:	☒Yes	☐No	☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time requested:	☐Yes	☒No	☐N/A	7.
Sufficient volume:	☒Yes	☐No	☐N/A	8.
Correct containers used:	☒Yes	☐No	☐N/A	
Pace containers used:	☒Yes	☐No	☐N/A	9.
Containers intact:	☒Yes	☐No	☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes	☐No	☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes	☐No	☒N/A	12.
Sample labels match COC:	☒Yes	☐No	☐N/A	
Includes date/time/ID/analyses Matrix: WT				13.
All containers needing preservation have been checked.	☒Yes	☐No	☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes	☐No	☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes	☒No	Initial when completed	Lot # of added preservative
Trip Blank present:	☐Yes	☐No	☒N/A	
Pace Trip Blank lot # (if purchased):				15.
Headspace in VOA vials (>6mm):	☐Yes	☐No	☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes	☐No	☒N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes	☐No	☒N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: DM Date: 5.5.16

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Alliant-Lansing	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070	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

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

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	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-6	WT	G	xxx	xxx	4/29/16	10:15	9.7	2			2							X	X	X		(2) 8 PM 5.0 (01)
2	MW-20	WT	G	xxx	xxx		12:40	8.8	2			2							X	X	X		02
3	MW-301	WT	G	xxx	xxx		16:25	8.9	2			2							X	X	X		03
4	MW-302	WT	G	xxx	xxx		15:30	7.8	2			2							X	X	X		04
5	MW-303	WT	G	xxx	xxx		14:45	6.7	2			2							X	X	X		05
6	FIELD BLANK	WT	G	xxx	xxx		17:10	—	2			2							X	X	X		06
7																							
8																							
9																							
10																							
11																							
12																							

6218431

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)
	Paul A. Brown SCS	5/2/16	17:00	J. S. Pace	5/5	0925	1.5	Y	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.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 60218431 **Workorder Name:** Alliant-Lansing/25216070 **Owner Received Date:** 5/5/2016 **Results Requested By:** 5/27/2016

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#:30182853

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	904.0 Radium-228	Total Radium									LAB USE ONLY
1	MW-6	PS	4/29/2016 10:15	60218431001	Water	2						X	X	X									001
2	MW-20	PS	4/29/2016 12:40	60218431002	Water	2						X	X	X									002
3	MW-301	PS	4/29/2016 16:25	60218431003	Water	2						X	X	X									003
4	MW-302	PS	4/29/2016 15:30	60218431004	Water	2						X	X	X									004
5	MW-303	PS	4/29/2016 14:45	60218431005	Water	2						X	X	X									005
6	FIELD BLANK	PS	4/29/2016 17:10	60218431006	Water	2						X	X	X									006

Transfers	Released By	Date/Time	Received	Date/Time
1		5/4/16 0700		5/11/16 0920
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.*

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: Paul, KS Project # 30182853

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

Tracking #: 6703 1642 6870

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

Thermometer Used 8 **Type of Ice:** Wet Blue (None)

Cooler Temperature **Observed Temp** 19.2 °C Correction Factor: +0.1 °C Final Temp: 19.3 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 5/11/16

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/Analysis 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:	✓			10.
-Pace Containers Used:	✓			
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests		✓		12.
All containers needing preservation have been checked.	✓			13. All sample's pH < 2
All containers needing preservation are found to be in compliance with EPA recommendation.	✓	~~✓~~	~~✓~~	
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed KH / Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	14.
Trip Blank Present:			✓	15.
Trip Blank Custody Seals Present			✓	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

A3 Round 3 Background Sampling, Analytical Laboratory Report

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

August 03, 2016

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

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

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

Sincerely,

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

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

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

CERTIFICATIONS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60224091001	**MW 301**	Water	07/20/16 17:50	07/22/16 08:40
60224091002	**MW 302**	Water	07/20/16 16:10	07/22/16 08:40
60224091003	**MW 303**	Water	07/20/16 15:20	07/22/16 08:40
60224091004	**MW 20**	Water	07/20/16 14:40	07/22/16 08:40
60224091005	**MW 6**	Water	07/20/16 19:00	07/22/16 08:40
60224091006	**FIELD BLANK**	Water	07/20/16 14:15	07/22/16 08:40

Pace Analytical Services, Inc.
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Lenexa, KS 66219
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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60224091001	**MW 301**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K
60224091002	**MW 302**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K
60224091003	**MW 303**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K
60224091004	**MW 20**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K
60224091005	**MW 6**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K
60224091006	**FIELD BLANK**	EPA 6010	ZBM	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	HAC	1	PASI-K
		EPA 9040	LDB	1	PASI-K
		EPA 9056	OL	3	PASI-K

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

ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: MW 301 **Lab ID: 60224091001** Collected: 07/20/16 17:50 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		07/20/16 17:50		
Field pH	**7.86**	Std. Units	0.10	0.050	1		07/20/16 17:50		
Field Temperature	**13.3**	deg C	0.50	0.25	1		07/20/16 17:50		
Field Specific Conductance	**377.4**	umhos/cm	1.0	1.0	1		07/20/16 17:50		
Field Oxidation Potential	**-166.3**	mV			1		07/20/16 17:50		
Oxygen, Dissolved	**0.16**	mg/L			1		07/20/16 17:50	7782-44-7	
Turbidity	**2.00**	NTU	1.0	1.0	1		07/20/16 17:50		
Groundwater Elevation	**624.76**	feet			1		07/20/16 17:50		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**417**	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 15:44	7440-42-8	
Calcium	**45.1**	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 15:44	7440-70-2	
Lithium	**5.0J**	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 15:44	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:31	7440-36-0	
Arsenic	**2.8**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:31	7440-38-2	
Barium	**182**	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:31	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:31	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:31	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:31	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:31	7440-48-4	
Lead	**0.23J**	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:31	7439-92-1	
Molybdenum	**5.0**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:31	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:31	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**218**	mg/L	5.0	5.0	1		07/27/16 09:21		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.2**	mg/L	1.0	0.50	1		07/30/16 17:27	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.027	1		07/30/16 17:27	16984-48-8	
Sulfate	**37.5**	mg/L	5.0	0.77	5		07/31/16 13:18	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: MW 302 **Lab ID: 60224091002** Collected: 07/20/16 16:10 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		07/20/16 16:10		
Field pH	**6.86**	Std. Units	0.10	0.050	1		07/20/16 16:10		
Field Temperature	**14.2**	deg C	0.50	0.25	1		07/20/16 16:10		
Field Specific Conductance	**891**	umhos/cm	1.0	1.0	1		07/20/16 16:10		
Field Oxidation Potential	**-141.50**	mV			1		07/20/16 16:10		
Oxygen, Dissolved	**0.03**	mg/L			1		07/20/16 16:10	7782-44-7	
Turbidity	**2.60**	NTU	1.0	1.0	1		07/20/16 16:10		
Groundwater Elevation	**628.60**	feet			1		07/20/16 16:10		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**579**	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 15:51	7440-42-8	
Calcium	**97.8**	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 15:51	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 15:51	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:36	7440-36-0	
Arsenic	**41.0**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:36	7440-38-2	
Barium	**540**	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:36	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:36	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:36	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:36	7440-47-3	
Cobalt	**1.2**	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:36	7440-48-4	
Lead	**0.32J**	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:36	7439-92-1	
Molybdenum	**0.98J**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:36	7439-98-7	
Selenium	**0.22J**	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:36	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**438**	mg/L	5.0	5.0	1		07/27/16 09:21		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.1**	mg/L	1.0	0.50	1		07/30/16 18:10	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.027	1		07/30/16 18:10	16984-48-8	
Sulfate	**0.29J**	mg/L	1.0	0.15	1		07/30/16 18:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: MW 303 **Lab ID: 60224091003** Collected: 07/20/16 15:20 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		07/20/16 15:20		
Field pH	**7.12**	Std. Units	0.10	0.050	1		07/20/16 15:20		
Field Temperature	**30.4**	deg C	0.50	0.25	1		07/20/16 15:20		
Field Specific Conductance	**535**	umhos/cm	1.0	1.0	1		07/20/16 15:20		
Field Oxidation Potential	**-27.20**	mV			1		07/20/16 15:20		
Oxygen, Dissolved	**0.15**	mg/L			1		07/20/16 15:20	7782-44-7	
Turbidity	**0.39**	NTU	1.0	1.0	1		07/20/16 15:20		
Groundwater Elevation	**639.33**	feet			1		07/20/16 15:20		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**405**	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 15:53	7440-42-8	
Calcium	**64.5**	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 15:53	7440-70-2	
Lithium	**13.9**	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 15:53	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.55J**	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:40	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:40	7440-38-2	
Barium	**178**	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:40	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:40	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:40	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:40	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:40	7440-48-4	
Lead	**0.20J**	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:40	7439-92-1	
Molybdenum	**16.8**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:40	7439-98-7	
Selenium	**0.90J**	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:40	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**317**	mg/L	5.0	5.0	1		07/27/16 09:22		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.1**	mg/L	1.0	0.50	1		07/30/16 18:38	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.027	1		07/30/16 18:38	16984-48-8	
Sulfate	**56.0**	mg/L	5.0	0.77	5		07/31/16 14:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: MW 20 **Lab ID: 60224091004** Collected: 07/20/16 14:40 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		07/20/16 14:40		
Field pH	**8.05**	Std. Units	0.10	0.050	1		07/20/16 14:40		
Field Temperature	**12.8**	deg C	0.50	0.25	1		07/20/16 14:40		
Field Specific Conductance	**1481**	umhos/cm	1.0	1.0	1		07/20/16 14:40		
Field Oxidation Potential	**-68.8**	mV			1		07/20/16 14:40		
Oxygen, Dissolved	**0.05**	mg/L			1		07/20/16 14:40	7782-44-7	
Turbidity	**0.62**	NTU	1.0	1.0	1		07/20/16 14:40		
Groundwater Elevation	**649.86**	feet			1		07/20/16 14:40		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3820**	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 15:55	7440-42-8	
Calcium	**190**	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 15:55	7440-70-2	
Lithium	**6.4J**	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 15:55	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.089J**	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:44	7440-36-0	
Arsenic	**1.6**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:44	7440-38-2	
Barium	**133**	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:44	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:44	7440-41-7	
Cadmium	**0.034J**	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:44	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:44	7440-47-3	
Cobalt	**1.3**	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:44	7440-48-4	
Lead	**0.28J**	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:44	7439-92-1	
Molybdenum	**90.5**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:44	7439-98-7	
Selenium	**44.7**	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:44	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:48	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1130**	mg/L	5.0	5.0	1		07/27/16 09:22		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**3.3**	mg/L	1.0	0.50	1		07/30/16 18:52	16887-00-6	
Fluoride	**0.43**	mg/L	0.20	0.027	1		07/30/16 18:52	16984-48-8	
Sulfate	**532**	mg/L	50.0	7.7	50		07/31/16 14:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: MW 6 **Lab ID: 60224091005** Collected: 07/20/16 19:00 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		07/20/16 18:00		
Field pH	**7.25**	Std. Units	0.10	0.050	1		07/20/16 18:00		
Field Temperature	**9.9**	deg C	0.50	0.25	1		07/20/16 18:00		
Field Specific Conductance	**582.4**	umhos/cm	1.0	1.0	1		07/20/16 18:00		
Field Oxidation Potential	**45.8**	mV			1		07/20/16 18:00		
Oxygen, Dissolved	**4.98**	mg/L			1		07/20/16 18:00	7782-44-7	
Turbidity	**0.01**	NTU	1.0	1.0	1		07/20/16 18:00		
Groundwater Elevation	**663.21**	feet			1		07/20/16 18:00		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 15:58	7440-42-8	
Calcium	**68.9**	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 15:58	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 15:58	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:49	7440-36-0	
Arsenic	**0.26J**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:49	7440-38-2	
Barium	**43.8**	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:49	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:49	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:49	7440-43-9	
Chromium	**0.81J**	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:49	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:49	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:49	7439-92-1	
Molybdenum	**0.24J**	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:49	7439-98-7	
Selenium	**0.46J**	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:49	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**352**	mg/L	5.0	5.0	1		07/27/16 09:23		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**8.1**	mg/L	1.0	0.50	1		07/30/16 19:06	16887-00-6	
Fluoride	**0.082J**	mg/L	0.20	0.027	1		07/30/16 19:06	16984-48-8	
Sulfate	**22.5**	mg/L	2.0	0.31	2		07/31/16 15:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Sample: FIELD BLANK **Lab ID: 60224091006** Collected: 07/20/16 14:15 Received: 07/22/16 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	07/26/16 13:45	07/28/16 16:05	7440-42-8	
Calcium	ND	mg/L	0.10	0.0081	1	07/26/16 13:45	07/28/16 16:05	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	07/26/16 13:45	07/28/16 16:05	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	07/26/16 13:45	07/27/16 13:14	7440-36-0	
Arsenic	ND	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:14	7440-38-2	
Barium	ND	ug/L	1.0	0.14	1	07/26/16 13:45	07/27/16 13:14	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	07/26/16 13:45	07/27/16 13:14	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	07/26/16 13:45	07/27/16 13:14	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	07/26/16 13:45	07/27/16 13:14	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:14	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	07/26/16 13:45	07/27/16 13:14	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.10	1	07/26/16 13:45	07/27/16 13:14	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	07/26/16 13:45	07/27/16 13:14	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	07/26/16 13:45	07/27/16 13:14	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	07/26/16 15:45	07/27/16 11:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		07/27/16 09:23		
9040 pH	Analytical Method: EPA 9040								
pH	**6.8**	Std. Units	0.10	0.10	1		07/26/16 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		07/30/16 19:20	16887-00-6	
Fluoride	ND	mg/L	0.20	0.027	1		07/30/16 19:20	16984-48-8	
Sulfate	ND	mg/L	1.0	0.15	1		07/30/16 19:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440089 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

METHOD BLANK: 1800386 Matrix: Water
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	07/27/16 11:04	

LABORATORY CONTROL SAMPLE: 1800387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1800388 1800389

Parameter	Units	60223899001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.7	3.5	74	69	75-125	7	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440051 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

METHOD BLANK: 1800206 Matrix: Water
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	50.0	07/28/16 15:40	
Calcium	mg/L	0.0098J	0.10	0.0081	07/28/16 15:40	
Lithium	ug/L	ND	10.0	4.9	07/28/16 15:40	

LABORATORY CONTROL SAMPLE: 1800207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	984	98	80-120	
Calcium	mg/L	10	10.1	101	80-120	
Lithium	ug/L	1000	997	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1800208 1800209

Parameter	Units	60224091001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	417	1000	1000	1400	1420	98	100	75-125	1	20	
Calcium	mg/L	45.1	10	10	53.6	54.6	85	96	75-125	2	20	
Lithium	ug/L	5.0J	1000	1000	1000	998	100	99	75-125	0	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440062 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

METHOD BLANK: 1800243 Matrix: Water
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.058	07/27/16 12:22	
Arsenic	ug/L	ND	1.0	0.10	07/27/16 12:22	
Barium	ug/L	ND	1.0	0.14	07/27/16 12:22	
Beryllium	ug/L	ND	0.50	0.080	07/27/16 12:22	
Cadmium	ug/L	ND	0.50	0.029	07/27/16 12:22	
Chromium	ug/L	ND	1.0	0.34	07/27/16 12:22	
Cobalt	ug/L	ND	1.0	0.50	07/27/16 12:22	
Lead	ug/L	ND	1.0	0.19	07/27/16 12:22	
Molybdenum	ug/L	ND	1.0	0.10	07/27/16 12:22	
Selenium	ug/L	ND	1.0	0.18	07/27/16 12:22	
Thallium	ug/L	ND	1.0	0.50	07/27/16 12:22	

LABORATORY CONTROL SAMPLE: 1800244

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	80-120	
Arsenic	ug/L	40	42.2	106	80-120	
Barium	ug/L	40	40.9	102	80-120	
Beryllium	ug/L	40	41.0	102	80-120	
Cadmium	ug/L	40	41.4	104	80-120	
Chromium	ug/L	40	42.1	105	80-120	
Cobalt	ug/L	40	42.1	105	80-120	
Lead	ug/L	40	40.7	102	80-120	
Molybdenum	ug/L	40	42.6	107	80-120	
Selenium	ug/L	40	41.2	103	80-120	
Thallium	ug/L	40	40.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1800245 1800246

Parameter	Units	60224043001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	40.1	39.7	99	98	75-125	1	20	
Arsenic	ug/L	26.9	40	40	67.5	67.2	102	101	75-125	0	20	
Barium	ug/L	231	40	40	272	268	104	94	75-125	1	20	
Beryllium	ug/L	ND	40	40	36.7	36.4	91	91	75-125	1	20	
Cadmium	ug/L	ND	40	40	39.8	39.8	99	99	75-125	0	20	
Chromium	ug/L	3.3	40	40	44.7	44.1	103	102	75-125	1	20	
Cobalt	ug/L	1.7	40	40	41.7	41.3	100	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1800245 1800246

Parameter	Units	60224043001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	3.1	40	40	44.8	44.5	104	103	75-125	1	20	
Molybdenum	ug/L	4.3	40	40	46.4	46.3	105	105	75-125	0	20	
Selenium	ug/L	ND	40	40	37.0	37.5	92	93	75-125	1	20	
Thallium	ug/L	ND	40	40	41.9	41.3	104	103	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440161 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

METHOD BLANK: 1800706 Matrix: Water
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	07/27/16 09:15	

LABORATORY CONTROL SAMPLE: 1800707

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	953	95	80-120	

SAMPLE DUPLICATE: 1800713

Parameter	Units	60224084001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1500	1500	0	10	

SAMPLE DUPLICATE: 1800714

Parameter	Units	60224336001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	133	129	3	10	

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 439913 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

SAMPLE DUPLICATE: 1799744

Parameter	Units	60223869001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	11.5	11.5	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440695 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

METHOD BLANK: 1803126 Matrix: Water
Associated Lab Samples: 60224091001, 60224091002, 60224091003, 60224091004, 60224091005, 60224091006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	07/30/16 16:31	
Fluoride	mg/L	ND	0.20	0.027	07/30/16 16:31	
Sulfate	mg/L	ND	1.0	0.15	07/30/16 16:31	

LABORATORY CONTROL SAMPLE: 1803127

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	2.3	93	80-120	
Sulfate	mg/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1803128 1803129

Parameter	Units	60224091001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	18.2	5	5	23.0	23.0	97	97	80-120	0	15	
Fluoride	mg/L	0.25	2.5	2.5	2.7	2.7	98	98	80-120	0	15	

SAMPLE DUPLICATE: 1803130

Parameter	Units	60224091002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	15.1	15.0	0	15	
Fluoride	mg/L	0.22	0.21	5	15	
Sulfate	mg/L	0.29J	0.25J		15	

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QUALITY CONTROL DATA

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

QC Batch: 440716 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60224091001, 60224091003, 60224091004, 60224091005

METHOD BLANK: 1803287 Matrix: Water
Associated Lab Samples: 60224091001, 60224091003, 60224091004, 60224091005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.15	07/31/16 12:50	

LABORATORY CONTROL SAMPLE: 1803288

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1803289 1803290

Parameter	Units	60224091001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	37.5	25	25	55.8	62.7	73	101	80-120	12	15	M1

SAMPLE DUPLICATE: 1803291

Parameter	Units	60224091003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	56.0	56.0	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

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

QUALIFIERS

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

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: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60224091001	**MW 301**		441091		
60224091002	**MW 302**		441091		
60224091003	**MW 303**		441091		
60224091004	**MW 20**		441091		
60224091005	**MW 6**		441091		
60224091001	**MW 301**	EPA 3010	440051	EPA 6010	440093
60224091002	**MW 302**	EPA 3010	440051	EPA 6010	440093
60224091003	**MW 303**	EPA 3010	440051	EPA 6010	440093
60224091004	**MW 20**	EPA 3010	440051	EPA 6010	440093
60224091005	**MW 6**	EPA 3010	440051	EPA 6010	440093
60224091006	**FIELD BLANK**	EPA 3010	440051	EPA 6010	440093
60224091001	**MW 301**	EPA 3010	440062	EPA 6020	440101
60224091002	**MW 302**	EPA 3010	440062	EPA 6020	440101
60224091003	**MW 303**	EPA 3010	440062	EPA 6020	440101
60224091004	**MW 20**	EPA 3010	440062	EPA 6020	440101
60224091005	**MW 6**	EPA 3010	440062	EPA 6020	440101
60224091006	**FIELD BLANK**	EPA 3010	440062	EPA 6020	440101
60224091001	**MW 301**	EPA 7470	440089	EPA 7470	440115
60224091002	**MW 302**	EPA 7470	440089	EPA 7470	440115
60224091003	**MW 303**	EPA 7470	440089	EPA 7470	440115
60224091004	**MW 20**	EPA 7470	440089	EPA 7470	440115
60224091005	**MW 6**	EPA 7470	440089	EPA 7470	440115
60224091006	**FIELD BLANK**	EPA 7470	440089	EPA 7470	440115
60224091001	**MW 301**	SM 2540C	440161		
60224091002	**MW 302**	SM 2540C	440161		
60224091003	**MW 303**	SM 2540C	440161		
60224091004	**MW 20**	SM 2540C	440161		
60224091005	**MW 6**	SM 2540C	440161		
60224091006	**FIELD BLANK**	SM 2540C	440161		
60224091001	**MW 301**	EPA 9040	439913		
60224091002	**MW 302**	EPA 9040	439913		
60224091003	**MW 303**	EPA 9040	439913		
60224091004	**MW 20**	EPA 9040	439913		
60224091005	**MW 6**	EPA 9040	439913		
60224091006	**FIELD BLANK**	EPA 9040	439913		
60224091001	**MW 301**	EPA 9056	440695		
60224091001	**MW 301**	EPA 9056	440716		
60224091002	**MW 302**	EPA 9056	440695		
60224091003	**MW 303**	EPA 9056	440695		
60224091003	**MW 303**	EPA 9056	440716		
60224091004	**MW 20**	EPA 9056	440695		
60224091004	**MW 20**	EPA 9056	440716		
60224091005	**MW 6**	EPA 9056	440695		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing Iowa/25216070
Pace Project No.: 60224091

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60224091005	**MW 6**	EPA 9056	440716		
60224091006	**FIELD BLANK**	EPA 9056	440695		

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Sample Condition Upon Receipt

WO# : 60224091

60224091

Client Name: SCS

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 7836 3554 5400 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: CF +1.1 T-266 / CF -0.1 T-239 **Type of Ice:** (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 0.4

Temperature should be above freezing to 6°C

Date and initials of person examining contents: JB 7/22

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	6. pH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC:	☒Yes ☐No ☐N/A	
Includes date/time/ID/analyses Matrix: WT		13.
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes ☒No	Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes ☐No ☒N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes ☐No ☒N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: AM Date: 7.22.16

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

Page 1 of

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CHAIN OF CUSTODY

C022409|

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

(Please Print Clearly)	
Company Name:	SCS Engineers
Branch/Location:	Madison, WI
Project Contact:	Tom Karwoski
Phone:	(608) 216-73
Project Number:	25216070
Project Name:	Alliant - Lansing Iowa
Project State:	
Sampled By (Print):	Paul A. Grover
Sampled By (Sign):	Paul A. Grover
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	Meg Blodgett
Mail To Company:	SCS Engineers
Mail To Address:	2830 Dairy Dr. Madison, WI 53718
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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

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

Matrix Codes

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

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					Y/N	Pick Letter	6010/6020/7470 Total Metals; Cl, Fluoride, TDS, Sulfate, pH			
	MW 301	7/20/16	17:50	GW	N	D	X	BP2N BP2N		001
	MW 302		16:10		N	A	X			002
	MW 303		15:20							003
	MW 20		14:40							004
	MW 6		19:00							005
	Field Blank		14:15	DI						006

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

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

Email #1:	
Email #2:	
Telephone:	
Fax:	

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

Relinquished By:	Date/Time:	Received By:	Date/Time:
Paul A. Grover	7/21/16 13:30		
			7/22 0840

PACE Project No.

Receipt Temp = 0.4 °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Page 2 of 23

Pace Analytical Services, LLC
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January 25, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

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

Revision 1 - This report replaces the August 16, 2016 report. This report has been reissued on January 25, 2018. In 2017, the process for calculating Total Radium concentration using results from individual Ra-226 and Ra-228 analyses was standardized. At the client's request, this project from 2016 has been revised to include a Total Radium concentration using the standardized method.

Amended Report, Revision 1 on 1/25/18, Total Radium Concentration

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 Kyle Kramer, SCS Engineers

REPORT OF LABORATORY ANALYSIS

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cc: Jeff Maxted, Alliant Energy

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60224097001	**MW-301**	Water	07/20/16 19:50	07/22/16 08:40
60224097002	**MW-302**	Water	07/20/16 16:10	07/22/16 08:40
60224097003	**MW-303**	Water	07/20/16 15:20	07/22/16 08:40
60224097004	**MW-20**	Water	07/20/16 14:40	07/22/16 08:40
60224097005	**MW-6**	Water	07/20/16 19:00	07/22/16 08:40
60224097006	**FIELD BLANK**	Water	07/20/16 14:15	07/22/16 08:40

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SAMPLE ANALYTE COUNT

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60224097001	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60224097002	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60224097003	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60224097004	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60224097005	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60224097006	**FIELD BLANK**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: MW-301 **Lab ID: 60224097001** Collected: 07/20/16 19:50 Received: 07/22/16 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	**0.126 ± 0.302 (0.583) C:NA T:95%**	pCi/L	08/16/16 12:16	13982-63-3	
Radium-228	EPA 904.0	**-0.0306 ± 0.340 (0.796) C:74% T:85%**	pCi/L	08/15/16 17:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.126 ± 0.642 (1.38)**	pCi/L	08/16/16 11:37	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: MW-302 **Lab ID: 60224097002** Collected: 07/20/16 16:10 Received: 07/22/16 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	**0.969 ± 0.692 (0.942) C:NA T:90%**	pCi/L	08/16/16 11:22	13982-63-3	
Radium-228	EPA 904.0	**1.10 ± 0.440 (0.674) C:76% T:87%**	pCi/L	08/15/16 17:04	15262-20-1	
Total Radium	Total Radium Calculation	**2.07 ± 1.13 (1.62)**	pCi/L	08/16/16 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: MW-303 **Lab ID: 60224097003** Collected: 07/20/16 15:20 Received: 07/22/16 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	**0.372 ± 0.388 (0.547) C:NA T:88%**	pCi/L	08/16/16 01:48	13982-63-3	
Radium-228	EPA 904.0	**0.396 ± 0.340 (0.679) C:72% T:86%**	pCi/L	08/15/16 17:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.768 ± 0.728 (1.23)**	pCi/L	08/16/16 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: MW-20 **Lab ID: 60224097004** Collected: 07/20/16 14:40 Received: 07/22/16 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	**0.324 ± 0.338 (0.477) C:NA T:96%**	pCi/L	08/16/16 02:00	13982-63-3	
Radium-228	EPA 904.0	**0.708 ± 0.397 (0.708) C:71% T:84%**	pCi/L	08/15/16 17:05	15262-20-1	
Total Radium	Total Radium Calculation	**1.03 ± 0.735 (1.19)**	pCi/L	08/16/16 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: MW-6 **Lab ID: 60224097005** Collected: 07/20/16 19:00 Received: 07/22/16 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	**0.0668 ± 0.305 (0.620) C:NA T:93%**	pCi/L	08/16/16 01:42	13982-63-3	
Radium-228	EPA 904.0	**0.657 ± 0.355 (0.622) C:76% T:87%**	pCi/L	08/15/16 17:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.724 ± 0.660 (1.24)**	pCi/L	08/16/16 15:05	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Sample: FIELD BLANK **Lab ID: 60224097006** Collected: 07/20/16 14:15 Received: 07/22/16 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	**0.195 ± 0.382 (0.699) C:NA T:93%**	pCi/L	08/16/16 01:16	13982-63-3	
Radium-228	EPA 904.0	**0.540 ± 0.329 (0.594) C:75% T:88%**	pCi/L	08/15/16 17:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.735 ± 0.711 (1.29)**	pCi/L	08/16/16 15:05	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

QC Batch: 228934 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60224097001, 60224097002, 60224097003, 60224097004, 60224097005, 60224097006

METHOD BLANK: 1122217 Matrix: Water
Associated Lab Samples: 60224097001, 60224097002, 60224097003, 60224097004, 60224097005, 60224097006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.568 ± 0.451 (0.586) C:NA T:96%	pCi/L	08/16/16 01:12	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

QC Batch: 228896 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60224097001, 60224097002, 60224097003, 60224097004, 60224097005, 60224097006

METHOD BLANK: 1121827 Matrix: Water
Associated Lab Samples: 60224097001, 60224097002, 60224097003, 60224097004, 60224097005, 60224097006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.384 (0.790) C:80% T:81%	pCi/L	08/15/16 17:02	

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

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QUALIFIERS

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Lansing Gen Station/25216070
Pace Project No.: 60224097

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60224097001	**MW-301**	EPA 903.1	228934		
60224097002	**MW-302**	EPA 903.1	228934		
60224097003	**MW-303**	EPA 903.1	228934		
60224097004	**MW-20**	EPA 903.1	228934		
60224097005	**MW-6**	EPA 903.1	228934		
60224097006	**FIELD BLANK**	EPA 903.1	228934		
60224097001	**MW-301**	EPA 904.0	228896		
60224097002	**MW-302**	EPA 904.0	228896		
60224097003	**MW-303**	EPA 904.0	228896		
60224097004	**MW-20**	EPA 904.0	228896		
60224097005	**MW-6**	EPA 904.0	228896		
60224097006	**FIELD BLANK**	EPA 904.0	228896		
60224097001	**MW-301**	Total Radium Calculation	285975		
60224097002	**MW-302**	Total Radium Calculation	229933		
60224097003	**MW-303**	Total Radium Calculation	229933		
60224097004	**MW-20**	Total Radium Calculation	229933		
60224097005	**MW-6**	Total Radium Calculation	229933		
60224097006	**FIELD BLANK**	Total Radium Calculation	229933		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60224097

60224097

Client Name: SCS

Optional
Proj Due Date:
Proj Name:

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

Tracking #: 7836 3554 5911 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: CF +1.1 T-266 / CF -0.1 T-239 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3-0

Temperature should be above freezing to 6°C

Date and initials of person examining contents: DV 7/22/16

Chain of Custody present:	☑Yes	☐No	☐N/A	1.
Chain of Custody filled out:	☑Yes	☐No	☐N/A	2.
Chain of Custody relinquished:	☑Yes	☐No	☐N/A	3.
Sampler name & signature on COC:	☑Yes	☐No	☐N/A	4.
Samples arrived within holding time:	☑Yes	☐No	☐N/A	5.
Short Hold Time analyses (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time requested:	☐Yes	☑No	☐N/A	7.
Sufficient volume:	☑Yes	☐No	☐N/A	8.
Correct containers used:	☑Yes	☐No	☐N/A	
Pace containers used:	☑Yes	☐No	☐N/A	9.
Containers intact:	☑Yes	☐No	☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes	☐No	☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes	☐No	☑N/A	12.
Sample labels match COC:	☑Yes	☐No	☐N/A	
Includes date/time/ID/analyses Matrix: WT				13.
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	☐Yes	☑No		Initial when completed / Lot # of added preservative
Trip Blank present:	☐Yes	☐No	☑N/A	
Pace Trip Blank lot # (if purchased):				15.
Headspace in VOA vials (>6mm):	☐Yes	☐No	☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes	☐No	☑N/A	17. List State:
Additional labels attached to 5035A vials in the field?	☐Yes	☐No	☑N/A	18.

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: DVS Date: 7-22-16

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Lansing Generating Station	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070	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	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	7/20/16	19:50	13.4	2			2						X	X	X			6022407 2BPIN 001
2	MW-302	WT	G	xxx	xxx		16:10	14.2	2			2						X	X	X			002
3	MW-303	WT	G	xxx	xxx		15:20	30.4	2			2						X	X	X			003
4	MW-20	WT	G	xxx	xxx		14:40	12.3	2			2						X	X	X			004
5	MW-6	WT	G	xxx	xxx		19:00	9.9	2			2						X	X	X			005
6	FIELD BLANK	WT	G	xxx	xxx		14:15	-	2			2						X	X	X			006
7																							
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	Paul A. Grom SCS	7/21/16	13:30		7/22/16	0840	3-0	Y	Y	Y

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:					
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.

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 60224097 **Workorder Name:** Lansing Gen Station/25216070 **Owner Received Date:** 7/22/2016 **Results Requested By:** 8/16/2016

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#:30191001

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	904.0 Radium-228	Total Radium										LAB USE ONLY
1	MW-301	PS	7/20/2016 19:50	60224097001	Water	2						X	X	X										001
2	MW-302	PS	7/20/2016 16:10	60224097002	Water	2						X	X	X										002
3	MW-303	PS	7/20/2016 15:20	60224097003	Water	2						X	X	X										003
4	MW-20	PS	7/20/2016 14:40	60224097004	Water	2						X	X	X										004
5	MW-6	PS	7/20/2016 19:00	60224097005	Water	2						X	X	X										005
6	FIELD BLANK	PS	7/20/2016 14:15	60224097006	Water	2						X	X	X										006

Transfers	Released By	Date/Time	Received	Date/Time
1		7/21/16 900	Pace	7/26/16
2				
3				

Comments: 0940

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

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

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

30191001

Client Name: Pace KS Project #

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

Tracking #: 6703 1646 7365

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

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

Cooler Temperature **Observed Temp** N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: RTB 7/26/16

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: WT	X			5.
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13. pH<2
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed 7/26/16 RTB; Date/time of preservation; Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:			X	15.
Trip Blank Custody Seals Present			X	

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

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

A4 Round 4 Background Sampling, Analytical Laboratory Report

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

December 02, 2016

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended Report, Revision 1 on 12/2/16, Field Data

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

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

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

Pace Analytical Services, LLC
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Lenexa, KS 66219
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CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60231107001	**MW-6**	Water	10/27/16 09:26	10/29/16 08:25
60231107002	**MW-20**	Water	10/26/16 14:46	10/29/16 08:25
60231107003	**MW-301**	Water	10/26/16 13:46	10/29/16 08:25
60231107004	**MW-302**	Water	10/26/16 13:01	10/29/16 08:25
60231107005	**MW-303**	Water	10/26/16 15:56	10/29/16 08:25
60231107006	**FIELD BLANK**	Water	10/27/16 09:45	10/29/16 08:25

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

SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60231107001	**MW-6**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60231107002	**MW-20**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60231107003	**MW-301**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60231107004	**MW-302**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60231107005	**MW-303**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60231107006	**FIELD BLANK**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: MW-6 **Lab ID: 60231107001** Collected: 10/27/16 09:26 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/27/16 09:26		
Field pH	**7.56**	Std. Units	0.10	0.050	1		10/27/16 09:26		
Field Temperature	**10**	deg C	0.50	0.25	1		10/27/16 09:26		
Field Specific Conductance	**590**	umhos/cm	1.0	1.0	1		10/27/16 09:26		
Field Oxidation Potential	**122**	mV			1		10/27/16 09:26		
Oxygen, Dissolved	**8.6**	mg/L			1		10/27/16 09:26	7782-44-7	
Turbidity	**2.10**	NTU	1.0	1.0	1		10/27/16 09:26		
Groundwater Elevation	**670.82**	feet			1		10/27/16 09:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:23	7440-42-8	
Calcium	**68.6**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:23	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:23	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:10	7440-36-0	
Arsenic	**0.19J**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:10	7440-38-2	
Barium	**44.6**	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:10	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:10	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:10	7440-43-9	
Chromium	**0.81J**	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:10	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:10	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:10	7439-92-1	
Molybdenum	**0.31J**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:10	7439-98-7	
Selenium	**0.54J**	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:06	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**337**	mg/L	5.0	5.0	1		11/01/16 11:04		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		11/07/16 14:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.8**	mg/L	1.0	0.50	1		11/09/16 14:50	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.027	1		11/09/16 14:50	16984-48-8	M1
Sulfate	**25.2**	mg/L	2.0	0.31	2		11/10/16 08:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: MW-20 **Lab ID: 60231107002** Collected: 10/26/16 14:46 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/26/16 14:46		
Field pH	**7.77**	Std. Units	0.10	0.050	1		10/26/16 14:46		
Field Temperature	**13.7**	deg C	0.50	0.25	1		10/26/16 14:46		
Field Specific Conductance	**1118**	umhos/cm	1.0	1.0	1		10/26/16 14:46		
Field Oxidation Potential	**-97**	mV			1		10/26/16 14:46		
Oxygen, Dissolved	**0**	mg/L			1		10/26/16 14:46	7782-44-7	
Turbidity	**42.15**	NTU	1.0	1.0	1		10/26/16 14:46		
Groundwater Elevation	**651.32**	feet			1		10/26/16 14:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**4140**	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:27	7440-42-8	
Calcium	**146**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:27	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:27	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.067J**	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:23	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:23	7440-38-2	
Barium	**106**	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:23	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:23	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:23	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:23	7440-47-3	
Cobalt	**1.1**	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:23	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:23	7439-92-1	
Molybdenum	**70.2**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:23	7439-98-7	
Selenium	**17.0**	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:14	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:23	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**783**	mg/L	5.0	5.0	1		11/01/16 10:51		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		11/07/16 14:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**1.8**	mg/L	1.0	0.50	1		11/09/16 15:33	16887-00-6	
Fluoride	**0.45**	mg/L	0.20	0.027	1		11/09/16 15:33	16984-48-8	
Sulfate	**545**	mg/L	50.0	7.7	50		11/10/16 09:03	14808-79-8	D6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: MW-301 **Lab ID: 60231107003** Collected: 10/26/16 13:46 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/26/16 13:46		
Field pH	**8.10**	Std. Units	0.10	0.050	1		10/26/16 13:46		
Field Temperature	**15.4**	deg C	0.50	0.25	1		10/26/16 13:46		
Field Specific Conductance	**456**	umhos/cm	1.0	1.0	1		10/26/16 13:46		
Field Oxidation Potential	**-156**	mV			1		10/26/16 13:46		
Oxygen, Dissolved	**0**	mg/L			1		10/26/16 13:46	7782-44-7	
Turbidity	**6.79**	NTU	1.0	1.0	1		10/26/16 13:46		
Groundwater Elevation	**624.97**	feet			1		10/26/16 13:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**554**	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:38	7440-42-8	
Calcium	**55.5**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:38	7440-70-2	
Lithium	**6.4J**	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:38	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:28	7440-36-0	
Arsenic	**3.5**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:28	7440-38-2	
Barium	**220**	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:28	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:28	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:28	7440-43-9	
Chromium	**0.35J**	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:28	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:28	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:28	7439-92-1	
Molybdenum	**8.1**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:28	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:16	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:28	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**246**	mg/L	5.0	5.0	1		11/01/16 10:53		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		11/07/16 14:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.8**	mg/L	1.0	0.50	1		11/09/16 16:01	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.027	1		11/09/16 16:01	16984-48-8	
Sulfate	**45.7**	mg/L	5.0	0.77	5		11/10/16 09:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: MW-302 **Lab ID: 60231107004** Collected: 10/26/16 13:01 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/26/16 13:01		
Field pH	**7.12**	Std. Units	0.10	0.050	1		10/26/16 13:01		
Field Temperature	**15.6**	deg C	0.50	0.25	1		10/26/16 13:01		
Field Specific Conductance	**1004**	umhos/cm	1.0	1.0	1		10/26/16 13:01		
Field Oxidation Potential	**-171**	mV			1		10/26/16 13:01		
Oxygen, Dissolved	**0**	mg/L			1		10/26/16 13:01	7782-44-7	
Turbidity	**11.14**	NTU	1.0	1.0	1		10/26/16 13:01		
Groundwater Elevation	**628.35**	feet			1		10/26/16 13:01		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**673**	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:41	7440-42-8	
Calcium	**110**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:41	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:41	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:32	7440-36-0	
Arsenic	**50.2**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:32	7440-38-2	
Barium	**648**	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:32	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:32	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:32	7440-43-9	
Chromium	**0.56J**	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:32	7440-47-3	
Cobalt	**1.1**	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:32	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:32	7439-92-1	
Molybdenum	**1.2**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:32	7439-98-7	
Selenium	**0.28J**	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:19	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:32	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**499**	mg/L	5.0	5.0	1		11/01/16 10:54		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		11/07/16 14:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.5**	mg/L	1.0	0.50	1		11/09/16 16:16	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.027	1		11/09/16 16:16	16984-48-8	
Sulfate	**0.32J**	mg/L	1.0	0.15	1		11/09/16 16:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: MW-303 **Lab ID: 60231107005** Collected: 10/26/16 15:56 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/26/16 15:56		
Field pH	**7.93**	Std. Units	0.10	0.050	1		10/26/16 15:56		
Field Temperature	**22.1**	deg C	0.50	0.25	1		10/26/16 15:56		
Field Specific Conductance	**776**	umhos/cm	1.0	1.0	1		10/26/16 15:56		
Field Oxidation Potential	**10**	mV			1		10/26/16 15:56		
Oxygen, Dissolved	**8.1**	mg/L			1		10/26/16 15:56	7782-44-7	
Turbidity	**3.02**	NTU	1.0	1.0	1		10/26/16 15:56		
Groundwater Elevation	**638.65**	feet			1		10/26/16 15:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**235**	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:45	7440-42-8	
Calcium	**67.1**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:45	7440-70-2	
Lithium	**10.4**	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:45	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.25J**	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:36	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:36	7440-38-2	
Barium	**169**	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:36	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:36	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:36	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:36	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:36	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:36	7439-92-1	
Molybdenum	**16.1**	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:36	7439-98-7	
Selenium	**0.60J**	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:21	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**340**	mg/L	5.0	5.0	1		11/01/16 10:55		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		11/07/16 14:10		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.7**	mg/L	1.0	0.50	1		11/09/16 16:30	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	0.027	1		11/09/16 16:30	16984-48-8	
Sulfate	**62.2**	mg/L	5.0	0.77	5		11/10/16 09:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Sample: FIELD BLANK **Lab ID: 60231107006** Collected: 10/27/16 09:45 Received: 10/29/16 08:25 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	10/31/16 10:00	10/31/16 17:49	7440-42-8	
Calcium	**0.013J**	mg/L	0.10	0.0081	1	10/31/16 10:00	10/31/16 17:49	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	10/31/16 10:00	10/31/16 17:49	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	10/31/16 10:00	11/09/16 18:50	7440-36-0	
Arsenic	ND	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:50	7440-38-2	
Barium	ND	ug/L	1.0	0.14	1	10/31/16 10:00	11/09/16 18:50	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	10/31/16 10:00	11/09/16 18:50	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	10/31/16 10:00	11/09/16 18:50	7440-43-9	
Chromium	ND	ug/L	1.0	0.34	1	10/31/16 10:00	11/09/16 18:50	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:50	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	10/31/16 10:00	11/09/16 18:50	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.10	1	10/31/16 10:00	11/09/16 18:50	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	10/31/16 10:00	11/10/16 11:29	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	10/31/16 10:00	11/09/16 18:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	11/04/16 16:30	11/07/16 11:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		11/01/16 11:04		
9040 pH	Analytical Method: EPA 9040								
pH	**5.8**	Std. Units	0.10	0.10	1		11/10/16 13:15		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		11/09/16 17:12	16887-00-6	
Fluoride	ND	mg/L	0.20	0.027	1		11/09/16 17:12	16984-48-8	
Sulfate	ND	mg/L	1.0	0.15	1		11/09/16 17:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 453535 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

METHOD BLANK: 1856607 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	11/07/16 11:09	

LABORATORY CONTROL SAMPLE: 1856608

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1856609 1856610

Parameter	Units	60231109003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	3.6	3.5	73	70	75-125	3	20	M1

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 452700 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

METHOD BLANK: 1853412 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	50.0	10/31/16 17:19	
Calcium	mg/L	ND	0.10	0.0081	10/31/16 17:19	
Lithium	ug/L	ND	10.0	4.9	10/31/16 17:19	

LABORATORY CONTROL SAMPLE: 1853413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	946	95	80-120	
Calcium	mg/L	10	9.8	98	80-120	
Lithium	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1853414 1853415

Parameter	Units	60231107002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	4140	1000	1000	5210	5160	107	102	75-125	1	20	
Calcium	mg/L	146	10	10	156	157	103	112	75-125	1	20	
Lithium	ug/L	ND	1000	1000	1060	1070	106	107	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 452698 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

METHOD BLANK: 1853408 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.058	11/09/16 17:57	
Arsenic	ug/L	ND	1.0	0.10	11/09/16 17:57	
Barium	ug/L	0.21J	1.0	0.14	11/09/16 17:57	
Beryllium	ug/L	ND	0.50	0.080	11/09/16 17:57	
Cadmium	ug/L	ND	0.50	0.029	11/09/16 17:57	
Chromium	ug/L	ND	1.0	0.34	11/09/16 17:57	
Cobalt	ug/L	ND	1.0	0.50	11/09/16 17:57	
Lead	ug/L	ND	1.0	0.19	11/09/16 17:57	
Molybdenum	ug/L	ND	1.0	0.10	11/09/16 17:57	
Selenium	ug/L	ND	1.0	0.18	11/10/16 11:01	
Thallium	ug/L	ND	1.0	0.50	11/09/16 17:57	

LABORATORY CONTROL SAMPLE: 1853409

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.7	102	80-120	
Arsenic	ug/L	40	39.6	99	80-120	
Barium	ug/L	40	40.7	102	80-120	
Beryllium	ug/L	40	38.6	97	80-120	
Cadmium	ug/L	40	40.4	101	80-120	
Chromium	ug/L	40	41.3	103	80-120	
Cobalt	ug/L	40	40.8	102	80-120	
Lead	ug/L	40	41.0	103	80-120	
Molybdenum	ug/L	40	42.6	106	80-120	
Selenium	ug/L	40	40.2	100	80-120	
Thallium	ug/L	40	39.6	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1853410 1853411

Parameter	Units	60231107001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	41.0	41.0	102	103	75-125	0	20	
Arsenic	ug/L	0.19J	40	40	39.8	40.2	99	100	75-125	1	20	
Barium	ug/L	44.6	40	40	85.6	86.2	102	104	75-125	1	20	
Beryllium	ug/L	ND	40	40	36.4	37.1	91	93	75-125	2	20	
Cadmium	ug/L	ND	40	40	39.8	39.5	99	99	75-125	1	20	
Chromium	ug/L	0.81J	40	40	41.9	41.8	103	102	75-125	0	20	
Cobalt	ug/L	ND	40	40	39.9	39.8	100	100	75-125	0	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

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

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1853410 1853411

Parameter	Units	60231107001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	40	40	41.0	41.2	102	103	75-125	0	20	
Molybdenum	ug/L	0.31J	40	40	43.6	44.1	108	109	75-125	1	20	
Selenium	ug/L	0.54J	40	40	38.4	39.3	95	97	75-125	2	20	
Thallium	ug/L	ND	40	40	39.7	40.0	99	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 452910 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

METHOD BLANK: 1853994 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	11/01/16 10:49	

LABORATORY CONTROL SAMPLE: 1853995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1090	109	80-120	

SAMPLE DUPLICATE: 1853996

Parameter	Units	60231107002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	783	799	2	10	

SAMPLE DUPLICATE: 1853997

Parameter	Units	60231110003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1500	1440	4	10	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 453716 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005

SAMPLE DUPLICATE: 1857878

Parameter	Units	60231110002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.4	7.4	1	10	H6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 454320
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Associated Lab Samples: 60231107006

SAMPLE DUPLICATE: 1860443

Parameter	Units	60231107006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	5.8	5.9	1	10	H6

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 454107 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

METHOD BLANK: 1859354 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107004, 60231107005, 60231107006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	11/09/16 14:22	
Fluoride	mg/L	ND	0.20	0.027	11/09/16 14:22	
Sulfate	mg/L	ND	1.0	0.15	11/09/16 14:22	

LABORATORY CONTROL SAMPLE: 1859355

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	80-120	
Fluoride	mg/L	2.5	2.6	103	80-120	
Sulfate	mg/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859356 1859357

Parameter	Units	60231107001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.8	5	5	12.5	12.7	115	119	80-120	2	15	
Fluoride	mg/L	0.12J	2.5	2.5	3.0	3.2	116	121	80-120	4	15	M1

SAMPLE DUPLICATE: 1859358

Parameter	Units	60231107002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.8	1.7	0	15	
Fluoride	mg/L	0.45	0.45	1	15	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

QC Batch: 454221 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107005

METHOD BLANK: 1859893 Matrix: Water
Associated Lab Samples: 60231107001, 60231107002, 60231107003, 60231107005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.15	11/10/16 07:10	

LABORATORY CONTROL SAMPLE: 1859894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1859895 1859896

Parameter	Units	60231107001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.2	10	10	36.6	36.6	114	114	80-120	0	15	

SAMPLE DUPLICATE: 1859897

Parameter	Units	60231107002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	545	326	50	15	D6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALIFIERS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60231107001	**MW-6**		457189		
60231107002	**MW-20**		457189		
60231107003	**MW-301**		457189		
60231107004	**MW-302**		457189		
60231107005	**MW-303**		457189		
60231107001	**MW-6**	EPA 3010	452700	EPA 6010	452750
60231107002	**MW-20**	EPA 3010	452700	EPA 6010	452750
60231107003	**MW-301**	EPA 3010	452700	EPA 6010	452750
60231107004	**MW-302**	EPA 3010	452700	EPA 6010	452750
60231107005	**MW-303**	EPA 3010	452700	EPA 6010	452750
60231107006	**FIELD BLANK**	EPA 3010	452700	EPA 6010	452750
60231107001	**MW-6**	EPA 3010	452698	EPA 6020	452751
60231107002	**MW-20**	EPA 3010	452698	EPA 6020	452751
60231107003	**MW-301**	EPA 3010	452698	EPA 6020	452751
60231107004	**MW-302**	EPA 3010	452698	EPA 6020	452751
60231107005	**MW-303**	EPA 3010	452698	EPA 6020	452751
60231107006	**FIELD BLANK**	EPA 3010	452698	EPA 6020	452751
60231107001	**MW-6**	EPA 7470	453535	EPA 7470	453628
60231107002	**MW-20**	EPA 7470	453535	EPA 7470	453628
60231107003	**MW-301**	EPA 7470	453535	EPA 7470	453628
60231107004	**MW-302**	EPA 7470	453535	EPA 7470	453628
60231107005	**MW-303**	EPA 7470	453535	EPA 7470	453628
60231107006	**FIELD BLANK**	EPA 7470	453535	EPA 7470	453628
60231107001	**MW-6**	SM 2540C	452910		
60231107002	**MW-20**	SM 2540C	452910		
60231107003	**MW-301**	SM 2540C	452910		
60231107004	**MW-302**	SM 2540C	452910		
60231107005	**MW-303**	SM 2540C	452910		
60231107006	**FIELD BLANK**	SM 2540C	452910		
60231107001	**MW-6**	EPA 9040	453716		
60231107002	**MW-20**	EPA 9040	453716		
60231107003	**MW-301**	EPA 9040	453716		
60231107004	**MW-302**	EPA 9040	453716		
60231107005	**MW-303**	EPA 9040	453716		
60231107006	**FIELD BLANK**	EPA 9040	454320		
60231107001	**MW-6**	EPA 9056	454107		
60231107001	**MW-6**	EPA 9056	454221		
60231107002	**MW-20**	EPA 9056	454107		
60231107002	**MW-20**	EPA 9056	454221		
60231107003	**MW-301**	EPA 9056	454107		
60231107003	**MW-301**	EPA 9056	454221		
60231107004	**MW-302**	EPA 9056	454107		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60231107

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60231107005	**MW-303**	EPA 9056	454107		
60231107005	**MW-303**	EPA 9056	454221		
60231107006	**FIELD BLANK**	EPA 9056	454107		

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Sample Condition Upon Receipt

WO# : 60231107

60231107

Client Name: SCS

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

Tracking #: 7775 8640 1599 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: (CF +0.7) T-266 / (CF -0.5) T-239 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 3.9 **Corr. Factor** (CF +0.7) (CF -0.5) **Corrected** 4.6

Date and initials of person examining contents: JD 10/29

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	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 10.31.16

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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:	Alliant-Lansing	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070	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.
																		Y/N	N	N	N					60231107
1	MW-6	WT	G	xxx	xxx	10/27/16	0926	10.0	2	1		1						X	X	X	X	X	X		BP2U BP2N 2nd 01
2	MW-20	WT	G	xxx	xxx	10/26/16	1446	13.7	2	1		1						X	X	X	X	X	X		02
3	MW-301	WT	G	xxx	xxx	10/26/16	1346	5.9	2	1		1						X	X	X	X	X	X		03
4	MW-302	WT	G	xxx	xxx	10/26/16	1301	15.6	2	1		1						X	X	X	X	X	X		04
5	MW-303	WT	G	xxx	xxx	10/26/16	1556	22.1	2	1		1						X	X	X	X	X	X		05
6	FIELD BLANK	WT	G	xxx	xxx	10/27/16	0945		2	1		1						X	X	X	X	X	X		06
7																										
8																										
9																										
10																										
11																										
12																										

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Gary Sterkel	10/28/16	1700		10/29	0825	4/6	Y	N	Y
* Sb-As-Ba-Be-Cd-Co-Cr-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:	Gary Sterkel					
SIGNATURE of SAMPLER:	Gary Sterkel	DATE Signed (MM/DD/YY): 10/27/16				

*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

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

November 28, 2016

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

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

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

CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60231118001	**MW-6**	Water	10/27/16 09:26	10/29/16 08:25
60231118002	**MW-20**	Water	10/26/16 14:46	10/29/16 08:25
60231118003	**MW-301**	Water	10/26/16 13:46	10/29/16 08:25
60231118004	**MW-302**	Water	10/26/16 13:01	10/29/16 08:25
60231118005	**MW-303**	Water	10/26/16 15:56	10/29/16 08:25
60231118006	**FIELD BLANK**	Water	10/27/16 09:45	10/29/16 08:25

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60231118001	**MW-6**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60231118002	**MW-20**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60231118003	**MW-301**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60231118004	**MW-302**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60231118005	**MW-303**	EPA 903.1	ACM	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60231118006	**FIELD BLANK**	EPA 903.1	ACM	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: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: MW-6 **Lab ID: 60231118001** Collected: 10/27/16 09:26 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.126 ± 0.287 (0.462) C:NA T:93%**	pCi/L	11/23/16 20:09	13982-63-3	
Radium-228	EPA 904.0	**0.474 ± 0.393 (0.792) C:78% T:82%**	pCi/L	11/27/16 13:06	15262-20-1	
Total Radium	Total Radium Calculation	**0.600 ± 0.680 (1.25)**	pCi/L	11/28/16 16:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: MW-20 **Lab ID: 60231118002** Collected: 10/26/16 14:46 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.263 ± 0.365 (0.610) C:NA T:87%**	pCi/L	11/23/16 20:10	13982-63-3	
Radium-228	EPA 904.0	**0.709 ± 0.450 (0.852) C:67% T:84%**	pCi/L	11/27/16 13:06	15262-20-1	
Total Radium	Total Radium Calculation	**0.972 ± 0.815 (1.46)**	pCi/L	11/28/16 16:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: MW-301 **Lab ID: 60231118003** Collected: 10/26/16 13:46 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.236 ± 0.366 (0.634) C:NA T:92%**	pCi/L	11/23/16 20:10	13982-63-3	
Radium-228	EPA 904.0	**0.791 ± 0.453 (0.845) C:73% T:86%**	pCi/L	11/27/16 13:06	15262-20-1	
Total Radium	Total Radium Calculation	**1.03 ± 0.819 (1.48)**	pCi/L	11/28/16 16:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: MW-302 **Lab ID: 60231118004** Collected: 10/26/16 13:01 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.539 ± 0.394 (0.440) C:NA T:90%**	pCi/L	11/23/16 20:10	13982-63-3	
Radium-228	EPA 904.0	**1.19 ± 0.465 (0.722) C:77% T:86%**	pCi/L	11/27/16 13:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.73 ± 0.859 (1.16)**	pCi/L	11/28/16 16:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: MW-303 **Lab ID: 60231118005** Collected: 10/26/16 15:56 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.653 ± 0.486 (0.639) C:NA T:92%**	pCi/L	11/23/16 20:11	13982-63-3	
Radium-228	EPA 904.0	**0.582 ± 0.458 (0.906) C:62% T:83%**	pCi/L	11/27/16 13:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.24 ± 0.944 (1.55)**	pCi/L	11/28/16 16:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Sample: FIELD BLANK **Lab ID: 60231118006** Collected: 10/27/16 09:45 Received: 10/29/16 08:25 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.128 ± 0.291 (0.470) C:NA T:85%**	pCi/L	11/23/16 20:35	13982-63-3	
Radium-228	EPA 904.0	**0.299 ± 0.382 (0.814) C:71% T:84%**	pCi/L	11/27/16 13:07	15262-20-1	
Total Radium	Total Radium Calculation	**0.427 ± 0.673 (1.28)**	pCi/L	11/28/16 16:40	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

QC Batch: 240364 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60231118001, 60231118002, 60231118003, 60231118004, 60231118005, 60231118006

METHOD BLANK: 1181263 Matrix: Water
Associated Lab Samples: 60231118001, 60231118002, 60231118003, 60231118004, 60231118005, 60231118006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.265 ± 0.410 (0.887) C:75% T:73%	pCi/L	11/27/16 13:06	

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: Alliant-Lansing/25216070
Pace Project No.: 60231118

QC Batch: 240362 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60231118001, 60231118002, 60231118003, 60231118004, 60231118005, 60231118006

METHOD BLANK: 1181256 Matrix: Water
Associated Lab Samples: 60231118001, 60231118002, 60231118003, 60231118004, 60231118005, 60231118006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.196 ± 0.340 (0.607) C:NA T:92%	pCi/L	11/23/16 20:09	

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: Alliant-Lansing/25216070
Pace Project No.: 60231118

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60231118

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60231118001	**MW-6**	EPA 903.1	240362		
60231118002	**MW-20**	EPA 903.1	240362		
60231118003	**MW-301**	EPA 903.1	240362		
60231118004	**MW-302**	EPA 903.1	240362		
60231118005	**MW-303**	EPA 903.1	240362		
60231118006	**FIELD BLANK**	EPA 903.1	240362		
60231118001	**MW-6**	EPA 904.0	240364		
60231118002	**MW-20**	EPA 904.0	240364		
60231118003	**MW-301**	EPA 904.0	240364		
60231118004	**MW-302**	EPA 904.0	240364		
60231118005	**MW-303**	EPA 904.0	240364		
60231118006	**FIELD BLANK**	EPA 904.0	240364		
60231118001	**MW-6**	Total Radium Calculation	241514		
60231118002	**MW-20**	Total Radium Calculation	241514		
60231118003	**MW-301**	Total Radium Calculation	241514		
60231118004	**MW-302**	Total Radium Calculation	241514		
60231118005	**MW-303**	Total Radium Calculation	241514		
60231118006	**FIELD BLANK**	Total Radium Calculation	241514		

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Sample Condition Upon Receipt

WO#: 60231118

60231118

Client Name: SCS

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

Tracking #: 9775 8632 7162 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: CF +0.7 / CF -0.5 T-266 / T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 3.5 **Corr. Factor** CF +0.7 CF -0.5 **Corrected** 4.2

Date and initials of person examining contents: JB 10/29

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	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 10.31.16

CHAIN-OF-CUSTODY / Analytical Request Document

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

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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:	Alliant-Lansing	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

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

Site Location STATE: IA

Requested Analysis Filtered (Y/N)

ITEM #	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)	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	Y/N	Analysis Test: 903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-6	WT	G	xxx	xxx	10/27/16	0926	10.0	2			2								X	X	X		60231118 (2) XPH 01
2	MW-20	WT	G	xxx	xxx	10/26/16	1446	13.7	2			2								X	X	X		02
3	MW-301	WT	G	xxx	xxx	10/26/16	1346	15.4	2			2								X	X	X		03
4	MW-302	WT	G	xxx	xxx	10/26/16	1301	15.6	2			2								X	X	X		04
5	MW-303	WT	G	xxx	xxx	10/26/16	1556	22.1	2			2								X	X	X		05
6	FIELD BLANK	WT	G	xxx	xxx	10/27/16	0945		2			2								X	X	X		06
7																								
8																								
9																								
10																								
11																								
12																								

Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Gary Starkel	10/28/16	1700		10/29	0825	4.2	Y	Y	Y

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:	Gary Starkel					
SIGNATURE of SAMPLER:	Gary Starkel	DATE Signed (MM/DD/YY): 10/27/16				

*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

WO#:30201158

30201158

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Workorder: 60231118 **Workorder Name:** Alliant-Lansing/25216070 **Owner Received Date:** 10/29/2016 **Results Requested By:** 11/22/2016

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	904.0 Radium-228	Total Radium									LAB USE ONLY
1	MW-6	PS	10/27/2016 09:26	60231118001	Water	2						X	X	X									001
2	MW-20	PS	10/26/2016 14:46	60231118002	Water	2						X	X	X									002
3	MW-301	PS	10/26/2016 13:46	60231118003	Water	2						X	X	X									003
4	MW-302	PS	10/26/2016 13:01	60231118004	Water	2						X	X	X									004
5	MW-303	PS	10/26/2016 15:56	60231118005	Water	2						X	X	X									005
6	FIELD BLANK	PS	10/27/2016 09:45	60231118006	Water	2						X	X	X									006

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature]	10/31/16 1200	[signature]	11-1-16 1000
2				
3				

Comments

Cooler Temperature on Receipt NA °C Custody Seal (Y) or N Received on Ice Y or (N) Samples Intact (Y) or N

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

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: Pace KS Project #: 30201158

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

Tracking #: _____

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

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

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ML 11-1-16

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

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

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

A5 Round 5 Background Sampling, Analytical Laboratory Report

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

February 21, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Amended Report, Revision 1 on 2/21/17, Field Data Correction

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

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

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

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236433001	**MW-6**	Water	01/18/17 09:06	01/20/17 08:55
60236433002	**MW-20**	Water	01/17/17 15:26	01/20/17 08:55
60236433003	**MW-301**	Water	01/17/17 14:31	01/20/17 08:55
60236433004	**MW-302**	Water	01/17/17 13:21	01/20/17 08:55
60236433005	**MW-303**	Water	01/17/17 12:26	01/20/17 08:55
60236433006	**FIELD BLANK**	Water	01/18/17 09:15	01/20/17 08:55

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236433001	**MW-6**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236433002	**MW-20**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236433003	**MW-301**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236433004	**MW-302**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236433005	**MW-303**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	AGO	1	PASI-K
		EPA 9040	AGO	1	PASI-K
		EPA 9056	OL	3	PASI-K
60236433006	**FIELD BLANK**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	ZBM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: MW-6 **Lab ID: 60236433001** Collected: 01/18/17 09:06 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		02/01/17 09:34		
Field pH	**7.62**	Std. Units	0.10	0.050	1		02/01/17 09:34		
Field Temperature	**8.0**	deg C	0.50	0.25	1		02/01/17 09:34		
Field Specific Conductance	**589**	umhos/cm	1.0	1.0	1		02/01/17 09:34		
Oxygen, Dissolved	**9.8**	mg/L			1		02/01/17 09:34	7782-44-7	
REDOX	**163**	mV			1		02/01/17 09:34		
Turbidity	**0.00**	NTU	1.0	1.0	1		02/01/17 09:34		
Groundwater Elevation	**666.28**	feet			1		02/01/17 09:34		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:22	7440-42-8	
Calcium	**68.6**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:22	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:22	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 14:55	7440-36-0	
Arsenic	**0.23J**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 14:55	7440-38-2	
Barium	**46.5**	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 14:55	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 14:55	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 14:55	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 14:55	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 14:55	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 14:55	7439-92-1	
Molybdenum	**0.21J**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 14:55	7439-98-7	
Selenium	**0.36J**	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 14:55	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 14:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:37	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**324**	mg/L	5.0	5.0	1		01/25/17 15:04		
9040 pH	Analytical Method: EPA 9040								
pH	**8.1**	Std. Units	0.10	0.10	1		02/01/17 09:32		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.5**	mg/L	1.0	0.50	1		01/27/17 21:19	16887-00-6	
Fluoride	**0.092J**	mg/L	0.20	0.027	1		01/27/17 21:19	16984-48-8	
Sulfate	**24.8**	mg/L	2.0	0.31	2		01/28/17 17:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: MW-20 **Lab ID: 60236433002** Collected: 01/17/17 15:26 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		02/01/17 09:34		
Field pH	**7.89**	Std. Units	0.10	0.050	1		02/01/17 09:34		
Field Temperature	**9.2**	deg C	0.50	0.25	1		02/01/17 09:34		
Field Specific Conductance	**939**	umhos/cm	1.0	1.0	1		02/01/17 09:34		
Oxygen, Dissolved	**0.8**	mg/L			1		02/01/17 09:34	7782-44-7	
REDOX	**-49**	mV			1		02/01/17 09:34		
Turbidity	**5.1**	NTU	1.0	1.0	1		02/01/17 09:34		
Groundwater Elevation	**650.18**	feet			1		02/01/17 09:34		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3560**	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:26	7440-42-8	
Calcium	**125**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:26	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:26	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.083J**	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 15:00	7440-36-0	
Arsenic	**2.8**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:00	7440-38-2	
Barium	**122**	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 15:00	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 15:00	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 15:00	7440-43-9	
Chromium	**0.62J**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 15:00	7440-47-3	
Cobalt	**1.0**	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:00	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 15:00	7439-92-1	
Molybdenum	**44.9**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:00	7439-98-7	
Selenium	**3.2**	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 15:00	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**631**	mg/L	5.0	5.0	1		01/24/17 09:57		
9040 pH	Analytical Method: EPA 9040								
pH	**8.0**	Std. Units	0.10	0.10	1		02/01/17 09:31		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**1.9**	mg/L	1.0	0.50	1		01/27/17 21:49	16887-00-6	
Fluoride	**0.43**	mg/L	0.20	0.027	1		01/27/17 21:49	16984-48-8	
Sulfate	**197**	mg/L	20.0	3.1	20		01/28/17 18:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: MW-301 **Lab ID: 60236433003** Collected: 01/17/17 14:31 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		02/01/17 09:35		
Field pH	**8.37**	Std. Units	0.10	0.050	1		02/01/17 09:35		
Field Temperature	**12.3**	deg C	0.50	0.25	1		02/01/17 09:35		
Field Specific Conductance	**491**	umhos/cm	1.0	1.0	1		02/01/17 09:35		
Oxygen, Dissolved	**1.6**	mg/L			1		02/01/17 09:35	7782-44-7	
REDOX	**-98**	mV			1		02/01/17 09:35		
Turbidity	**4.27**	NTU	1.0	1.0	1		02/01/17 09:35		
Groundwater Elevation	**624.09**	feet			1		02/01/17 09:35		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**471**	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:30	7440-42-8	
Calcium	**56.4**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:30	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:30	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.088J**	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 15:04	7440-36-0	
Arsenic	**3.8**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:04	7440-38-2	
Barium	**227**	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 15:04	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 15:04	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 15:04	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 15:04	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:04	7440-48-4	
Lead	**0.23J**	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 15:04	7439-92-1	
Molybdenum	**9.3**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:04	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 15:04	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:04	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**271**	mg/L	5.0	5.0	1		01/24/17 15:41		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		01/24/17 16:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**16.0**	mg/L	1.0	0.50	1		01/27/17 22:05	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.027	1		01/27/17 22:05	16984-48-8	
Sulfate	**55.6**	mg/L	5.0	0.77	5		01/28/17 19:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: MW-302 **Lab ID: 60236433004** Collected: 01/17/17 13:21 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		02/01/17 09:36		
Field pH	**7.25**	Std. Units	0.10	0.050	1		02/01/17 09:36		
Field Temperature	**9.3**	deg C	0.50	0.25	1		02/01/17 09:36		
Field Specific Conductance	**1036**	umhos/cm	1.0	1.0	1		02/01/17 09:36		
Oxygen, Dissolved	**0.2**	mg/L			1		02/01/17 09:36	7782-44-7	
REDOX	**-154**	mV			1		02/01/17 09:36		
Turbidity	**93.10**	NTU	1.0	1.0	1		02/01/17 09:36		
Groundwater Elevation	**627.32**	feet			1		02/01/17 09:36		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**576**	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:33	7440-42-8	
Calcium	**116**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:33	7440-70-2	
Lithium	ND	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:33	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.14J**	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 15:09	7440-36-0	
Arsenic	**45.0**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:09	7440-38-2	
Barium	**706**	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 15:09	7440-39-3	
Beryllium	**0.10J**	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 15:09	7440-41-7	
Cadmium	**0.074J**	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 15:09	7440-43-9	
Chromium	**3.5**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 15:09	7440-47-3	
Cobalt	**3.2**	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:09	7440-48-4	
Lead	**3.3**	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 15:09	7439-92-1	
Molybdenum	**1.1**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:09	7439-98-7	
Selenium	**0.36J**	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 15:09	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**497**	mg/L	5.0	5.0	1		01/24/17 15:41		
9040 pH	Analytical Method: EPA 9040								
pH	**6.9**	Std. Units	0.10	0.10	1		01/24/17 16:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.7**	mg/L	1.0	0.50	1		01/27/17 22:20	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.027	1		01/27/17 22:20	16984-48-8	
Sulfate	ND	mg/L	1.0	0.15	1		01/27/17 22:20	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: MW-303 **Lab ID: 60236433005** Collected: 01/17/17 12:26 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		02/01/17 09:37		
Field pH	**8.16**	Std. Units	0.10	0.050	1		02/01/17 09:37		
Field Temperature	**6.3**	deg C	0.50	0.25	1		02/01/17 09:37		
Field Specific Conductance	**614**	umhos/cm	1.0	1.0	1		02/01/17 09:37		
Oxygen, Dissolved	**3**	mg/L			1		02/01/17 09:37	7782-44-7	
REDOX	**221**	mV			1		02/01/17 09:37		
Turbidity	**2.53**	NTU	1.0	1.0	1		02/01/17 09:37		
Groundwater Elevation	**638.10**	feet			1		02/01/17 09:37		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**133**	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:37	7440-42-8	
Calcium	**72.5**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:37	7440-70-2	
Lithium	**5.9J**	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:37	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.19J**	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 15:13	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:13	7440-38-2	
Barium	**174**	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 15:13	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 15:13	7440-41-7	
Cadmium	**0.042J**	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 15:13	7440-43-9	
Chromium	**0.81J**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 15:13	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:13	7440-48-4	
Lead	**0.24J**	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 15:13	7439-92-1	
Molybdenum	**10.7**	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 15:13	7439-98-7	
Selenium	**1.9**	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 15:13	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 15:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**350**	mg/L	5.0	5.0	1		01/24/17 15:42		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		01/24/17 16:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**21.9**	mg/L	2.0	1.0	2		01/28/17 19:19	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.027	1		01/27/17 22:36	16984-48-8	
Sulfate	**67.9**	mg/L	5.0	0.77	5		01/28/17 19:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Sample: FIELD BLANK **Lab ID: 60236433006** Collected: 01/18/17 09:15 Received: 01/20/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	50.0	1	01/23/17 14:00	01/26/17 12:41	7440-42-8	
Calcium	**0.020J**	mg/L	0.10	0.0081	1	01/23/17 14:00	01/26/17 12:41	7440-70-2	B
Lithium	ND	ug/L	10.0	4.9	1	01/23/17 14:00	01/26/17 12:41	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.058	1	01/23/17 14:00	01/26/17 14:38	7440-36-0	
Arsenic	ND	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 14:38	7440-38-2	
Barium	ND	ug/L	1.0	0.14	1	01/23/17 14:00	01/26/17 14:38	7440-39-3	
Beryllium	ND	ug/L	0.50	0.080	1	01/23/17 14:00	01/26/17 14:38	7440-41-7	
Cadmium	ND	ug/L	0.50	0.029	1	01/23/17 14:00	01/26/17 14:38	7440-43-9	
Chromium	**0.47J**	ug/L	1.0	0.34	1	01/23/17 14:00	01/26/17 14:38	7440-47-3	
Cobalt	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 14:38	7440-48-4	
Lead	ND	ug/L	1.0	0.19	1	01/23/17 14:00	01/26/17 14:38	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.10	1	01/23/17 14:00	01/26/17 14:38	7439-98-7	
Selenium	ND	ug/L	1.0	0.18	1	01/23/17 14:00	01/26/17 14:38	7782-49-2	
Thallium	ND	ug/L	1.0	0.50	1	01/23/17 14:00	01/26/17 14:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.039	1	01/30/17 09:30	01/30/17 12:48	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		01/25/17 15:05		
9040 pH	Analytical Method: EPA 9040								
pH	**5.3**	Std. Units	0.10	0.10	1		02/01/17 09:34		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		01/27/17 22:51	16887-00-6	
Fluoride	ND	mg/L	0.20	0.027	1		01/27/17 22:51	16984-48-8	
Sulfate	ND	mg/L	1.0	0.15	1		01/27/17 22:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463650 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

METHOD BLANK: 1898131 Matrix: Water
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.039	01/30/17 12:06	

LABORATORY CONTROL SAMPLE: 1898132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1898133 1898134

Parameter	Units	60236450003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.0	5.0	100	99	75-125	1	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 462882 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

METHOD BLANK: 1895235 Matrix: Water
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	01/26/17 11:28	
Calcium	mg/L	ND	0.10	0.036	01/26/17 11:28	
Lithium	ug/L	ND	10.0	2.9	01/26/17 11:28	

LABORATORY CONTROL SAMPLE: 1895236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	976	98	80-120	
Calcium	mg/L	10	9.6	96	80-120	
Lithium	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895237 1895238

Parameter	Units	60236399001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	144	1000	1000	1140	1150	100	100	75-125	0	20	
Calcium	mg/L	101	10	10	112	109	108	82	75-125	2	20	
Lithium	ug/L	37.1	1000	1000	1060	1070	102	103	75-125	1	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 462883 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

METHOD BLANK: 1895239 Matrix: Water
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	01/26/17 13:46	
Arsenic	ug/L	ND	1.0	0.052	01/26/17 13:46	
Barium	ug/L	0.14J	1.0	0.095	01/26/17 13:46	
Beryllium	ug/L	ND	0.50	0.012	01/26/17 13:46	
Cadmium	ug/L	ND	0.50	0.018	01/26/17 13:46	
Chromium	ug/L	0.26J	1.0	0.054	01/26/17 13:46	
Cobalt	ug/L	ND	1.0	0.014	01/26/17 13:46	
Lead	ug/L	ND	1.0	0.033	01/26/17 13:46	
Molybdenum	ug/L	ND	1.0	0.058	01/26/17 13:46	
Selenium	ug/L	ND	1.0	0.086	01/26/17 13:46	
Thallium	ug/L	ND	1.0	0.036	01/26/17 13:46	

LABORATORY CONTROL SAMPLE: 1895240

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.3	101	80-120	
Arsenic	ug/L	40	41.1	103	80-120	
Barium	ug/L	40	39.6	99	80-120	
Beryllium	ug/L	40	42.2	106	80-120	
Cadmium	ug/L	40	40.7	102	80-120	
Chromium	ug/L	40	40.4	101	80-120	
Cobalt	ug/L	40	39.7	99	80-120	
Lead	ug/L	40	38.4	96	80-120	
Molybdenum	ug/L	40	41.2	103	80-120	
Selenium	ug/L	40	42.8	107	80-120	
Thallium	ug/L	40	40.4	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895241 1895242

Parameter	Units	60236399002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	40.5	40.7	100	101	75-125	1	20	
Arsenic	ug/L	4.3	40	40	44.2	45.1	100	102	75-125	2	20	
Barium	ug/L	100	40	40	141	144	102	110	75-125	2	20	
Beryllium	ug/L	ND	40	40	38.6	38.6	96	96	75-125	0	20	
Cadmium	ug/L	ND	40	40	39.6	39.4	99	98	75-125	0	20	
Chromium	ug/L	ND	40	40	40.0	40.2	98	99	75-125	0	20	
Cobalt	ug/L	ND	40	40	37.6	37.9	94	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1895241 1895242

Parameter	Units	60236399002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	40	40	38.5	38.6	96	96	75-125	0	20	
Molybdenum	ug/L	8.6	40	40	50.8	50.9	105	106	75-125	0	20	
Selenium	ug/L	14.6	40	40	54.5	55.6	100	102	75-125	2	20	
Thallium	ug/L	ND	40	40	40.4	41.1	101	103	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 462912 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236433002

METHOD BLANK: 1895338 Matrix: Water
Associated Lab Samples: 60236433002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	01/24/17 09:49	

LABORATORY CONTROL SAMPLE: 1895339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	980	98	80-120	

SAMPLE DUPLICATE: 1895340

Parameter	Units	60236163003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	668	657	2	10	

SAMPLE DUPLICATE: 1895341

Parameter	Units	60236164001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	484	481	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463087 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236433003, 60236433004, 60236433005

METHOD BLANK: 1895932 Matrix: Water
Associated Lab Samples: 60236433003, 60236433004, 60236433005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	01/24/17 15:40	

LABORATORY CONTROL SAMPLE: 1895933

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	962	96	80-120	

SAMPLE DUPLICATE: 1895934

Parameter	Units	60236203003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	968	971	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463213 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60236433001, 60236433006

METHOD BLANK: 1896349 Matrix: Water
Associated Lab Samples: 60236433001, 60236433006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	01/25/17 15:02	

LABORATORY CONTROL SAMPLE: 1896350

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	972	97	80-120	

SAMPLE DUPLICATE: 1896351

Parameter	Units	60236433001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	324	322	1	10	

SAMPLE DUPLICATE: 1896352

Parameter	Units	60236559005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	14100	14500	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 462925 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60236433003, 60236433004, 60236433005

SAMPLE DUPLICATE: 1895386

Parameter	Units	60235886001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.2	0	10	H6

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463706 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60236433001, 60236433002, 60236433006

SAMPLE DUPLICATE: 1898316

Parameter	Units	60236399005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.6	7.6	0	10	H6

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463458 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

METHOD BLANK: 1897258 Matrix: Water
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433004, 60236433005, 60236433006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	01/27/17 19:31	
Fluoride	mg/L	ND	0.20	0.10	01/27/17 19:31	
Sulfate	mg/L	ND	1.0	0.50	01/27/17 19:31	

LABORATORY CONTROL SAMPLE: 1897259

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	80-120	
Fluoride	mg/L	2.5	2.6	104	80-120	
Sulfate	mg/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1897260 1897261

Parameter	Units	60236418001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.9	5	5	9.3	9.4	107	109	80-120	1	15	
Fluoride	mg/L	0.45	2.5	2.5	3.2	3.3	110	112	80-120	2	15	
Sulfate	mg/L	8.2	5	5	13.6	13.7	107	108	80-120	1	15	

SAMPLE DUPLICATE: 1897262

Parameter	Units	60236433001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	6.5	6.5	0	15	
Fluoride	mg/L	0.092J	ND		15	

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

QC Batch: 463594 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433005

METHOD BLANK: 1897852 Matrix: Water
Associated Lab Samples: 60236433001, 60236433002, 60236433003, 60236433005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	01/28/17 17:00	
Sulfate	mg/L	ND	1.0	0.50	01/28/17 17:00	

LABORATORY CONTROL SAMPLE: 1897853

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	100	80-120	
Sulfate	mg/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1897854 1897855

Parameter	Units	60236433001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.5			16.8	16.7				1	15	
Sulfate	mg/L	24.8	10	10	35.1	34.8	103	100	80-120	1	15	

SAMPLE DUPLICATE: 1897856

Parameter	Units	60236433002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	1.9	ND			
Sulfate	mg/L	197	189	5	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236433001	**MW-6**		464021		
60236433002	**MW-20**		464021		
60236433003	**MW-301**		464021		
60236433004	**MW-302**		464021		
60236433005	**MW-303**		464021		
60236433001	**MW-6**	EPA 3010	462882	EPA 6010	462904
60236433002	**MW-20**	EPA 3010	462882	EPA 6010	462904
60236433003	**MW-301**	EPA 3010	462882	EPA 6010	462904
60236433004	**MW-302**	EPA 3010	462882	EPA 6010	462904
60236433005	**MW-303**	EPA 3010	462882	EPA 6010	462904
60236433006	**FIELD BLANK**	EPA 3010	462882	EPA 6010	462904
60236433001	**MW-6**	EPA 3010	462883	EPA 6020	462905
60236433002	**MW-20**	EPA 3010	462883	EPA 6020	462905
60236433003	**MW-301**	EPA 3010	462883	EPA 6020	462905
60236433004	**MW-302**	EPA 3010	462883	EPA 6020	462905
60236433005	**MW-303**	EPA 3010	462883	EPA 6020	462905
60236433006	**FIELD BLANK**	EPA 3010	462883	EPA 6020	462905
60236433001	**MW-6**	EPA 7470	463650	EPA 7470	463677
60236433002	**MW-20**	EPA 7470	463650	EPA 7470	463677
60236433003	**MW-301**	EPA 7470	463650	EPA 7470	463677
60236433004	**MW-302**	EPA 7470	463650	EPA 7470	463677
60236433005	**MW-303**	EPA 7470	463650	EPA 7470	463677
60236433006	**FIELD BLANK**	EPA 7470	463650	EPA 7470	463677
60236433001	**MW-6**	SM 2540C	463213		
60236433002	**MW-20**	SM 2540C	462912		
60236433003	**MW-301**	SM 2540C	463087		
60236433004	**MW-302**	SM 2540C	463087		
60236433005	**MW-303**	SM 2540C	463087		
60236433006	**FIELD BLANK**	SM 2540C	463213		
60236433001	**MW-6**	EPA 9040	463706		
60236433002	**MW-20**	EPA 9040	463706		
60236433003	**MW-301**	EPA 9040	462925		
60236433004	**MW-302**	EPA 9040	462925		
60236433005	**MW-303**	EPA 9040	462925		
60236433006	**FIELD BLANK**	EPA 9040	463706		
60236433001	**MW-6**	EPA 9056	463458		
60236433001	**MW-6**	EPA 9056	463594		
60236433002	**MW-20**	EPA 9056	463458		
60236433002	**MW-20**	EPA 9056	463594		
60236433003	**MW-301**	EPA 9056	463458		
60236433003	**MW-301**	EPA 9056	463594		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60236433

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236433004	**MW-302**	EPA 9056	463458		
60236433005	**MW-303**	EPA 9056	463458		
60236433005	**MW-303**	EPA 9056	463594		
60236433006	**FIELD BLANK**	EPA 9056	463458		

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Sample Condition Upon Receipt

WO# : 60236433

60236433

Client Name: SCS Eng

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

Tracking #: 778218285947 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: CF +1.5 T-266 / CF +0.9 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.6 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 3.1

Date and initials of person examining contents: PVI 1/20/17

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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 1-20-17

CHAIN-OF-CUSTODY / Analytical Request Document

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

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Page: of

Section A — Required Client Information:

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

Section B — Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	Alliant-Lansing
Project Number:	25216070

Section C — Invoice Information:

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

REGULATORY AGENCY

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

Site Location STATE: IA

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): N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	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. 60236433
1	MW-6	WT	G	xxx	xxx	1/18/17	0906	8.0	2	1		1							X	X	X	X	X	X								001
2	MW-20	WT	G	xxx	xxx	1/17/17	1526	9.2	2	1		1							X	X	X	X	X	X								002
3	MW-301	WT	G	xxx	xxx	1/17/17	1431	12.3	2	1		1							X	X	X	X	X	X								003
4	MW-302	WT	G	xxx	xxx	1/17/17	1321	9.3	2	1		1							X	X	X	X	X	X								004
5	MW-303	WT	G	xxx	xxx	1/17/17	1226	6.6	2	1		1							X	X	X	X	X	X								005
6	FIELD BLANK	WT	G	xxx	xxx	1/18/17	0915		2	1		1							X	X	X	X	X	X								006
7																																
8																																
9																																
10																																
11																																
12																																

1BPU 1BP2U 1BP2N 2.0 PU 1/20/17

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	[signature] SCS	1/19/17	1700	[signature] PASI	1/20/17	0855	3.1	Y	Y	Y
* Sb-As-Ba-Be-Cd-Co-Cr-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

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

February 20, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on January 20, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
Project Manager

Enclosures

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

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CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60236435001	**MW-6**	Water	01/18/17 09:06	01/20/17 08:55
60236435002	**MW-20**	Water	01/17/17 15:26	01/20/17 08:55
60236435003	**MW-301**	Water	01/17/17 14:31	01/20/17 08:55
60236435004	**MW-302**	Water	01/17/17 13:21	01/20/17 08:55
60236435005	**MW-303**	Water	01/17/17 12:26	01/20/17 08:55
60236435006	**FIELD BLANK**	Water	01/18/17 09:15	01/20/17 08:55

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60236435001	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236435002	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236435003	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236435004	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236435005	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60236435006	**FIELD BLANK**	EPA 903.1	WRR	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: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: MW-6 **Lab ID: 60236435001** Collected: 01/18/17 09:06 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.332 (0.675) C:NA T:97%**	pCi/L	02/15/17 01:09	13982-63-3	
Radium-228	EPA 904.0	**0.397 ± 0.385 (0.791) C:65% T:89%**	pCi/L	02/14/17 16:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.397 ± 0.717 (1.47)**	pCi/L	02/20/17 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: MW-20 **Lab ID: 60236435002** Collected: 01/17/17 15:26 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0739 ± 0.435 (0.888) C:NA T:88%**	pCi/L	02/15/17 01:09	13982-63-3	
Radium-228	EPA 904.0	**0.502 ± 0.363 (0.700) C:78% T:78%**	pCi/L	02/14/17 16:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.576 ± 0.798 (1.59)**	pCi/L	02/20/17 14:28	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: MW-301 **Lab ID: 60236435003** Collected: 01/17/17 14:31 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.334 ± 0.465 (0.776) C:NA T:87%**	pCi/L	02/15/17 01:09	13982-63-3	
Radium-228	EPA 904.0	**0.313 ± 0.357 (0.744) C:66% T:79%**	pCi/L	02/14/17 16:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.647 ± 0.822 (1.52)**	pCi/L	02/20/17 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: MW-302 **Lab ID: 60236435004** Collected: 01/17/17 13:21 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.514 ± 0.534 (0.795) C:NA T:89%**	pCi/L	02/15/17 01:21	13982-63-3	
Radium-228	EPA 904.0	**0.978 ± 0.444 (0.721) C:67% T:82%**	pCi/L	02/14/17 16:12	15262-20-1	
Total Radium	Total Radium Calculation	**1.49 ± 0.978 (1.52)**	pCi/L	02/20/17 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: MW-303 **Lab ID: 60236435005** Collected: 01/17/17 12:26 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.077 ± 0.401 (0.929) C:NA T:89%**	pCi/L	02/15/17 01:21	13982-63-3	
Radium-228	EPA 904.0	**0.416 ± 0.369 (0.740) C:66% T:81%**	pCi/L	02/14/17 16:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.416 ± 0.770 (1.67)**	pCi/L	02/20/17 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Sample: FIELD BLANK **Lab ID: 60236435006** Collected: 01/18/17 09:15 Received: 01/20/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.222 ± 0.339 (0.201) C:NA T:95%**	pCi/L	02/15/17 01:21	13982-63-3	
Radium-228	EPA 904.0	**-0.137 ± 0.381 (0.942) C:73% T:81%**	pCi/L	02/14/17 19:27	15262-20-1	
Total Radium	Total Radium Calculation	**0.222 ± 0.720 (1.14)**	pCi/L	02/20/17 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

QC Batch: 248441 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60236435001, 60236435002, 60236435003, 60236435004, 60236435005, 60236435006

METHOD BLANK: 1222154 Matrix: Water
Associated Lab Samples: 60236435001, 60236435002, 60236435003, 60236435004, 60236435005, 60236435006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.708 ± 0.454 (0.847) C:60% T:83%	pCi/L	02/14/17 12:07	

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: Alliant-Lansing/25216070
Pace Project No.: 60236435

QC Batch: 248439 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60236435001, 60236435002, 60236435003, 60236435004, 60236435005, 60236435006

METHOD BLANK: 1222149 Matrix: Water
Associated Lab Samples: 60236435001, 60236435002, 60236435003, 60236435004, 60236435005, 60236435006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.349 (0.563) C:NA T:93%	pCi/L	02/15/17 00:12	

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

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALIFIERS

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60236435

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60236435001	**MW-6**	EPA 903.1	248439		
60236435002	**MW-20**	EPA 903.1	248439		
60236435003	**MW-301**	EPA 903.1	248439		
60236435004	**MW-302**	EPA 903.1	248439		
60236435005	**MW-303**	EPA 903.1	248439		
60236435006	**FIELD BLANK**	EPA 903.1	248439		
60236435001	**MW-6**	EPA 904.0	248441		
60236435002	**MW-20**	EPA 904.0	248441		
60236435003	**MW-301**	EPA 904.0	248441		
60236435004	**MW-302**	EPA 904.0	248441		
60236435005	**MW-303**	EPA 904.0	248441		
60236435006	**FIELD BLANK**	EPA 904.0	248441		
60236435001	**MW-6**	Total Radium Calculation	249821		
60236435002	**MW-20**	Total Radium Calculation	249821		
60236435003	**MW-301**	Total Radium Calculation	249821		
60236435004	**MW-302**	Total Radium Calculation	249821		
60236435005	**MW-303**	Total Radium Calculation	249821		
60236435006	**FIELD BLANK**	Total Radium Calculation	249821		

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Sample Condition Upon Receipt

WO# : 60236435

60236435

Client Name: SCS Eng.

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

Tracking #: _____ 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: CF +1.5 T-266 / CF +0.9 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 0.5 **Corr. Factor** CF +1.5 CF +0.9 **Corrected** 2.0

Date and initials of person examining contents: JJS 1/20/17

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: water	☐Yes ☐No ☒N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	
Cyanide water sample checks: ☒N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: JJS Date: 1-20-17

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Alliant-Lansing	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070	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	Y/N	Analysis Test: 903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-6	WT	G	xxx	xxx	1/18/17	0906	8.0	2			2							X	X	X		60236435 001
2	MW-20	WT	G	xxx	xxx	1/17/17	1526	9.2	2			2							X	X	X		002
3	MW-301	WT	G	xxx	xxx	1/17/17	1431	12.3	2			2							X	X	X		003
4	MW-302	WT	G	xxx	xxx	1/17/17	1321	9.3	2			2							X	X	X		004
5	MW-303	WT	G	xxx	xxx	1/17/17	1226	6.6	2			2							X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	1/18/17	0915		2			2							X	X	X		006
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Gary Stuhel SCS	1/19/17	1700	Pace	1/20/17	855	2.0	Y	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.

Chain of Custody

30208959

Pace Analytical®
www.pacelabs.com

Workorder: 60236435 **Workorder Name:** Alliant-Lansing/25216070 **Owner Received Date:** 1/20/2017 **Results Requested By:** 2/16/2017

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#:30208959

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	904.0 Radium-228	Total Radium									LAB USE ONLY
1	MW-6	PS	1/18/2017 09:06	60236435001	Water	2						X	X	X									001
2	MW-20	PS	1/17/2017 15:26	60236435002	Water	2						X	X	X									002
3	MW-301	PS	1/17/2017 14:31	60236435003	Water	2						X	X	X									003
4	MW-302	PS	1/17/2017 13:21	60236435004	Water	2						X	X	X									004
5	MW-303	PS	1/17/2017 12:26	60236435005	Water	2						X	X	X									005
6	FIELD BLANK	PS	1/18/2017 09:15	60236435006	Water	2						X	X	X									006

Comments

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature]	1/20/17 1200	Pace [signature]	1/25/17 1030
2				
3				

Cooler Temperature on Receipt NA °C Custody Seal Y or (N) Received on Ice Y or (N) Samples Intact (Y) or N

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

Sample Condition Upon Receipt Pittsburgh

30208959

Face Analytical

Client Name: PACKS Project #

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

Tracking #: 7044 6105 8796 05

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

Thermometer Used NA Type of Ice: Wet Blue None

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

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 1/25/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -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.
Organic Samples checked for dechlorination:			✓	13.
Filtered volume received for Dissolved tests			✓	14.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation.	✓ ✓			15. pH<2
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed ARM Date/time of preservation; Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	16.
Trip Blank Present:			✓	17.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: ARM Date: 1/25/17

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

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

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

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

A6 Round 6 Background Sampling, Analytical Laboratory Report

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

May 04, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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

CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60242633001	**MW-6**	Water	04/19/17 12:42	04/22/17 09:05
60242633002	**MW-20**	Water	04/19/17 15:26	04/22/17 09:05
60242633003	**MW-301**	Water	04/19/17 14:36	04/22/17 09:05
60242633004	**MW-302**	Water	04/19/17 13:46	04/22/17 09:05
60242633005	**MW-303**	Water	04/19/17 16:46	04/22/17 09:05
60242633006	**FIELD BLANK**	Water	04/19/17 15:35	04/22/17 09:05

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60242633001	MW-6	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60242633002	MW-20	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60242633003	MW-301	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60242633004	MW-302	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60242633005	MW-303	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60242633006	FIELD BLANK	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K

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

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: MW-6 **Lab ID: 60242633001** Collected: 04/19/17 12:42 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		04/19/17 12:42		
Field pH	**7.48**	Std. Units	0.10	0.050	1		04/19/17 12:42		
Field Temperature	**10.3**	deg C	0.50	0.25	1		04/19/17 12:42		
Field Specific Conductance	**589**	umhos/cm	1.0	1.0	1		04/19/17 12:42		
Field Oxidation Potential	**321**	mV			1		04/19/17 12:42		
Oxygen, Dissolved	**7.1**	mg/L			1		04/19/17 12:42	7782-44-7	
Turbidity	**1.71**	NTU	1.0	1.0	1		04/19/17 12:42		
Groundwater Elevation	**669.82**	feet			1		04/19/17 12:42		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**31.9J**	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:27	7440-42-8	B
Calcium	**67.8**	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:27	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:27	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:00	7440-36-0	
Arsenic	**0.28J**	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:00	7440-38-2	
Barium	**45.4**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:00	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:00	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:00	7440-43-9	
Chromium	**0.76J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:00	7440-47-3	B
Cobalt	**0.034J**	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:00	7440-48-4	B
Lead	**0.13J**	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:00	7439-92-1	B
Molybdenum	**0.25J**	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:00	7439-98-7	
Selenium	**0.50J**	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:00	7782-49-2	
Thallium	**0.11J**	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:00	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:34	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**350**	mg/L	5.0	5.0	1		04/24/17 12:53		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		04/26/17 13:15		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.3**	mg/L	1.0	0.50	1		04/26/17 15:46	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		04/26/17 15:46	16984-48-8	
Sulfate	**25.5**	mg/L	2.0	1.0	2		04/26/17 16:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: MW-20 **Lab ID: 60242633002** Collected: 04/19/17 15:26 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		04/19/17 15:26		
Field pH	**7.83**	Std. Units	0.10	0.050	1		04/19/17 15:26		
Field Temperature	**8.1**	deg C	0.50	0.25	1		04/19/17 15:26		
Field Specific Conductance	**1169**	umhos/cm	1.0	1.0	1		04/19/17 15:26		
Field Oxidation Potential	**-111**	mV			1		04/19/17 15:26		
Oxygen, Dissolved	**0**	mg/L			1		04/19/17 15:26	7782-44-7	
Turbidity	**1.1**	NTU	1.0	1.0	1		04/19/17 15:26		
Groundwater Elevation	**651.71**	feet			1		04/19/17 15:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3470**	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:29	7440-42-8	
Calcium	**154**	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:29	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:29	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:04	7440-36-0	
Arsenic	**2.7**	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:04	7440-38-2	
Barium	**117**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:04	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:04	7440-41-7	
Cadmium	**0.027J**	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:04	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:04	7440-47-3	B
Cobalt	**1.1**	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:04	7440-48-4	
Lead	**0.13J**	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:04	7439-92-1	B
Molybdenum	**46.9**	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:04	7439-98-7	
Selenium	**22.2**	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:04	7782-49-2	
Thallium	**0.055J**	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:04	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:45	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**851**	mg/L	5.0	5.0	1		04/24/17 12:53		
9040 pH	Analytical Method: EPA 9040								
pH	**7.9**	Std. Units	0.10	0.10	1		04/26/17 13:16		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**2.2**	mg/L	1.0	0.50	1		04/26/17 16:59	16887-00-6	
Fluoride	**0.41**	mg/L	0.20	0.10	1		04/26/17 16:59	16984-48-8	
Sulfate	**385**	mg/L	20.0	10.0	20		04/26/17 16:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: MW-301 **Lab ID: 60242633003** Collected: 04/19/17 14:36 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		04/19/17 14:36		
Field pH	**8.50**	Std. Units	0.10	0.050	1		04/19/17 14:36		
Field Temperature	**10.6**	deg C	0.50	0.25	1		04/19/17 14:36		
Field Specific Conductance	**471**	umhos/cm	1.0	1.0	1		04/19/17 14:36		
Field Oxidation Potential	**-181**	mV			1		04/19/17 14:36		
Oxygen, Dissolved	**0.3**	mg/L			1		04/19/17 14:36	7782-44-7	
Turbidity	**3.04**	NTU	1.0	1.0	1		04/19/17 14:36		
Groundwater Elevation	**624.7**	feet			1		04/19/17 14:36		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**405**	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:31	7440-42-8	
Calcium	**61.7**	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:31	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:31	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:17	7440-36-0	
Arsenic	**3.1**	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:17	7440-38-2	
Barium	**182**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:17	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:17	7440-41-7	
Cadmium	**0.021J**	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:17	7440-43-9	
Chromium	**0.97J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:17	7440-47-3	B
Cobalt	**0.098J**	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:17	7440-48-4	B
Lead	**0.36J**	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:17	7439-92-1	B
Molybdenum	**6.9**	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:17	7439-98-7	
Selenium	**0.12J**	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:17	7782-49-2	
Thallium	**0.14J**	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:17	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**289**	mg/L	5.0	5.0	1		04/24/17 12:54		
9040 pH	Analytical Method: EPA 9040								
pH	**7.8**	Std. Units	0.10	0.10	1		04/26/17 13:18		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.3**	mg/L	1.0	0.50	1		04/26/17 17:14	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.10	1		04/26/17 17:14	16984-48-8	
Sulfate	**48.7**	mg/L	5.0	2.5	5		04/26/17 17:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: MW-302 **Lab ID: 60242633004** Collected: 04/19/17 13:46 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		04/19/17 13:46		
Field pH	**7.25**	Std. Units	0.10	0.050	1		04/19/17 13:46		
Field Temperature	**7.6**	deg C	0.50	0.25	1		04/19/17 13:46		
Field Specific Conductance	**971**	umhos/cm	1.0	1.0	1		04/19/17 13:46		
Field Oxidation Potential	**-172**	mV			1		04/19/17 13:46		
Oxygen, Dissolved	**0**	mg/L			1		04/19/17 13:46	7782-44-7	
Turbidity	**3.36**	NTU	1.0	1.0	1		04/19/17 13:46		
Groundwater Elevation	**628.98**	feet			1		04/19/17 13:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**527**	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:43	7440-42-8	
Calcium	**112**	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:43	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:43	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:25	7440-36-0	
Arsenic	**31.7**	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:25	7440-38-2	
Barium	**559**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:25	7440-39-3	
Beryllium	**0.016J**	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:25	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:25	7440-43-9	
Chromium	**1.0J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:25	7440-47-3	B
Cobalt	**1.1**	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:25	7440-48-4	
Lead	**0.36J**	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:25	7439-92-1	B
Molybdenum	**0.87J**	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:25	7439-98-7	
Selenium	**0.25J**	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:25	7782-49-2	
Thallium	**0.042J**	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:25	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**503**	mg/L	5.0	5.0	1		04/24/17 12:54		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		04/26/17 13:19		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**12.9**	mg/L	1.0	0.50	1		04/26/17 17:44	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.10	1		04/26/17 17:44	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/26/17 17:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: MW-303 **Lab ID: 60242633005** Collected: 04/19/17 16:46 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		04/19/17 16:46		
Field pH	**8.19**	Std. Units	0.10	0.050	1		04/19/17 16:46		
Field Temperature	**10.5**	deg C	0.50	0.25	1		04/19/17 16:46		
Field Specific Conductance	**520**	umhos/cm	1.0	1.0	1		04/19/17 16:46		
Field Oxidation Potential	**81**	mV			1		04/19/17 16:46		
Oxygen, Dissolved	**1.4**	mg/L			1		04/19/17 16:46	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		04/19/17 16:46		
Groundwater Elevation	**639.20**	feet			1		04/19/17 16:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**177**	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:45	7440-42-8	
Calcium	**60.1**	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:45	7440-70-2	
Lithium	**4.7J**	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:45	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.26J**	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:47	7440-36-0	
Arsenic	**2.4**	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:47	7440-38-2	
Barium	**159**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:47	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:47	7440-41-7	
Cadmium	**0.018J**	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:47	7440-43-9	
Chromium	**0.71J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:47	7440-47-3	B
Cobalt	**0.090J**	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:47	7440-48-4	B
Lead	**0.078J**	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:47	7439-92-1	B
Molybdenum	**7.6**	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:47	7439-98-7	
Selenium	**0.63J**	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:47	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:47	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**317**	mg/L	5.0	5.0	1		04/24/17 12:55		
9040 pH	Analytical Method: EPA 9040								
pH	**8.1**	Std. Units	0.10	0.10	1		04/26/17 13:23		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**16.1**	mg/L	1.0	0.50	1		04/26/17 18:28	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	0.10	1		04/26/17 18:28	16984-48-8	
Sulfate	**43.7**	mg/L	5.0	2.5	5		04/26/17 18:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Sample: FIELD BLANK **Lab ID: 60242633006** Collected: 04/19/17 15:35 Received: 04/22/17 09:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	3.5	1	04/27/17 15:40	04/28/17 15:47	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	04/27/17 15:40	04/28/17 15:47	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	04/27/17 15:40	04/28/17 15:47	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	04/27/17 15:40	05/03/17 20:43	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	04/27/17 15:40	05/03/17 20:43	7440-38-2	
Barium	**0.67J**	ug/L	1.0	0.095	1	04/27/17 15:40	05/03/17 20:43	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.012	1	04/27/17 15:40	05/03/17 20:43	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	04/27/17 15:40	05/03/17 20:43	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.054	1	04/27/17 15:40	05/03/17 20:43	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.014	1	04/27/17 15:40	05/03/17 20:43	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	04/27/17 15:40	05/03/17 20:43	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	04/27/17 15:40	05/03/17 20:43	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	04/27/17 15:40	05/03/17 20:43	7782-49-2	
Thallium	**0.047J**	ug/L	1.0	0.036	1	04/27/17 15:40	05/03/17 20:43	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	04/27/17 14:30	04/28/17 12:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**9.5**	mg/L	5.0	5.0	1		04/24/17 12:55		
9040 pH	Analytical Method: EPA 9040								
pH	**6.8**	Std. Units	0.10	0.10	1		04/26/17 13:25		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		04/26/17 09:39	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		04/26/17 09:39	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		04/26/17 09:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 474524 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

METHOD BLANK: 1943391 Matrix: Water
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	04/28/17 12:29	

LABORATORY CONTROL SAMPLE: 1943392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.3	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943393 1943394

Parameter	Units	60242633001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.1	5.1	101	103	75-125	2	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 474512 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

METHOD BLANK: 1943322 Matrix: Water
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	3.5J	100	3.5	04/28/17 15:38	
Calcium	mg/L	ND	0.10	0.036	04/28/17 15:38	
Lithium	ug/L	ND	10.0	2.9	04/28/17 15:38	

LABORATORY CONTROL SAMPLE: 1943323

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1010	101	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	ug/L	1000	1000	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943324 1943325

Parameter	Units	60242652001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	134	1000	1000	1180	1160	104	103	75-125	1	20	
Calcium	mg/L	76.4	10	10	83.7	82.1	73	57	75-125	2	20	M1
Lithium	ug/L	ND	1000	1000	1020	1010	102	101	75-125	1	20	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 474513 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

METHOD BLANK: 1943328 Matrix: Water
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	05/03/17 19:51	
Arsenic	ug/L	ND	1.0	0.052	05/03/17 19:51	
Barium	ug/L	0.84J	1.0	0.095	05/03/17 19:51	
Beryllium	ug/L	ND	0.50	0.012	05/03/17 19:51	
Cadmium	ug/L	ND	0.50	0.018	05/03/17 19:51	
Chromium	ug/L	0.12J	1.0	0.054	05/03/17 19:51	
Cobalt	ug/L	0.018J	1.0	0.014	05/03/17 19:51	
Lead	ug/L	0.044J	1.0	0.033	05/03/17 19:51	
Molybdenum	ug/L	ND	1.0	0.058	05/03/17 19:51	
Selenium	ug/L	ND	1.0	0.086	05/03/17 19:51	
Thallium	ug/L	0.045J	1.0	0.036	05/03/17 19:51	

LABORATORY CONTROL SAMPLE: 1943329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.2	100	80-120	
Arsenic	ug/L	40	40.6	102	80-120	
Barium	ug/L	40	40.3	101	80-120	
Beryllium	ug/L	40	41.2	103	80-120	
Cadmium	ug/L	40	39.2	98	80-120	
Chromium	ug/L	40	40.6	102	80-120	
Cobalt	ug/L	40	40.0	100	80-120	
Lead	ug/L	40	39.0	97	80-120	
Molybdenum	ug/L	40	41.1	103	80-120	
Selenium	ug/L	40	39.8	100	80-120	
Thallium	ug/L	40	37.2	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943330 1943331

Parameter	Units	60242633002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	40	40	40.4	39.9	101	100	75-125	1	20	
Arsenic	ug/L	2.7	40	40	43.5	43.0	102	101	75-125	1	20	
Barium	ug/L	117	40	40	156	160	98	108	75-125	3	20	
Beryllium	ug/L	ND	40	40	36.9	36.3	92	91	75-125	2	20	
Cadmium	ug/L	0.027J	40	40	37.5	36.6	94	92	75-125	2	20	
Chromium	ug/L	0.36J	40	40	40.5	40.0	100	99	75-125	1	20	
Cobalt	ug/L	1.1	40	40	39.1	39.0	95	95	75-125	0	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

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

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1943330 1943331

Parameter	Units	60242633002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.13J	40	40	35.9	35.8	90	89	75-125	0	20	
Molybdenum	ug/L	46.9	40	40	87.8	90.5	102	109	75-125	3	20	
Selenium	ug/L	22.2	40	40	61.5	60.9	98	97	75-125	1	20	
Thallium	ug/L	0.055J	40	40	35.5	35.7	89	89	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 473939 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

METHOD BLANK: 1941301 Matrix: Water
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	04/24/17 12:46	

LABORATORY CONTROL SAMPLE: 1941302

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	982	98	80-120	

SAMPLE DUPLICATE: 1941303

Parameter	Units	60242499001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	499	498	0	10	

SAMPLE DUPLICATE: 1941304

Parameter	Units	60242633002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	851	855	0	10	

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

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 473975 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

SAMPLE DUPLICATE: 1941389

Parameter	Units	60242633001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.8	7.5	4	10	H6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

QC Batch: 474218 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

METHOD BLANK: 1942227 Matrix: Water
Associated Lab Samples: 60242633001, 60242633002, 60242633003, 60242633004, 60242633005, 60242633006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	04/26/17 08:27	
Fluoride	mg/L	ND	0.20	0.10	04/26/17 08:27	
Sulfate	mg/L	ND	1.0	0.50	04/26/17 08:27	

LABORATORY CONTROL SAMPLE: 1942228

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	2.4	98	80-120	
Sulfate	mg/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1942229 1942230

Parameter	Units	60242633004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.9	5	5	18.4	18.3	109	109	80-120	0	15	
Fluoride	mg/L	0.22	2.5	2.5	2.9	2.9	107	107	80-120	0	15	
Sulfate	mg/L	ND	5	5	5.2	5.2	104	103	80-120	1	15	

SAMPLE DUPLICATE: 1942231

Parameter	Units	60242652004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	13.5	13.5	0	15	
Fluoride	mg/L	0.13J	0.13J		15	
Sulfate	mg/L	ND	ND		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: Alliant-Lansing/25216070
Pace Project No.: 60242633

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60242633

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60242633001	**MW-6**		475235		
60242633002	**MW-20**		475235		
60242633003	**MW-301**		475235		
60242633004	**MW-302**		475235		
60242633005	**MW-303**		475235		
60242633001	**MW-6**	EPA 3010	474512	EPA 6010	474589
60242633002	**MW-20**	EPA 3010	474512	EPA 6010	474589
60242633003	**MW-301**	EPA 3010	474512	EPA 6010	474589
60242633004	**MW-302**	EPA 3010	474512	EPA 6010	474589
60242633005	**MW-303**	EPA 3010	474512	EPA 6010	474589
60242633006	**FIELD BLANK**	EPA 3010	474512	EPA 6010	474589
60242633001	**MW-6**	EPA 3010	474513	EPA 6020	474596
60242633002	**MW-20**	EPA 3010	474513	EPA 6020	474596
60242633003	**MW-301**	EPA 3010	474513	EPA 6020	474596
60242633004	**MW-302**	EPA 3010	474513	EPA 6020	474596
60242633005	**MW-303**	EPA 3010	474513	EPA 6020	474596
60242633006	**FIELD BLANK**	EPA 3010	474513	EPA 6020	474596
60242633001	**MW-6**	EPA 7470	474524	EPA 7470	474554
60242633002	**MW-20**	EPA 7470	474524	EPA 7470	474554
60242633003	**MW-301**	EPA 7470	474524	EPA 7470	474554
60242633004	**MW-302**	EPA 7470	474524	EPA 7470	474554
60242633005	**MW-303**	EPA 7470	474524	EPA 7470	474554
60242633006	**FIELD BLANK**	EPA 7470	474524	EPA 7470	474554
60242633001	**MW-6**	SM 2540C	473939		
60242633002	**MW-20**	SM 2540C	473939		
60242633003	**MW-301**	SM 2540C	473939		
60242633004	**MW-302**	SM 2540C	473939		
60242633005	**MW-303**	SM 2540C	473939		
60242633006	**FIELD BLANK**	SM 2540C	473939		
60242633001	**MW-6**	EPA 9040	473975		
60242633002	**MW-20**	EPA 9040	473975		
60242633003	**MW-301**	EPA 9040	473975		
60242633004	**MW-302**	EPA 9040	473975		
60242633005	**MW-303**	EPA 9040	473975		
60242633006	**FIELD BLANK**	EPA 9040	473975		
60242633001	**MW-6**	EPA 9056	474218		
60242633002	**MW-20**	EPA 9056	474218		
60242633003	**MW-301**	EPA 9056	474218		
60242633004	**MW-302**	EPA 9056	474218		
60242633005	**MW-303**	EPA 9056	474218		
60242633006	**FIELD BLANK**	EPA 9056	474218		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60242633

60242633

TDG

Client Name: SCS Eng

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

Tracking #: 7789 6694 1514 Pace Shipping Label Used? Yes ☐ No ☑

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

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T-266 (CF +0.5) / T-239 (CF +0.2) **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.1 **Corr. Factor** (CF +0.5 CF +0.2) **Corrected** 3.6

Date and initials of person examining contents: 4/21/17

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	
Cyanide water sample checks: ☑N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 4-24-17

CHAIN-OF-CUSTODY / Analytical Request Document

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

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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:	Alliant-Lansing
Project Number:	25216070

Section C
Invoice Information:

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

REGULATORY AGENCY

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

Site Location STATE: IA

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 N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	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. 6024 2633
1	MW-6	WT	G	xxx	xxx	4/19/17	1242	10.3	2	1		1							X	X	X	X	X	X		BR2U BR2N 1-5 001
2	MW-20	WT	G	xxx	xxx	4/19/17	1526	8.4	2	1		1							X	X	X	X	X	X		002
3	MW-301	WT	G	xxx	xxx	4/19/17	1436	10.6	2	1		1							X	X	X	X	X	X		003
4	MW-302	WT	G	xxx	xxx	4/19/17	1346	7.6	2	1		1							X	X	X	X	X	X		004
5	MW-303	WT	G	xxx	xxx	4/19/17	1646	10.5	2	1		1							X	X	X	X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	4/19/17	1535		2	1		1							X	X	X	X	X	X		006
7																										
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 SCS	4/21/17	1700	[signature] PASI	4/22/17	0905	3.6	Y	Y	Y
* Sb-As-Ba-Be-Cd-Co-Cr-Pb-Mo-Se-Tl										

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

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

May 16, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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(913)599-5665

CERTIFICATIONS

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60242637001	**MW-6**	Water	04/19/17 12:42	04/22/17 09:05
60242637002	**MW-20**	Water	04/19/17 15:26	04/22/17 09:05
60242637003	**MW-301**	Water	04/19/17 14:36	04/22/17 09:05
60242637004	**MW-302**	Water	04/19/17 13:46	04/22/17 09:05
60242637005	**MW-303**	Water	04/19/17 16:46	04/22/17 09:05
60242637006	**FIELD BLANK**	Water	04/19/17 15:35	04/22/17 09:05

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SAMPLE ANALYTE COUNT

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60242637001	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60242637002	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60242637003	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60242637004	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60242637005	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60242637006	**FIELD BLANK**	EPA 903.1	WRR	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: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: MW-6 **Lab ID: 60242637001** Collected: 04/19/17 12:42 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.070 ± 0.456 (0.988) C:NA T:85%**	pCi/L	05/08/17 21:13	13982-63-3	
Radium-228	EPA 904.0	**0.0972 ± 0.501 (1.13) C:77% T:83%**	pCi/L	05/09/17 12:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.0972 ± 0.957 (2.12)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: MW-20 **Lab ID: 60242637002** Collected: 04/19/17 15:26 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0673 ± 0.349 (0.725) C:NA T:86%**	pCi/L	05/08/17 21:13	13982-63-3	
Radium-228	EPA 904.0	**0.272 ± 0.503 (1.10) C:79% T:65%**	pCi/L	05/09/17 12:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.339 ± 0.852 (1.83)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: MW-301 **Lab ID: 60242637003** Collected: 04/19/17 14:36 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.374 ± 0.302 (0.169) C:NA T:95%**	pCi/L	05/08/17 21:13	13982-63-3	
Radium-228	EPA 904.0	**0.378 ± 0.460 (0.977) C:80% T:84%**	pCi/L	05/09/17 12:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.752 ± 0.762 (1.15)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: MW-302 **Lab ID: 60242637004** Collected: 04/19/17 13:46 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.672 ± 0.492 (0.550) C:NA T:80%**	pCi/L	05/08/17 21:13	13982-63-3	
Radium-228	EPA 904.0	**0.576 ± 0.496 (1.02) C:78% T:83%**	pCi/L	05/09/17 12:39	15262-20-1	
Total Radium	Total Radium Calculation	**1.25 ± 0.988 (1.57)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: MW-303 **Lab ID: 60242637005** Collected: 04/19/17 16:46 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.339 ± 0.353 (0.498) C:NA T:83%**	pCi/L	05/08/17 21:13	13982-63-3	
Radium-228	EPA 904.0	**-0.167 ± 0.407 (0.965) C:81% T:80%**	pCi/L	05/09/17 12:39	15262-20-1	
Total Radium	Total Radium Calculation	**0.339 ± 0.760 (1.46)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Sample: FIELD BLANK **Lab ID: 60242637006** Collected: 04/19/17 15:35 Received: 04/22/17 09:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.422 ± 0.393 (0.517) C:NA T:84%**	pCi/L	05/08/17 21:35	13982-63-3	
Radium-228	EPA 904.0	**0.0132 ± 0.391 (0.905) C:76% T:72%**	pCi/L	05/09/17 12:21	15262-20-1	
Total Radium	Total Radium Calculation	**0.435 ± 0.784 (1.42)**	pCi/L	05/16/17 15:48	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

QC Batch: 256997 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60242637001, 60242637002, 60242637003, 60242637004, 60242637005, 60242637006

METHOD BLANK: 1266150 Matrix: Water
Associated Lab Samples: 60242637001, 60242637002, 60242637003, 60242637004, 60242637005, 60242637006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.473 ± 0.480 (0.727) C:NA T:96%	pCi/L	05/08/17 20:32	

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: Alliant-Lansing/25216070
Pace Project No.: 60242637

QC Batch: 257053 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60242637001, 60242637002, 60242637003, 60242637004, 60242637005, 60242637006

METHOD BLANK: 1266308 Matrix: Water
Associated Lab Samples: 60242637001, 60242637002, 60242637003, 60242637004, 60242637005, 60242637006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.257 ± 0.409 (0.888) C:77% T:74%	pCi/L	05/09/17 12:21	

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: Alliant-Lansing/25216070
Pace Project No.: 60242637

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Alliant-Lansing/25216070
Pace Project No.: 60242637

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60242637001	**MW-6**	EPA 903.1	256997		
60242637002	**MW-20**	EPA 903.1	256997		
60242637003	**MW-301**	EPA 903.1	256997		
60242637004	**MW-302**	EPA 903.1	256997		
60242637005	**MW-303**	EPA 903.1	256997		
60242637006	**FIELD BLANK**	EPA 903.1	256997		
60242637001	**MW-6**	EPA 904.0	257053		
60242637002	**MW-20**	EPA 904.0	257053		
60242637003	**MW-301**	EPA 904.0	257053		
60242637004	**MW-302**	EPA 904.0	257053		
60242637005	**MW-303**	EPA 904.0	257053		
60242637006	**FIELD BLANK**	EPA 904.0	257053		
60242637001	**MW-6**	Total Radium Calculation	258652		
60242637002	**MW-20**	Total Radium Calculation	258652		
60242637003	**MW-301**	Total Radium Calculation	258652		
60242637004	**MW-302**	Total Radium Calculation	258652		
60242637005	**MW-303**	Total Radium Calculation	258652		
60242637006	**FIELD BLANK**	Total Radium Calculation	258652		

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Sample Condition Upon Receipt

WO# : 60242637

60242637

TX

Client Name: SCS

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

Tracking #: 778966877001 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: CF +1.5 T-266 / CF +0.2 T-239 **Type of Ice:** Wet Blue (None)

Cooler Temperature (°C): **As-read** 11.5 **Corr. Factor** CF +1.5 CF +0.2 **Corrected** 13.0

Date and initials of person examining contents: 04/24/17

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	
Cyanide water sample checks: ☑ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 4-24-17

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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:	Alliant-Lansing
Project Number:	25216070

Section C Invoice Information:

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

REGULATORY AGENCY

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

Site Location STATE: IA

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	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		N	N	N			60242637
1	MW-6	WT	G	xxx	xxx	4/19/17	1242	10.3	4			4							X	X	X		48P2N20 001
2	MW-20	WT	G	xxx	xxx	4/19/17	1526	8.4	4			4							X	X	X		002
3	MW-301	WT	G	xxx	xxx	4/19/17	1436	10.6	4			4							X	X	X		003
4	MW-302	WT	G	xxx	xxx	4/19/17	1346	9.6	4			4							X	X	X		004
5	MW-303	WT	G	xxx	xxx	4/19/17	1646	10.5	4			4							X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	4/19/17	1535		4			4							X	X	X		006
7																							
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Gary Stanley SCS	4/21/17	1700		4/22/17	0905	2/4/2017

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

Chain of Custody

30217021

Pace Analytical®
www.pacelabs.com

Workorder: 60242637 **Workorder Name:** Alliant-Lansing/25216070 **Owner Received Date:** 4/22/2017 **Results Requested By:** 5/17/2017

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#: 30217021

30217021

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-6	PS	4/19/2017 12:42	60242637001	Water	4	X	X	X	001
2	MW-20	PS	4/19/2017 15:26	60242637002	Water	4	X	X	X	002
3	MW-301	PS	4/19/2017 14:36	60242637003	Water	4	X	X	X	003
4	MW-302	PS	4/19/2017 13:46	60242637004	Water	4	X	X	X	004
5	MW-303	PS	4/19/2017 16:46	60242637005	Water	4	X	X	X	005
6	FIELD BLANK	PS	4/19/2017 15:35	60242637006	Water	4	X	X	X	006

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature] Pace	4/24/17 1700	[signature] Pace	4/25/17 1000
2				
3				

Comments:

Cooler Temperature on Receipt NA °C **Custody Seal** Y or (N) **Received on Ice** Y or (N) **Samples Intact** (Y) or N

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

Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: PACKS

Project # 30217021

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

Tracking #: 728560592090 4

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

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

Cooler Temperature Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 4/25/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -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.
Organic Samples checked for dechlorination:			✓	13.
Filtered volume received for Dissolved tests			✓	14.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation.	✓	✓		15. PH<2
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed ARM Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	16.
Trip Blank Present:			✓	17.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: ARM Date: 4/25/17

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

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

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

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

A7 Round 7 Background Sampling, Analytical Laboratory Report

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

July 03, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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

CERTIFICATIONS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60247077001	**MW-301**	Water	06/19/17 15:46	06/22/17 08:55
60247077002	**MW-302**	Water	06/19/17 17:01	06/22/17 08:55
60247077003	**MW-303**	Water	06/20/17 09:06	06/22/17 08:55
60247077004	**MW-20**	Water	06/19/17 15:01	06/22/17 08:55
60247077005	**MW-6**	Water	06/19/17 13:26	06/22/17 08:55
60247077006	**FIELD BLANK**	Water	06/20/17 09:15	06/22/17 08:55

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE ANALYTE COUNT

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60247077001	**MW-301**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60247077002	**MW-302**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60247077003	**MW-303**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60247077004	**MW-20**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60247077005	**MW-6**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K
60247077006	**FIELD BLANK**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	LDF	1	PASI-K
		EPA 9040	JSS	1	PASI-K
		EPA 9056	RAD	3	PASI-K

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: MW-301 **Lab ID: 60247077001** Collected: 06/19/17 15:46 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/19/17 15:46		
Field pH	**8.25**	Std. Units	0.10	0.050	1		06/19/17 15:46		
Field Temperature	**12.20**	deg C	0.50	0.25	1		06/19/17 15:46		
Field Specific Conductance	**468**	umhos/cm	1.0	1.0	1		06/19/17 15:46		
Field Oxidation Potential	**-230**	mV			1		06/19/17 15:46		
Oxygen, Dissolved	**0**	mg/L			1		06/19/17 15:46	7782-44-7	
Turbidity	**0.20**	NTU	1.0	1.0	1		06/19/17 15:46		
Groundwater Elevation	**624.89**	feet			1		06/19/17 15:46		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**333**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:04	7440-42-8	
Calcium	**59.5**	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:04	7440-70-2	
Lithium	**4.2J**	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:04	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.080J**	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 19:15	7440-36-0	
Arsenic	**3.0**	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 19:15	7440-38-2	
Barium	**175**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 19:15	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 19:15	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 19:15	7440-43-9	
Chromium	**0.21J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 19:15	7440-47-3	B
Cobalt	**0.074J**	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 19:15	7440-48-4	
Lead	**0.041J**	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 19:15	7439-92-1	
Molybdenum	**5.5**	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 19:15	7439-98-7	
Selenium	**0.10J**	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 19:15	7782-49-2	
Thallium	**0.050J**	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 19:15	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:01	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**278**	mg/L	5.0	5.0	1		06/22/17 15:54		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		06/23/17 09:49		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.0**	mg/L	1.0	0.50	1		06/23/17 12:32	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.10	1		06/23/17 12:32	16984-48-8	
Sulfate	**44.7**	mg/L	5.0	2.5	5		06/23/17 13:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: MW-302 **Lab ID: 60247077002** Collected: 06/19/17 17:01 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/19/17 17:01		
Field pH	**7.03**	Std. Units	0.10	0.050	1		06/19/17 17:01		
Field Temperature	**11.40**	deg C	0.50	0.25	1		06/19/17 17:01		
Field Specific Conductance	**1017**	umhos/cm	1.0	1.0	1		06/19/17 17:01		
Field Oxidation Potential	**-189**	mV			1		06/19/17 17:01		
Oxygen, Dissolved	**0**	mg/L			1		06/19/17 17:01	7782-44-7	
Turbidity	**4.61**	NTU	1.0	1.0	1		06/19/17 17:01		
Groundwater Elevation	**627.75**	feet			1		06/19/17 17:01		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**558**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:06	7440-42-8	
Calcium	**110**	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:06	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:06	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.048J**	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 19:19	7440-36-0	
Arsenic	**36.7**	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 19:19	7440-38-2	
Barium	**597**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 19:19	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 19:19	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 19:19	7440-43-9	
Chromium	**0.51J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 19:19	7440-47-3	B
Cobalt	**1.2**	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 19:19	7440-48-4	
Lead	**0.14J**	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 19:19	7439-92-1	
Molybdenum	**0.91J**	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 19:19	7439-98-7	B
Selenium	**0.19J**	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 19:19	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 19:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:08	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**512**	mg/L	5.0	5.0	1		06/22/17 15:55		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		06/23/17 09:51		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**14.4**	mg/L	1.0	0.50	1		06/23/17 14:10	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.10	1		06/23/17 14:10	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		06/23/17 14:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: MW-303 **Lab ID: 60247077003** Collected: 06/20/17 09:06 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/20/17 09:06		
Field pH	**7.93**	Std. Units	0.10	0.050	1		06/20/17 09:06		
Field Temperature	**24.8**	deg C	0.50	0.25	1		06/20/17 09:06		
Field Specific Conductance	**567**	umhos/cm	1.0	1.0	1		06/20/17 09:06		
Field Oxidation Potential	**9**	mV			1		06/20/17 09:06		
Oxygen, Dissolved	**0**	mg/L			1		06/20/17 09:06	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		06/20/17 09:06		
Groundwater Elevation	**638.77**	feet			1		06/20/17 09:06		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**390**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:13	7440-42-8	
Calcium	**62.2**	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:13	7440-70-2	
Lithium	**10.4**	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:13	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.34J**	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 19:23	7440-36-0	
Arsenic	**2.5**	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 19:23	7440-38-2	
Barium	**214**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 19:23	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 19:23	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 19:23	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 19:23	7440-47-3	B
Cobalt	**0.22J**	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 19:23	7440-48-4	
Lead	**0.085J**	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 19:23	7439-92-1	
Molybdenum	**15.9**	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 19:23	7439-98-7	
Selenium	**0.67J**	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 19:23	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 19:23	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**346**	mg/L	5.0	5.0	1		06/22/17 15:56		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		06/23/17 09:52		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.3**	mg/L	1.0	0.50	1		06/23/17 14:26	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	0.10	1		06/23/17 14:26	16984-48-8	
Sulfate	**71.9**	mg/L	5.0	2.5	5		06/23/17 14:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: MW-20 **Lab ID: 60247077004** Collected: 06/19/17 15:01 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/19/17 15:01		
Field pH	**7.68**	Std. Units	0.10	0.050	1		06/19/17 15:01		
Field Temperature	**11.1**	deg C	0.50	0.25	1		06/19/17 15:01		
Field Specific Conductance	**918**	umhos/cm	1.0	1.0	1		06/19/17 15:01		
Field Oxidation Potential	**-114**	mV			1		06/19/17 15:01		
Oxygen, Dissolved	**0**	mg/L			1		06/19/17 15:01	7782-44-7	
Turbidity	**8.95**	NTU	1.0	1.0	1		06/19/17 15:01		
Groundwater Elevation	**650.22**	feet			1		06/19/17 15:01		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3150**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:20	7440-42-8	
Calcium	**117**	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:20	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:20	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.065J**	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 19:37	7440-36-0	
Arsenic	**1.8**	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 19:37	7440-38-2	
Barium	**116**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 19:37	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 19:37	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 19:37	7440-43-9	
Chromium	**0.23J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 19:37	7440-47-3	B
Cobalt	**0.85J**	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 19:37	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 19:37	7439-92-1	
Molybdenum	**32.0**	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 19:37	7439-98-7	
Selenium	**3.3**	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 19:37	7782-49-2	
Thallium	**0.069J**	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 19:37	7440-28-0	B
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**644**	mg/L	5.0	5.0	1		06/22/17 15:55		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		06/23/17 09:48		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**2.5**	mg/L	1.0	0.50	1		06/23/17 14:58	16887-00-6	
Fluoride	**0.42**	mg/L	0.20	0.10	1		06/23/17 14:58	16984-48-8	
Sulfate	**205**	mg/L	20.0	10.0	20		06/27/17 04:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: MW-6 **Lab ID: 60247077005** Collected: 06/19/17 13:26 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/19/17 13:26		
Field pH	**7.40**	Std. Units	0.10	0.050	1		06/19/17 13:26		
Field Temperature	**11.2**	deg C	0.50	0.25	1		06/19/17 13:26		
Field Specific Conductance	**580**	umhos/cm	1.0	1.0	1		06/19/17 13:26		
Field Oxidation Potential	**251**	mV			1		06/19/17 13:26		
Oxygen, Dissolved	**3.7**	mg/L			1		06/19/17 13:26	7782-44-7	
Turbidity	**1.35**	NTU	1.0	1.0	1		06/19/17 13:26		
Groundwater Elevation	**670.65**	feet			1		06/19/17 13:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**42.1J**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:22	7440-42-8	
Calcium	**64.6**	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:22	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:22	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.027J**	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 19:41	7440-36-0	
Arsenic	**0.18J**	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 19:41	7440-38-2	
Barium	**41.9**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 19:41	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 19:41	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 19:41	7440-43-9	
Chromium	**0.68J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 19:41	7440-47-3	B
Cobalt	**0.021J**	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 19:41	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 19:41	7439-92-1	
Molybdenum	**0.26J**	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 19:41	7439-98-7	B
Selenium	**0.36J**	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 19:41	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 19:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**337**	mg/L	5.0	5.0	1		06/22/17 15:55		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		06/23/17 09:44		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.2**	mg/L	1.0	0.50	1		06/23/17 15:31	16887-00-6	
Fluoride	**0.10J**	mg/L	0.20	0.10	1		06/23/17 15:31	16984-48-8	
Sulfate	**27.4**	mg/L	2.0	1.0	2		06/23/17 15:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Sample: FIELD BLANK **Lab ID: 60247077006** Collected: 06/20/17 09:15 Received: 06/22/17 08:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**4.7J**	ug/L	100	3.5	1	06/28/17 17:00	06/29/17 18:24	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	06/28/17 17:00	06/29/17 18:24	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	06/28/17 17:00	06/29/17 18:24	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	06/28/17 17:00	06/29/17 20:50	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	06/28/17 17:00	06/29/17 20:50	7440-38-2	
Barium	**0.14J**	ug/L	1.0	0.095	1	06/28/17 17:00	06/29/17 20:50	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	06/28/17 17:00	06/29/17 20:50	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	06/28/17 17:00	06/29/17 20:50	7440-43-9	
Chromium	**0.16J**	ug/L	1.0	0.054	1	06/28/17 17:00	06/29/17 20:50	7440-47-3	B
Cobalt	ND	ug/L	1.0	0.014	1	06/28/17 17:00	06/29/17 20:50	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	06/28/17 17:00	06/29/17 20:50	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	06/28/17 17:00	06/29/17 20:50	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	06/28/17 17:00	06/29/17 20:50	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	06/28/17 17:00	06/29/17 20:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	06/29/17 14:19	06/30/17 10:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		06/22/17 15:56		
9040 pH	Analytical Method: EPA 9040								
pH	**6.8**	Std. Units	0.10	0.10	1		06/23/17 09:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		06/23/17 16:03	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		06/23/17 16:03	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		06/23/17 16:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 483241 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

METHOD BLANK: 1979538 Matrix: Water
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	06/30/17 09:57	

LABORATORY CONTROL SAMPLE: 1979539

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.5	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979540 1979541

Parameter	Units	60247077001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.6	4.8	92	96	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 483129 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

METHOD BLANK: 1979036 Matrix: Water
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	06/29/17 18:02	
Calcium	mg/L	ND	0.10	0.036	06/29/17 18:02	
Lithium	ug/L	ND	10.0	2.9	06/29/17 18:02	

LABORATORY CONTROL SAMPLE: 1979037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	958	96	80-120	
Calcium	mg/L	10	9.4	94	80-120	
Lithium	ug/L	1000	1080	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979038 1979039

Parameter	Units	60247077002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	558	1000	1000	1530	1550	97	99	75-125	1	20	
Calcium	mg/L	110	10	10	118	120	84	98	75-125	1	20	
Lithium	ug/L	ND	1000	1000	1100	1100	110	110	75-125	0	20	

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 483127 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

METHOD BLANK: 1979032 Matrix: Water
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	06/29/17 19:06	
Arsenic	ug/L	ND	1.0	0.052	06/29/17 19:06	
Barium	ug/L	ND	1.0	0.095	06/29/17 19:06	
Beryllium	ug/L	ND	0.50	0.012	06/29/17 19:06	
Cadmium	ug/L	ND	0.50	0.018	06/29/17 19:06	
Chromium	ug/L	0.070J	1.0	0.054	06/29/17 19:06	
Cobalt	ug/L	ND	1.0	0.014	06/29/17 19:06	
Lead	ug/L	ND	1.0	0.033	06/29/17 19:06	
Molybdenum	ug/L	0.12J	1.0	0.058	06/29/17 19:06	
Selenium	ug/L	ND	1.0	0.086	06/29/17 19:06	
Thallium	ug/L	0.052J	1.0	0.036	06/29/17 19:06	

LABORATORY CONTROL SAMPLE: 1979033

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	37.9	95	80-120	
Arsenic	ug/L	40	37.9	95	80-120	
Barium	ug/L	40	38.9	97	80-120	
Beryllium	ug/L	40	39.1	98	80-120	
Cadmium	ug/L	40	38.3	96	80-120	
Chromium	ug/L	40	39.2	98	80-120	
Cobalt	ug/L	40	39.1	98	80-120	
Lead	ug/L	40	38.5	96	80-120	
Molybdenum	ug/L	40	40.4	101	80-120	
Selenium	ug/L	40	36.2	91	80-120	
Thallium	ug/L	40	37.0	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979034 1979035

Parameter	Units	60247077003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.34J	40	40	36.9	37.2	91	92	75-125	1	20	
Arsenic	ug/L	2.5	40	40	38.0	38.8	89	91	75-125	2	20	
Barium	ug/L	214	40	40	254	250	98	90	75-125	1	20	
Beryllium	ug/L	ND	40	40	37.8	37.7	95	94	75-125	0	20	
Cadmium	ug/L	ND	40	40	35.7	35.6	89	89	75-125	0	20	
Chromium	ug/L	0.36J	40	40	39.1	38.4	97	95	75-125	2	20	
Cobalt	ug/L	0.22J	40	40	37.1	37.3	92	93	75-125	1	20	

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979034 1979035

Parameter	Units	60247077003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.085J	40	40	36.1	36.2	90	90	75-125	0	20	
Molybdenum	ug/L	15.9	40	40	56.6	56.0	102	100	75-125	1	20	
Selenium	ug/L	0.67J	40	40	33.6	33.5	82	82	75-125	0	20	
Thallium	ug/L	ND	40	40	35.5	35.4	89	88	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 482246 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

METHOD BLANK: 1975356 Matrix: Water
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	06/22/17 15:53	

LABORATORY CONTROL SAMPLE: 1975357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	936	94	80-120	

SAMPLE DUPLICATE: 1975358

Parameter	Units	60247077002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	512	501	2	10	

SAMPLE DUPLICATE: 1975359

Parameter	Units	60247033002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	7030	7070	0	10	

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 482331 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

SAMPLE DUPLICATE: 1975661

Parameter	Units	60247077005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.4	3	10	H6

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 482293 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

METHOD BLANK: 1975597 Matrix: Water
Associated Lab Samples: 60247077001, 60247077002, 60247077003, 60247077004, 60247077005, 60247077006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	06/23/17 08:30	
Fluoride	mg/L	ND	0.20	0.10	06/23/17 08:30	
Sulfate	mg/L	ND	1.0	0.50	06/23/17 08:30	

LABORATORY CONTROL SAMPLE: 1975598

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	103	80-120	
Fluoride	mg/L	2.5	2.8	113	80-120	
Sulfate	mg/L	5	5.2	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1975599 1975600

Parameter	Units	60247071001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	19.2	10	10	30.3	30.4	111	111	80-120	0	15	
Fluoride	mg/L	ND	5	5	6.0	6.0	113	114	80-120	0	15	
Sulfate	mg/L	30.2	10	10	41.0	41.0	108	109	80-120	0	15	

SAMPLE DUPLICATE: 1975601

Parameter	Units	60247077001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	18.0	18.0	0	15	
Fluoride	mg/L	0.23	0.20	12	15	
Sulfate	mg/L	44.7	44.6	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

QC Batch: 482528 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60247077004

METHOD BLANK: 1977058 Matrix: Water
Associated Lab Samples: 60247077004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.50	06/27/17 04:05	

LABORATORY CONTROL SAMPLE: 1977059

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1977060 1977061

Parameter	Units	60247169001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	23.6	10	10	34.0	33.6	104	100	80-120	1	15	

SAMPLE DUPLICATE: 1977062

Parameter	Units	60247169002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	37.8	37.6	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Lansing Gen Station/25216070
Pace Project No.: 60247077

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60247077001	**MW-301**		483791		
60247077002	**MW-302**		483791		
60247077003	**MW-303**		483791		
60247077004	**MW-20**		483791		
60247077005	**MW-6**		483791		
60247077001	**MW-301**	EPA 3010	483129	EPA 6010	483172
60247077002	**MW-302**	EPA 3010	483129	EPA 6010	483172
60247077003	**MW-303**	EPA 3010	483129	EPA 6010	483172
60247077004	**MW-20**	EPA 3010	483129	EPA 6010	483172
60247077005	**MW-6**	EPA 3010	483129	EPA 6010	483172
60247077006	**FIELD BLANK**	EPA 3010	483129	EPA 6010	483172
60247077001	**MW-301**	EPA 3010	483127	EPA 6020	483175
60247077002	**MW-302**	EPA 3010	483127	EPA 6020	483175
60247077003	**MW-303**	EPA 3010	483127	EPA 6020	483175
60247077004	**MW-20**	EPA 3010	483127	EPA 6020	483175
60247077005	**MW-6**	EPA 3010	483127	EPA 6020	483175
60247077006	**FIELD BLANK**	EPA 3010	483127	EPA 6020	483175
60247077001	**MW-301**	EPA 7470	483241	EPA 7470	483391
60247077002	**MW-302**	EPA 7470	483241	EPA 7470	483391
60247077003	**MW-303**	EPA 7470	483241	EPA 7470	483391
60247077004	**MW-20**	EPA 7470	483241	EPA 7470	483391
60247077005	**MW-6**	EPA 7470	483241	EPA 7470	483391
60247077006	**FIELD BLANK**	EPA 7470	483241	EPA 7470	483391
60247077001	**MW-301**	SM 2540C	482246		
60247077002	**MW-302**	SM 2540C	482246		
60247077003	**MW-303**	SM 2540C	482246		
60247077004	**MW-20**	SM 2540C	482246		
60247077005	**MW-6**	SM 2540C	482246		
60247077006	**FIELD BLANK**	SM 2540C	482246		
60247077001	**MW-301**	EPA 9040	482331		
60247077002	**MW-302**	EPA 9040	482331		
60247077003	**MW-303**	EPA 9040	482331		
60247077004	**MW-20**	EPA 9040	482331		
60247077005	**MW-6**	EPA 9040	482331		
60247077006	**FIELD BLANK**	EPA 9040	482331		
60247077001	**MW-301**	EPA 9056	482293		
60247077002	**MW-302**	EPA 9056	482293		
60247077003	**MW-303**	EPA 9056	482293		
60247077004	**MW-20**	EPA 9056	482293		
60247077004	**MW-20**	EPA 9056	482528		
60247077005	**MW-6**	EPA 9056	482293		
60247077006	**FIELD BLANK**	EPA 9056	482293		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO# : 60247077

60247077

Client Name: SCS Engineers

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

Tracking #: 7285 6593 2919 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: CF +2.9 T-266 / CF +0.2 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 3.2 **Corr. Factor** CF +2.9 CF +0.2 **Corrected** 3.4

Date and initials of person examining contents: JPG/22/17

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	
Cyanide water sample checks: ☒N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 6-22-17

CHAIN-OF-CUSTODY / Analytical Request Document

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

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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:	Lansing Generating Station	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070.17	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

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 (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	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. 60247077
1	MW-301	WT	G	xxx	xxx	6/19/17	1546	12.2	3	1		2					N	X	X	X	X	X	X		001
2	MW-302	WT	G	xxx	xxx	6/19/17	1701	11.4	3	1		2					N	X	X	X	X	X	X		002
3	MW-303	WT	G	xxx	xxx	6/20/17	0906	24.8	3	1		2					N	X	X	X	X	X	X		003
4	MW-20	WT	G	xxx	xxx	6/19/17	1501	11.1	3	1		2					N	X	X	X	X	X	X		004
5	MW-6	WT	G	xxx	xxx	6/19/17	1326	11.2	3	1		2					N	X	X	X	X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	6/20/17	0915		3	1		2					N	X	X	X	X	X	X		006
7																									—
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Gary Stuhr SCS	6/21/17	1700		6/22/17	0855	3.4	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										

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.

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

July 17, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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CERTIFICATIONS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60247078001	**MW-301**	Water	06/19/17 15:46	06/22/17 08:55
60247078002	**MW-302**	Water	06/19/17 17:01	06/22/17 08:55
60247078003	**MW-303**	Water	06/20/17 09:06	06/22/17 08:55
60247078004	**MW-20**	Water	06/19/17 15:01	06/22/17 08:55
60247078005	**MW-6**	Water	06/19/17 13:26	06/22/17 08:55
60247078006	**FIELD BLANK**	Water	06/20/17 09:15	06/22/17 08:55

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SAMPLE ANALYTE COUNT

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60247078001	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247078002	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247078003	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247078004	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247078005	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60247078006	**FIELD BLANK**	EPA 903.1	WRR	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: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: MW-301 **Lab ID: 60247078001** Collected: 06/19/17 15:46 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0591 ± 0.384 (0.775) C:NA T:87%**	pCi/L	07/06/17 11:22	13982-63-3	
Radium-228	EPA 904.0	**0.394 ± 0.351 (0.713) C:77% T:88%**	pCi/L	07/11/17 12:07	15262-20-1	
Total Radium	Total Radium Calculation	**0.453 ± 0.735 (1.49)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: MW-302 **Lab ID: 60247078002** Collected: 06/19/17 17:01 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.36 ± 0.589 (0.418) C:NA T:96%**	pCi/L	07/06/17 11:22	13982-63-3	
Radium-228	EPA 904.0	**1.39 ± 0.516 (0.791) C:79% T:85%**	pCi/L	07/11/17 12:07	15262-20-1	
Total Radium	Total Radium Calculation	**2.75 ± 1.11 (1.21)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: MW-303 **Lab ID: 60247078003** Collected: 06/20/17 09:06 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.217 ± 0.332 (0.196) C:NA T:73%**	pCi/L	07/06/17 11:22	13982-63-3	
Radium-228	EPA 904.0	**0.422 ± 0.361 (0.728) C:77% T:84%**	pCi/L	07/11/17 12:08	15262-20-1	
Total Radium	Total Radium Calculation	**0.639 ± 0.693 (0.924)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: MW-20 **Lab ID: 60247078004** Collected: 06/19/17 15:01 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.209 ± 0.410 (0.749) C:NA T:80%**	pCi/L	07/06/17 11:22	13982-63-3	
Radium-228	EPA 904.0	**1.07 ± 0.450 (0.721) C:82% T:78%**	pCi/L	07/11/17 12:08	15262-20-1	
Total Radium	Total Radium Calculation	**1.28 ± 0.860 (1.47)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: MW-6 **Lab ID: 60247078005** Collected: 06/19/17 13:26 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.457 ± 0.423 (0.615) C:NA T:92%**	pCi/L	07/06/17 11:40	13982-63-3	
Radium-228	EPA 904.0	**0.606 ± 0.348 (0.631) C:78% T:90%**	pCi/L	07/11/17 12:08	15262-20-1	
Total Radium	Total Radium Calculation	**1.06 ± 0.771 (1.25)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Sample: FIELD BLANK **Lab ID: 60247078006** Collected: 06/20/17 09:15 Received: 06/22/17 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.488 ± 0.387 (0.503) C:NA T:97%**	pCi/L	07/06/17 11:40	13982-63-3	
Radium-228	EPA 904.0	**0.789 ± 0.384 (0.646) C:81% T:80%**	pCi/L	07/11/17 12:08	15262-20-1	
Total Radium	Total Radium Calculation	**1.28 ± 0.771 (1.15)**	pCi/L	07/14/17 08:21	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

QC Batch: 263419 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60247078001, 60247078002, 60247078003, 60247078004, 60247078005, 60247078006

METHOD BLANK: 1297565 Matrix: Water
Associated Lab Samples: 60247078001, 60247078002, 60247078003, 60247078004, 60247078005, 60247078006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.383 ± 0.383 (0.794) C:79% T:84%	pCi/L	07/11/17 12:06	

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: Lansing Gen Station/25216070
Pace Project No.: 60247078

QC Batch: 263240 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60247078001, 60247078002, 60247078003, 60247078004, 60247078005, 60247078006

METHOD BLANK: 1296768 Matrix: Water
Associated Lab Samples: 60247078001, 60247078002, 60247078003, 60247078004, 60247078005, 60247078006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.287 ± 0.408 (0.690) C:NA T:93%	pCi/L	07/06/17 11:05	

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

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALIFIERS

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

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

Pace Analytical Services, LLC
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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Lansing Gen Station/25216070
Pace Project No.: 60247078

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60247078001	**MW-301**	EPA 903.1	263240		
60247078002	**MW-302**	EPA 903.1	263240		
60247078003	**MW-303**	EPA 903.1	263240		
60247078004	**MW-20**	EPA 903.1	263240		
60247078005	**MW-6**	EPA 903.1	263240		
60247078006	**FIELD BLANK**	EPA 903.1	263240		
60247078001	**MW-301**	EPA 904.0	263419		
60247078002	**MW-302**	EPA 904.0	263419		
60247078003	**MW-303**	EPA 904.0	263419		
60247078004	**MW-20**	EPA 904.0	263419		
60247078005	**MW-6**	EPA 904.0	263419		
60247078006	**FIELD BLANK**	EPA 904.0	263419		
60247078001	**MW-301**	Total Radium Calculation	264929		
60247078002	**MW-302**	Total Radium Calculation	264929		
60247078003	**MW-303**	Total Radium Calculation	264929		
60247078004	**MW-20**	Total Radium Calculation	264929		
60247078005	**MW-6**	Total Radium Calculation	264929		
60247078006	**FIELD BLANK**	Total Radium Calculation	264929		

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Sample Condition Upon Receipt

WO#: 60247078

60247078

Client Name: SCS Engineers

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

Tracking #: 7285 6593 2930 Pace Shipping Label Used? Yes ☐ No ☐

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

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

Thermometer Used: T-266 / T-239 (CF +2.9 / CF +0.2) **Type of Ice:** Wet Blue (None)

Cooler Temperature (°C): **As-read** 1.6 **Corr. Factor** (CF +2.9 / CF +0.2) **Corrected** 1.8

Date and initials of person examining contents: JB 6/22/17

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	
Cyanide water sample checks: ☒N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: 6.22.17

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Lansing Generating Station	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070.17	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 #	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. 60247078
1	MW-301	WT	G	xxx	xxx	6/19/17	1546	12.2	2			2						X	X	X		(2) BP1N-40 001
2	MW-302	WT	G	xxx	xxx	6/19/17	1701	11.4	2			2						X	X	X		002
3	MW-303	WT	G	xxx	xxx	6/20/17	0906	21.9	2			2						X	X	X		003
4	MW-20	WT	G	xxx	xxx	6/19/17	1501	11.1	2			2						X	X	X		004
5	MW-6	WT	G	xxx	xxx	6/19/17	1326	11.2	2			2						X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	6/20/17	0915		2			2						X	X	X		006
7																						
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	6/21/17	1700		6/22/17	0855	11.0	W	Y	Y

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:					
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

Workorder: 60247078 **Workorder Name:** Lansing Gen Station/25216070 **Owner Received Date:** 6/22/2017 **Results Requested By:** 7/18/2017

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#: 30222492

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: 903.1 Radium-226	904.0 Radium-228	Total Radium									LAB USE ONLY
1	MW-301	PS	6/19/2017 15:46	60247078001	Water	2						X	X	X									
2	MW-302	PS	6/19/2017 17:01	60247078002	Water	2						X	X	X									
3	MW-303	PS	6/20/2017 09:06	60247078003	Water	2						X	X	X									
4	MW-20	PS	6/19/2017 15:01	60247078004	Water	2						X	X	X									
5	MW-6	PS	6/19/2017 13:26	60247078005	Water	2						X	X	X									
6	FIELD BLANK	PS	6/20/2017 09:15	60247078006	Water	2						X	X	X									

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature]	6/22/17 1700	[signature]	6/23/17 1000
2				
3				

Comments

Cooler Temperature on Receipt 2.1 °C Custody Seal Y or (N) Received on Ice Y or (N) Samples Intact Y or N

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

Sample Condition Upon Receipt Pittsburgh

30222492

Pace Analytical

Client Name: PACE - KANSAS Project #

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

Tracking #: 773076887665 90

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

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

Cooler Temperature Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ZH 6/23/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -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:	✓			10.
-Pace Containers Used:		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Organic Samples checked for dechlorination:			✓	13.
Filtered volume received for Dissolved tests			✓	14.
All containers have been checked for preservation.	✓			15. Pace
All containers needing preservation are found to be in compliance with EPA recommendation.	✓			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed ZH Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	16.
Trip Blank Present:			✓	17.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: ZH Date: 6/23/17

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

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

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

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

A8 Round 8 Background Sampling, Analytical Laboratory Report

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

September 01, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory between August 19, 2017 and August 22, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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

CERTIFICATIONS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 15-016-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60251369001	**MW-301**	Water	08/15/17 13:36	08/19/17 08:40
60251369002	**MW-303**	Water	08/15/17 15:16	08/19/17 08:40
60251369003	**MW-20**	Water	08/15/17 12:51	08/19/17 08:40
60251369004	**MW-6**	Water	08/15/17 11:51	08/19/17 08:40
60251369005	**FIELD BLANK**	Water	08/15/17 15:30	08/19/17 08:40
60251369006	**MW-302**	Water	08/15/17 14:28	08/22/17 08:30

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SAMPLE ANALYTE COUNT

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60251369001	**MW-301**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251369002	**MW-303**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251369003	**MW-20**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251369004	**MW-6**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251369005	**FIELD BLANK**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K
60251369006	**MW-302**	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	NSM	1	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	JMC1	3	PASI-K

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: MW-301 **Lab ID: 60251369001** Collected: 08/15/17 13:36 Received: 08/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/15/17 13:36		
Field pH	**8.19**	Std. Units	0.10	0.050	1		08/15/17 13:36		
Field Temperature	**14.7**	deg C	0.50	0.25	1		08/15/17 13:36		
Field Specific Conductance	**498**	umhos/cm	1.0	1.0	1		08/15/17 13:36		
Field Oxidation Potential	**-178**	mV			1		08/15/17 13:36		
Oxygen, Dissolved	**0**	mg/L			1		08/15/17 13:36	7782-44-7	
Turbidity	**4.87**	NTU	1.0	1.0	1		08/15/17 13:36		
Groundwater Elevation	**624.09**	feet			1		08/15/17 13:36		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**365**	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:04	7440-42-8	
Calcium	**66.4**	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:04	7440-70-2	
Lithium	**7.3J**	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:04	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.079J**	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:46	7440-36-0	
Arsenic	**3.8**	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:46	7440-38-2	
Barium	**196**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:46	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:46	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:46	7440-43-9	
Chromium	**0.23J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:46	7440-47-3	
Cobalt	**0.070J**	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:46	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:46	7439-92-1	
Molybdenum	**6.8**	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:46	7439-98-7	
Selenium	**0.13J**	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:46	7782-49-2	
Thallium	**0.31J**	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:09	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**285**	mg/L	5.0	5.0	1		08/21/17 16:55		
9040 pH	Analytical Method: EPA 9040								
pH	**8.1**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**16.2**	mg/L	1.0	0.50	1		08/30/17 08:51	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.10	1		08/30/17 08:51	16984-48-8	
Sulfate	**49.4**	mg/L	4.0	2.0	4		08/30/17 09:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: MW-303 **Lab ID: 60251369002** Collected: 08/15/17 15:16 Received: 08/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/15/17 15:16		
Field pH	**7.78**	Std. Units	0.10	0.050	1		08/15/17 15:16		
Field Temperature	**31.7**	deg C	0.50	0.25	1		08/15/17 15:16		
Field Specific Conductance	**423**	umhos/cm	1.0	1.0	1		08/15/17 15:16		
Field Oxidation Potential	**-75**	mV			1		08/15/17 15:16		
Oxygen, Dissolved	**0**	mg/L			1		08/15/17 15:16	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		08/15/17 15:16		
Groundwater Elevation	**637.86**	feet			1		08/15/17 15:16		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**386**	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:15	7440-42-8	
Calcium	**42.0**	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:15	7440-70-2	
Lithium	**16.1**	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:15	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.26J**	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:50	7440-36-0	
Arsenic	**2.5**	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:50	7440-38-2	
Barium	**147**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:50	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:50	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:50	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:50	7440-47-3	
Cobalt	**0.14J**	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:50	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:50	7439-92-1	
Molybdenum	**11.8**	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:50	7439-98-7	
Selenium	**0.59J**	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:50	7782-49-2	
Thallium	**0.17J**	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:11	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**219**	mg/L	5.0	5.0	1		08/21/17 16:56		
9040 pH	Analytical Method: EPA 9040								
pH	**7.9**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.4**	mg/L	1.0	0.50	1		08/30/17 10:11	16887-00-6	
Fluoride	**0.48**	mg/L	0.20	0.10	1		08/30/17 10:11	16984-48-8	
Sulfate	**43.4**	mg/L	5.0	2.5	5		08/30/17 10:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: MW-20 **Lab ID: 60251369003** Collected: 08/15/17 12:51 Received: 08/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/15/17 12:51		
Field pH	**7.67**	Std. Units	0.10	0.050	1		08/15/17 12:51		
Field Temperature	**12.9**	deg C	0.50	0.25	1		08/15/17 12:51		
Field Specific Conductance	**907**	umhos/cm	1.0	1.0	1		08/15/17 12:51		
Field Oxidation Potential	**-129**	mV			1		08/15/17 12:51		
Oxygen, Dissolved	**0**	mg/L			1		08/15/17 12:51	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		08/15/17 12:51		
Groundwater Elevation	**649.58**	feet			1		08/15/17 12:51		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3470**	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:18	7440-42-8	
Calcium	**119**	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:18	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:18	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.069J**	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:55	7440-36-0	
Arsenic	**2.3**	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:55	7440-38-2	
Barium	**122**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:55	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:55	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:55	7440-43-9	
Chromium	**0.57J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:55	7440-47-3	
Cobalt	**0.87J**	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:55	7440-48-4	
Lead	**0.041J**	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:55	7439-92-1	
Molybdenum	**31.2**	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:55	7439-98-7	
Selenium	**0.72J**	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:55	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**603**	mg/L	5.0	5.0	1		08/21/17 16:57		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**3.3**	mg/L	1.0	0.50	1		08/30/17 11:00	16887-00-6	B
Fluoride	**0.48**	mg/L	0.20	0.10	1		08/30/17 11:00	16984-48-8	
Sulfate	**150**	mg/L	25.0	12.5	25		08/30/17 11:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: MW-6 **Lab ID: 60251369004** Collected: 08/15/17 11:51 Received: 08/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/15/17 11:51		
Field pH	**7.48**	Std. Units	0.10	0.050	1		08/15/17 11:51		
Field Temperature	**11.4**	deg C	0.50	0.25	1		08/15/17 11:51		
Field Specific Conductance	**588**	umhos/cm	1.0	1.0	1		08/15/17 11:51		
Field Oxidation Potential	**142**	mV			1		08/15/17 11:51		
Oxygen, Dissolved	**5.8**	mg/L			1		08/15/17 11:51	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		08/15/17 11:51		
Groundwater Elevation	**670.61**	feet			1		08/15/17 11:51		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**40.0J**	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:22	7440-42-8	B
Calcium	**68.2**	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:22	7440-70-2	
Lithium	**3.0J**	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:22	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.037J**	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:59	7440-36-0	
Arsenic	**0.28J**	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:59	7440-38-2	
Barium	**44.0**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:59	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:59	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:59	7440-43-9	
Chromium	**0.71J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:59	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:59	7440-48-4	
Lead	**0.065J**	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:59	7439-92-1	
Molybdenum	**0.31J**	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:59	7439-98-7	
Selenium	**0.52J**	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:59	7782-49-2	
Thallium	**0.29J**	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:59	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**333**	mg/L	5.0	5.0	1		08/21/17 16:57		
9040 pH	Analytical Method: EPA 9040								
pH	**7.5**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.5**	mg/L	1.0	0.50	1		08/30/17 15:53	16887-00-6	
Fluoride	**0.12J**	mg/L	0.20	0.10	1		08/30/17 15:53	16984-48-8	
Sulfate	**26.9**	mg/L	4.0	2.0	4		08/30/17 16:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: FIELD BLANK **Lab ID: 60251369005** Collected: 08/15/17 15:30 Received: 08/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	ND	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:26	7440-42-8	
Calcium	ND	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:26	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:26	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 22:42	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 22:42	7440-38-2	
Barium	**0.67J**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 22:42	7440-39-3	B
Beryllium	ND	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 22:42	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 22:42	7440-43-9	
Chromium	**0.29J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 22:42	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 22:42	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 22:42	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 22:42	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 22:42	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 22:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**7.0**	mg/L	5.0	5.0	1		08/21/17 16:58		
9040 pH	Analytical Method: EPA 9040								
pH	**5.6**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		08/30/17 17:56	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		08/30/17 17:56	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/30/17 17:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Sample: MW-302 **Lab ID: 60251369006** Collected: 08/15/17 14:28 Received: 08/22/17 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		08/15/17 14:28		
Field pH	**6.96**	Std. Units	0.10	0.050	1		08/15/17 14:28		
Field Temperature	**15.70**	deg C	0.50	0.25	1		08/15/17 14:28		
Field Specific Conductance	**1053**	umhos/cm	1.0	1.0	1		08/15/17 14:28		
Field Oxidation Potential	**-181**	mV			1		08/15/17 14:28		
Oxygen, Dissolved	**0**	mg/L			1		08/15/17 14:28	7782-44-7	
Turbidity	**4.28**	NTU	1.0	1.0	1		08/15/17 14:28		
Groundwater Elevation	**627.28**	feet			1		08/15/17 14:28		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**645**	ug/L	100	3.5	1	08/26/17 11:24	08/28/17 19:30	7440-42-8	
Calcium	**118**	mg/L	0.10	0.036	1	08/26/17 11:24	08/28/17 19:30	7440-70-2	
Lithium	ND	ug/L	10.0	2.9	1	08/26/17 11:24	08/28/17 19:30	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.069J**	ug/L	1.0	0.026	1	08/26/17 11:24	08/27/17 23:03	7440-36-0	
Arsenic	**47.3**	ug/L	1.0	0.052	1	08/26/17 11:24	08/27/17 23:03	7440-38-2	
Barium	**660**	ug/L	1.0	0.095	1	08/26/17 11:24	08/27/17 23:03	7440-39-3	
Beryllium	**0.012J**	ug/L	0.50	0.012	1	08/26/17 11:24	08/27/17 23:03	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	08/26/17 11:24	08/27/17 23:03	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.054	1	08/26/17 11:24	08/27/17 23:03	7440-47-3	
Cobalt	**1.2**	ug/L	1.0	0.014	1	08/26/17 11:24	08/27/17 23:03	7440-48-4	
Lead	**0.075J**	ug/L	1.0	0.033	1	08/26/17 11:24	08/27/17 23:03	7439-92-1	
Molybdenum	**1.2**	ug/L	1.0	0.058	1	08/26/17 11:24	08/27/17 23:03	7439-98-7	
Selenium	**0.31J**	ug/L	1.0	0.086	1	08/26/17 11:24	08/27/17 23:03	7782-49-2	
Thallium	**0.14J**	ug/L	1.0	0.036	1	08/26/17 11:24	08/27/17 23:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.046	1	08/29/17 19:10	08/30/17 11:24	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**517**	mg/L	5.0	5.0	1		08/22/17 16:21		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		08/24/17 00:00		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.0**	mg/L	1.0	0.50	1		08/30/17 19:29	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.10	1		08/30/17 19:29	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		08/30/17 19:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 492045 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

METHOD BLANK: 2013601 Matrix: Water
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.046	08/30/17 10:45	

LABORATORY CONTROL SAMPLE: 2013602

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: 2013603 2013604

Parameter	Units	60250503001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.8	4.7	97	93	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 491612 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

METHOD BLANK: 2012299 Matrix: Water
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	5.3J	100	3.5	08/28/17 18:16	
Calcium	mg/L	ND	0.10	0.036	08/28/17 18:16	
Lithium	ug/L	ND	10.0	2.9	08/28/17 18:16	

LABORATORY CONTROL SAMPLE: 2012300

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	957	96	80-120	
Calcium	mg/L	10	9.6	96	80-120	
Lithium	ug/L	1000	1010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2012301 2012302

Parameter	Units	60251263001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	28.9J	1000	1000	995	1000	97	97	75-125	1	20	
Calcium	mg/L	142	10	10	148	148	68	64	75-125	0	20	M1
Lithium	ug/L	16.8	1000	1000	1040	1030	102	102	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 491614 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

METHOD BLANK: 2012309 Matrix: Water
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	08/27/17 21:46	
Arsenic	ug/L	ND	1.0	0.052	08/27/17 21:46	
Barium	ug/L	0.18J	1.0	0.095	08/27/17 21:46	
Beryllium	ug/L	ND	0.50	0.012	08/27/17 21:46	
Cadmium	ug/L	ND	0.50	0.018	08/27/17 21:46	
Chromium	ug/L	ND	1.0	0.054	08/27/17 21:46	
Cobalt	ug/L	ND	1.0	0.014	08/27/17 21:46	
Lead	ug/L	ND	1.0	0.033	08/27/17 21:46	
Molybdenum	ug/L	ND	1.0	0.058	08/27/17 21:46	
Selenium	ug/L	ND	1.0	0.086	08/27/17 21:46	
Thallium	ug/L	ND	1.0	0.036	08/27/17 21:46	

LABORATORY CONTROL SAMPLE: 2012310

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.3	98	80-120	
Arsenic	ug/L	40	39.9	100	80-120	
Barium	ug/L	40	39.4	98	80-120	
Beryllium	ug/L	40	40.6	101	80-120	
Cadmium	ug/L	40	39.5	99	80-120	
Chromium	ug/L	40	39.9	100	80-120	
Cobalt	ug/L	40	39.0	97	80-120	
Lead	ug/L	40	37.6	94	80-120	
Molybdenum	ug/L	40	39.7	99	80-120	
Selenium	ug/L	40	38.8	97	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2012311 2012312

Parameter	Units	60251263002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.11J	40	40	39.3	39.7	98	99	75-125	1	20	
Arsenic	ug/L	1.9	40	40	42.4	42.4	101	101	75-125	0	20	
Barium	ug/L	175	40	40	212	214	93	97	75-125	1	20	
Beryllium	ug/L	ND	40	40	38.9	38.6	97	96	75-125	1	20	
Cadmium	ug/L	0.030J	40	40	38.6	38.5	96	96	75-125	0	20	
Chromium	ug/L	1.5	40	40	41.5	41.4	100	100	75-125	0	20	
Cobalt	ug/L	1.4	40	40	39.8	39.3	96	95	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2012311 2012312

Parameter	Units	60251263002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	40	40	39.5	39.6	99	99	75-125	0	20	
Molybdenum	ug/L	0.38J	40	40	41.9	42.0	104	104	75-125	0	20	
Selenium	ug/L	0.46J	40	40	38.3	38.0	95	94	75-125	1	20	
Thallium	ug/L	0.18J	40	40	39.1	39.8	97	99	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 490816 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005

METHOD BLANK: 2009127 Matrix: Water
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	08/21/17 16:53	

LABORATORY CONTROL SAMPLE: 2009128

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

SAMPLE DUPLICATE: 2009129

Parameter	Units	60251369001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	285	294	3	10	

SAMPLE DUPLICATE: 2009130

Parameter	Units	60251362004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	360	373	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 490995 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60251369006

METHOD BLANK: 2009802 Matrix: Water
Associated Lab Samples: 60251369006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	08/22/17 16:20	

LABORATORY CONTROL SAMPLE: 2009803

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	992	99	80-120	

SAMPLE DUPLICATE: 2009804

Parameter	Units	60251369006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	517	533	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 491088 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60251369001, 60251369002, 60251369003, 60251369004, 60251369005, 60251369006

SAMPLE DUPLICATE: 2010056

Parameter	Units	60251317001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.2	7.5	4	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 491943 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60251369001, 60251369002, 60251369003

METHOD BLANK: 2013297 Matrix: Water
Associated Lab Samples: 60251369001, 60251369002, 60251369003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.61J	1.0	0.50	08/29/17 22:07	
Fluoride	mg/L	ND	0.20	0.10	08/29/17 22:07	
Sulfate	mg/L	ND	1.0	0.50	08/29/17 22:07	

LABORATORY CONTROL SAMPLE: 2013298

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2013299 2013300

Parameter	Units	7572181005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2790	1250	1250	4100	4100	105	105	80-120	0	15	
Fluoride	mg/L	1.1			619	622				0	15	
Sulfate	mg/L	3380	1250	1250	4640	4640	101	101	80-120	0	15	

MATRIX SPIKE SAMPLE: 2014469

Parameter	Units	7572531001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	275	250	532	103	80-120	
Fluoride	mg/L	13.2	125	133	96	80-120	
Sulfate	mg/L	63.0	250	307	98	80-120	

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: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

QC Batch: 492233 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60251369004, 60251369005, 60251369006

METHOD BLANK: 2014211 Matrix: Water
Associated Lab Samples: 60251369004, 60251369005, 60251369006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	100	50.0	08/30/17 15:22	
Fluoride	mg/L	ND	20.0	10.0	08/30/17 15:22	
Sulfate	mg/L	ND	100	50.0	08/30/17 15:22	

LABORATORY CONTROL SAMPLE: 2014212

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	500	489	98	80-120	
Fluoride	mg/L	250	254	101	80-120	
Sulfate	mg/L	500	495	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2014213 2014214

Parameter	Units	60251369004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.5	5	5	11.5	11.7	101	104	80-120	1	15	
Fluoride	mg/L	0.12J	2.5	2.5	2.7	2.8	103	107	80-120	3	15	
Sulfate	mg/L	26.9	20	20	46.9	47.4	100	103	80-120	1	15	

SAMPLE DUPLICATE: 2014215

Parameter	Units	60251369005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	ND	ND		15	
Fluoride	mg/L	ND	ND		15	
Sulfate	mg/L	ND	ND		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
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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251369

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60251369001	**MW-301**		492531		
60251369002	**MW-303**		492531		
60251369003	**MW-20**		492531		
60251369004	**MW-6**		492531		
60251369006	**MW-302**		492531		
60251369001	**MW-301**	EPA 3010	491612	EPA 6010	491631
60251369002	**MW-303**	EPA 3010	491612	EPA 6010	491631
60251369003	**MW-20**	EPA 3010	491612	EPA 6010	491631
60251369004	**MW-6**	EPA 3010	491612	EPA 6010	491631
60251369005	**FIELD BLANK**	EPA 3010	491612	EPA 6010	491631
60251369006	**MW-302**	EPA 3010	491612	EPA 6010	491631
60251369001	**MW-301**	EPA 3010	491614	EPA 6020	491633
60251369002	**MW-303**	EPA 3010	491614	EPA 6020	491633
60251369003	**MW-20**	EPA 3010	491614	EPA 6020	491633
60251369004	**MW-6**	EPA 3010	491614	EPA 6020	491633
60251369005	**FIELD BLANK**	EPA 3010	491614	EPA 6020	491633
60251369006	**MW-302**	EPA 3010	491614	EPA 6020	491633
60251369001	**MW-301**	EPA 7470	492045	EPA 7470	492110
60251369002	**MW-303**	EPA 7470	492045	EPA 7470	492110
60251369003	**MW-20**	EPA 7470	492045	EPA 7470	492110
60251369004	**MW-6**	EPA 7470	492045	EPA 7470	492110
60251369005	**FIELD BLANK**	EPA 7470	492045	EPA 7470	492110
60251369006	**MW-302**	EPA 7470	492045	EPA 7470	492110
60251369001	**MW-301**	SM 2540C	490816		
60251369002	**MW-303**	SM 2540C	490816		
60251369003	**MW-20**	SM 2540C	490816		
60251369004	**MW-6**	SM 2540C	490816		
60251369005	**FIELD BLANK**	SM 2540C	490816		
60251369006	**MW-302**	SM 2540C	490995		
60251369001	**MW-301**	EPA 9040	491088		
60251369002	**MW-303**	EPA 9040	491088		
60251369003	**MW-20**	EPA 9040	491088		
60251369004	**MW-6**	EPA 9040	491088		
60251369005	**FIELD BLANK**	EPA 9040	491088		
60251369006	**MW-302**	EPA 9040	491088		
60251369001	**MW-301**	EPA 9056	491943		
60251369002	**MW-303**	EPA 9056	491943		
60251369003	**MW-20**	EPA 9056	491943		
60251369004	**MW-6**	EPA 9056	492233		
60251369005	**FIELD BLANK**	EPA 9056	492233		
60251369006	**MW-302**	EPA 9056	492233		

REPORT OF LABORATORY ANALYSIS

GY

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Sample Condition Upon Receipt

WO#: 60251369

60251369

Client Name: SCS Engineers

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

Tracking #: 7700 7581 1530 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: CF 0.0 T-266 / CF +0.3 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 4.9 1.9 Corr. Factor CF 0.0 CF +0.3 Corrected 4.9 1.9

Date and initials of person examining contents: 8-19 MB

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	MB 8-19 ph
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	Did not receive mw-302
Pace containers used:	☒Yes ☐No ☐N/A	- received 8/22 at 0830 from fedex
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	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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	

TDS

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 8-21-17, 8-22-17

CHAIN-OF-CUSTODY / Analytical Request Document

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

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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:	Lansing Generating Station
Project Number:	25216070.17

Section C Invoice Information:

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

REGULATORY AGENCY

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

Site Location STATE: IA

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): 6010 Total Metals: N; 6020 Total Metals: N; 7470 Total Hg: N

Pace Project No./ Lab I.D.: 60251369

ITEM #	SAMPLE ID	MATRIX CODE	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	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.
1	MW-301	WT	G	xxx	xxx	8/15/17	1336	11.7	3	1		2							X	X	X	X	X	X		2BP2N BP2U 001
2	MW-302	WT	G	xxx	xxx	8/15/17	1428	15.7	3	1		2							X	X	X	X	X	X		Did Not Receive
3	MW-303	WT	G	xxx	xxx	8/15/17	1516	31.7	3	1		2							X	X	X	X	X	X		2BP3N BP2U 002
4	MW-20	WT	G	xxx	xxx	8/15/17	1251	12.9	3	1		2							X	X	X	X	X	X		003
5	MW-6	WT	G	xxx	xxx	8/15/17	1151	11.4	3	1		2							X	X	X	X	X	X		004
6	FIELD BLANK	WT	G	xxx	xxx	8/15/17	1530		3	1		2							X	X	X	X	X	X		005
7																										
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 Sterkel (signature)	8/17/17	0900	(signature)	8-19	0840	4.9	Y	Y	Y
* Sb-As-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Sterkel

SIGNATURE of SAMPLER: (signature)

DATE Signed (MM/DD/YY): 8/15/17

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

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

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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: Lansing Generating Station	Pace Project Manager: Trudy Gipson 913-563-1405
Requested Due Date/TAT:	Project Number: 25216070.17	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: 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	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.
[redacted]	WT	G	xxx	xxx	8/15/17	1336	11.7	3	1		2						N	X	X	X	X	X	X	60251369
MW-302	WT	G	xxx	xxx	8/15/17	1428	15.7	3	1		2						N	X	X	X	X	X	X	BP2U (2)BP3N 006
[redacted]	WT	G	xxx	xxx	8/15/17	1516	3.7	3	1		2						N	X	X	X	X	X	X	
[redacted]	WT	G	xxx	xxx	8/15/17	1251	12.9	3	1		2						N	X	X	X	X	X	X	
[redacted]	WT	G	xxx	xxx	8/15/17	1151	11.4	3	1		2						N	X	X	X	X	X	X	
[redacted]	WT	G	xxx	xxx	8/15/17	1530		3	1		2						N	X	X	X	X	X	X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
c: 9608 Loiret Boulevard, Lenexa, KS 66219	Gary Stenkel	8/17/17	0900		8/22	0830	1.9	Y	Y	Y
s-Ba-Be-Cd-Cr-Co-Pb-Mo-Se-Tl										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Stenkel

SIGNATURE of SAMPLER: Gary Stenkel DATE Signed (MM/DD/YY): 8/15/17

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

September 10, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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

CERTIFICATIONS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60251392001	**MW-301**	Water	08/15/17 13:36	08/19/17 08:40
60251392002	**MW-302**	Water	08/15/17 14:28	08/19/17 08:40
60251392003	**MW-303**	Water	08/15/17 15:16	08/19/17 08:40
60251392004	**MW-20**	Water	08/15/17 12:51	08/19/17 08:40
60251392005	**MW-6**	Water	08/15/17 11:51	08/19/17 08:40
60251392006	**FIELD BLANK**	Water	08/15/17 15:30	08/19/17 08:40

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60251392001	**MW-301**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251392002	**MW-302**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251392003	**MW-303**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251392004	**MW-20**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251392005	**MW-6**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60251392006	**FIELD BLANK**	EPA 903.1	WRR	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: MW-301 **Lab ID: 60251392001** Collected: 08/15/17 13:36 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**1.03 ± 0.798 (1.13) C:NA T:73%**	pCi/L	08/29/17 20:15	13982-63-3	
Radium-228	EPA 904.0	**0.826 ± 0.433 (0.782) C:70% T:94%**	pCi/L	09/05/17 15:11	15262-20-1	
Total Radium	Total Radium Calculation	**1.86 ± 1.23 (1.91)**	pCi/L	09/10/17 12:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: MW-302 **Lab ID: 60251392002** Collected: 08/15/17 14:28 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.619 ± 0.622 (0.970) C:NA T:89%**	pCi/L	08/29/17 20:15	13982-63-3	
Radium-228	EPA 904.0	**1.06 ± 0.429 (0.683) C:77% T:94%**	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	**1.68 ± 1.05 (1.65)**	pCi/L	09/10/17 12:52	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: MW-303 **Lab ID: 60251392003** Collected: 08/15/17 15:16 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.155 ± 0.480 (0.930) C:NA T:78%**	pCi/L	08/29/17 20:15	13982-63-3	
Radium-228	EPA 904.0	**0.322 ± 0.320 (0.660) C:80% T:86%**	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.477 ± 0.800 (1.59)**	pCi/L	09/10/17 12:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: MW-20 **Lab ID: 60251392004** Collected: 08/15/17 12:51 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.340 ± 0.624 (1.11) C:NA T:79%**	pCi/L	08/29/17 20:15	13982-63-3	
Radium-228	EPA 904.0	**0.286 ± 0.355 (0.753) C:75% T:84%**	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.626 ± 0.979 (1.86)**	pCi/L	09/10/17 12:52	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: MW-6 **Lab ID: 60251392005** Collected: 08/15/17 11:51 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.633 ± 0.573 (0.844) C:NA T:83%**	pCi/L	08/29/17 20:15	13982-63-3	
Radium-228	EPA 904.0	**0.193 ± 0.379 (0.833) C:73% T:91%**	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.826 ± 0.952 (1.68)**	pCi/L	09/10/17 12:52	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Sample: FIELD BLANK **Lab ID: 60251392006** Collected: 08/15/17 15:30 Received: 08/19/17 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0696 ± 0.453 (0.913) C:NA T:86%**	pCi/L	08/29/17 20:30	13982-63-3	
Radium-228	EPA 904.0	**0.488 ± 0.390 (0.775) C:71% T:84%**	pCi/L	09/05/17 15:12	15262-20-1	
Total Radium	Total Radium Calculation	**0.558 ± 0.843 (1.69)**	pCi/L	09/10/17 12:52	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

QC Batch: 269248 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60251392001, 60251392002, 60251392003, 60251392004, 60251392005, 60251392006

METHOD BLANK: 1325044 Matrix: Water
Associated Lab Samples: 60251392001, 60251392002, 60251392003, 60251392004, 60251392005, 60251392006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.549 ± 0.386 (0.186) C:NA T:90%	pCi/L	08/29/17 19:38	

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: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

QC Batch: 269268 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60251392001, 60251392002, 60251392003, 60251392004, 60251392005, 60251392006

METHOD BLANK: 1325072 Matrix: Water
Associated Lab Samples: 60251392001, 60251392002, 60251392003, 60251392004, 60251392005, 60251392006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.288 ± 0.379 (0.808) C:72% T:83%	pCi/L	09/05/17 15:11	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60251392

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60251392001	**MW-301**	EPA 903.1	269248		
60251392002	**MW-302**	EPA 903.1	269248		
60251392003	**MW-303**	EPA 903.1	269248		
60251392004	**MW-20**	EPA 903.1	269248		
60251392005	**MW-6**	EPA 903.1	269248		
60251392006	**FIELD BLANK**	EPA 903.1	269248		
60251392001	**MW-301**	EPA 904.0	269268		
60251392002	**MW-302**	EPA 904.0	269268		
60251392003	**MW-303**	EPA 904.0	269268		
60251392004	**MW-20**	EPA 904.0	269268		
60251392005	**MW-6**	EPA 904.0	269268		
60251392006	**FIELD BLANK**	EPA 904.0	269268		
60251392001	**MW-301**	Total Radium Calculation	271118		
60251392002	**MW-302**	Total Radium Calculation	271118		
60251392003	**MW-303**	Total Radium Calculation	271118		
60251392004	**MW-20**	Total Radium Calculation	271118		
60251392005	**MW-6**	Total Radium Calculation	271118		
60251392006	**FIELD BLANK**	Total Radium Calculation	271118		

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Sample Condition Upon Receipt

WO# : 60251392

60251392

Client Name: SCS Engineers

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

Tracking #: 7700 6258 8186 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: CF 0.0 T-266 / CF +0.3 T-239 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 16.4 **Corr. Factor** CF 0.0 CF +0.3 **Corrected** 16.4

Date and initials of person examining contents: 8.19 MB

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? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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	TDG

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 8.21.17

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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:	Lansing Generating Station	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070.17	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	8/15/17	1336	H.T	2			2						X	X	X		60251392	
2	MW-302	WT	G	xxx	xxx	8/15/16	1420	15.7	2			2						X	X	X		ZBPIN	001
3	MW-303	WT	G	xxx	xxx	8/15/16	1516	13.7	2			2						X	X	X			002
4	MW-20	WT	G	xxx	xxx	8/15/16	1251	12.9	2			2						X	X	X			004
5	MW-6	WT	G	xxx	xxx	8/15/16	1151	11.4	2			2						X	X	X			005
6	FIELD BLANK	WT	G	xxx	xxx	8/15/16	1530		2			2						X	X	X			006
7																							
8																							
9																							
10																							
11																							
12																							

Pace Project No./ Lab I.D.

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 Stirkel SCS	8/17/16	0900	Mark Spencer	8.19	0840	16.4	M	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Stirkel

SIGNATURE of SAMPLER: Gary Stirkel

DATE Signed (MM/DD/YY): 8/15/17

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

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

Chain of Custody

30227847

Pace Analytical®
www.pacelabs.com

Workorder: 60251392 **Workorder Name:** Lansing Gen Sta/25216070.17 **Owner Received Date:** 8/19/2017 **Results Requested By:** 9/14/2017

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#:30227847

30227847

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis 903.1 Radium-226	904.0 Radium-228	Total Radium									LAB USE ONLY
1	MW-301	PS	8/15/2017 13:36	60251392001	Water	2						X	X	X									001
2	MW-302	PS	8/15/2017 14:28	60251392002	Water	2						X	X	X									002
3	MW-303	PS	8/15/2017 15:16	60251392003	Water	2						X	X	X									003
4	MW-20	PS	8/15/2017 12:51	60251392004	Water	2						X	X	X									004
5	MW-6	PS	8/15/2017 11:51	60251392005	Water	2						X	X	X									005
6	FIELD BLANK	PS	8/15/2017 15:30	60251392006	Water	2						X	X	X									006

Transfers	Released By	Date/Time	Received	Date/Time
1	[signature]	8/21/17 1700	[signature]	8/22/17 1005
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.*

Sample Condition Upon Receipt Pittsburgh

30227847

Pace Analytical

Client Name: PACE, KS Project #

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

Label ATNL

Tracking #: 772856596080

LIMS Login JRM

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals Intact: ☐ yes ☐ no

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

Cooler Temperature Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Date and initials of person examining contents: JT 8/22/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -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.
Organic Samples checked for dechlorination:			✓	13.
Filtered volume received for Dissolved tests			✓	14.
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	✓ ✓			15. pH<2
Headspace in VOA Vials (>6mm):			✓	16.
Trip Blank Present:			✓	17.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		

Initial when completed JT Date/time of preservation

Lot # of added preservative

Initial when completed: JT Date: 8/22/17

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

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

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

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

A9 Fall 2017 Detection Sampling, Analytical Laboratory Report

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

October 31, 2017

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trudy Gipson

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

Enclosures

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

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

CERTIFICATIONS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

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

SAMPLE SUMMARY

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60256012001	**MW-301**	Water	10/16/17 13:41	10/19/17 08:40
60256012002	**MW-302**	Water	10/16/17 14:21	10/19/17 08:40
60256012003	**MW-303**	Water	10/16/17 15:26	10/19/17 08:40
60256012004	**MW-20**	Water	10/16/17 12:56	10/19/17 08:40
60256012005	**MW-6**	Water	10/16/17 11:56	10/19/17 08:40
60256012006	**FIELD BLANK**	Water	10/16/17 15:30	10/19/17 08:40

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60256012001	**MW-301**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60256012002	**MW-302**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60256012003	**MW-303**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60256012004	**MW-20**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60256012005	**MW-6**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K
60256012006	**FIELD BLANK**	EPA 6010	TDS	2	PASI-K
		SM 2540C	JSS	1	PASI-K
		EPA 9040	HMM	1	PASI-K
		EPA 9056	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: MW-301 **Lab ID: 60256012001** Collected: 10/16/17 13:41 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/16/17 13:41		
Field pH	**7.66**	Std. Units	0.10	0.050	1		10/16/17 13:41		
Field Temperature	**17.0**	deg C	0.50	0.25	1		10/16/17 13:41		
Field Specific Conductance	**497**	umhos/cm	1.0	1.0	1		10/16/17 13:41		
Field Oxidation Potential	**-221**	mV			1		10/16/17 13:41		
Oxygen, Dissolved	**0**	mg/L			1		10/16/17 13:41	7782-44-7	
Turbidity	**0.05**	NTU	1.0	1.0	1		10/16/17 13:41		
Groundwater Elevation	**625.7**	feet			1		10/16/17 13:41		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**436**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:00	7440-42-8	
Calcium	**65.9**	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 12:00	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**289**	mg/L	5.0	5.0	1		10/20/17 15:41		
9040 pH	Analytical Method: EPA 9040								
pH	**7.9**	Std. Units	0.10	0.10	1		10/21/17 14:34		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.3**	mg/L	1.0	0.50	1		10/30/17 00:01	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	0.10	1		10/30/17 00:01	16984-48-8	
Sulfate	**52.7**	mg/L	5.0	2.5	5		10/31/17 11:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: MW-302 **Lab ID: 60256012002** Collected: 10/16/17 14:21 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/16/17 14:21		
Field pH	**7.1**	Std. Units	0.10	0.050	1		10/16/17 14:21		
Field Temperature	**16.2**	deg C	0.50	0.25	1		10/16/17 14:21		
Field Specific Conductance	**1045**	umhos/cm	1.0	1.0	1		10/16/17 14:21		
Field Oxidation Potential	**-179**	mV			1		10/16/17 14:21		
Oxygen, Dissolved	**0**	mg/L			1		10/16/17 14:21	7782-44-7	
Turbidity	**3.96**	NTU	1.0	1.0	1		10/16/17 14:21		
Groundwater Elevation	**628.75**	feet			1		10/16/17 14:21		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**708**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:02	7440-42-8	
Calcium	**116**	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 12:02	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**507**	mg/L	5.0	5.0	1		10/20/17 15:41		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		10/21/17 14:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**13.9**	mg/L	1.0	0.50	1		10/30/17 00:16	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.10	1		10/30/17 00:16	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/30/17 00:16	14808-79-8	

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: MW-303 **Lab ID: 60256012003** Collected: 10/16/17 15:26 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/16/17 15:26		
Field pH	**7.20**	Std. Units	0.10	0.050	1		10/16/17 15:26		
Field Temperature	**25.2**	deg C	0.50	0.25	1		10/16/17 15:26		
Field Specific Conductance	**687**	umhos/cm	1.0	1.0	1		10/16/17 15:26		
Field Oxidation Potential	**49**	mV			1		10/16/17 15:26		
Oxygen, Dissolved	**1.9**	mg/L			1		10/16/17 15:26	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		10/16/17 15:26		
Groundwater Elevation	**638.79**	feet			1		10/16/17 15:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**592**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:05	7440-42-8	
Calcium	**84.7**	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 12:05	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**379**	mg/L	5.0	5.0	1		10/20/17 15:42		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		10/21/17 14:36		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.2**	mg/L	1.0	0.50	1		10/30/17 00:31	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.10	1		10/30/17 00:31	16984-48-8	
Sulfate	**69.9**	mg/L	5.0	2.5	5		10/31/17 12:51	14808-79-8	

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: MW-20 **Lab ID: 60256012004** Collected: 10/16/17 12:56 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/16/17 12:56		
Field pH	**7.35**	Std. Units	0.10	0.050	1		10/16/17 12:56		
Field Temperature	**14.3**	deg C	0.50	0.25	1		10/16/17 12:56		
Field Specific Conductance	**1213**	umhos/cm	1.0	1.0	1		10/16/17 12:56		
Field Oxidation Potential	**-70**	mV			1		10/16/17 12:56		
Oxygen, Dissolved	**0**	mg/L			1		10/16/17 12:56	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		10/16/17 12:56		
Groundwater Elevation	**650.81**	feet			1		10/16/17 12:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3620**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:07	7440-42-8	
Calcium	**154**	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 12:07	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**884**	mg/L	5.0	5.0	1		10/20/17 15:42		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		10/21/17 14:39		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**2.6**	mg/L	1.0	0.50	1		10/30/17 00:46	16887-00-6	
Fluoride	**0.44**	mg/L	0.20	0.10	1		10/30/17 00:46	16984-48-8	
Sulfate	**426**	mg/L	50.0	25.0	50		10/31/17 13:21	14808-79-8	

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: MW-6 **Lab ID: 60256012005** Collected: 10/16/17 11:56 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		10/16/17 11:56		
Field pH	**7.03**	Std. Units	0.10	0.050	1		10/16/17 11:56		
Field Temperature	**10.2**	deg C	0.50	0.25	1		10/16/17 11:56		
Field Specific Conductance	**591**	umhos/cm	1.0	1.0	1		10/16/17 11:56		
Field Oxidation Potential	**282**	mV			1		10/16/17 11:56		
Oxygen, Dissolved	**8.8**	mg/L			1		10/16/17 11:56	7782-44-7	
Turbidity	**0**	NTU	1.0	1.0	1		10/16/17 11:56		
Groundwater Elevation	**669.58**	feet			1		10/16/17 11:56		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**41.2J**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:09	7440-42-8	
Calcium	**66.9**	mg/L	0.10	0.036	1	10/25/17 17:00	10/27/17 12:09	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**318**	mg/L	5.0	5.0	1		10/20/17 15:42		
9040 pH	Analytical Method: EPA 9040								
pH	**7.5**	Std. Units	0.10	0.10	1		10/21/17 14:40		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**6.5**	mg/L	1.0	0.50	1		10/30/17 01:02	16887-00-6	
Fluoride	**0.14J**	mg/L	0.20	0.10	1		10/30/17 01:02	16984-48-8	
Sulfate	**25.8**	mg/L	2.0	1.0	2		10/31/17 13:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Sample: FIELD BLANK **Lab ID: 60256012006** Collected: 10/16/17 15:30 Received: 10/19/17 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**6.0J**	ug/L	100	3.5	1	10/25/17 17:00	10/27/17 12:12	7440-42-8	
Calcium	**0.11**	mg/L	0.10	0.036	1	10/27/17 16:55	10/30/17 11:44	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		10/20/17 15:43		
9040 pH	Analytical Method: EPA 9040								
pH	**5.3**	Std. Units	0.10	0.10	1		10/21/17 14:42		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.50	1		10/30/17 01:17	16887-00-6	
Fluoride	ND	mg/L	0.20	0.10	1		10/30/17 01:17	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		10/30/17 01:17	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 500307 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

METHOD BLANK: 2047621 Matrix: Water
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	3.5	10/27/17 11:33	
Calcium	mg/L	0.14	0.10	0.036	10/27/17 11:33	

LABORATORY CONTROL SAMPLE: 2047622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	976	98	80-120	
Calcium	mg/L	10	9.7	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2047623 2047624

Parameter	Units	60255981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	26.8J	1000	1000	1020	1030	99	100	75-125	1	20	
Calcium	mg/L	139	10	10	149	147	99	80	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 500670 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60256012006

METHOD BLANK: 2049577 Matrix: Water
Associated Lab Samples: 60256012006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.10	0.036	10/30/17 11:41	

LABORATORY CONTROL SAMPLE: 2049578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	10	9.6	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2049579 2049580

Parameter	Units	60256491001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	219000 ug/L	10	10	223	224	37	51	75-125	1	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 499660 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

METHOD BLANK: 2044774 Matrix: Water
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	10/20/17 15:38	

LABORATORY CONTROL SAMPLE: 2044775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	976	98	80-120	

SAMPLE DUPLICATE: 2044776

Parameter	Units	60255667001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	212000	281	199	10	D6

SAMPLE DUPLICATE: 2044777

Parameter	Units	60255888003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4950	4810	3	10	

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 499705 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

SAMPLE DUPLICATE: 2045460

Parameter	Units	60255991001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.8	7.6	3	10	H6

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 500738 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

METHOD BLANK: 2050307 Matrix: Water
Associated Lab Samples: 60256012001, 60256012002, 60256012003, 60256012004, 60256012005, 60256012006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	10/29/17 20:28	
Fluoride	mg/L	ND	0.20	0.10	10/29/17 20:28	
Sulfate	mg/L	ND	1.0	0.50	10/29/17 20:28	

LABORATORY CONTROL SAMPLE: 2050308

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	80-120	
Fluoride	mg/L	2.5	2.5	98	80-120	
Sulfate	mg/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2050309 2050310

Parameter	Units	60255981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.17J	2.5	2.5	2.7	2.7	100	100	80-120	1	15	

SAMPLE DUPLICATE: 2050311

Parameter	Units	60255981002 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.19J	0.19J		15	

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QUALITY CONTROL DATA

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

QC Batch: 500974 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60256012001, 60256012003, 60256012004, 60256012005

METHOD BLANK: 2050910 Matrix: Water
Associated Lab Samples: 60256012001, 60256012003, 60256012004, 60256012005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.50	10/31/17 07:29	

LABORATORY CONTROL SAMPLE: 2050911

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.2	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2050912 2050913

Parameter	Units	60256012001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	52.7	25	25	79.3	78.9	106	105	80-120	0	15	

SAMPLE DUPLICATE: 2050914

Parameter	Units	60256012003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	69.9	70.0	0	15	

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QUALIFIERS

Project: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
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: Lansing Gen Sta/25216070.17
Pace Project No.: 60256012

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60256012001	**MW-301**		500952		
60256012002	**MW-302**		500952		
60256012003	**MW-303**		500952		
60256012004	**MW-20**		500952		
60256012005	**MW-6**		500952		
60256012001	**MW-301**	EPA 3010	500307	EPA 6010	500398
60256012002	**MW-302**	EPA 3010	500307	EPA 6010	500398
60256012003	**MW-303**	EPA 3010	500307	EPA 6010	500398
60256012004	**MW-20**	EPA 3010	500307	EPA 6010	500398
60256012005	**MW-6**	EPA 3010	500307	EPA 6010	500398
60256012006	**FIELD BLANK**	EPA 3010	500307	EPA 6010	500398
60256012006	**FIELD BLANK**	EPA 3010	500670	EPA 6010	500762
60256012001	**MW-301**	SM 2540C	499660		
60256012002	**MW-302**	SM 2540C	499660		
60256012003	**MW-303**	SM 2540C	499660		
60256012004	**MW-20**	SM 2540C	499660		
60256012005	**MW-6**	SM 2540C	499660		
60256012006	**FIELD BLANK**	SM 2540C	499660		
60256012001	**MW-301**	EPA 9040	499705		
60256012002	**MW-302**	EPA 9040	499705		
60256012003	**MW-303**	EPA 9040	499705		
60256012004	**MW-20**	EPA 9040	499705		
60256012005	**MW-6**	EPA 9040	499705		
60256012006	**FIELD BLANK**	EPA 9040	499705		
60256012001	**MW-301**	EPA 9056	500738		
60256012001	**MW-301**	EPA 9056	500974		
60256012002	**MW-302**	EPA 9056	500738		
60256012003	**MW-303**	EPA 9056	500738		
60256012003	**MW-303**	EPA 9056	500974		
60256012004	**MW-20**	EPA 9056	500738		
60256012004	**MW-20**	EPA 9056	500974		
60256012005	**MW-6**	EPA 9056	500738		
60256012005	**MW-6**	EPA 9056	500974		
60256012006	**FIELD BLANK**	EPA 9056	500738		

REPORT OF LABORATORY ANALYSIS

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60256012

60256012

Client Name: SCS Engineer

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

Tracking #: 728565979218 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 ☐ TG

Thermometer Used: CF 0.0 T-266 / CF +0.3 T-239 **Type of Ice:** (Wet) Blue None

RH 10-19-17

Cooler Temperature (°C): **As-read** 3.1 **Corr. Factor** CF 0.0 CF +0.3 **Corrected** 3.1

Date and initials of person examining contents:

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	
Cyanide water sample checks: ☒ N/A Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No ☐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: JDR Date: 10-20-17

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CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

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:	Lansing Generating Station	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25216070.17	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

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

Site Location STATE: IA

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	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	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60256012
1	MW-301	WT	G	xxx	xxx	10/16/17	1341	n.o	2	1		1						N	X	X	X	X		BP2U BP3N 001
2	MW-302	WT	G	xxx	xxx	10/16/17	1421	10.2	2	1		1							X	X	X	X		002
3	MW-303	WT	G	xxx	xxx	10/16/17	1526	35.2	2	1		1							X	X	X	X		003
4	MW-20	WT	G	xxx	xxx	10/16/17	1256	11.3	2	1		1							X	X	X	X		004
5	MW-6	WT	G	xxx	xxx	10/16/17	1156	10.2	2	1		1							X	X	X	X		005
6	FIELD BLANK	WT	G	xxx	xxx	10/16/17	1530		2	1		1							X	X	X	X		006
7																								
8																								
9																								
10																								
11																								
12																								

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	SCS	10/18/17	1700		10/19	0840	3.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gary Stroke

SIGNATURE of SAMPLER: Gary Stroke

DATE Signed (MM/DD/YY): 10/16/17

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.

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