

2020 Annual Groundwater Monitoring and Corrective Action Report

Prairie Creek Generating Station
Cedar Rapids, Iowa

Prepared for:

Alliant Energy



SCS ENGINEERS

25220074.00 | January 29, 2021

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Overview of Current Status
Prairie Creek Generating Station
2020 Annual Report

In accordance with §257.90(e)(6), this section at the beginning of the annual report provides an overview of the current status of groundwater monitoring and corrective action programs for the coal combustion residual (CCR) unit. The groundwater monitoring system at PCS monitors the closure area for 10 former CCR units. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
Monitoring Status – Start of Year	(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Monitoring Status – End of Year	(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Assessment
Statistically Significant Increases (SSIs)	(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):	
	(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and	<u>April/May 2020</u> Boron: MW-303, MW-304, MW-305, MW-306, MW-307, MW-308 Fluoride: MW-303, MW-304, MW-305, MW-308 Field pH: MW-307 Sulfate: MW-303, MW-304, MW-305, MW-306, MW-308 Total Dissolved Solids: MW-305

Category	Rule Requirement	Site Status
		<p><u>October 2020</u> Boron: MW-303, MW-304, MW-305, MW-306, MW-307, MW-308</p> <p>Fluoride: MW-303, MW-304</p> <p>Field pH: MW-307, MW-308</p> <p>Sulfate: MW-303, MW-304, MW-305, MW-306, MW-308</p> <p>Total Dissolved Solids: MW-305</p> <p>Note: Includes compliance wells at waste boundary only; see Table 5 for complete results</p>
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	July 16, 2018
Statistically Significant Levels (SSL) Above Groundwater Protection Standard	(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	
	(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;	<p><u>April/May 2020:</u> Arsenic: MW-303, MW-304</p> <p>Molybdenum: MW-306</p> <p><u>October 2020:</u> Arsenic: MW-303, MW-304, MW-308</p> <p>Molybdenum: MW-306</p>
	(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	April 15, 2019
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	Selection of remedy in progress. A public meeting pursuant to §257.96(e) planned for 2021
	(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	September 12, 2019

Category	Rule Requirement	Site Status
Selection of Remedy	(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	Selection of remedy is in progress
Corrective Action	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Selection of remedy is in progress

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1.0 INTRODUCTION

This 2020 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 CFR 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2020 Annual Groundwater Monitoring and Corrective Action Report for the CCR Units. The Prairie Creek Generating Station (PCS) site location is shown on **Figure 1**.

This report covers the period of groundwater monitoring from January 1, 2020, through December 31, 2020.

The groundwater monitoring system at PCS monitors the closure area for 10 former CCR units. All CCR units at PCS were closed in 2018. CCR was consolidated, capped in accordance with §257.102(d), and closure certification was completed in December 2018.

The monitoring system is designed to detect monitored constituents at the waste boundary of the facility as required by 40 CFR 257.91(d). The groundwater monitoring system currently consists of 3 upgradient wells, 6 downgradient compliance monitoring wells at the waste boundary, and 5 downgradient delineation wells installed to characterize site conditions and evaluate the nature and extent of groundwater impacts (**Figure 2** and **Table 1**).

2.0 BACKGROUND

To provide context for the annual report, the following background information is provided in this section of the report, prior to the annual report requirement sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

2.1.1 Regional Information

The geologic formation beneath PCS that meets the definition of the “uppermost aquifer,” as defined by section 257.53 of the CCR Rule, is the surficial alluvial aquifer. A summary of regional hydrogeologic units in east-central Iowa is provided in **Appendix A**. The alluvial aquifer comprises Cedar River valley sand, gravel, silt, and clay deposits. This deposit is present along the Cedar River valley and is used for municipal supply by the City of Cedar Rapids approximately 4.5 miles upstream of PCS. A map of the regional surficial aquifers in east-central Iowa is included in **Appendix A**.

The alluvial aquifer is underlain by Devonian and Silurian limestone and dolomite bedrock. A bedrock geology map and cross sections of the area are provided in **Appendix A**. The Devonian and Silurian bedrock are also aquifer units and are likely hydraulically connected to the alluvial aquifer above. The Silurian limestone is several hundred feet thick at the site and is underlain by an Ordovician confining unit.

2.1.2 Site Information

Monitoring wells MW-301 through MW-310 were installed to intersect the surficial alluvium aquifer at the site. The unconsolidated materials at these well locations are generally sand and silt with minor clay and gravel. The total boring depths were between 15.5 and 30.5 feet and bedrock was not encountered in any monitoring well boring. Boring logs and well construction forms for MW-301 through MW-310 are included in **Appendix B**.

Assessment piezometers MW-301A, MW-306A, MW-309A, and MW-310A were installed in June and July 2020. Unconsolidated materials were also observed in the deeper piezometer boring and bedrock was not encountered. The boring for upgradient piezometer MW-301A encountered a thick lean clay layer and the well is screened within the clay. The other three piezometers are screened in sandy materials. The total boring depths were between 45 and 60 feet. Boring logs and well construction forms for the four deeper piezometers are included in **Appendix B**.

The sampling event summary and groundwater elevation data for the CCR monitoring wells are included in **Table 2** and **Table 3**. Water table elevations and groundwater flow patterns for April 2020 are shown on **Figure 3**. Water table elevations and groundwater flow patterns October 2020 are shown on **Figure 4**. Both water table maps show groundwater flow moving north toward Prairie Creek, which is a tributary of the Cedar River. Estimated horizontal gradients and flow velocities are provided in **Table 4A**. Vertical hydraulic gradients for the well nests are provided in **Table 4B**. The vertical gradients indicate downward flow for the upgradient well nest and upward flow for the three downgradient wells nests.

2.2 CCR RULE MONITORING SYSTEM

The current groundwater monitoring system established in accordance with the CCR Rule consists of 2 upgradient (background) monitoring wells, 1 upgradient piezometer, 6 downgradient monitoring wells, and 5 downgradient monitoring wells and piezometers to assist with the assessment monitoring and selection of remedy process. The background wells are MW-301 and MW-302, background piezometer MW-301A, and the six downgradient wells at the waste boundary include MW-303, MW-304, MW-305, MW-306, MW-307, and MW-308.

The shallow downgradient delineation monitoring wells include MW-309 and MW-310. The deeper downgradient piezometers include MW-306A, MW-309A, and MW-310A. The upgradient piezometer, MW-301A, was also installed to assist with the selection of remedy process. The CCR Rule wells are installed in the alluvial aquifer, which is the uppermost aquifer unit. Shallow monitoring well depths range from approximately 15 to 32 feet, measured from the top of the well casing. The piezometer depths range from approximately 47 to 62 feet, measured from top of well casing.

3.0 § 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:

3.1 §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 showing the site location is provided on **Figure 1**. A map with an aerial image showing the closure area, former CCR units, and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 2**.

3.2 §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;

Four new piezometers, MW-301A, MW-306A, MW-309A, and MW-310A, were installed in June and July 2020, to characterize site conditions in accordance with § 257.95(g)(1). The monitoring well boring logs and well construction forms are provided in **Appendix B**.

3.3 §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;

Five groundwater sampling events were completed in 2020. The first groundwater sampling event was completed in January 2020 for MW-309 and MW-310 only. The first round of semiannual groundwater monitoring was completed in April and May 2020. The semiannual event was split between April and May due to site access limitations in April that were related to the COVID-19 pandemic. The fourth groundwater sampling event was completed in September 2020 for the four piezometers that were installed in June and July 2020. The fifth event was the semiannual groundwater sampling event for all wells in October 2020. 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 assessment monitoring programs is included in **Table 2**.

Groundwater samples collected in each event were analyzed for both Appendix III and Appendix IV constituents in **Table 5**. Field parameter results for the 2020 sampling events are provided in **Table 6**. The results of the analytical laboratory analyses are provided in the laboratory reports in **Appendix C**. Historical results for each monitoring well are summarized in **Appendix D**.

Supplemental groundwater quality parameters were included in the monitoring program in October 2020 to support the selection of remedy process, including the evaluation of monitored natural

attenuation (MNA). The results for the supplemental parameters are also included in **Table 5**, and in the laboratory reports in **Appendix C**.

3.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

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

There was no monitoring program transition in 2020.

The PCS monitoring program transitioned to assessment monitoring beginning in April 2018 and assessment monitoring continued through 2020. An Assessment of Corrective Measures (ACM) was initiated for the PCS CCR units in April 2019 and completed in September 2019. An addendum to the ACM is anticipated in 2021 prior to the selection of remedy. The ACM was initiated in response to the detection of arsenic and molybdenum at statistically significant levels exceeding the Groundwater Protection Standards (GPS). Assessment monitoring continued during the ACM and will continue during the selection of remedy.

The statistical evaluation of the October 2019 assessment monitoring results was completed in January 2020. Evaluation of the April and May 2020 results was completed in July 2020. Evaluation of the October and 2020 results was completed in January 2021.

Appendix IV parameters, arsenic, lithium, and molybdenum, were detected at statistically significant levels above the GPS values established under §257.95(h). As shown in **Table 5**, several Appendix III and Appendix IV parameters continue to be detected at levels that represent statistically significant increases (SSIs) above background. The evaluation of significance of the GPS exceedance for arsenic and molybdenum is discussed below.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (USEPA, 2009), the comparison of assessment monitoring results to the GPS was based on the lower confidence limit (LCL) for the arithmetic mean. The LCL evaluation was completed for each Appendix IV parameter that has been detected at a concentration exceeding the GPS in at least one sample result since assessment monitoring was initiated, which include arsenic, molybdenum, and lithium. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in April 2018. The most recent LCL evaluation, completed for the October 2020 events, is provided in **Appendix E**.

Based on the LCL evaluation, statistically significant levels (SSLs) above the GPS were identified for the following parameters and wells:

- Arsenic: MW-303, MW-304, MW-308, MW309, and MW-310
- Lithium: None
- Molybdenum: MW-306

The SSLs for arsenic at MW-303 and MW-304 and for molybdenum at MW-306 are consistent with previous SSL determinations. The SSLs for arsenic at MW-308, MW-309, and MW-310 are newly identified SSLs, because these wells were installed more recently and have now been sampled four times, which is the minimum required for LCL evaluation.

The detection of lithium above the GPS at compliance well MW-308 was the first result above the GPS at this well in four rounds of sampling to date. The significance of the lithium GPS exceedance at this well will be reevaluated as additional sampling is completed.

3.5 § 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 2020 Annual Groundwater Monitoring and Corrective Action Report.

3.5.1 § 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 the selection of remedy process, with assessment monitoring continuing.

Summary of Key Actions Completed.

- Statistical evaluation for the October 2019 assessment monitoring event completed on January 28, 2020.
- Statistical evaluation for the May 2020 monitoring event, completed on August 14, 2020.
- Four piezometers were installed in June and July 2020 to further delineate the groundwater monitoring network and to assist with the selection of remedy process.
- Continued work on the selection of remedy in accordance with § 257.97.
- Two semiannual groundwater sampling and analysis events (April/May and October 2020)
- Supplemental groundwater monitoring events in January and September 2020 to characterize groundwater quality at selected wells installed to delineate the nature and extent of impacts.

Description of Any Problems Encountered.

- No problems were encountered during the groundwater sampling events in 2020. Some activities were initially delayed due to the COVID-19 pandemic and derecho that affected Eastern Iowa in August 2020.

Discussion of Actions to Resolve the Problems.

- Not applicable.

Projection of Key Activities for the Upcoming Year (2021):

- Statistical evaluation and determination of any statistically significant levels exceeding the GPS for the October 2020 monitoring event (January 2021).
- Statistical evaluation and determination of any statistically significant levels exceeding the GPS for the April 2021 monitoring event (July 2021).
- Continued work on the selection of remedy in accordance with § 257.97.
- Two semiannual assessment monitoring events (April and October 2021).
- ACM addendum to be completed in 2021.
- A public meeting will be held in 2021 prior to remedy selection.

3.5.2 § 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. The PCS closure area is no longer in the detection monitoring program.

3.5.3 § 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. The PCS closure area is no longer in the detection monitoring program.

3.5.4 § 257.95(c) Alternative Assessment Monitoring Frequency

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

Not applicable. Assessment monitoring has been initiated at the site but no alternative assessment monitoring frequency is proposed at this time.

3.5.5 § 257.95(d)(3) Assessment Monitoring Results and Standards

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

The 2020 assessment monitoring results, background upper prediction limits (UPLs), and GPSs established for PCS are provided in **Table 5**. The laboratory reports are provided in **Appendix C**. Historical monitoring results are summarized in **Appendix D**.

Supplemental groundwater quality parameters were included in the monitoring program in 2020 to support the selection of remedy process, including the evaluation of MNA. The results for the supplemental parameters are included in **Table 5** and in the laboratory reports in **Appendix C**.

3.5.6 § 257.95(d)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

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

Not applicable. No alternative source demonstration for assessment monitoring was completed in 2020.

3.5.7 § 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.

The ACM was initiated on April 15, 2019. The July 10, 2019 certification, demonstrating the need for a 90-day deadline extension which was provided in the 2019 Annual Groundwater Monitoring and Corrective Action Report. The ACM was completed on September 19, 2019.

3.6 §257.90(E)(6) OVERVIEW

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.

The specific requirements for the overview under §257.90(e)(6) are listed and the information is provided at the beginning of this report, before the Table of Contents.

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**Table 1. Groundwater Monitoring Well Network
Prairie Creek Generating Station
SCS Engineers Project #25220074.00**

Monitoring Well	Location in Monitoring Network	Role in Monitoring Network
MW-301	Upgradient	Background
MW-301A	Upgradient, deeper	Background
MW-302	Upgradient	Background
MW-303	Downgradient	Compliance
MW-304	Downgradient	Compliance
MW-305	Downgradient	Compliance
MW-306	Downgradient	Compliance
MW-306A	Downgradient, deeper	Delineation
MW-307	Downgradient	Compliance
MW-308	Downgradient	Compliance
MW-309	Downgradient	Delineation
MW-309A	Downgradient, deeper	Delineation
MW-310	Downgradient	Delineation
MW-310A	Downgradient, deeper	Delineation

Created by: RM
 Last revision by: RM
 Checked by: NDK

Date: 12/14/2020
 Date: 1/11/2021
 Date: 1/17/2021

**Table 2. CCR Rule Groundwater Samples Summary
Prairie Creek Generating Station
SCS Engineers Project #25220074.00**

Sample Dates	Background Wells			Compliance Wells				Delineation Well	Compliance Wells		Delineation Wells			
	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A
1/9/2020	--	NI	--	--	--	--	--	NI	--	--	A	NI	A	NI
4/27/2020	A	NI	A	A	A	A	A	NI	--	--	A	NI	A	NI
5/27/2020	--	NI	--	--	--	--	--	NI	A	A	--	NI	--	NI
9/15/2020	--	A	--	--	--	--	--	A	--	--	--	A	--	A
10/19-21/2020	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Total Samples	2	2	2	2	2	2	2	2	2	2	3	2	3	2

Abbreviations:

A = Assessment Monitoring Program

NI = Not Installed

-- = Not Sampled

Note: MW-301A, MW-306A, MW-309A, and MW-310A installed in June and July 2020.

Created by: NDK

Date: 1/4/2018

Last revision by: RM

Date: 1/17/2021

Checked by: NDK

Date: 1/17/2021

Table 3. Groundwater Elevation Summary
Prairie Creek Generating Station / SCS Engineers Project #25220074.00

Ground Water Elevation in feet above mean sea level (amsl)														
Well Number	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	MW-301A	MW-306A	MW-309A	MW-310A
Top of Casing Elevation (feet amsl)	732.55	722.27	709.46	709.66	709.61	712.54	721.16	719.67	711.80	711.93	732.07	711.50	710.54	710.68
Screen Length (ft)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0
Total Depth (ft from top of casing)	25.10	16.98	17.01	17.09	17.00	31.91	23.27	23.21	15.00	15.00	56.15	61.85	47.31	47.47
Top of Well Screen Elevation (ft)	717.45	715.29	702.45	702.57	702.61	685.63	707.89	706.46	703.11	703.09	680.92	654.65	668.23	668.21
Measurement Date														
December 20, 2016	716.05	715.39	703.36	703.42	703.46	703.32	NI	NI	NI	NI	NI	NI	NI	NI
January 23, 2017	716.05	715.77	704.64	704.56	704.59	704.49	NI	NI	NI	NI	NI	NI	NI	NI
February 23, 2017	715.87	715.55	704.46	704.65	704.67	704.59	NI	NI	NI	NI	NI	NI	NI	NI
March 28, 2017	715.80	715.45	703.81	703.99	704.09	703.99	NI	NI	NI	NI	NI	NI	NI	NI
April 27, 2017	716.70	716.07	705.07	705.08	705.04	704.98	NI	NI	NI	NI	NI	NI	NI	NI
May 25, 2017	717.08	716.27	705.37	705.37	705.29	705.34	NI	NI	NI	NI	NI	NI	NI	NI
June 28, 2017	716.10	715.22	703.96	704.16	704.11	703.94	NI	NI	NI	NI	NI	NI	NI	NI
August 17, 2017	715.35	714.47	702.83	702.96	702.91	702.74	NI	NI	NI	NI	NI	NI	NI	NI
October 17, 2017	714.36	713.92	702.95	703.17	703.21	703.16	NI	NI	NI	NI	NI	NI	NI	NI
May 8, 2018	713.95	713.53	705.36	705.54	705.61	705.51	NI	NI	NI	NI	NI	NI	NI	NI
August 6, 2018	714.30	713.83	702.64	702.62	702.56	702.68	NI	NI	NI	NI	NI	NI	NI	NI
October 9, 2018	715.74	716.72	707.86	707.81	707.73	707.88	NI	NI	NI	NI	NI	NI	NI	NI
March 11, 2019	NM	NM	NM	704.24	704.05	NM	NI	NI	NI	NI	NI	NI	NI	NI
April 22-23, 2019	716.44	715.69	703.83	703.93	703.93	704.23	709.86	706.19	NI	NI	NI	NI	NI	NI
October 28-29, 2019	715.86	715.27	704.10	704.15	704.17	704.40	708.57	706.31	703.84	703.71	NI	NI	NI	NI
January 9, 2020	NM	NM	NM	NM	NM	NM	NM	NM	703.10	702.81	NI	NI	NI	NI
April 27, 2020	715.80	715.17	703.10	702.84	703.02	703.35	NM	NM	702.84	702.53	NI	NI	NI	NI
May 27, 2020	NM	NM	NM	NM	NM	NM	708.14	705.64	NM	NM	NI	NI	NI	NI
September 14, 2020	715.30	715.16	703.70	703.74	703.74	703.84	708.75	706.13	703.28	702.83	694.12	704.03	703.63	703.43
October 19-21, 2020	714.77	713.75	702.16	702.13	702.02	702.26	706.56	703.87	701.97	701.78	704.32	702.43	702.17	702.00
Bottom of Well Elevation (ft)	707.45	705.29	692.45	692.57	692.61	680.63	697.89	696.46	693.11	693.09	675.92	649.65	663.23	663.21

Created by: <u>RM</u>	Date: <u>12/10/2020</u>
Last rev. by: <u>NDK</u>	Date: <u>1/17/2021</u>
Checked by: <u>MDB</u>	Date: <u>1/18/2021</u>
Proj Mgr/Scient QA/QC: <u>TK</u>	Date: <u>1/28/2021</u>

**Table 4A. Horizontal Gradients and Flow Velocities
Prairie Creek Generating Station
SCS Engineers Project #25220074.00**

Northwest					
Sampling Dates	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
4/27/2020	705.00	702.53	323	0.008	1.5
10/19-21/2020	703.00	701.78	330	0.004	0.7

Wells	K Value (cm/sec)	K Value (ft/d)	Assumed Porosity, n
MW-301	N/A	N/A	0.40
MW-301A	N/A	N/A	
MW-302	N/A	N/A	
MW-303	1.2E-02	34	
MW-304	1.3E-02	36	
MW-305	1.6E-01	439	
MW-306	5.0E-02	141	
MW-306A	1.2E-02	35	
MW-307	1.8E-02	50	
MW-308	5.3E-03	15	
MW-309	5.0E-02	142	
MW-309A	1.1E-01	303	
MW-310	1.7E-02	47	
MW-310A	5.1E-02	145	
Geometric Mean	2.7E-02	77	

Groundwater flow velocity equation: $V = [K * (\Delta h / \Delta l)] / n$

Notes:

1. Geometric mean calculation does not include upgradient wells MW-301, MW-301A, or MW-302.

ft = feet

ft/d = feet per day

K = hydraulic conductivity

n = effective porosity

V = groundwater flow velocity

h1, h2 = point interpreted groundwater elevation at locations 1 and 2

Δl = distance between location 1 and 2

Δh/Δl = hydraulic gradient

Created by: RM
Last revision by: NDK
Checked by: RM

Date: 12/29/2020
Date: 1/17/2021
Date: 1/18/2021

Table 4B. Vertical Gradients
Prairie Creek Generating Station / SCS Engineers Project #25220074.00
2020

Vertical Hydraulic Gradients	MW-301/MW-301A		MW-306/MW-306A		MW-309/MW-309A		MW-310/MW-310A	
	Shallow Well Screen midpoint ⁽²⁾ (feet amsl)	MW-301 712.45		MW-306 683.13		MW-309 698.11		MW-310 698.09
Deep Well Screen midpoint (feet amsl)	MW-301A 678.42		MW-306A 652.15		MW-309A 665.73		MW-310A 665.71	
Measurement Date	Distance Between Midpoints ⁽²⁾ (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints ⁽²⁾ (ft)	Vertical Gradient (ft/ft)	Distance Between Midpoints ⁽²⁾ (ft)	Vertical Gradient (ft/ft)
9/14/2020	33.0	-0.643	31.0	0.006	32.5	0.011	32.3	0.019
10/19-21/2020	32.7	-0.320	31.0	0.005	32.4	0.006	31.7	0.007

Notes:

1: A positive vertical gradient indicates upward groundwater flow. A negative gradient indicates downward flow.

2: The well screens at MW-301 and MW-310 were not fully submerged during the September and October 2020 sampling events. The well screen at MW-309 was not fully submerged during the October 2020 sampling event. In these cases, the effective screen midpoint is calculated at the midpoint between the water table elevation and screen bottom elevation, and this value is used to calculate Distance Between Midpoints.

Created by: RM
 Last rev. by: RM
 Checked by: MDB
 Proj Mgr QA/QC: TK

Date: 1/18/2021
 Date: 1/20/2021
 Date: 1/20/2021
 Date: 1/28/2021

Table 5. Groundwater Analytical Summary - 2020
Prairie Creek Generating Station, Cedar Rapids, IA / SCS Engineers Project #25220074.00

Parameter Name	UPL Method	UPL	GPS	Background Wells						Compliance Wells								Delineation Well	
				MW-301		MW-301A*		MW-302		MW-303		MW-304		MW-305		MW-306		MW-306A	
				4/27/2020	10/19/2020	9/15/2020	10/21/2020	4/27/2020	10/19/2020	4/27/2020	10/20/2020	4/27/2020	10/20/2020	4/27/2020	10/20/2020	4/27/2020	10/20/2020	4/27/2020	10/20/2020
Appendix III																			
Boron, ug/L	P	67		<73	<80	<80	<80	<73	<80	790	1,300	770	860	1,000	1,300	2,800	2,800	2,100	2,400
Calcium, mg/L	NP	148		140	150	72	76.0	86	110	110	110	110	98.0	120	130	54	54.0	150	150
Chloride, mg/L	P	36.7		40	67.0 F1	4.1 J1, B1	2.6 J	28	49	18	13.0	15	12.0	16	15.0	22	19.0	63 B1	65
Fluoride, mg/L	P*	0.23		<0.23	<0.23 F2	<0.23	<0.23	<0.23	<0.23	0.69	0.67	0.67	0.56	0.51	0.37 J	0.38 J	0.29 J	<0.23	<0.23
Field pH, Std. Units	NP	8		7.09	6.89	7.50	6.85	6.27	6.67	6.78	7.08	6.84	6.84	6.82	7.07	6.94	7.66	7.87	7.29
Sulfate, mg/L	NP	108		110	98.0 F1	6.4	7.8	66	78	120	130	110	110	240	230	110	120	330	350
Total Dissolved Solids, mg/L	NP	642		640	660	440	310	400	480	630	580	590	500	710	660	420	360	840	800
Appendix IV																			
Antimony, ug/L	P*	0.48	6	<0.58	<0.51	<0.51	<0.51	<0.58	<0.51	<0.58	<0.51	1.0	1.0	0.74 J	0.79 J	<0.58	<0.51	<0.51	0.64 J
Arsenic, ug/L	P	3.57	10	<0.88	<0.88	3.7	1.9 J	4.4	2.0	48	56	11	14	6.2	9.8	1.3 J	1.1 J	<0.88	<0.88
Barium, ug/L	P	332	2,000	260	270	290	190	210	200	130	120	120	110	110	140	73	67	180	170
Beryllium, ug/L	P*	0.16	4	<0.27	<0.27	0.98 J1	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27
Cadmium, ug/L	P*	0.12	5	0.066 J	0.073 J	0.49	0.054 J	0.098 J	0.062 J	0.066 J	<0.049	<0.039	<0.049	0.072 J	<0.049	0.090 J	0.10	0.073 J1	<0.049
Chromium, ug/L	P	13.5	100	4.7 J	4.9 J	5.1	1.1 J	2.8 J	2.2 J	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	1.9 J1	<1.1
Cobalt, ug/L	NP	4.7	6	0.23 J	<0.091	9.4	2.0	0.56	0.33 J	1.1	0.43 J	1.1	1.1	1.1	0.73	0.20 J	0.17 J	1.3	0.49 J
Fluoride, mg/L	P*	0.23	4	<0.23	<0.23 F2	<0.23	<0.23	<0.23	<0.23	0.69	0.67	0.67	0.56	0.51	0.37 J	0.38 J	0.29 J	<0.23	<0.23
Lead, ug/L	P*	0.56	15	0.27 J	<0.11	5.6	1.0	<0.27	<0.11	1.7	0.18 J	<0.27	<0.11	<0.27	<0.11	0.48 J	0.42 J	1.8	0.79
Lithium, ug/L	P	19.6	40	11	15	4.2 J1	4.1 J	3.8 J	8.2 J	14	21	11	17.0	12	20	<2.3	<2.5	4.1 J1	6.3 J
Mercury, ug/L	DQ	DQ	2	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	--
Molybdenum, ug/L	P*	0.73	100	<1.1	<1.1	2.1	3.1	<1.1	<1.1	8.4	17	26	28	38	58	250	260	8.6	13
Selenium, ug/L	P	1.47	50	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--
Thallium, ug/L	P*	0.47	2	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--
Radium 226/228 Combined, pCi/L	P	2.37	5	0.477	0.975	8.3	1.47	0.392	1.22	1.41	0.56	0.707	0.958	0.301	0.525	0.578	0.387	0.453	0.898
Additional Parameters Monitored for Selection of Remedy																			
Arsenic - dissolved, ug/L				--	--	--	--	--	--	--	53	--	14	--	8	--	--	--	--
Cobalt - dissolved, # ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium - dissolved, # ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Iron, dissolved, # ug/L				--	<50	--	97 J	--	430	--	3,100	--	2,000	--	180	--	1,500	--	1,700
Iron, ug/L				--	73 J	--	1,000	--	2,200	--	3,400	--	2,000	--	220	--	1,800	--	2,800
Magnesium ug/L				--	44,000	--	23,000	--	33,000	--	35,000	--	29,000	--	36,000	--	12,000	--	45,000
Manganese, dissolved, # ug/L				--	<4.0	--	690	--	77	--	1,400	--	1,200	--	1,100	--	100	--	360
Manganese, ug/L				--	<4.0	--	700	--	89	--	1,400	--	1,200	--	1,200	--	110	--	410
Molybdenum dissolved, ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	250	--	--
Potassium, ug/L				--	930	--	2,100	--	640	--	4,800	--	5,200	--	5,400	--	860	--	1,600
Sodium, ug/L				--	14,000	--	14,000	--	16,000	--	34,000	--	40,000	--	46,000	--	54,000	--	33,000
Bicarbonate Alkalinity, mg/L				--	470	--	330	--	310	--	370	--	350	--	340	--	160	--	200
Carbonate Alkalinity, mg/L				--	<3.8	--	<3.8	--	<3.8	--	<3.8	--	<3.8	--	<1.9	--	<1.9	--	<3.8
Total Alkalinity, mg/L				--	470	--	330	--	310	--	370	--	350	--	340	--	160	--	200

4.4 Blue highlighted cell indicates the compliance well result exceeds the UPL (background) and the LOQ.
30.8 Yellow highlighted cell indicates the compliance well result exceeds the GPS.
17 Grayscale indicates Additional Parameters sampled for selection of remedy and evaluation of Monitored Natural Attenuation.

Table 5. Groundwater Analytical Summary - 2020
Prairie Creek Generating Station, Cedar Rapids, IA / SCS Engineers Project #25220074.00

Parameter Name	UPL Method	UPL	GPS	Background Wells						Compliance Wells				Delineation Wells										
				MW-301		MW-301A*		MW-302		MW-307		MW-308		MW-309			MW-309A		MW-310			MW-310A		
				4/27/2020	10/19/2020	9/15/2020	10/21/2020	4/27/2020	10/19/2020	5/27/2020	10/19/2020	5/27/2020	10/19/2020	1/9/2020	4/27/2020	10/21/2020	9/15/2020	10/21/2020	1/9/2020	4/24/2020	10/21/2020	9/15/2020	10/21/2020	
Appendix III																								
Boron, ug/L	P	67		<73	<80	<80	<80	<73	<80	630	890	6,100	6,400	1,000	1,100	1,800	530	470	940	880	1,300	330	340	
Calcium, mg/L	NP	148		140	150	72	76.0	86	110	16	21.0	68	54	130	120	120	100	110	85	87	110	180	180	
Chloride, mg/L	P	36.7		40	67.0 F1	4.1 J1, B1	2.6 J	28	49	4.2 J	<2.0	11	8.4	17	16	13	23 B1	24	19	20	20	46 B1	48	
Fluoride, mg/L	P*	0.23		<0.23	<0.23 F2	<0.23	<0.23	<0.23	<0.23	0.49 J	0.29 J	0.54	<0.23	0.51	0.75	0.61	<0.23	<0.23	0.61	0.93	<0.23	<0.23	<0.23	
Field pH, Std. Units	NP	8		7.09	6.89	7.50	6.85	6.27	6.67	8.28	9.26	7.86	9.23	6.95	7.09	7.22	7.26	7.33	7.33	7.41	7.20	7.25	7.24	
Sulfate, mg/L	NP	108		110	98.0 F1	6.4	7.8	66	78	32	30.0	180	150	130	130	170	110	110	130	130	170	310	330	
Total Dissolved Solids, mg/L	NP	642		640	660	440	310	400	480	38	80.0	390	370	650	630	620	490	460	500	520	580	890	850	
Appendix IV																								
Antimony, ug/L	P*	0.48	6	<0.58	<0.51	<0.51	<0.51	<0.58	<0.51	0.83 J	1.0	0.7 J	1.40	<0.53	<0.58	<0.51	<0.51	<0.51	<0.53	<0.58	<0.51	<0.51	0.66 J	
Arsenic, ug/L	P	3.57	10	<0.88	<0.88	3.7	1.9 J	4.4	2.0	6.1	6.7	58	50	110	75	89	<0.88	<0.88	28	23	36	<0.88	<0.88	
Barium, ug/L	P	332	2,000	260	270	290	190	210	200	26	45.0	38	53	130	130	130	170	170	140	140	160	210	210	
Beryllium, ug/L	P*	0.16	4	<0.27	<0.27	0.98 J1	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	
Cadmium, ug/L	P*	0.12	5	0.066 J	0.073 J	0.49	0.054 J	0.098 J	0.062 J	<0.039	<0.049	0.04 J	0.071 J	<0.039	<0.039	<0.049	<0.049	<0.049	<0.039	<0.039	<0.049	<0.049	<0.049	
Chromium, ug/L	P	13.5	100	4.7 J	4.9 J	5.1	1.1 J	2.8 J	2.2 J	<1.1	<1.1	<1.1	<4.4	<0.98	<1.1	<1.1	<1.1	<1.1	<0.98	<1.1	<1.1	<1.1	<1.1	
Cobalt, ug/L	NP	4.7	6	0.23 J	<0.091	9.4	2.0	0.56	0.33 J	<0.091	<0.091	<0.091	<0.36	0.23 J	0.35 J	0.14 J	0.22 J1	0.32 J	0.095 J	0.098 J	0.11 J	0.54	2.1	
Fluoride, mg/L	P*	0.23	4	<0.23	<0.23 F2	<0.23	<0.23	<0.23	<0.23	0.49 J	0.29 J	0.54	<0.23	0.51	0.75	0.61	<0.23	<0.23	0.61	0.93	<0.23	<0.23	<0.23	
Lead, ug/L	P*	0.56	15	0.27 J	<0.11	5.6	1.0	<0.27	<0.11	<0.27	<0.11	<0.27	<0.11	<0.27	<0.27	<0.11	<0.11	<0.11	<0.27	<0.27	<0.11	<0.11	<0.11	
Lithium, ug/L	P	19.6	40	11	15	4.2 J1	4.1 J	3.8 J	8.2 J	8.3 J	16.0	35	47	15	13	19	4.1 J1	5.9 J	14	11	18	3.2 J1	5.3 J	
Mercury, ug/L	DQ	DQ	2	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	--	<0.10	<0.10	--	<0.10	--	<0.10	<0.10	--	<0.10	--	
Molybdenum, ug/L	P*	0.73	100	<1.1	<1.1	2.1	3.1	<1.1	<1.1	7.0	5.2	64	58	18	19	21	8.5	7.1	59	55	71	20	21	
Selenium, ug/L	P	1.47	50	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	--	<1.0	<1.0	--	<1.0	--	<1.0	<1.0	--	<1.0	--	
Thallium, ug/L	P*	0.47	2	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.26	--	<0.27	<0.26	--	<0.26	--	<0.27	<0.26	--	<0.26	--	
Radium 226/228 Combined, pCi/L	P	2.37	5	0.477	0.975	8.3	1.47	0.392	1.22	0.341	0.233	0.117	1.05	0.543	0.837	0.815	0.783	0.509	0.232	0.341	0.351	1.21	1.27	
Additional Parameters Monitored for Selection of Remedy																								
Arsenic - dissolved, ug/L				--	--	--	--	--	--	--	--	44	--	--	78	--	--	--	--	--	32	--	--	
Cobalt - dissolved, ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Lithium - dissolved, ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Iron, dissolved, ug/L				--	<50	--	97 J	--	430	--	<50	--	<50	--	--	1,200	--	--	7,600	--	--	4,100	--	6,100
Iron, ug/L				--	73 J	--	1,000	--	2,200	--	<50	--	<50	--	--	1,200	--	--	7,500	--	--	4,400	--	6,300
Magnesium, ug/L				--	44,000	--	23,000	--	33,000	--	2,300	--	3,100	--	--	33,000	--	--	29,000	--	--	26,000	--	48,000
Manganese, dissolved, ug/L				--	<4.0	--	690	--	77	--	<4.0	--	52	--	--	980	--	--	710	--	--	960	--	490
Manganese, ug/L				--	<4.0	--	700	--	89	--	<4.0	--	47	--	--	920	--	--	710	--	--	980	--	520
Molybdenum dissolved, ug/L				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Potassium, ug/L				--	930	--	2,100	--	640	--	1,600	--	5,300	--	--	4,800	--	--	1,700	--	--	5,800	--	1,100
Sodium, ug/L				--	14,000	--	14,000	--	16,000	--	4,600	--	33,000	--	--	34,000	--	--	14,000	--	--	53,000	--	15,000
Bicarbonate Alkalinity, mg/L				--	470	--	330	--	310	--	41	--	82	--	--	360	--	--	280	--	--	300	--	320
Carbonate Alkalinity, mg/L				--	<3.8	--	<3.8	--	<3.8	--	<1.9	--	41	--	--	<3.8	--	--	<1.9	--	--	<3.8	--	<3.8
Total Alkalinity, mg/L				--	470	--	330	--	310	--	41	--	120	--	--	360	--	--	280	--	--	300	--	320

4.4 Blue highlighted cell indicates the compliance well result exceeds the UPL (background) and the LOQ.
30.8 Yellow highlighted cell indicates the compliance well result exceeds the GPS.
17 Grayscale indicates Additional Parameters sampled for selection of remedy and evaluation of Monitored Natural Attenuation.

See Page 3 for notes and abbreviations.

Table 5. Groundwater Analytical Summary - 2020
Prairie Creek Generating Station, Cedar Rapids, IA / SCS Engineers Project #25220074.00

Abbreviations:

UPL = Upper Prediction Limit
 NA = Not Analyzed
 µg/L = micrograms per liter
 mg/L = milligrams per liter

GPS = Groundwater Protection Standard
 LOD = Limit of Detection
 LOQ = Limit of Quantitation

DQ= Double Quantification
 P = Parametric UPL with 1-of-2 retesting
 NP = Nonparametric UPL with 1-of-2 retesting

Notes:

- B1 = Compound was found in the blank and the sample.
 - J = Estimated concentration at or above the LOD and below the LOQ.
 - J1 = Result is less than the reporting limit but greater than or equal to the MDL and the concentration is an approximate value.
 - * = UPL is below the LOQ for background sampling. For compliance wells, only results confirmed above the LOQ are evaluated as potential Statistically Significant Increases above background.
 - ** = Piezometer located near background water table monitoring well but groundwater flow direction is not yet confirmed.
1. An individual result above the UPL or GPS does not constitute an SSI above background or statistically significant level above the GPS. See the accompanying letter text for identification of statistically significant results.
 2. GPS is the United States Environmental Protection Agency (USEPA) Maximum Contamination Level (MCLs), if established; otherwise, the values from 40 CFR 257.95(h)(2).
 3. Interwell UPLs calculated based on results from background wells MW-301 and MW-302.

Created by: NDK
 Last revision by: NDK
 Checked by: MDB
 Proj Mgr QA/QC: TK

Date: 5/1/2018
 Date: 1/17/2021
 Date: 1/19/2021
 Date: 1/28/2021

Table 6. 2020 Groundwater Field Data Summary
Prairie Creek Generating Station / SCS Engineers Project #25220074.00
January - December 2020

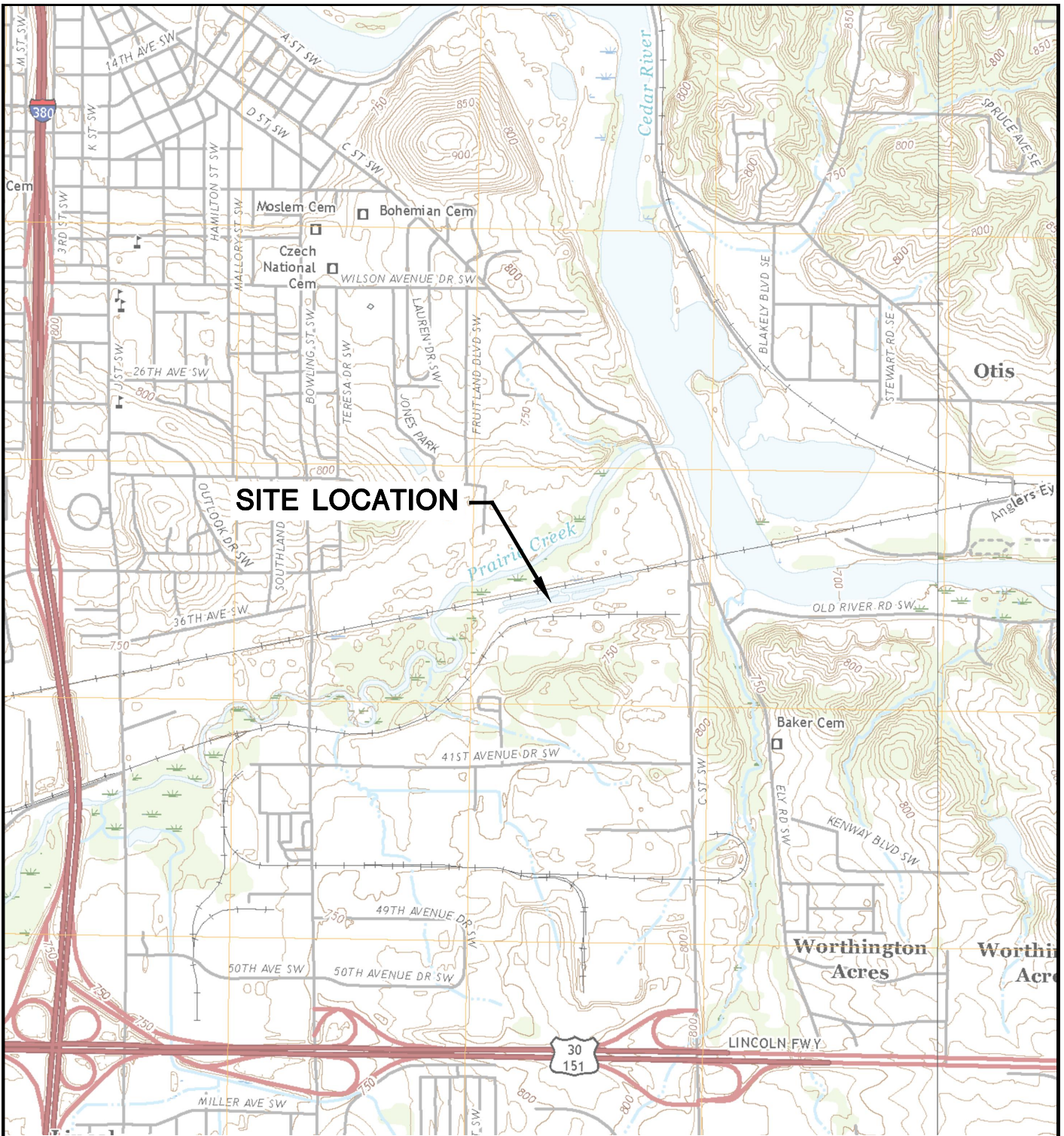
Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	4/27/2020	715.80	11.1	7.09	3.50	954	208.3	6.5
	10/19/2020	714.77	11.8	6.89	3.69	983	67.9	6.0
MW-301A	9/15/2020	694.12	16.0	7.50	7.77	471	131.6	285
	10/21/2020	704.32	11.6	6.85	1.77	551	-92.6	--
MW-302	4/27/2020	715.17	8.1	6.27	1.39	588	30.0	27.5
	10/19/2020	713.75	13.6	6.67	2.22	761	21.5	8.2
MW-303	4/27/2020	703.10	9.3	6.78	0.14	922	-143.2	25.9
	10/20/2020	702.16	15.1	7.08	0.08	853	-147.8	0.8
MW-304	4/27/2020	702.84	10.1	6.84	0.14	841	-85.0	1.6
	10/20/2020	702.13	15.7	6.84	0.08	771	-99.3	0.0
MW-305	4/27/2020	703.02	9.6	6.82	0.70	971	20.5	4.0
	10/20/2020	702.02	15.5	7.07	0.10	930	-86.4	0.0
MW-306	4/27/2020	703.35	13.2	6.94	0.18	540	-142.0	3.9
	10/20/2020	702.26	12.5	7.66	0.13	539	-199.7	19.9
MW-306A	9/15/2020	704.03	14.1	7.87	0.13	1180	-100.3	118
	10/20/2020	702.43	12.7	7.29	0.13	1054	-139.7	20.8
MW-307	5/27/2020	708.14	12.6	8.28	0.19	244	109.8	3.0
	10/19/2020	706.56	18.7	9.26	0.09	145	-123.4	2.1
MW-308	5/27/2020	705.64	12.7	7.86	0.10	1008	-22.4	2.3
	10/19/2020	703.87	14.9	9.23	0.21	318	-178.0	1.1
MW-309	1/9/2020	703.10	15.7	6.95	4.42	1016	-335.3	1.8
	4/27/2020	702.84	13.2	7.09	0.06	898	-117.7	4.2
	10/21/2020	701.97	18.8	7.22	0.10	955	-145.9	1.9
MW-309A	9/15/2020	703.63	16.1	7.26	0.14	815	-144.8	1.3
	10/21/2020	702.17	15.7	7.33	0.13	749	-181.6	1.5
MW-310	1/9/2020	702.81	15.2	7.33	3.72	784	-342.4	3.3
	4/27/2020	702.53	12.9	7.41	0.09	734	-148.0	6.3
	10/21/2020	701.78	17.5	7.20	0.14	894	-162.5	3.7
MW-310A	9/15/2020	703.43	16.0	7.25	0.19	1304	-128.9	1.7
	10/21/2020	702.00	15.3	7.24	0.11	1168	-165.8	2.8

Created by: RM
Last revision by: RM
Checked by: NDK

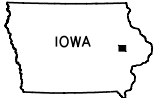
Date: 12/23/2020
Date: 1/11/2021
Date: 1/18/2021

Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 April 2020 Water Table Map
- 4 October 2020 Water Table Map

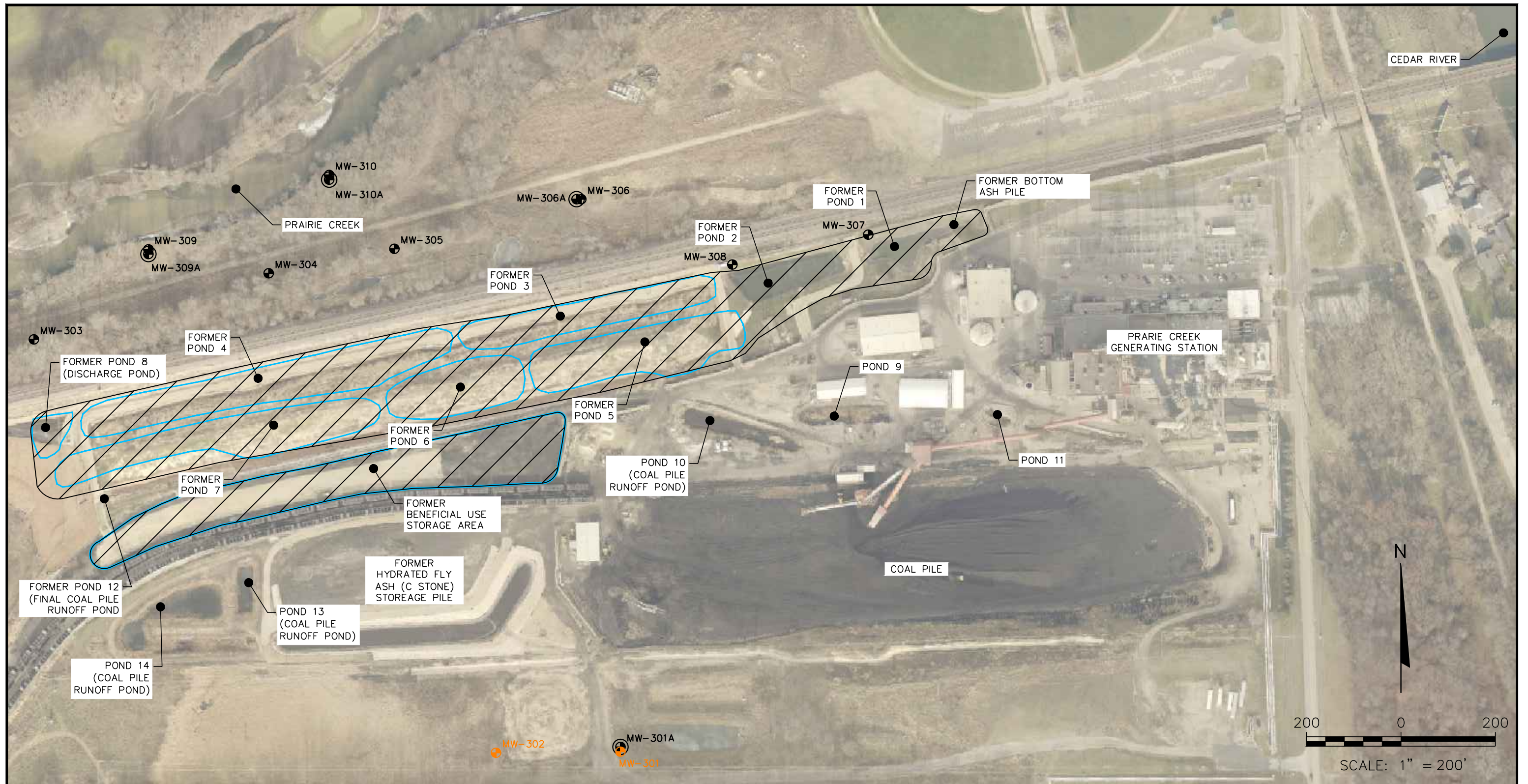


CEDAR RAPIDS SOUTH QUADRANGLE
 IOWA-LINN CO.
 7.5 MINUTE SERIES (TOPOGRAPHIC)
 2018
 SCALE: 1" = 2,000'



CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718		SITE	ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA		ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE	1
	PROJECT NO.	25219074.00		DRAWN BY:	BSS				
	DRAWN:	11/18/2019	CHECKED BY:	MDB					
	REVISED:	01/14/2020							

I:\25219074.00\Drawings\CCR 2019 Annual Report\Site Location Map.dwg, 1/30/2020 3:28:29 PM



LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- PIEZOMETER
- CCR UNITS
- APPROXIMATE CLOSURE AREA (SEE NOTE 1)

NOTES:

1. PCS PONDS 1-8, THE BOTTOM ASH PILE, AND THE BENEFICIAL USE STORAGE AREA WERE CLOSED IN DECEMBER 2018. LIMITS ARE APPROXIMATE.
2. AERIAL PHOTO IMPORTED FROM THE ARCMAP BASEMAP (CEDAR RAPIDS, IOWA GIS - DECEMBER 22, 2018).
3. MONITORING WELLS MW-301 THROUGH MW-306 INSTALLED BY CASCADE DRILLING BETWEEN OCTOBER 31 AND DECEMBER 6, 2016.
4. MONITORING WELLS MW-307 AND MW-308 INSTALLED BY CASCADE DRILLING ON NOVEMBER 27, 2018.
5. MONITORING WELLS MW-309 AND MW-310 INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING ON AUGUST 5-6, 2019.
6. MONITORING WELLS MW-301A AND MW-306A INSTALLED BY CASCADE DRILLING ON JUNE 22-24, 2020.
7. MONITORING WELLS MW-309A AND MW-310A WERE INSTALLED BY CASCADE DRILLING ON JULY 23, 2020.
8. THE BACKGROUND MONITORING WELLS FOR THE PRAIRIE CREEK GENERATING STATION ARE: MW-301 AND MW-302.

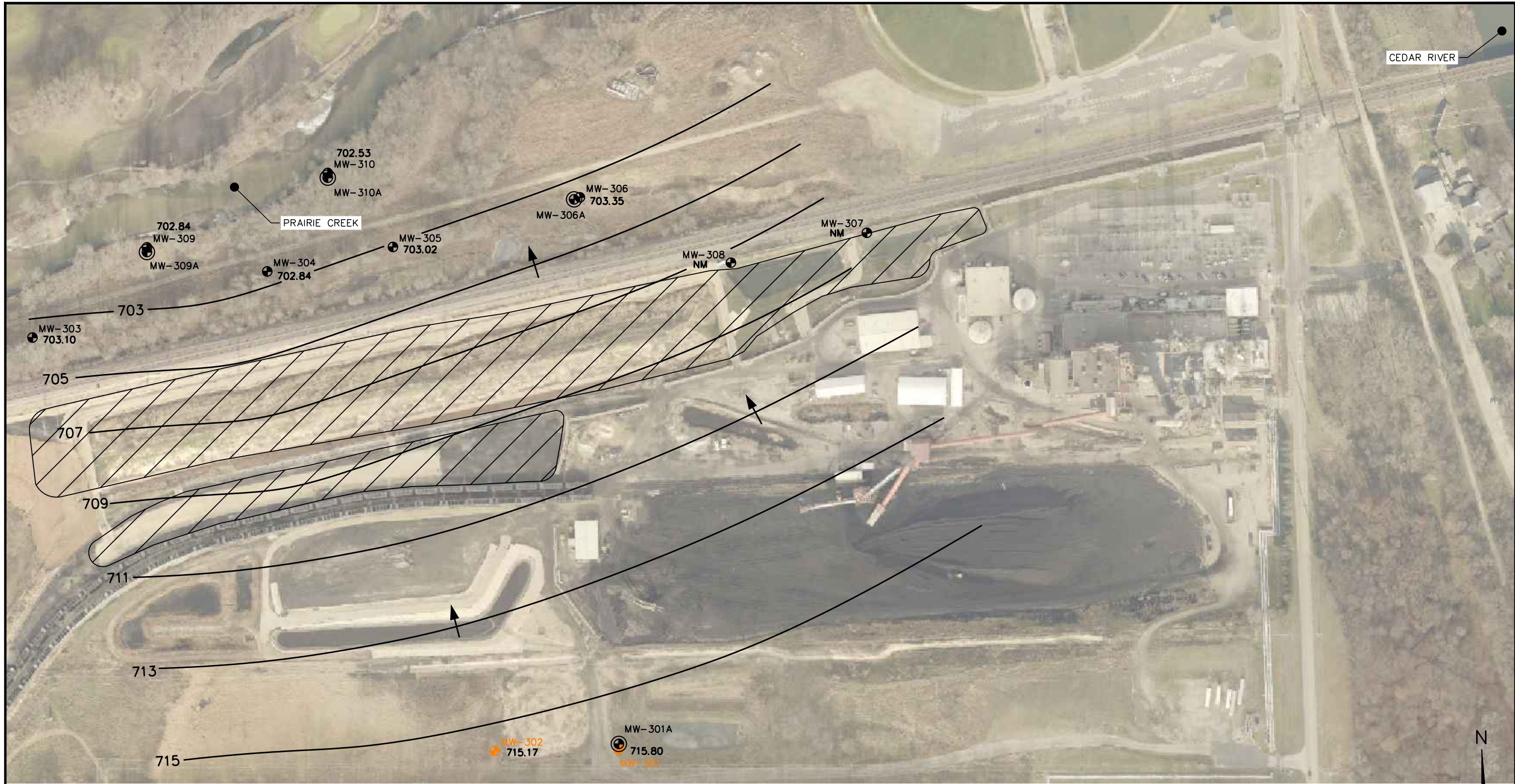
PROJECT NO.	25219074.00	DRAWN BY:	BSS
DRAWN:	11/18/2019	CHECKED BY:	MDB
REVISED:	01/21/2021	APPROVED BY:	TK 01/28/2021

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

CLIENT ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE ALLIANT ENERGY PRAIRIE CREEK GENERATING STATION CEDAR RAPIDS, IA
---	--

SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE 2
--	-------------

I:\25220074.00\Drawings\Site Plan and Monitoring Well Locations.dwg, 1/21/2021 2:37:02 PM



CEDAR RIVER

702.53
MW-310
MW-310A

MW-306
703.35
MW-306A

MW-307
NM

702.84
MW-309
MW-309A

MW-304
702.84

MW-305
703.02

MW-308
NM

703

MW-303
703.10

705

707

709

711

713

715

MW-302
715.17

MW-301A
715.80
MW-301

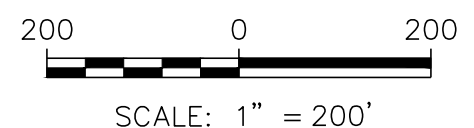
LEGEND

- MONITORING WELL
- BACKGROUND MONITORING WELL
- CLOSURE AREA (APPROXIMATE)

- 716.44 WATER TABLE ELEVATION (APRIL 27, 2020)
- WATER TABLE CONTOUR
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. AERIAL PHOTO IMPORTED FROM THE ARCMAP BASEMAP (CEDAR RAPIDS, IOWA GIS - DECEMBER 22, 2018).
2. DUE TO THE COVID-19 PANDEMIC, WELLS ON THE GENERATING STATION PROPERTY (MW-307 AND MW-308) WERE NOT MEASURED IN APRIL 2020. THESE WELLS WERE MEASURED AND SAMPLED IN MAY 2020.
3. THE BACKGROUND MONITORING WELLS FOR THE PRAIRIE CREEK GENERATING STATION ARE: MW-301 AND MW-302.



PROJECT NO.	25219074.00	DRAWN BY:	BSS/ZTW
DRAWN:	07/03/19	CHECKED BY:	MOB
REVISED:	01/21/21	APPROVED BY:	TK 01/28/2021

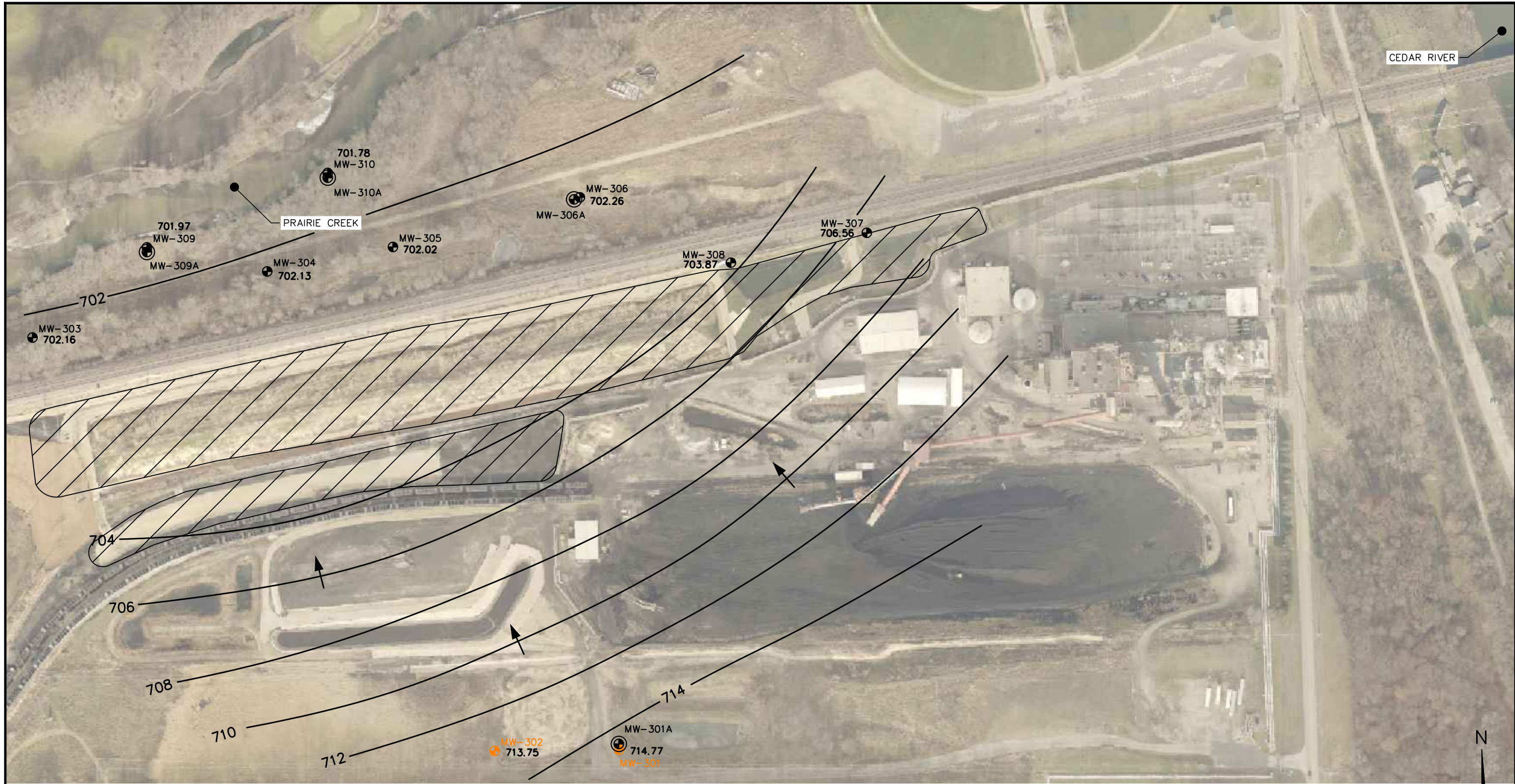
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ALLIANT ENERGY
4902 N. BILTMORE LANE
MADISON, WI 53718




SITE
IPL-PRAIRIE CREEK GENERATING STATION
3300 C ST. SW
CEDAR RAPIDS, IA 52404



WATER TABLE MAP - APRIL 2020

FIGURE
3



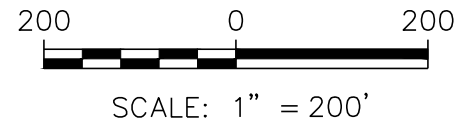
LEGEND

-  MONITORING WELL
-  BACKGROUND MONITORING WELL
-  CLOSURE AREA (APPROXIMATE)

- 716.44** WATER TABLE ELEVATION (OCTOBER 19-21, 2020)
-  WATER TABLE CONTOUR
-  APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. AERIAL PHOTO IMPORTED FROM THE ARCMAP BASEMAP (CEDAR RAPIDS, IOWA GIS - DECEMBER 22, 2018).
2. THE BACKGROUND MONITORING WELLS FOR THE PRAIRIE CREEK GENERATING STATION ARE: MW-301 AND MW-302.



PROJECT NO.	25219074.00	DRAWN BY:	BSS/ZTW
DRAWN:	07/03/19	CHECKED BY:	MOB
REVISED:	01/21/21	APPROVED BY:	TK 01/28/2021


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

ALLIANT ENERGY
 4902 N. BILTMORE LANE
 MADISON, WI 53718

IPL-PRAIRIE CREEK GENERATING STATION
 3300 C ST. SW
 CEDAR RAPIDS, IA 52404

WATER TABLE MAP - OCTOBER 2020

FIGURE
4



Appendix A
Regional Hydrogeologic Information

**Table PC-2. Regional Hydrogeologic Stratigraphy
Prairie Creek Generating Station / SCS Engineers Project #25215053.01**

Age of Rocks	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Type of Rock
Quaternary (0-1 million years old)	Surficial Aquifers • Alluvial • Buried-Channel • Drift	0 to 400	Undifferentiated	<ul style="list-style-type: none"> • Sand, gravel, silt, and clay • Sand, gravel, silt, and clay • Till (sandy, pebbly clay), sand, and silt
Pennsylvanian (280 to 310 million years old)	Aquiclude, locally contains waterbearing sandstone	0 to 70	Undifferentiated	<ul style="list-style-type: none"> • Shale, sandstone, limestone, and coal
Mississippian (310 to 345 million years old)	Mississippian Aquifer	0 to 220	Meramecian Series Osagean Series Kinderhookian Series	<ul style="list-style-type: none"> • Limestone and sandstone • Dolomite, limestone, and shale • Limestone, dolomite, and siltstone
Devonian (345 to 400 million years old)	Devonian Aquiclude	0 to 350	Yellow Spring Group Lime Creek Group	<ul style="list-style-type: none"> • Shale, dolomite, and siltstone • Dolomite and shale
	Devonian Aquifer	0 to 400	Cedar Valley Limestone Wapsipinicon Limestone	<ul style="list-style-type: none"> • Limestone and dolomite • Dolomite, limestone, and shale
Silurian (400 to 425 million years old)	Silurian Aquifer	0 to 450	Gower Dolomite Hopkinton Dolomite Kankakee Limestone Edgewood Dolomite	<ul style="list-style-type: none"> • Dolomite, with some chert and limestone
Ordovician (425 to 500 million years old)	Aquiclude	300 to 600	Maquoketa Shale Galena Dolomite Decorah Formation Platteville Formation	<ul style="list-style-type: none"> • Dolomite and shale • Dolomite and chert • Limestone and shale • Limestone and shale
	Cambrian-Ordovician aquifer	400 to 650	St. Peter sandstone Prairie du Chien Formation Jordan Sandstone St. Lawrence Dolomite	<ul style="list-style-type: none"> • Sandstone • Dolomite, sandstone, and shale • Sandstone • Dolomite
Cambrian (500 to 600 million years old)	Cambrian confining beds	90 to 290	Franconia Sandstone	<ul style="list-style-type: none"> • Shale, siltstone, and sandstone
	Dresbach Aquifer	157 to 1644	Dresbach Group Galesville Sandstone Eau Claire Sandstone Mt. Simon Sandstone	<ul style="list-style-type: none"> • Sandstone • Sandstone, shale, and dolomite • Sandstone
Precambrian (600 million to more than 2 billion years old)	Precambrian rocks	Unknown	Crystalline rocks, undifferentiated	<ul style="list-style-type: none"> • Sandstone, igneous and metamorphic rocks

*This nomenclature and classification of rock units in this report are those of the Iowa Geological Survey and do not necessarily coincide with those accepted by the U.S. Geological Survey.

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.

I:\25215053\Reports\Report 8 - OGS\Tables\Regional_Hydrogeologic_Stratigraphy.doc

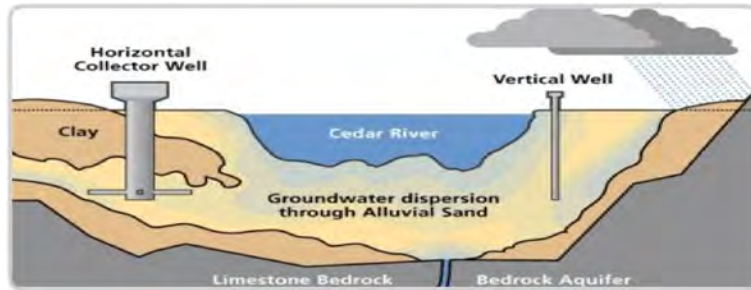
GO

- Things to See & Do
- Resident Resources
- Doing Business
- City Council
- Government
- City News
- CR Talks

Resident Resources

- Parks & Recreation
- Utilities
- Energy Management
- Garbage & Recycling
- Utility Bills
- Water
- About Us
- Backflow Prevention
- Outages/Main Breaks
- Our Treatment Process
- Water Quality
- Our Watershed
- Water Quality Report
- Best Tasting Water
- Water Engineering
- In the Home
- Drought
- Water Conservation
- Utility Bills
- 5 in 1 Dam
- Sewer Maintenance
- Water Pollution Control
- Sewer
- Storm Water
- City Buses
- Rental Services
- Neighborhood Services
- Streets Services
- Housing Services
- CleanUpCR
- iGreenCR
- Library
- Public Safety
- City Services
- Get Involved
- Americans with Disabilities Act

Our Watershed



SHARE

Where Does Our Water Come From?

The City of Cedar Rapids obtains its drinking water supplies from shallow vertical and collector wells constructed in the sand and gravel deposits along the Cedar River. Those deposits form an underground water-bearing layer called an alluvial aquifer. Because of continuous pumping of the City's wells, most of the water in the aquifer is pulled from the river. The rest of the water is supplied as water percolates up from a deeper bedrock aquifer or down from the top of the ground.

Our drinking water from those wells benefits from natural filtration through the riverbank. This natural sand filtration has proven beneficial, pre-treating the water before it ever reaches the City's two treatment plants (both conventional lime-softening facilities).

Watershed Monitoring

In order to most effectively manage our water resources, the Cedar Rapids Water Division has worked with state and federal agencies to complete a source water assessment, identifying potential contamination sources in the Cedar River watershed. The results of that assessment, paired with a continuous monitoring program, help us better understand our watershed. We have confirmed that some contaminants, including nitrate, herbicides and bacteria, enter the Cedar River watershed upstream from our wells. The watershed of the Cedar River upstream from Cedar Rapids is over 6,500 square miles and extends into southern Minnesota. Monitoring of these contaminants will continue to ensure a strong watershed protection program.

If you are interested in reviewing our source water assessment or any monitoring results, please contact the CRWD at 319-286-5910.

- | | | | |
|-----------------------------|------------------------|---------------------------|--------------------|
| How do I...? | Building Permit Viewer | Flood Recovery Progress | Parks & Recreation |
| Contact Us | City Buses | Garbage Pickup | Public Safety |
| Subscribe | City Departments | Licenses, Permits & Taxes | Utility Bills |
| Bid Opportunities & Results | Report a Problem | Maps | FAQ |

Privacy Statement & Disclaimer

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Select Language ▼

Surficial Aquifers

The surficial aquifers are located within the unconsolidated materials above the bedrock surface. They are subdivided into alluvial, buried-channel, and drift aquifers.

The alluvial aquifers are deposits located along present-day watercourses. They consist of sands and gravels interbedded with less-permeable silts and clays and lie beneath the flood plains of larger rivers and creeks. In the eastern half of the report area, the Iowa, Cedar, Wapsipinicon, and Maquoketa Rivers as well as Buffalo Creek alternately flow through narrow bedrock gorges and wide flood plains (fig. 22). Thus the alluvial aquifers occur irregularly in the valleys of these rivers.

The buried-channel aquifers (fig. 23) are the unconsolidated material deposited by ancient streams that carved valleys prior to or between glacial

advances. Many of these ancient valleys were scoured deeply into the bedrock and are much wider than the valleys of present streams (fig. 24). Buried channels may be easily recognized on the bedrock topography map (fig. 25), but are only poorly expressed in the modern landscape. While they are not generally expressed as primary features of present topography, they exert noticeable influences on modern drainage. Prairie Creek near Cedar Rapids, Deep Creek near Preston, and the lower stretches of the Cedar, Wapsipinicon, and Maquoketa Rivers follow the courses of buried channels. See figures 22 and 23. In addition, most of the irregularly occurring alluvial aquifers in the eastern half of the report area are located where modern stream valleys intersect buried bedrock channels.



Approximate Site Location

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.

Figure 22.—Areal distribution of alluvial aquifers in east-central Iowa

FORM NO. 79 - In stock and for sale by Mid-West Prtg. Co., Tulsa W-2935

STATE IOWA CEDAR RAPIDS (LINN)
 NE/SE NE CENTRAL IOWA POWER CO-OP
 SEC. 3 Test hole No. 1
 TWP. 82N RGE. 7W COMMENCED COMPLETED



Art Bruinekool
 CASING RECORD
 LOGGED BY
 Aug 11, 1947 SEB+Gp.

REMARKS
 Elev. 722 ± S.W.L. 19.6' below L.S. - 8-11-47
 T.D. 75'

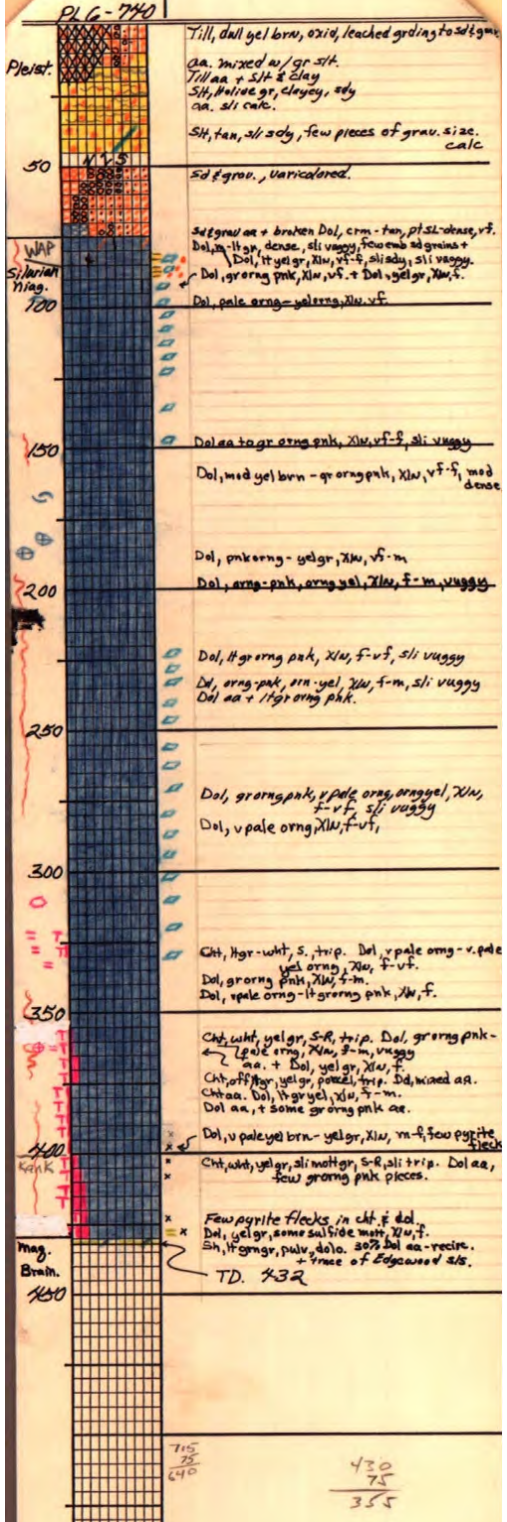
CB7-3



General	Construction	Logs	Stratigraphy	Water	Storage
---------	--------------	------	--------------	-------	---------

Identification		Location	
Date Received		State	Iowa
Owner Name	Hide-A-Way Manor	County	Linn
Alt Name		Quadrangle	Cedar Rapids South, Iowa
WNumber	38137	Township	T82N
PWTS ID		Range	R7W
Storet ID		Section	3
SDWIS ID	2411834	Quarter	SW NE NE
USGS ID		Latitude	41.9401300000
Project	SOURCE WATER PROTECTION	Longitude	-91.6478370000
Operator	Unknown	Accuracy	GPS +/- 20 m.
		UTM X	612089
		UTM Y	4644013
Site		Drilling	
Site Type	Drilled hole	Drilling Company	Unknown
Well Status	Active	Drilling Date	
Field Located		Drill Method	Unknown
Elevation	741 ft	Bedrock Depth	
Elevation Accuracy	Digital Elevation Model Accurate to 5 ft	Well Depth	142 ft
Landscape Position	Valley	Total Depth	142 ft
		Well Types	Public Access
		Aquifers	Silurian

STATE Iowa Cedar Rapids (Linna)
 SW NW SW NE Iowa Elec. L & P #5
 SEC. 3
 TWP. 82 RGE. 7W COMMENCED _____ COMPLETED 10/66
 Casing Record: Thorpe
 LOGGED July 1974 BY Gilmore
 REMARKS: El. 715 Top.
TD. 432'



STATE Iowa Cedar Rapids (Linn)

SENE SWNE Central Iowa Power #4

SEC. 3

TWP. 82 RGE. 7W COMMENCED 8-22-66 COMPLETED 9-17-66

Thorpe well co.

CASING RECORD
42" csg 0-5', 32" csg +1'-23', 24" csg

+17'-69'7", 16" csg +2'10"-90'

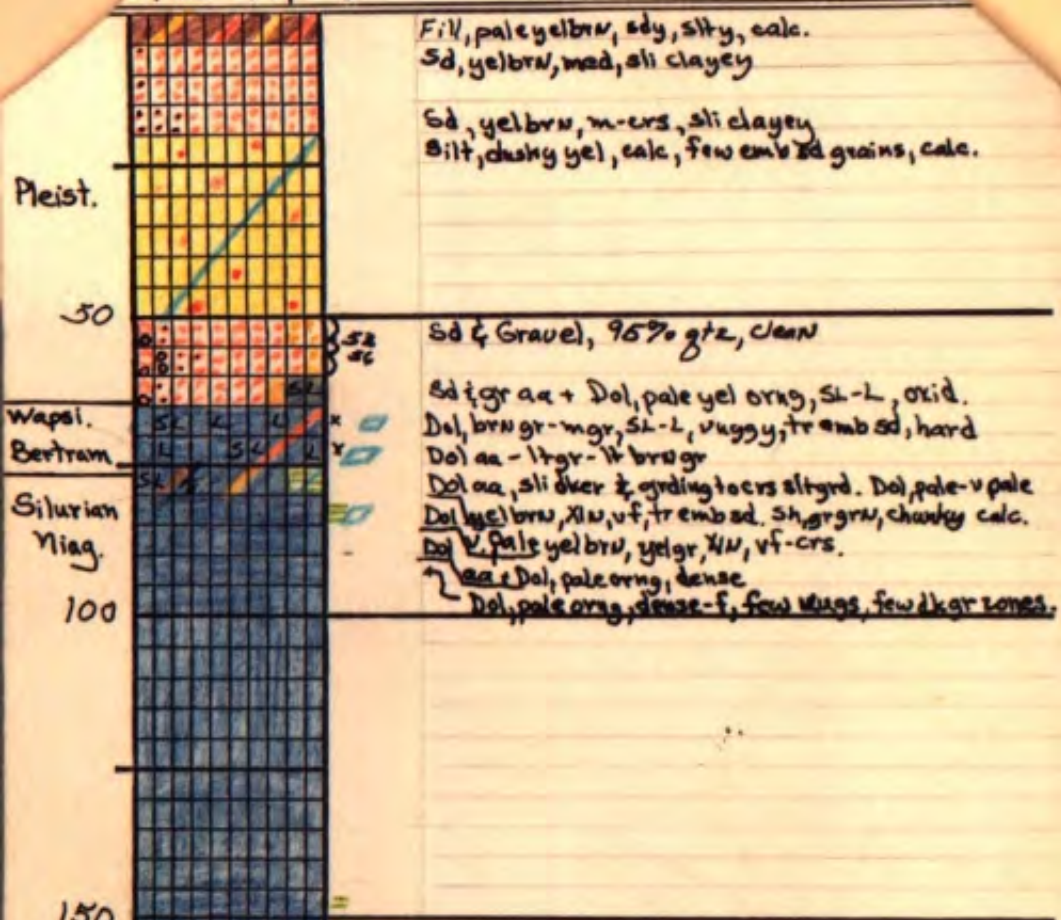
LOGGED 10-22-71 BY Gilmore

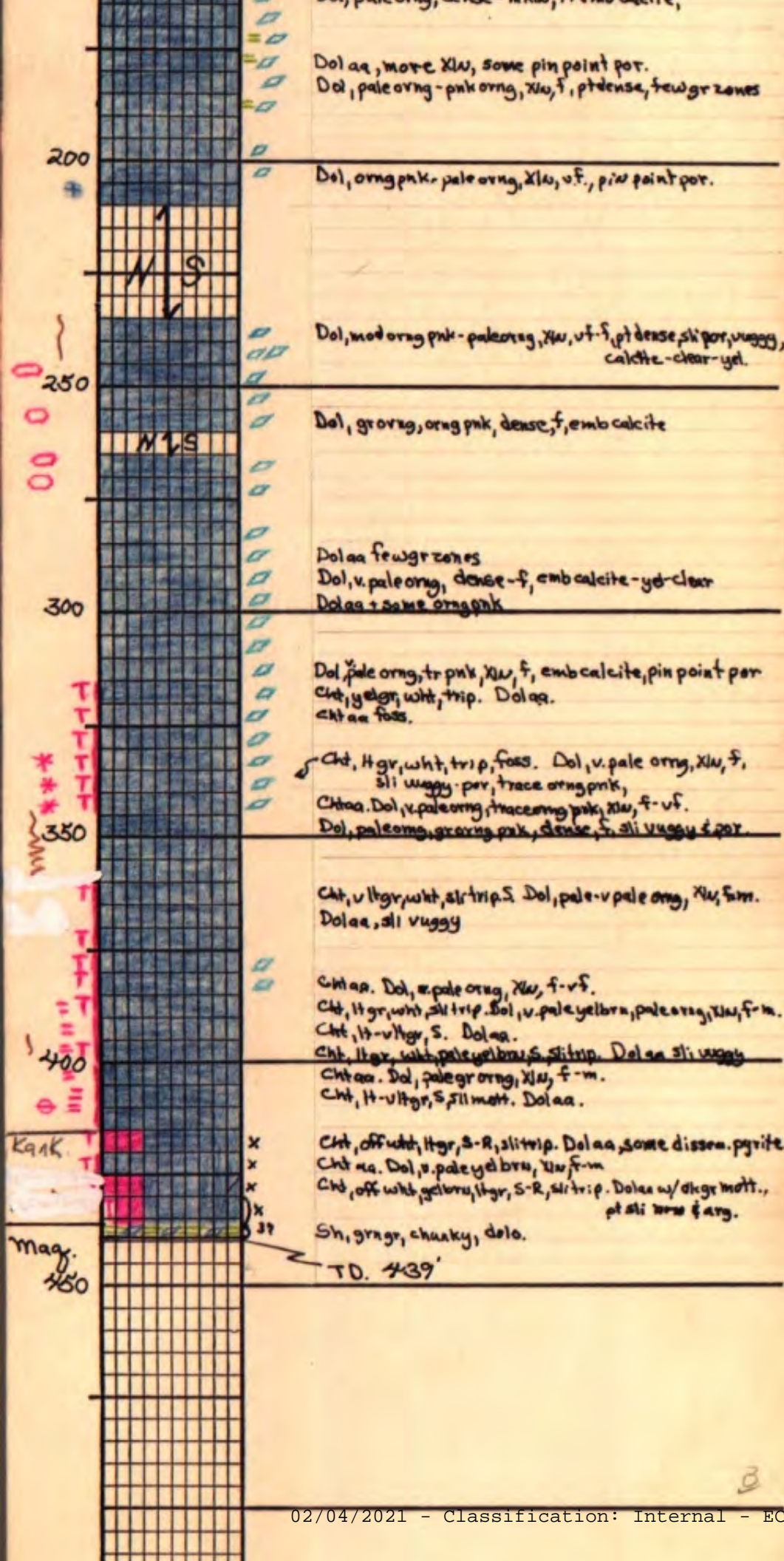
REMARKS
Cable tools

EL. 722' SWL-40-58', PL-113.9'

TD. 439' Yield-600 gpm

PL6-717

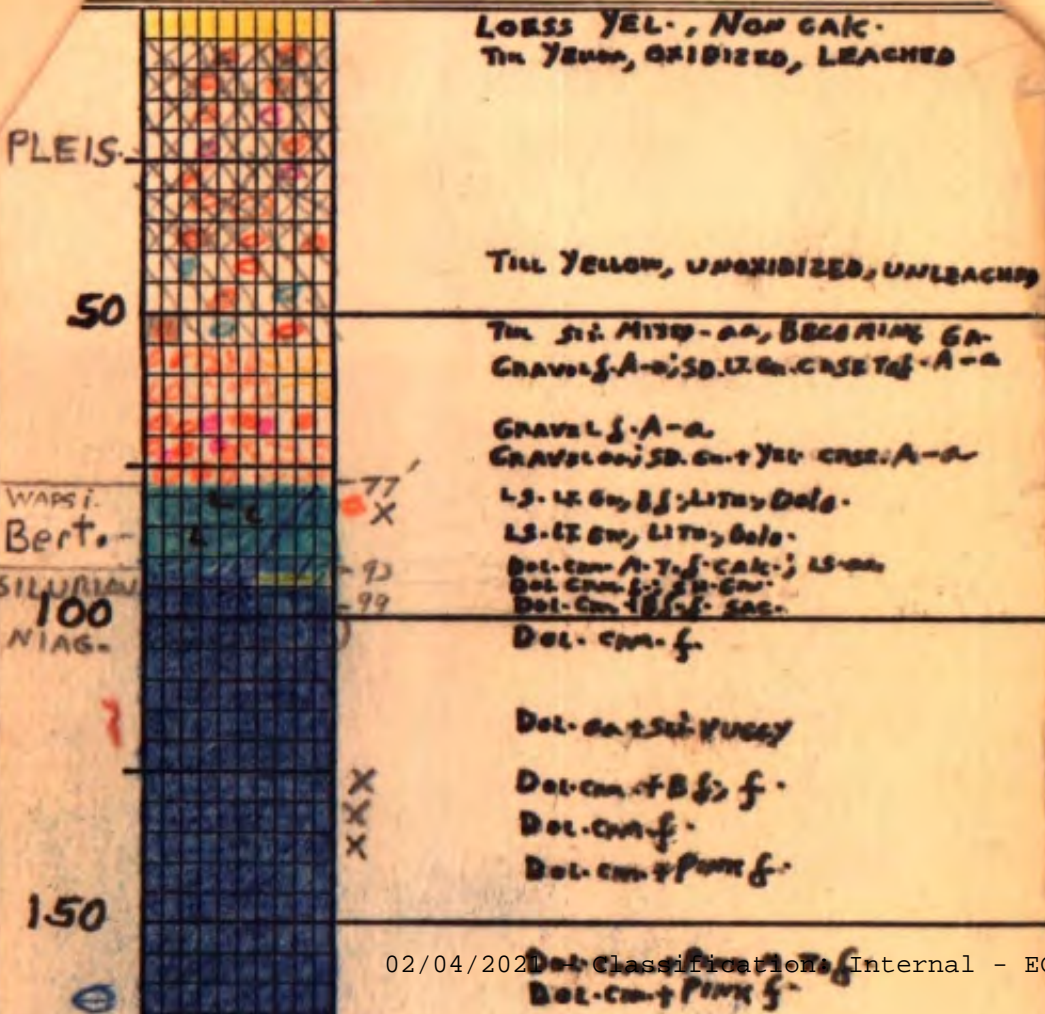




$$\begin{array}{r} 720 \\ 60 \\ \hline 660 \end{array}$$

$$\begin{array}{r} 722 \\ 436 \\ \hline 286 \end{array}$$

STATE		IOWA		CEDAR RAPIDS (LINN)	
NW NESENE APP. C NE SE		CENTRAL IOWA POWER COOP #3		(REA)	
SEC. 3		TWP. 82N RGE. 7W		COMMENCED AUG. 21 - SEPT. 14, 1956	
30 NW NESENE		HORG & AMES		COMPLETED	
CAGING RECORD		77' OF 20" CASING			
LOGGED		FEB. 25, 1957		BY NORTHROP	
REMARKS		EL 722'		SWL 38.67'	
TD		PL 144.9' @		SWL 39.12'	
EKS-1		SWL 145' @ 476 gpm			



Dol. Bl. + P. f.

Dol. Bl. f., sil. porous - some p. f.

200

Dol. con. + P. f. + porous
Dol. P. f., Vuggy
Dol. con. + P. f., Vuggy
Dol. con. + P. f., sil. porous

250

Dol. con. f.

Dol. con. + P. f.
Dol. mostly con. f. - some P. f.
Dol. con. f., sil. vuggy

Dol. con. + P. f. + sil. porous

300

CHZ. w. R. con., Tap; Dol. con. + P. f.
sil. porous
CHZ. con.; Dol. mostly con. f. sil. porous
Dol. con. + P. f. some P. f.

350

CHZ. w. R. con., Tap; Dol. con. + P. f.
CHZ. w. R. con., Tap, P. f.; Dol. con.
CHZ. w. R. con. + S. med.; Dol. con. + P. f.
CHZ. w. R. con., Tap; Dol. con. + P. f.
CHZ. w. R. con., S. med.; Dol. con.

400

CHZ. con. + R. con., Tap; Dol. con. + P. f.

KAK

X Dol. con. + P. f.
CHZ. w. R. con., Tap, + S. med.; Dol. con. + P. f.
CHZ. con.; Dol. con. f.
CHZ. con.; Dol. con. + sil. porous, CHZ. con.
Dol. con. + P. f.; sil. porous CHZ. con., Dol. con.
Lumpy

MAA
D. 111111

TD 434

450

722 722
95 77
627 645

500

Note: The location of this

The location of this well should be checked. The map provided by the Company indicates the plant is in the

NE 1/4 sec. 3-82-7W
Elev. should be checked also.

A set of geophysical logs was run 3-23-76. Caliper and radiation logs gave indications of major cavities from 200-220' and 300-320'. These

logs are on file with the Carbonate Hydrology Project data.

3-24-76
Bunker

LB

722
+30

292

FORM NO. 79 - in stock and for sale by Mid-West Prtg. Co., Tulsa, Ok. 3639

STATE
IOWA

SESE-NE-NE
SEC. **3**

TWP. **82N** RGE. **7W**

Cedar Rapids P.O. (Linw)

Central Iowa Power Co-op #1
(North) R.E.A.

COMMENCED **May 5, 1999** COMPLETED **June 1, 1999**

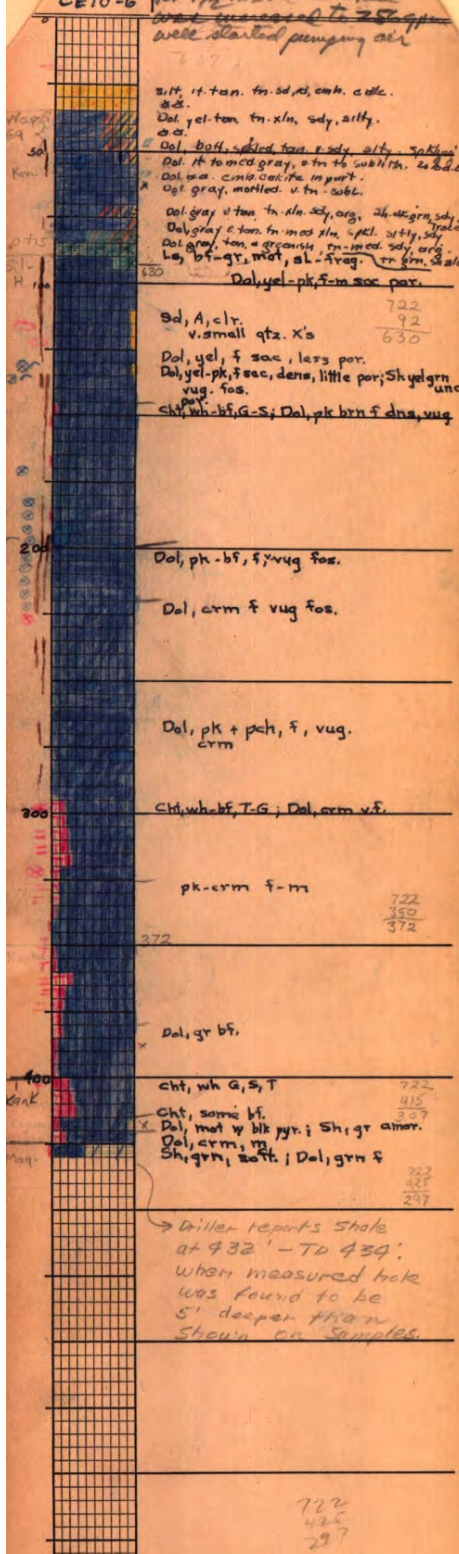
Hoes & Ames - Ed Martin

CASING RECORD
110' of 12" casing cemented in

20" hole - (open 12" hole balance)

LOGGED BY **M. Parker**

REMARKS
Pump setting 290'
2nd Prod. Test after 1st acid.
SWL. 24.50'
PWL 250±' @ 248 gpm
for 1/2 hrs. when rate
was increased to 250 gpm
well started pumping oil



STATE Iowa CEDAR RAPIDS (LINN)

NW-SW-NW Central Iowa Power Co-op #3(47)
 SEC. 2

TWP. 82N RGE. 7W COMMENCED August 13, 1947 COMPLETED

Pella Tank & Pipe Co. Bruner-Kool
 CASING RECORD
cased with 5 3/16" casing (removed)

LOGGED Aug. 25, 1947 BY M. Parker

REMARKS El. 715'
No water level data

T.O. 55'
Test hole abandoned

CB8-1



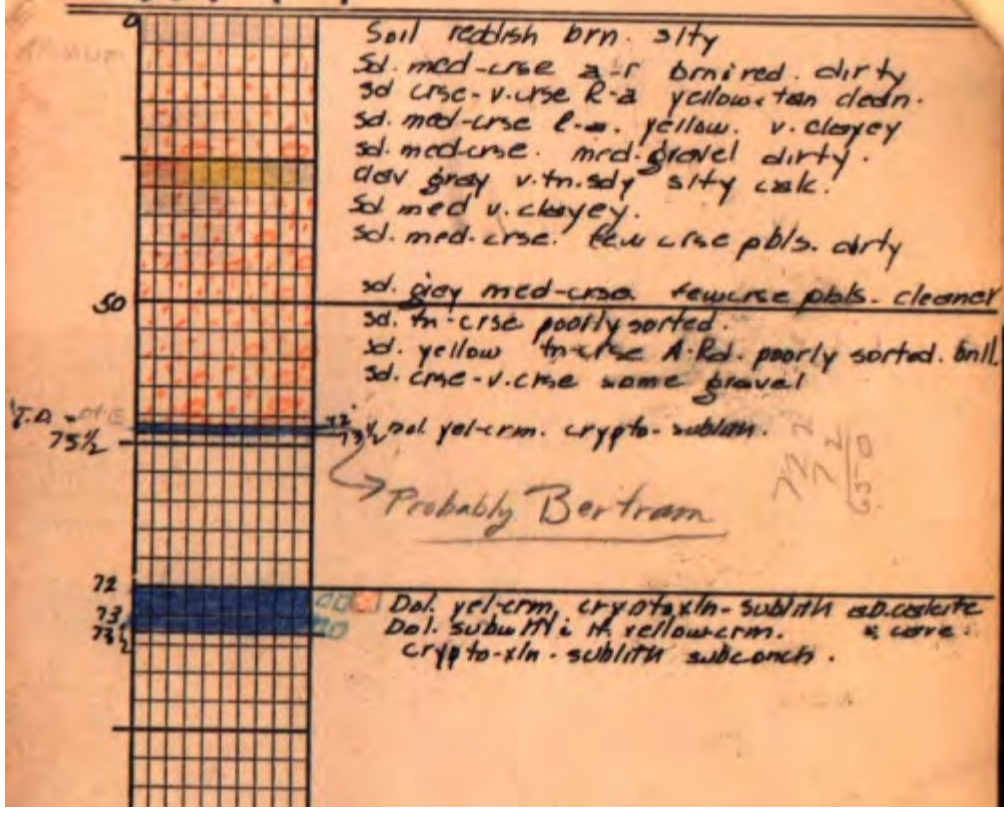
Top soil dk. brn. silty sdy.
 sd. fn-med. r.-a dirty clay tan v. sdy.
 sd. med-arse r.-a. dirty.
 sd. a.a. some gravel
 clay H. gray silty sdy v. silty calc
 a.a.
 Clay H. gray-tan v. sdy.
 clay a.a. r' sd. fn-med a-r.
 sd. med-arse a-r. dirty some gravel

$$\begin{array}{r} 715 \\ - 55 \\ \hline 660 \end{array}$$

FORM NO. 79 - In stock and for sale by Mid-West Prtg. Co., Tulsa W-2953

STATE <u>Iowa</u>		<u>CEDAR RAPIDS (LIVAK)</u>																	
NE-SE-NE SEC. <u>3</u>		<u>Central Iowa Power Coop. Test hole #</u>																	
TWP. <u>82N</u>	RGE. <u>7W</u>	COMMENCED	COMPLETED																
<table border="1"> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td><u>3</u></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>							<u>3</u>											Art Brunekool	
			<u>3</u>																
CASING RECORD <u>5 3/4" casing taken out</u>		LOGGED BY <u>Aug 13, 1947 M. Parker</u>																	
REMARKS <u>EL. 722⁻</u> <u>T.D. 73 1/2</u>																			

CB7-9



Identification

Date Received
Owner Name New Shack Tavern, The
Alt Name
WNumber 38138
PWTS ID
Storet ID
SDWIS ID 2409013
USGS ID
Project SOURCE WATER PROTECTION
Operator Unknown

Location

State Iowa
County Linn
Quadrangle Cedar Rapids South, Iowa
Township T82N
Range R7W
Section 2
Quarter NW SW NE
Latitude 41.9431790000
Longitude -91.6330300000
Accuracy GPS
UTM X 613311
UTM Y 4644371

Site

Site Type Drilled hole
Well Status Not Used
Field Located
Elevation 728 ft
Elevation Accuracy Digital Elevation Model Accurate to 5 ft
Landscape Position Valley

Drilling

Drilling Company Unknown
Drilling Date
Drill Method Unknown
Bedrock Depth
Well Depth 120 ft
Total Depth 120 ft
Well Types Public Access
Aquifers Silurian

Identification

Date Received
 Owner Name New Shack Tavern, The
 Alt Name
 WNumber 53968
 PWTS ID
 Storet ID
 SDWIS ID 2413414
 USGS ID
 Project SOURCE WATER PROTECTION
 Operator Unknown

Site

Site Type Drilled hole
 Well Status Not Used
 Field Located
 Elevation 731 ft
 Elevation Accuracy Digital Elevation Model Accurate to 5 ft
 Landscape Position Valley

Location

State Iowa
 County Linn
 Quadrangle Cedar Rapids South, Iowa
 Township T82N
 Range R7W
 Section 2
 Quarter NW SW NE
 Latitude 41.9431730000
 Longitude -91.6332960000
 Accuracy GPS +/- 20 m.
 UTM X 613289
 UTM Y 4644370

Drilling

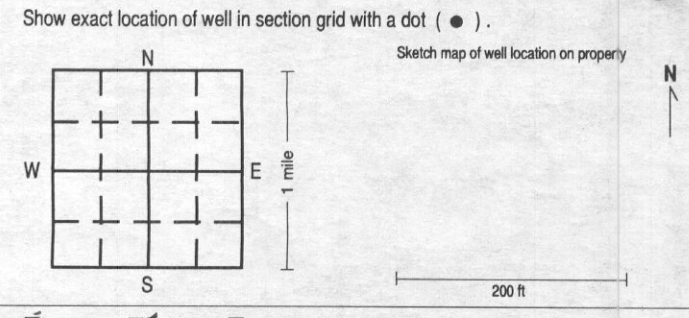
Drilling Company Unknown
 Drilling Date
 Drill Method Unknown
 Bedrock Depth
 Well Depth 40 ft
 Total Depth 40 ft
 Well Types Public Access
 Aquifers Alluvium

Site identification
 Property Owner Kloubec Aquaculture Well Number _____
 Address 3800 cst SW C.R.
 Tenant _____
 Well Depth 335 ft Date Completed 7/25/96

Drill method rotary auger cable other _____
Hole size
 18 inch from 0 ft to 20 ft hole size continued
 6 inch from 100 ft to 335 ft
 8 inch from 20 ft to 100 ft _____ inch from _____ ft to _____ ft

Location County Linn
 _____ mi. N and _____ mi. E of intersection of _____ and _____
 _____ mi. S and _____ mi. W
 1/4 of the _____ 1/4 of the _____ 1/4 of Sec 3 TWP 82 RNG 7 W

Casing Drive shoe (yes/no) Pitless adaptor (yes/no)
 Size (ID/OD) Type / Wt Depth top Depth bottom Amount (length)
6 SDR 21 PVC +1 100 101
~~5 1/2 SDR 21 PVC~~
4 1/2 SCH 40 PVC 95 215 120



Perforated or slotted casing? (yes/no)
 Perforated / slotted from 175 ft to 215 ft
 Perforated / slotted from _____ ft to _____ ft

upland hillside valley Elevation (if known) _____

Casing grouted? (yes/no)
 Type Depth Top Depth Bottom Amount
Benscol 0 20 25ACKS
Bentonite + Delecta 20 100

Formation log

From	To	Color	Hardness	Formation description
0	38	Yellow		Clay
38	78			Limestone
78	170			Devonian
170	335			Silurian

Well screen? (yes/no)
 Diameter Slot size Depth Top Depth Bottom Length Material

Bottom capped (yes/no) with _____
 Seals / Packers (yes/no) kind _____ depth _____ ft
 Gravel packed (yes/no) from _____ ft to _____ ft
 type _____ amount _____

Well developed? (yes/no)
 Explain A.R.

Pump installed? (yes/no) Date _____ / _____ / _____
 Installer's name SAVE
 Type of pump sub Depth to intake 200 ft
 Pump diameter 4 Rated capacity 70 GPM

Water information Aquifer: sand/gravel limestone sandstone
 Main water-supply zone from 175 ft to 335 ft
 Final water level (static water level) 110 ft below / above GL.
 Pumping water level 170 ft below GL; tape airline E-line EST
 At yield of 100 GPM; orifice volumetric estimate Date 7/25

Remarks (including depth of lost drilling fluids, materials, or tools)

Water quality test? (yes/no) Date tested _____ / _____ / _____
 Tested by _____
 Test results _____

Well use
 Domestic Municipal Industrial
 Livestock Public Supply Monitoring
 Test Well Irrigation Other _____ (explain)

Contractor Gingerich Well & Pump
 Address 13210 Locust Ave, Kalona
 Driller Kel Gingerich Certification no. 40046

Bedrock Aquifers

The bedrock hydrogeologic map (fig. 26) shows the aquifers and confining beds that make up the bedrock surface in east-central Iowa. Pennsylvanian confining beds are the bedrock in the extreme southwest corner of the area, in southeast Muscatine County and southwest Scott County, and in other small outlying localities. The Mississippian aquifer is found beneath the surficial deposits in most of the southwest part of the region. The Devonian confining beds comprise the bedrock surface in an area about 25 miles wide extending from the northwest corner to the south-central part of the report area. They have been partly or completely removed in parts of the Belle Plaine and Poweshiek buried bedrock channels.

The Devonian aquifer is the bedrock in a broad belt that parallels the northeast side of the Devonian confining beds. This belt is from 12 to 25 miles wide and extends from northern Benton and Linn Counties to the southern border of Muscatine County. The Devonian and Silurian aquifers are separated by an irregular zone of relatively thin shale occurring near the base of the Devonian and represented by a single line on figure 26.

The Silurian aquifer comprises the bedrock surface over most of the eastern half of the area. In the extreme northeastern border area the Ordovician confining beds are found at the bedrock surface. They also appear in several buried bedrock channels where the Silurian aquifer has been removed locally by erosion.

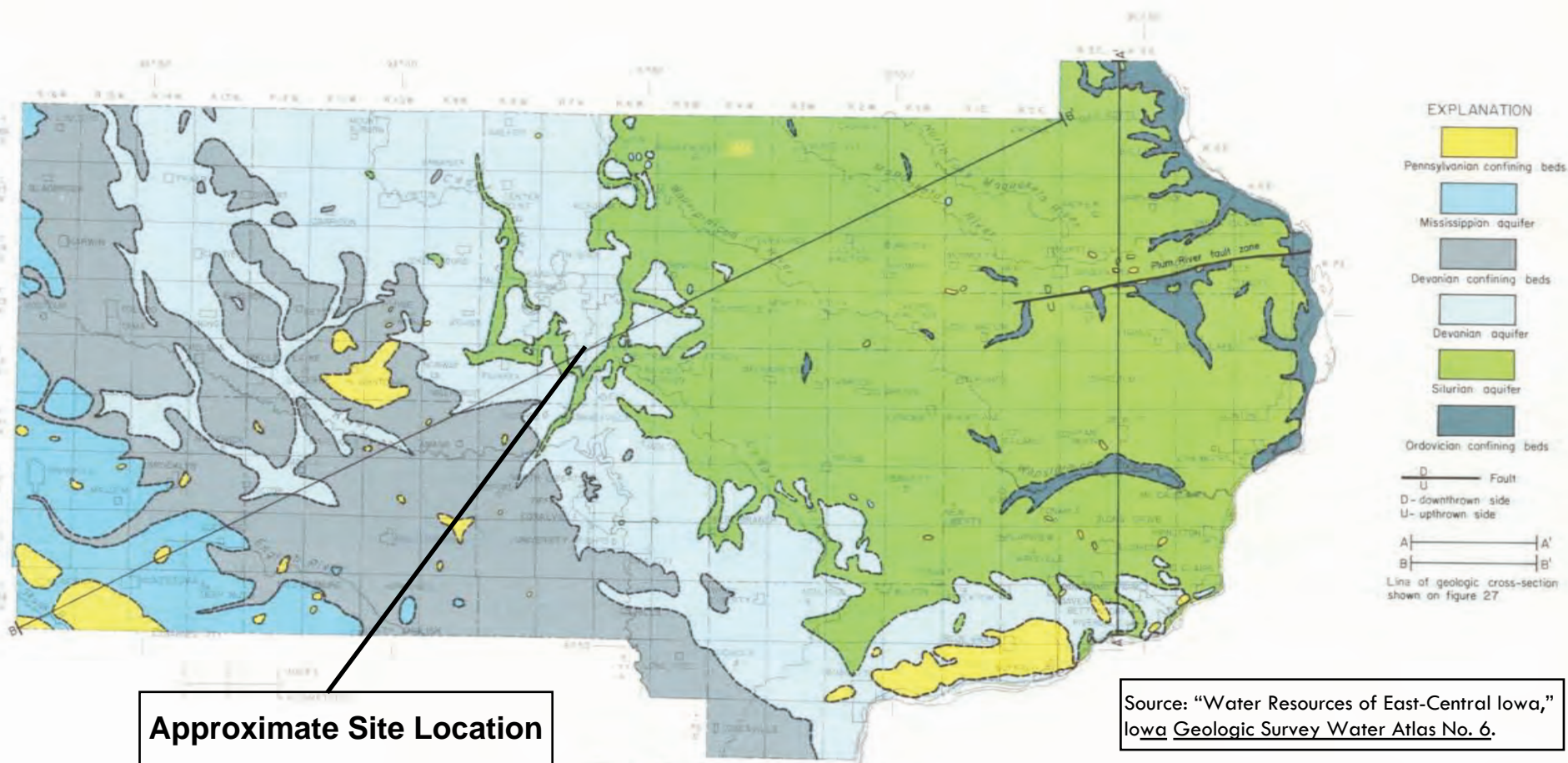


Figure 26.—Bedrock hydrogeologic map

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.

The Cambrian-Ordovician aquifer and the underlying Dresbach aquifer are not at the bedrock surface in east-central Iowa. These aquifers are shallowest in the northeastern part of the area; they slope southwest and become progressively deeper in the subsurface. Figure 27 shows that all the rock units are approximately parallel to each other and dip (slope) toward the southwest.

A major structural feature, the Plum River fault zone, extends approximately 30 miles through southern Jackson County and northwest Clinton County. This structure continues eastward approximately 40 miles into northwest Illinois, where it was originally recognized and mapped (Kolata and Buschbach, 1976). As much as 400 feet of vertical displacement has been inferred by the Illinois State Geological Survey in the vicinity of Savannah, Illinois, and similar displacements may occur in Iowa between Preston and Maquoketa. In the vicinity of Preston, an uplifted area south of the fault zone

is indicated by the anomalous presence of the Ordovician confining beds at the land surface. Preliminary results from an ongoing research drilling program in the Devonian and Silurian aquifers have indicated a possible extension of the structure as far west as southern Linn County, Iowa. The Plum River fault zone is probably quiescent, as no evidence of geologically recent movement along the fault has been found.

The fault zone has cut the various bedrock aquifers and confining beds, and faulting has placed them adjacent to rock units of dissimilar hydrologic characteristics (fig. 27). Depending on the local displacement or associated fracturing, the fault may serve either as a barrier to or a conduit for ground water movement. Where an aquifer is placed against a confining bed the fault may serve as an impediment to ground-water movement. Where two different aquifers are placed against one another by the fault there may be continuity between the two aquifers.

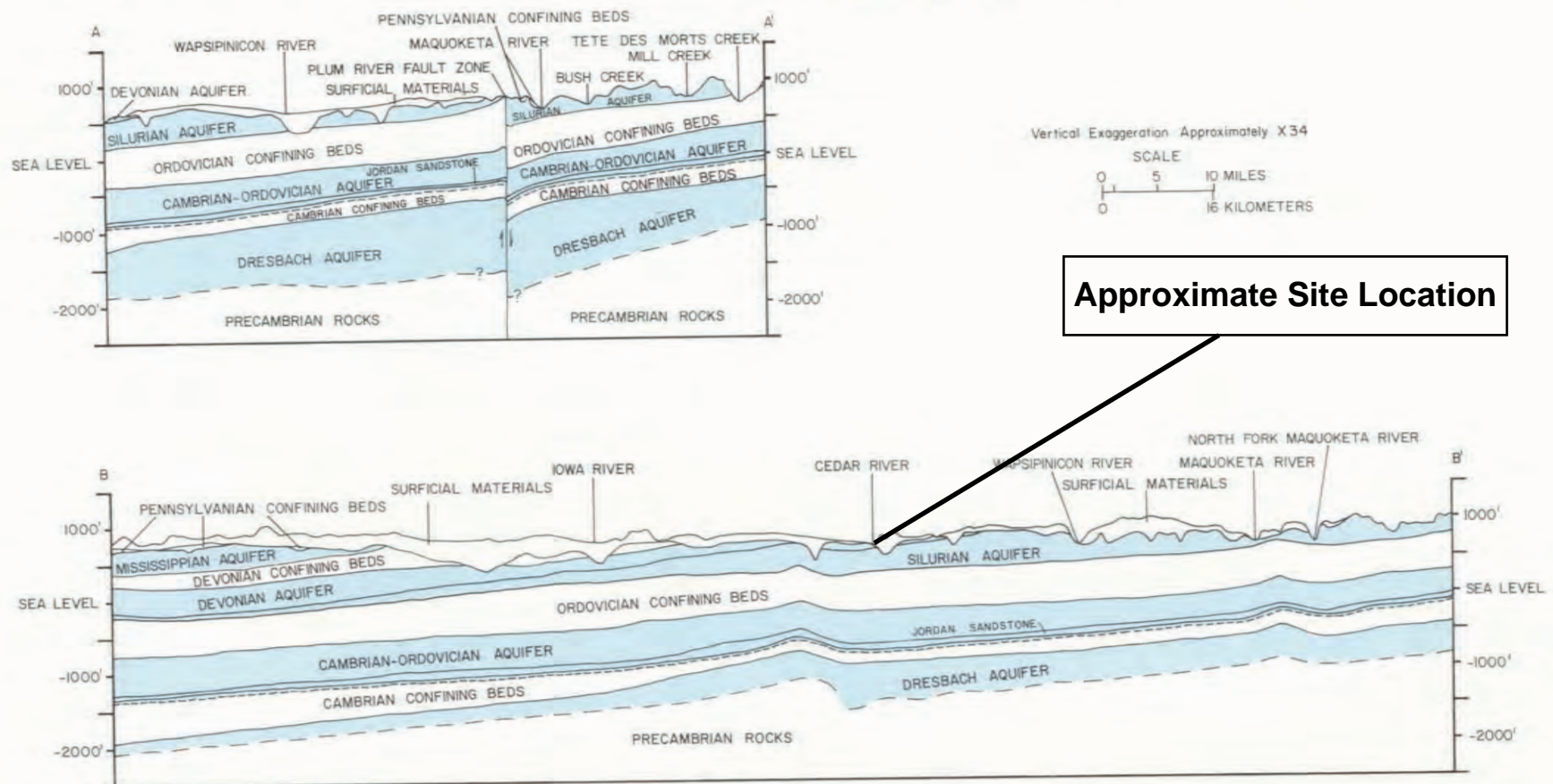



Figure 27.—Hydrogeologic cross sections

Source: "Water Resources of East-Central Iowa," Iowa Geologic Survey Water Atlas No. 6.



Appendix B
Boring Logs and Well Construction Documentation

SCS ENGINEERS

Environmental Consultants and Contractors

SOIL BORING LOG INFORMATION

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-301	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 10/31/2016		Date Drilling Completed 10/31/2016	
Unique Well No.		DNR Well ID No.		Common Well Name MW-301	
Final Static Water Level Feet		Surface Elevation 730.0 Feet		Borehole Diameter 8.5 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		State Plane 3,447,401 N, 5,426,409 E S/C/N		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
SW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____"		Long _____"	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	TOPSOIL.											
S1	19	3 4 4 6	3-4	SILT WITH SAND, very dark grayish brown (10YR 3/2).	ML			0.5		M					
S2	24	2 7 6 9	6-7	LEAN CLAY WITH SAND, dark grayish brown (10YR 4/2).	CL			0.3		M					
S3	22	3 3 4 6	8-9	POORLY GRADED SAND WITH SILT, dark yellowish brown (10YR 3/4), medium grained.	SP			0.4		M					
S4	23	3 4 4 5	11-12	SANDY SILT, dark yellowish brown (10YR 3/4).	ML			0.3		M					
S5	12	4 9 11 12	13-14	POORLY GRADED GRAVEL, dark yellowish brown (10YR 3/4), coarse grained.	GP			0.3		W					water at 12.5 ft bgs.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Mike Mueller</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Boring Number MW-301

Page 2 of 2

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments			
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200				
S6	17	5 11 11 11	17	POORLY GRADED GRAVEL, dark yellowish brown (10YR 3/4), coarse grained. (continued)	GP			0.3		W							
S7	17	5 8 9 9	18 19										W				
S8	23	2 2 1 4	20 21 22 23										W				
				End of boring at 23.5 ft bgs.													

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station SCS#: 25220057		License/Permit/Monitoring Number		Boring Number MW301A	
Boring Drilled By: Name of crew chief (first, last) and Firm Roy Buckenberger Cascade			Date Drilling Started 6/23/2020		Date Drilling Completed 6/23/2020
Unique Well No.	DNR Well ID No.	Common Well Name MW301A	Final Static Water Level Feet		Surface Elevation Feet
					Borehole Diameter 6.0 in
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane N, E S/C/N			Lat ° ' "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W
1/4 of	1/4 of Section	T N, R	Long ° ' "		Feet <input type="checkbox"/> S <input type="checkbox"/> W
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids, Iowa	









Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	36		1	Topsoil. 10YR3/4.	ML									
			2	Silt with trace fine sand. 10YR3/4.	ML				1.0	M				
2	36		3											
			4											
			5											
			6											
			7											
			8											
			9											
			10	No Return.										
			11											
			12											
			13											
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm SCS Engineers 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
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Boring Number MW301A

Page 2 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
3	60		16	Silty Sand. Fine Sand. Well Graded. 10YR3/4.	SM									
			17											
			18											
4	60		19	Tan and Rust colored Silty Sand. 2.5Y4/3 and 10YR3/4.	SM									
			20											
			21											
			22											
			23											
5	60		24	Silty Gravel. 2.5Y2.5/1	GM									
			25											
6	60		26	Lean Clay. Stiff and uniform. No coarse material. Grey. 5Y4/1.	CL					1.3	W			
			27											
			28											
			29											
			30											
			31											
			32											
7	60		33						1.0	W				
			34											
			35											
			36											
			37											
	38													
	39													
	40													

Boring Number MW301A

Page 3 of 3


Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments			
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200				
8	60		41	Lean Clay. Stiff and uniform. No coarse material. Grey. 5Y4/1. (continued)	CL				1.0	W							
		42															
43																	
44																	
45																	
46																	
47																	
9	60		48										1.0	W			
49																	
50																	
51																	
10	48		52						1.5	W							
53																	
54																	

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-302	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 10/31/2016		Date Drilling Completed 10/31/2016	
Unique Well No.		DNR Well ID No.		Common Well Name MW-302	
Final Static Water Level Feet		Surface Elevation 720.3 Feet		Borehole Diameter 8.5 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		State Plane 3,447,399 N, 5,426,146 E S/C/N		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
SW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____"		Long _____"	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	TOPSOIL.											
			2	SILT WITH SAND, very dark grayish brown (10YR 3/2).											
S1	5	14 89	3		ML			0.5		M					
			4												
			5	SILTY SAND, greenish gray (5GY6/1).	SM										
S2	14	23 37	6	POORLY GRADED SAND, greenish gray (5GY 6/1), coarse grained.				1.0		W					
			7												
			8	Same as above except, dark yellowish brown (10YR 3/4).											
S3	12	12 22	9					0.7		W					
			10												
S4	24	23 46	11		SP			0.5		W					
			12												
			13												
S5	14	12 22	14					0.5		W					
			15												
			16												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Boring Number MW-302

Page 2 of 2

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
56	23	2 3 4 4	17	SILT, greenish gray (5GY 6/1).	ML			0.3		W				
				End of boring at 17 ft bgs.										

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-303	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 12/6/2016		Date Drilling Completed 12/6/2016	
Drilling Method HSA		Unique Well No.		DNR Well ID No.	
Common Well Name MW-303		Final Static Water Level Feet		Surface Elevation 707.0 Feet	
Borehole Diameter 8.5 in		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 3,448,275 N, 5,425,166 E S/C/N		Lat _____ " <input type="checkbox"/> N <input type="checkbox"/> E		Feet <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section 3 , T 82 N, R 7 W		Long _____ "		Feet <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200			
S1	20	20 20 27 34	1	SILT, very dark grayish brown (10YR 3/2).	ML			0.2	M							
			2													
S2	12	2 17 20 21	3	POORLY GRADED SAND, very dark grayish brown (10YR 3/2), coarse grained.	SP			0.2	W							saturation @ 5ft.
			4													
			5													
S3	16	7 8 8 6	6	Same as above except, brown (10YR 5/3), trace fine gravel.	SP			0.2	W							
			7													
S4	17	4 3 3 3	8	Same as above except, brown (10YR 5/3), trace fine gravel.	SP			0.2	W							
			9													
S5	17	1 1 2 3	10	Same as above except, brown (10YR 5/3), trace fine gravel.	SP			0.2	W							
			11													
				End of boring at 15.5 ft bgs.												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-304	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 12/6/2016		Date Drilling Completed 12/6/2016	
Drilling Method HSA		Unique Well No. MW-304		Borehole Diameter 8.5 in	
DNR Well ID No.		Final Static Water Level Feet		Surface Elevation 707.1 Feet	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location			
State Plane 3,448,415 N, 5,425,664 E S/C/N		Lat _____ ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Long _____ ' _____ "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	6	50/0.2	1-3	SILT, very dark grayish brown (10YR 3/2),	ML			0.2		M				water in borehole at 3 ft bgs.
S2	5	65/77	4-6					0.3		W				saturation @ 5ft.
S3	5	34/69	7-9	POORLY GRADED SAND, very dark grayish brown, medium to coarse grained.						W				
S4	12	12/22	10-12		SP					W				
S5	23	46/68	13-15							W				
			15	SILTY CLAY, gray.	CL									
				End of boring at 15.5 ft bgs.										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Mike Mueller</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-305	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 12/5/2016		Date Drilling Completed 12/5/2016	
Unique Well No.		DNR Well ID No.		Common Well Name MW-305	
Final Static Water Level Feet		Surface Elevation 707.1 Feet		Borehole Diameter 8.5 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		State Plane 3,448,467 N, 5,425,930 E S/C/N		Local Grid Location	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____"		_____ N <input type="checkbox"/> E <input type="checkbox"/>	
		Long _____"		Feet <input type="checkbox"/> S <input type="checkbox"/> W <input type="checkbox"/>	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S1	17	13 5 6	1	SILT, very dark grayish brown (10YR 3/2), trace sand.	ML			0.2	M					water in borehole at 3 ft bgs.	
			2												
S2	12	13 4 5	6	POORLY GRADED SAND, dark brown (10YR 3/3), coarse sand.	SP			0.1	W					saturation @ 5ft.	
			7												
S3	18	11 3 4	8		SP			0.9	W						
			9												
S4	14	9 13 21 19	11		SP			0.4	W						
			12												
S5	16	14 15 23	13		CL				W						
			14												
				15	LEAN CLAY, very dark gray (10YR 3/1).										
				End of boring at 15.5 ft bgs.											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

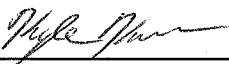
Signature	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
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Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25215135.60		License/Permit/Monitoring Number		Boring Number MW-306	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling		Date Drilling Started 11/2/2016		Date Drilling Completed 11/2/2016	
Unique Well No.		DNR Well ID No.		Common Well Name MW-306	
Final Static Water Level Feet		Surface Elevation 710.1 Feet		Borehole Diameter 8.5 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		State Plane 3,448,572 N, 5,426,326 E S/C/N		Local Grid Location	
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W		Lat _____ ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length At. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	9.5	4 5 5 5	1	SILT, dark yellowish brown (10YR 3/4).	ML	[Hatched]	[Hatched]	0.7	-	-	-	-	-	Plastic debris- water at 4 ft bgs
			4	POORLY GRADED SAND, very dark grayish brown (10YR 3/2), coarse grained.										
S2	14	11 11	6	SILT, very dark grayish brown (10YR 3/2).	ML	[Hatched]	[Hatched]	0.5	-	-	-	-	-	plastic debris
			7											
S3	NR	3 2 1 1	8		ML	[Hatched]	[Hatched]	-	-	-	-	-	-	plastic debris
			9											
S4	NR	1 1 2 3	11		ML	[Hatched]	[Hatched]	-	-	-	-	-	-	plastic debris
			12											
S5	10	1 2 3 3	13	POORLY GRADED SAND, vcrly dark gray (10YR 3/1), coarse grained.	SP	[Hatched]	[Hatched]	0.1	-	-	-	-	-	plastic and glass debris
			14											
			15											
			16											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
--	---	-----------------------------

Boring Number MW-306

Page 2 of 2

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S6	22	2 1 1 1	17 18	POORLY GRADED SAND, very dark gray (10YR 3/1), coarse grained. (continued)				0.4	W				plastic debris	
S7	19	2 1 1 1	19 20											
S8	6	2 1 1 2	21 22	Same as above except, dark gray (5Y 4/1).	SP			0.2	W					
S9	14	8 4 4 12	23 24											
S10	20	4 4 15 22	25 26											
S11	12	8 8 20 31	27 28 29					0.3	W					
			30	End of boring at 30.5 ft bgs.				0.2	W					

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station		SCS#: 25220057		License/Permit/Monitoring Number		Boring Number MW306A	
Boring Drilled By: Name of crew chief (first, last) and Firm Roy Buckenberger Cascade				Date Drilling Started 6/23/2020		Date Drilling Completed 6/23/2020	
Unique Well No.		DNR Well ID No.		Common Well Name MW306A		Final Static Water Level Feet	
						Surface Elevation Feet	
						Borehole Diameter 6.0 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane N, E S/C/N				Lat ° ' "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of 1/4 of Section , T N, R				Long ° ' "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids, Iowa			

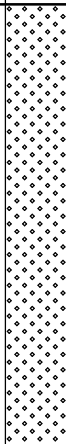

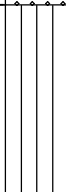

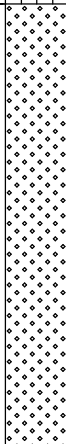





Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments		
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200			
1	60		1	Topsoil. Organic Material.	ML											
			2	Waste. Plastic wrapping. Soil.												
2	60		3	Tan/Brown soil/silt. 10YR3/4.	ML											
			4													
			5	Dark Black Sand and Silt. Well Graded. 10YR2/1.	SW											
3	60		6													
			7													
			8													
			9													
			10	Well Graded Sand. Light Grey. 2.5Y3/1.	SW											
			11													
			12	Silt with fine sand.	ML											
			13													
			14													
			15													

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm SCS Engineers 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
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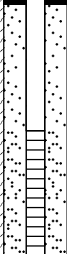
Boring Number MW306A

Page 2 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4	60		16	Well graded sand. 2.5Y3/1.	SW									
			17											
			18											
			19											
5	60		20	Silt with Sand. 5Y4/2.	ML									
			21											
			22											
			23											
6	60		24	Well Graded Sand.	SW									
			25											
			26											
			27											
7	60		28	Well Graded Sand.	SW									
			29											
			30											
			31											
8	60		32	Finer sand than above.	SW									
			33											
			34											
			35											

Boring Number MW306A

Page 3 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
9	60		41	Well Graded Sand. Fine sand to gravel. Some rocks greater than 1 inch in size.	SW									
			42											
			43											
			44											
			45											
10	60		46	Lean Clay. Soft. 2.5Y3/2. Sand Lens at 54 feet.	CL									
			47											
			48											
			49											
			50											
11	60		51	Lean Clay. Soft. 2.5Y3/2. Sand Lens at 54 feet.	CL									
			52											
			53											
			54											
			55											
12	60		56	Well Graded Sand. Fine to Coarse grained. Few fines.	SW									
			57											
			58											
			59											
			60											
		61												

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station		License/Permit/Monitoring Number SCS#: 25218184		Boring Number MW-307	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling, LP		Date Drilling Started 11/27/2018		Date Drilling Completed 11/27/2018	
		Common Well Name MW-307		Final Static Water Level 708.5 Feet	
		Surface Elevation 718.9 Feet		Borehole Diameter 6.5 in	

Local Grid Origin (estimated:) or Boring Location

State Plane **3,448,497 N, 5,426,934 E** S/C/N **Lat _____** N E
NE 1/4 of NE 1/4 of Section 3, T 83 N, R 7 W Long **_____** S W

Facility ID _____ County **Linn** Civil Town/City/ or Village **Cedar Rapids**

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	[]	[]	1	Topsoil and clay, black, (10YR 2/1), (Fill).			[Hatched]							
			2											
S2	[]	[]	3											
			4											
S3	[]	[]	5	Black ash? (Fill).			[Hatched]							
			6	LEAN CLAY, black (10YR 2/1), (Fill).	CL									
S4	[]	[]	7	SILT, dark gray/black, (5YR 3/1).	ML		[Vertical Lines]							
			8											
S5	[]	[]	9	LEAN CLAY, dark gray, (5YR 2.5/2).	CL		[Vertical Lines]							
			10											
			11											
			12											
			13											
			14	SILTY SAND, coarse sand, light brown, (2.5YR 3/1).	SM		[Vertical Lines]							
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *[Signature]* Firm **SCS Engineers** 3900 Kilroy Airport Way Long Beach, CA 90806 Tel: _____ Fax: _____

Boring Number **MW-307**

Page **2** of **2**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments			
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200				
S6			16	SILTY SAND, fine to medium, light brown, (2.5YR 4/4).	SM												
			17	SILTY SAND, medium to coarse, light brown, (2.5YR 5/4).													
S7			18		SM												
			19														
			20														
			21	End of boring at 21 feet below ground surface.													

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station		License/Permit/Monitoring Number SCS#: 25218184	Boring Number MW-308	
Boring Drilled By: Name of crew chief (first, last) and Firm Mike Mueller Cascade Drilling, LP		Date Drilling Started 11/27/2018	Date Drilling Completed 11/27/2018	Drilling Method sonic
Common Well Name MW-308		Final Static Water Level 711.5 Feet	Surface Elevation 717.5 Feet	Borehole Diameter 6.5 in
Local Grid Origin <input type="checkbox"/> (estimated <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location		
State Plane 3,448,434 N, 5,426,646 E S/C/N		Lat _____"		<input type="checkbox"/> N <input type="checkbox"/> E
NE 1/4 of NE 1/4 of Section 3, T 83 N, R 7 W		Long _____"		<input type="checkbox"/> S <input type="checkbox"/> W
Facility ID	County Linn	Civil Town/City/ or Village Cedar Rapids		

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			0	Topsoil, black.											
S1			1	LEAN CLAY, black, (2.5YR 2.5/1), (Fill).	CL										
S2			4	LEAN CLAY, brown, (2.5YR 4/4), (Fill).	CL				1.5						
S3			6	Ash, black, (2.5YR 3/1), (Fill).											
S4			8	LEAN CLAY with silt, gray, (5YR 5/1).	CL										
S5			9		CL										
S6			10	SANDY SILT, dark gray, (5YR 2.5/1).											
			11		ML										
S7			14	Same as above but (5YR 2.5/2).											
			15												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers 3900 Kilroy Airport Way Long Beach, CA 90806	Tel: Fax:
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Boring Number MW-308

Page 2 of 2

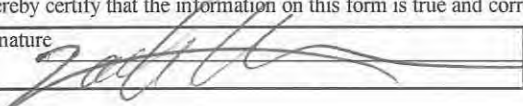
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			16	SANDY SILT, dark gray, (5YR 2.5/1). (continued)										
SB			17	Same as above but (5YR 2.5/1).	ML						W			
			18											
			19											
SB			20	SILTY SAND, coarse, (5YR 4/2).	SM						W			
			21	End of boring at 21 feet below ground surface.										

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other

Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25218218.00		License/Permit/Monitoring Number		Boring Number MW-309	
Boring Drilled By: Name of crew chief (first, last) and Firm Jeff Crank Roberts Environmental Drilling, Inc.		Date Drilling Started 8/5/2019		Date Drilling Completed 8/5/2019	
Unique Well No.		DNR Well ID No.		Common Well Name MW-309	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		Final Static Water Level Feet MSL		Surface Elevation 708.1 Feet MSL	
State Plane 3,448,466 N, 5,425,409 E S/C/N		Lat ° ' "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NW 1/4 of NE 1/4 of Section 3 , T 82 N, R 7 W		Long ° ' "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments		
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200			
S1	8	13 34	1	SILT, dark brown, (10YR 2/1), with sand, trace gravel.	ML											
S2	18	33 23	2-3	SILTY SAND.	SM											
S3	12	11 12	4-5	SILT, with sand, brown, (10YR 3/2), soft.	ML											
S4	12	22 12	6-7	SILTY SAND, mottled grey, tan, and brown.	SM											
S5	20	01 21	8-9	Variable color - grey, rust, and tan. Coarser sand.	SM											
S6	12	00 11	10-11	POORLY GRADED SAND, coarse, some fine and medium sand.	SP											
S7	12	11 33	12-13	With organic material.	SP											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers	Tel: Fax:
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Boring Number **MW-309**

Page **2** of **2**

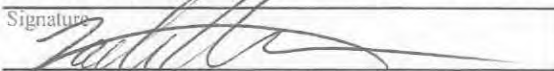
Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
58	12	12 4 5												
			16		SP									
			17	End of Boring.										Blind drilled from 16' to 17'

Route To: Watershed/Wastewater Waste Management
 Remediation/Redevelopment Other



Facility/Project Name IPL - Prairie Creek Generating Station SCS#: 25218218.00		License/Permit/Monitoring Number		Boring Number MW-310	
Boring Drilled By: Name of crew chief (first, last) and Firm Jeff Crank Roberts Environmental Drilling, Inc.			Date Drilling Started 8/6/2019		Date Drilling Completed 8/6/2019
Drilling Method 4 1/4" hollow stem auger	WI Unique Well No.	DNR Well ID No.	Common Well Name MW-310	Final Static Water Level Feet MSL	Surface Elevation 708.09 Feet MSL
Borehole Diameter 8.5 in.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>	State Plane 3,448,623 N, 5,425,792 E S/C/N	Lat _____ "	Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> S	Feet <input type="checkbox"/> E <input type="checkbox"/> W
NW 1/4 of NE 1/4 of Section 3, T 82 N, R 7 W	Long _____ "	County Linn	County Code	Civil Town/City/ or Village Cedar Rapids	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments				
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200					
S1	12	12 24	1	SILTY SAND, brown, (10YR 2/1), (topsoil).														
			2		SM													
S2	2	66 44	3															
			4															
S3	10	44 23	5	LEAN CLAY, brown, (10YR 2/1), some lenses of silty sand, organic material.														
			6		CL													
S4	6	31 12	7															
			8															
S5	20	32 11	9	SILTY SAND, coarse.														
			10															
S6	18	32 11	11		SM													
			12															
S7	12	11 22	13															
			14															
			15	SILTY GRAVEL, with sand.	GM													

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: 608-224-2830 Fax:
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This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number		MW-310						Use only as an attachment to Form 4400-122.						Page 2 of 2					
Sample	Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments				
										Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200					
	88	12	1 4 5 4	16 17	End of Boring.	GM													Blind drilled from 16' to 17'

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station SCS#: 25220057		License/Permit/Monitoring Number		Boring Number MW310A	
Boring Drilled By: Name of crew chief (first, last) and Firm Roy Buckenberger Cascade		Date Drilling Started 7/23/2020		Date Drilling Completed 7/23/2020	
Unique Well No.		DNR Well ID No.		Common Well Name MW310A	
Final Static Water Level Feet		Surface Elevation Feet		Borehole Diameter 6.0 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane N, E S/C/N		Lat ° ' "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of T N, R		1/4 of Section , T N, R		Long ° ' "	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids, Iowa	










Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	60		1	Topsoil. Organic material, roots and plant material.	ML									
			2	Lean Clay. Soft, trace coarse material. 2.5Y3/2.	CL									
2	60		3						0.5	W				
			4											
3	60		5	Fine to Coarse Sand. Well Graded Sand. 2.5Y3/1.	SW						W			
			6											
			7											
			8											
			9											
			10											
			11											
			12											
			13											
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm SCS Engineers 2830 Dairy Dr., Madison, WI 53718	Tel: Fax:
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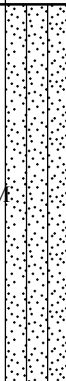
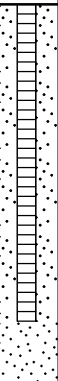
Boring Number MW310A

Page 2 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4	60		16	Lean Clay, trace coarse material (Fine Sand). 5Y4/1.	CL				1.5	W				
			17											
			18											
			19											
5	60		20	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			21											
			22											
			23											
			24											
			25											
6	60		26	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			27											
			28											
			29											
			30											
			31											
7	60		32	Silt with gravel.	ML					W				
			33											
			34											
			35											
8	60		36	Well graded sand with silt and gravel. 5Y4/2.	SW-SM					W				
			37											
			38											
			39											
			40											

Boring Number MW310A

Page 3 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
9	60		41 42 43 44 45 46	Well graded sand with silt and gravel. 5Y4/2. (continued)	SW-SM					W				



IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.:
Well or Piezometer No: MW-301
Dates Started: 10/31/16 Date Completed: 10/31/16

A. SURVEYED LOCATIONS AND ELEVATIONS
B. SOIL BORING INFORMATION
Locations (± 0.5 ft): Specify corner of site: SE of parcel 19031-51001-00000
Distance & direction along boundary: 145' W
Distance & direction from boundary to wall: 76' N
Elevations (± 0.01 ft MSL): Ground Surface: 729.95
Top of protective casing: 732.97
Top of well casing: 732.55
Benchmark elevation:
Benchmark description:
Name & Address of Construction Company: Cascade Drilling, LP
301 Alderson St
Schofield, WI 54476
Name of Driller: Mike Mueller
Drilling Method: HSA
Drilling Fluid: NA
Bore Hole Diameter: 8.5 inch
Soil Sampling Method: Spoon
Depth of Boring: 23.5 ft

C. MONITORING WELL INSTALLATION
Casing material: PVC sch 40
Length of casing: 12.5 ft
Outside casing diameter: 2.38"
Inside casing diameter: 2"
Casing joint type: threaded
Casing/screen joint type: threaded
Screen material: PVC
Screen opening size: 0.010"
Screen length: 10 ft
Depth of well: 22.5 ft
Filter Pack:
Material: Red Flint
Grain size: #40
Volume: 300 lbs
Seal (minimum 3 ft length above filter pack):
Material: 3/8 inch bentonite chips
Placement method: Gravity
Volume: 200 lbs
Backfill (if different from seal):
Material:
Placement method:
Volume:
Surface seal design:
Material of protective casing: Steel 6 inch
Material of grout between protective casing and well casing: sand
Protective cap:
Material: Steel, vented
Vented: [X] Yes [] No Locking: [] Yes [] No
Well Cap:
Material: PVC
Vented: [] Yes [X] No

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)
Water level: 16.27 Stabilization Time: ~5 min
Well development method: Pump and surge block
Average depth of frostline:

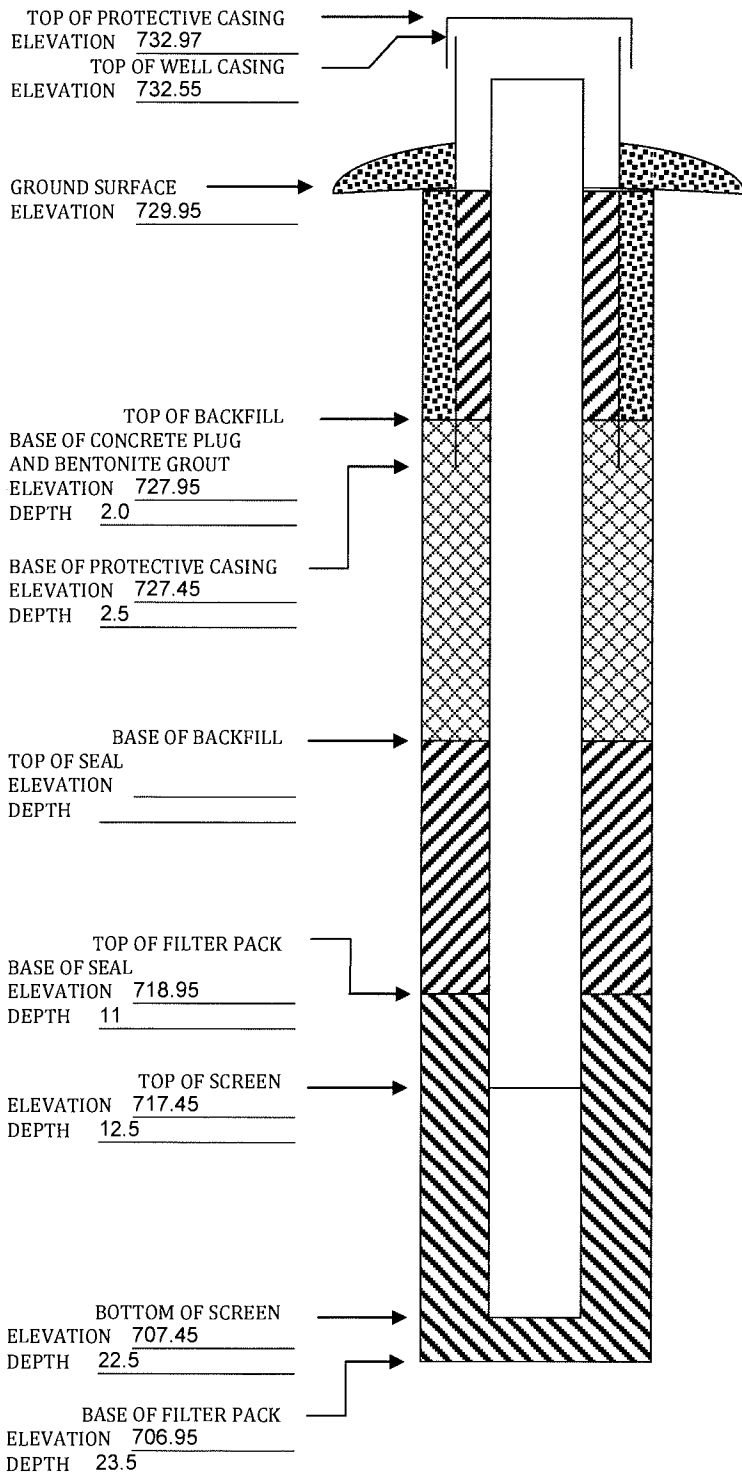
Attachments: Driller's log, Pipe schedules and grouting schedules, 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name Prairie Creek Generating Station Permit No. _____
Well or Piezometer No. MW301A Dates Started 6/23/2020 Date Completed 6/24/2020

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site SE of parcel 19031-51001-00 Distance and direction along boundary 145' W
Distance and direction from boundary to surface monitoring well 80' N
Elevation (+0.01 ft. MSL) _____
Ground Surface 729.40 Top of protective casing 732.45
Top of well casing 732.07 Benchmark elevation _____
Benchmark description On-site benchmark. NAVD_88 datum elevations.

B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476
Name of driller Mike Mueller
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches
Soil sampling method 5 foot sections Depth of boring 54 feet

C. MONITORING WELL INSTALLATION


Casing material <u>PVC</u>	Placement method <u>Tremie Pipe</u>
Length of casing <u>56 feet</u>	Volume <u>7.5 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cememt</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>53 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Plastic</u>
Volume <u>1.3 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Grout</u>	
Material <u>Bentonite Grout</u>	

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level 27.75 Stabilization time <5 minutes
Well development method Surged & purged
Average depth of frost line 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature  Certification # 9362 Date 6-24-2020

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

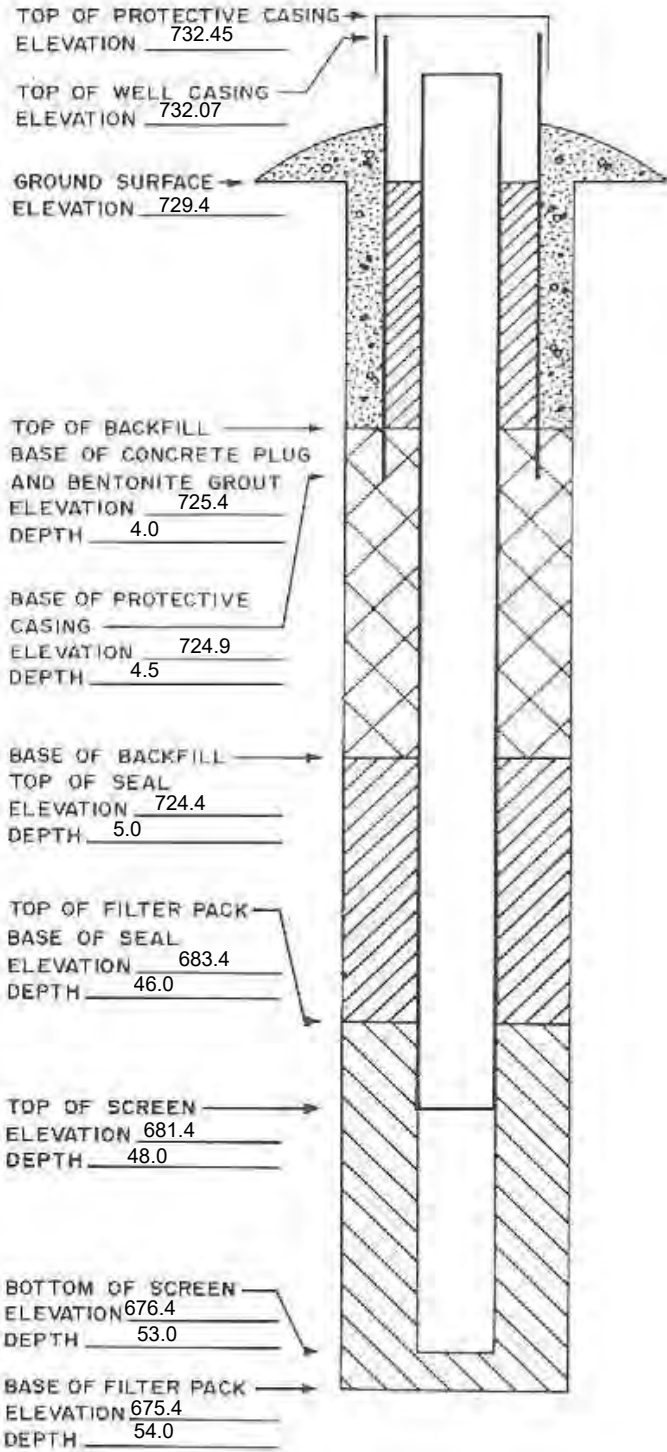
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

09/2017 cmc

DNR Form 542-1277

ELEVATIONS: ± 0.01 FT. MSL
 DEPTHS: ± 0.1 FT. FROM
 GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
 (SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)





IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: _____

Well or Piezometer No: MW-302

Dates Started: 10/31/16 Date Completed: 10/31/16

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft): _____

Specify corner of site: SE of parcel 19031-51001-00000

Distance & direction along boundary: 462' W

Distance & direction from boundary to wall: 79' N

Elevations (± 0.01 ft MSL): _____

Ground Surface: 720.29

Top of protective casing: 723.27

Top of well casing: _____ 722.68

Benchmark elevation: _____

Benchmark description: _____

B. SOIL BORING INFORMATION

Name & Address of Construction Company: _____

Cascade Drilling, LP

301 Alderson St

Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: NA

Bore Hole Diameter: 8.5 inch

Soil Sampling Method: Spoon

Depth of Boring: 23.5 ft

C. MONITORING WELL INSTALLATION

Casing material: _____ PVC sch 40

Length of casing: _____ 5 ft

Outside casing diameter: _____ 2.38"

Inside casing diameter: _____ 2"

Casing joint type: _____ threaded

Casing/screen joint type: threaded

Screen material: _____ PVC

Screen opening size: 0.010"

Screen length: _____ 10 ft

Depth of well: _____ 15 ft

Filter Pack: _____

Material: _____ Red Flint

Grain size: _____ #40

Volume: _____ 300 lbs

Seal (minimum 3 ft length above filter pack): _____

Material: 3/8 inch bentonite chips

Placement method: Gravity

Volume: 50 lbs

Backfill (if different from seal): _____

Material: _____

Placement method: _____

Volume: _____

Surface seal design: _____

Material of protective casing: Steel 6 inch

Material of grout between protective casing and well casing: sand

Protective cap: _____

Material: Steel, vented

Vented: Yes No Locking: Yes No

Well Cap: _____

Material: PVC

Vented: Yes No

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)

Water level: 6.39 Stabilization Time: ~5 min

Well development method: Pump and surge block

Average depth of frostline: _____

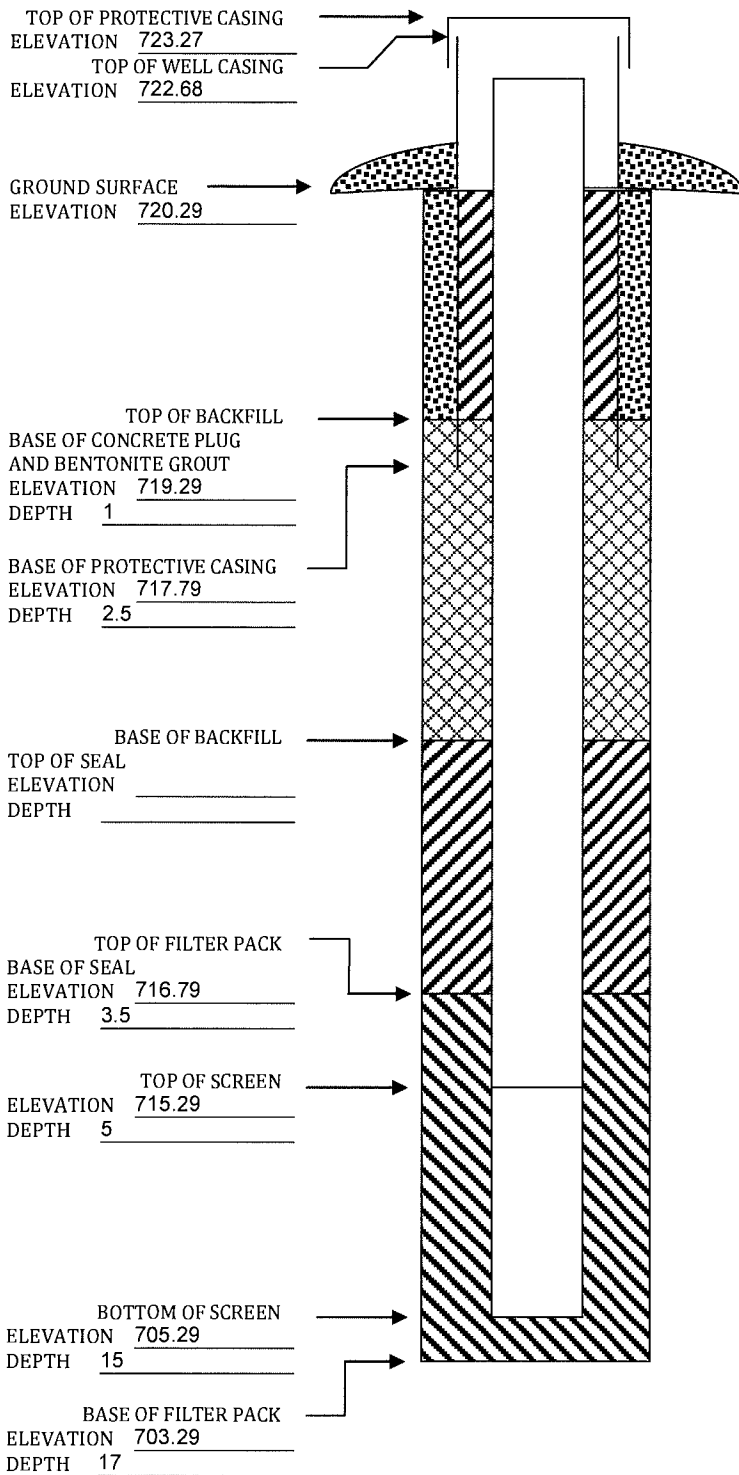
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)





IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: _____
 Well or Piezometer No: MW-303
 Dates Started: 12/6/16 Date Completed: 12/6/16

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft): _____
 Specify corner of site: NE of parcel 19032-01001-00000
 Distance & direction along boundary: 2,348' NW
 Distance & direction from boundary to wall: 1,477' S
 Elevations (± 0.01 ft MSL): _____
 Ground Surface: 706.95
 Top of protective casing: 709.85
 Top of well casing: _____ 709.46
 Benchmark elevation: _____
 Benchmark description: _____

B. SOIL BORING INFORMATION

Name & Address of Construction Company: _____
Cascade Drilling, LP
301 Alderson St
Schofield, WI 54476
 Name of Driller: Mike Mueller
 Drilling Method: HSA
 Drilling Fluid: NA
 Bore Hole Diameter: 8.5 inch
 Soil Sampling Method: Spoon
 Depth of Boring: 15.5 ft

C. MONITORING WELL INSTALLATION

<p>Casing material: <u>PVC sch 40</u> Length of casing: <u>4.5 ft</u> Outside casing diameter: <u>2.38"</u> Inside casing diameter: <u>2"</u> Casing joint type: <u>threaded</u> Casing/screen joint type: <u>threaded</u> Screen material: <u>PVC</u> Screen opening size: <u>0.010"</u> Screen length: <u>10 ft</u> Depth of well: <u>14.5 ft</u> Filter Pack: _____ Material: <u>Red Flint</u> Grain size: <u>#40</u> Volume: <u>300 lbs</u> Seal (minimum 3 ft length above filter pack): _____ Material: <u>3/8 inch bentonite chips</u></p>	<p>Placement method: <u>Gravity</u> Volume: <u>50 lbs</u> Backfill (if different from seal): _____ Material: _____ Placement method: _____ Volume: _____ Surface seal design: _____ Material of protective casing: <u>Steel 6 inch</u> Material of grout between protective casing and well casing: <u>sand</u> Protective cap: _____ Material: <u>Steel, vented</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Locking: <input type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: _____ Material: <u>PVC</u> Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
--	--

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)

Water level: 5.81 Stabilization Time: ~ 5 min
 Well development method: Pump and surge block
 Average depth of frostline: _____

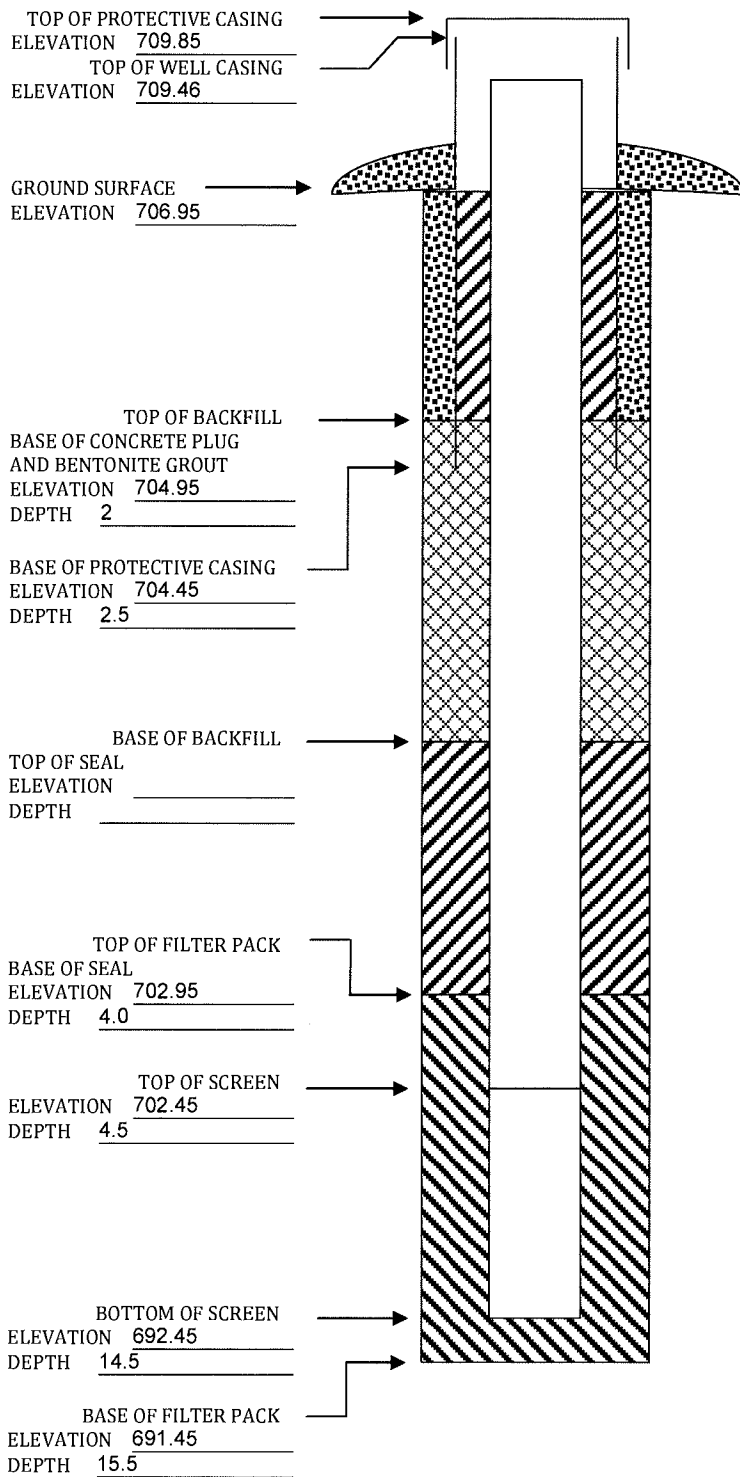
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)





IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: _____
 Well or Piezometer No: MW-304
 Dates Started: 12/6/16 Date Completed: 12/6/16

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft): _____
 Specify corner of site: NE of parcel 19032-01001-00000
 Distance & direction along boundary: 1878' NW
 Distance & direction from boundary to wall: 1,317' S
 Elevations (± 0.01 ft MSL): _____
 Ground Surface: 707.07
 Top of protective casing: 710.12
 Top of well casing: _____ 709.66
 Benchmark elevation: _____
 Benchmark description: _____

B. SOIL BORING INFORMATION

Name & Address of Construction Company: _____
Cascade Drilling, LP
301 Alderson St
Schofield, WI 54476
 Name of Driller: Mike Mueller
 Drilling Method: HSA
 Drilling Fluid: NA
 Bore Hole Diameter: 8.5 inch
 Soil Sampling Method: Spoon
 Depth of Boring: 15.5 ft

C. MONITORING WELL INSTALLATION

Casing material: <u>PVC sch 40</u>	Placement method: <u>Gravity</u>
Length of casing: <u>4.5 ft</u>	Volume: <u>50 lbs</u>
Outside casing diameter: <u>2.38"</u>	Backfill (if different from seal): _____
Inside casing diameter: <u>2"</u>	Material: _____
Casing joint type: <u>threaded</u>	Placement method: _____
Casing/screen joint type: <u>threaded</u>	Volume: _____
Screen material: <u>PVC</u>	Surface seal design: _____
Screen opening size: <u>0.010"</u>	Material of protective casing: <u>Steel 6 inch</u>
Screen length: <u>10 ft</u>	Material of grout between protective casing and well casing: <u>sand</u>
Depth of well: <u>14.5 ft</u>	Protective cap: _____
Filter Pack: _____	Material: <u>Steel, vented</u>
Material: <u>Red Flint</u>	Vented: <input type="checkbox"/> Yes <input type="checkbox"/> No Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Grain size: <u>#40</u>	Well Cap: _____
Volume: <u>300 lbs</u>	Material: <u>PVC</u>
Seal (minimum 3 ft length above filter pack): _____	Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Material: <u>3/8 inch bentonite chips</u>	

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)

Water level: 5.89 Stabilization Time: ~ 5 min
 Well development method: Bailer and surge block
 Average depth of frostline: _____

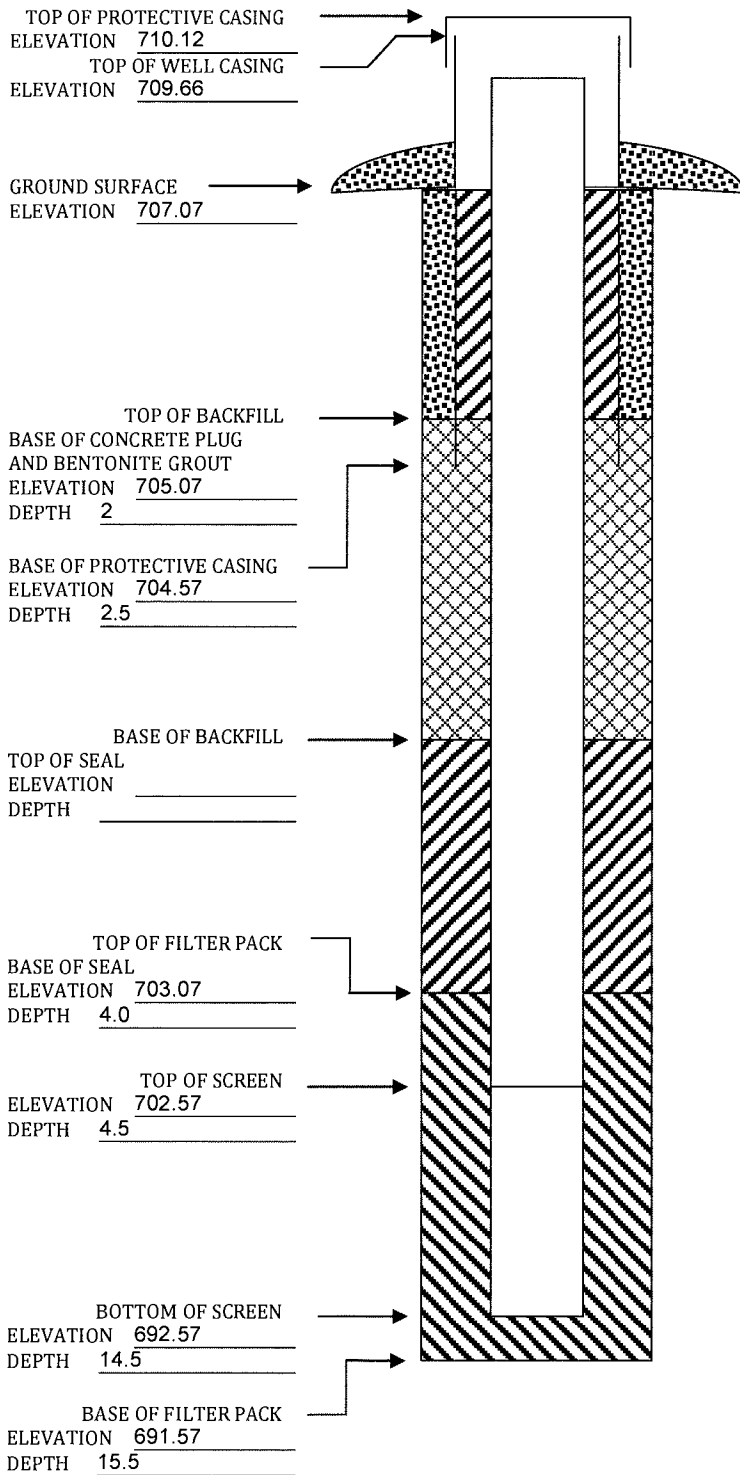
Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)





IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: _____

Well or Piezometer No: MW-305

Dates Started: 12/5/16 Date Completed: 12/5/16

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations (± 0.5 ft): _____	Name & Address of Construction Company: _____
Specify corner of site: <u>NE of parcel 19032-01001-00000</u>	<u>Cascade Drilling, LP</u>
Distance & direction along boundary: <u>1,594' NW</u>	<u>301 Alderson St</u>
Distance & direction from boundary to wall: <u>1,274' S</u>	<u>Schofield, WI 54476</u>
Elevations (± 0.01 ft MSL): _____	Name of Driller: <u>Mike Mueller</u>
Ground Surface: <u>707.11</u>	Drilling Method: <u>HSA</u>
Top of protective casing: <u>710.11</u>	Drilling Fluid: <u>NA</u>
Top of well casing: _____ <u>709.61</u>	Bore Hole Diameter: <u>8.5 inch</u>
Benchmark elevation: _____	Soil Sampling Method: <u>Spoon</u>
Benchmark description: _____	Depth of Boring: <u>15.5 ft</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC sch 40</u>	Placement method: <u>Gravity</u>
Length of casing: <u>4.5 ft</u>	Volume: <u>50 lbs</u>
Outside casing diameter: <u>2.38"</u>	Backfill (if different from seal): _____
Inside casing diameter: <u>2"</u>	Material: _____
Casing joint type: <u>threaded</u>	Placement method: _____
Casing/screen joint type: <u>threaded</u>	Volume: _____
Screen material: <u>PVC</u>	Surface seal design: _____
Screen opening size: <u>0.010"</u>	Material of protective casing: <u>Steel 6 inch</u>
Screen length: <u>10 ft</u>	Material of grout between protective casing and well casing: <u>sand</u>
Depth of well: <u>14.5 ft</u>	Protective cap: _____
Filter Pack: _____	Material: <u>Steel, vented</u>
Material: <u>Red Flint</u>	Vented: <input type="checkbox"/> Yes <input type="checkbox"/> No Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Grain size: <u>#40</u>	Well Cap: _____
Volume: <u>250 lbs</u>	Material: <u>PVC</u>
Seal (minimum 3 ft length above filter pack): _____	Vented: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Material: <u>3/8 inch bentonite chips</u>	

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)	
Water level: <u>5.68</u>	Stabilization Time: <u>~5 min</u>
Well development method: <u>Bailer and surge block</u>	
Average depth of frostline: _____	

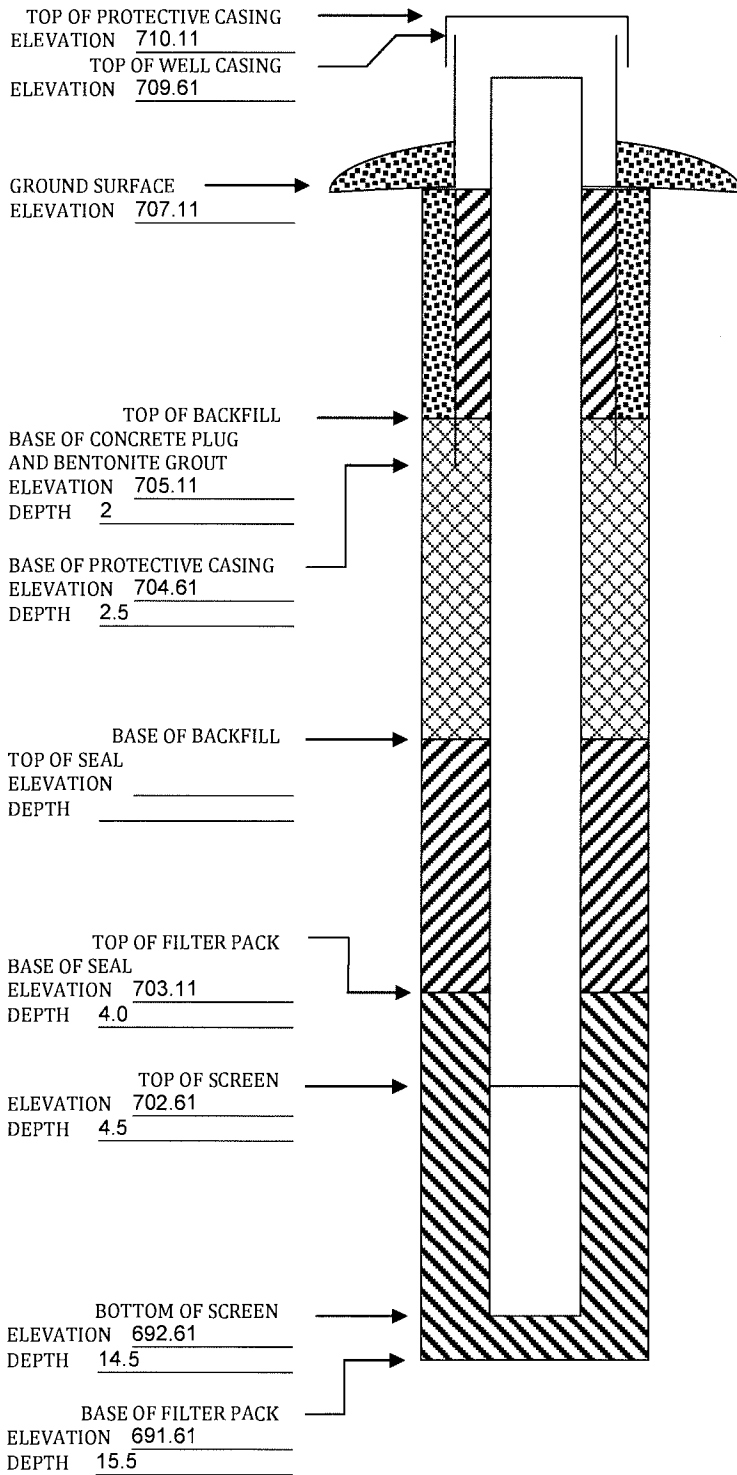
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)





IOWA DEPARTMENT OF NATURAL RESOURCES
MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL - Prairie Creek Generating Station Permit No.: _____

Well or Piezometer No: MW-306

Dates Started: 11/2/16 Date Completed: 11/2/16

A. SURVEYED LOCATIONS AND ELEVATIONS

Locations (± 0.5 ft): _____

Specify corner of site: NE of parcel 19032-01001-00000

Distance & direction along boundary: 1,203' NW

Distance & direction from boundary to wall: 1,205' S

Elevations (± 0.01 ft MSL): _____

Ground Surface: 710.13

Top of protective casing: 712.9

Top of well casing: _____ 712.54

Benchmark elevation: _____

Benchmark description: _____

B. SOIL BORING INFORMATION

Name & Address of Construction Company: _____

Cascade Drilling, LP

301 Alderson St

Schofield, WI 54476

Name of Driller: Mike Mueller

Drilling Method: HSA

Drilling Fluid: NA

Bore Hole Diameter: 8.5 inch

Soil Sampling Method: Spoon

Depth of Boring: 30.5 ft

C. MONITORING WELL INSTALLATION

Casing material: PVC sch 40

Length of casing: 24.5 ft

Outside casing diameter: 2.38"

Inside casing diameter: 2"

Casing joint type: threaded

Casing/screen joint type: threaded

Screen material: PVC

Screen opening size: 0.010"

Screen length: 5 ft

Depth of well: 29.5 ft

Filter Pack: _____

Material: Red Flint

Grain size: #40

Volume: 150 lbs

Seal (minimum 3 ft length above filter pack): _____

Material: 3/8 inch bentonite chips

Placement method: Gravity

Volume: 500 lbs

Backfill (if different from seal): _____

Material: _____

Placement method: _____

Volume: _____

Surface seal design: _____

Material of protective casing: Steel 6 inch

Material of grout between protective casing and well casing: sand

Protective cap: _____

Material: Steel, vented

Vented: Yes No Locking: Yes No

Well Cap: _____

Material: PVC

Vented: Yes No

D. GROUNDWATER MEASUREMENT (± 0.01 ft below top of inner well casing)

Water level: 8.75 Stabilization Time: ~ 5 min

Well development method: Bailer and surge block

Average depth of frostline: _____

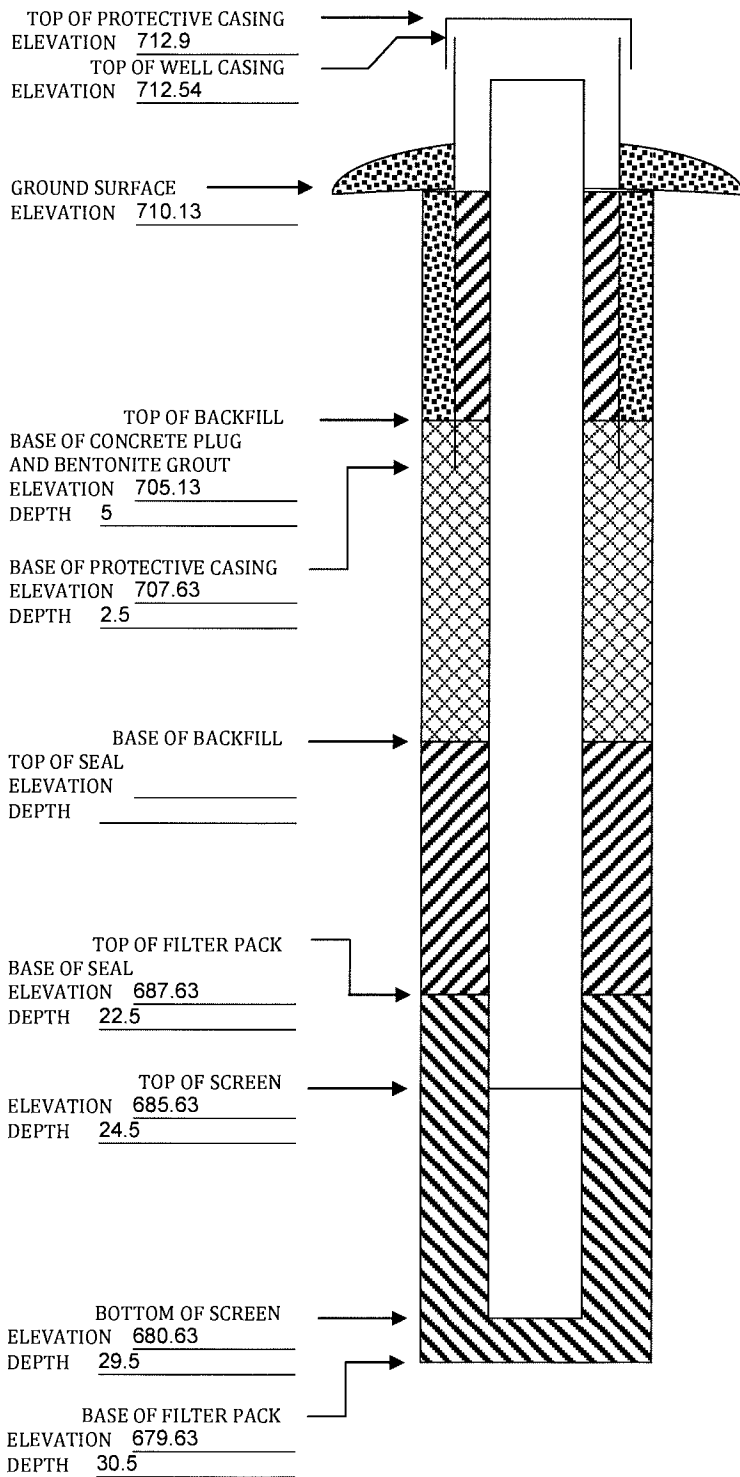
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed for to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319-0034.

Questions? Call or Email: Nina Koger, Environmental Engineer Sr., 515-281-8986, Nina.Koger@dnr.iowa.gov

ELEVATIONS: ± 0.01 ft MSL
DEPTHS: ± 0.1 ft FROM GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL.)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name IPL Prairie Creek Generating Station Permit No. PPW18-0051
Well or Piezometer No. MW-307 Dates Started 11/27/2018 Date Completed 11/27/2018

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site NE Distance and direction along boundary 1,140 W
Distance and direction from boundary to surface monitoring well 5 S
Elevation (+0.01 ft. MSL) _____
Ground Surface 718.89 Top of protective casing 721.35
Top of well casing 721.16 Benchmark elevation 718.58
Benchmark description CP #5

B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling LP
Address 301 Anderson St City, State, Zip Code Schofield, WI 54476
Name of driller Mike Mueller
Drilling method Sonic Drilling fluid NA Bore Hole diameter 6.5"
Soil sampling method Sonic soil core Depth of boring 21

C. MONITORING WELL INSTALLATION

Casing material PVC Sch. 40 Placement method Gravity
Length of casing 13.3' Volume 1.8 cu. ft
Outside casing diameter 2.38" Backfill (if different from seal): NA
Inside casing diameter 2" Material _____
Casing joint type Threaded Placement method _____
Casing/screen joint type Threaded Volume _____
Screen material PVC Sch. 40 Surface seal design: _____
Screen opening size 0.01" Material of protective casing: 6 inch Steel
Material of grout between protective casing and well casing: Bent. chips below grade
Screen length 10 ft Protective cap: _____
Depth of Well 21' Material Steel
Filter Pack: _____ Vented?: Y N Locking?: Y N
Material Red Flint Sand Well cap: _____
Grain Size #40 Material PVC
Volume 2.5 cu. ft Vented?: Y N
Seal (minimum 3 ft. length above filter pack): _____
Material 3/8" Bentonite Chips

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level 13.12' Stabilization time <5 minutes
Well development method Surged and pumped until water ran clear, removed ~400 gallons.
Average depth of frost line 4'

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature  Certification # 9362 Date 11/27/18

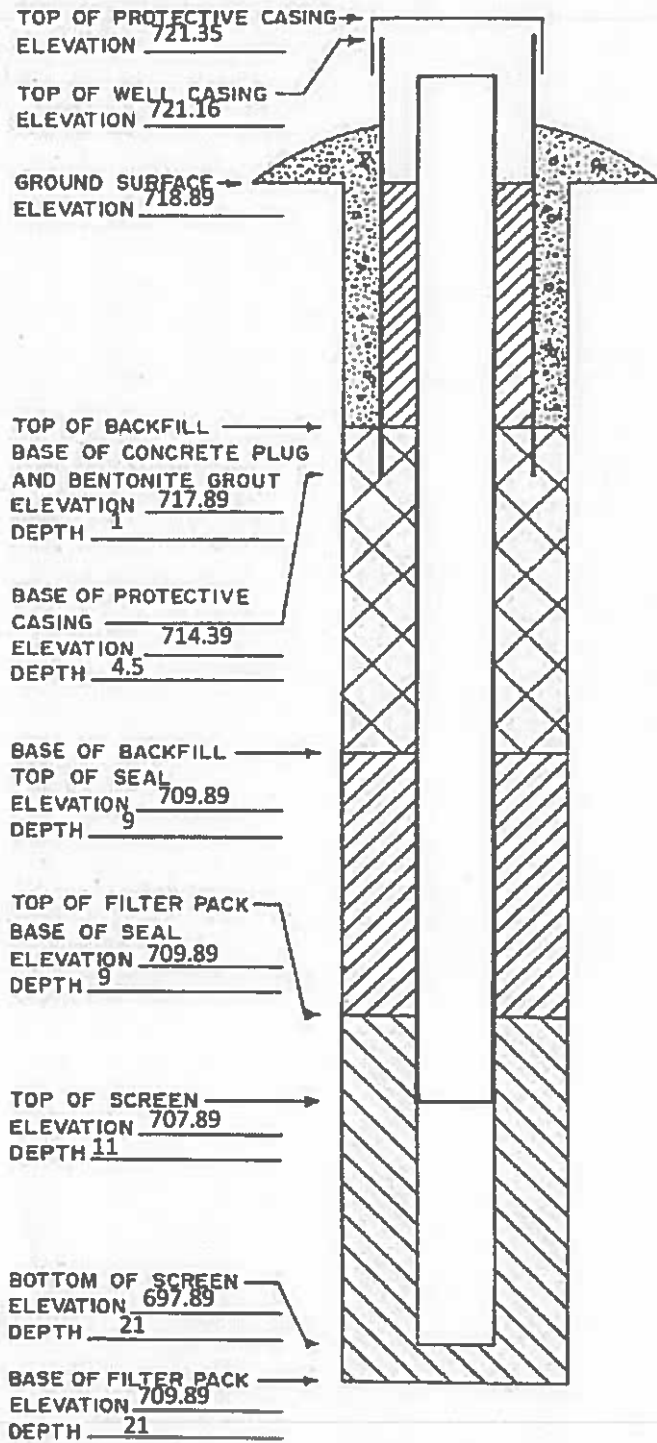
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov
09/2017 cmc

DNR Form 542-1277

ELEVATIONS: ± 0.01 FT. MSL
 DEPTHS: ± 0.1 FT. FROM
 GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
 (SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name IPL Prairie Creek Generating Station Permit No. PPW18-0051
Well or Piezometer No. MW-308 Dates Started 11/27/2018 Date Completed 11/27/2018

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site NE Distance and direction along boundary 950' W
Distance and direction from boundary to surface monitoring well 5 S
Elevation (+0.01 ft. MSL) _____
Ground Surface 717.46 Top of protective casing 719.98
Top of well casing 719.67 Benchmark elevation 718.58
Benchmark description CP #5

B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling LP
Address 301 Anderson St City, State, Zip Code Schofield, WI 54476
Name of driller Mike Mueller
Drilling method Sonic Drilling fluid NA Bore Hole diameter 6.5"
Soil sampling method Sonic soil core Depth of boring 21

C. MONITORING WELL INSTALLATION

Casing material <u>PVC Sch. 40</u>	Placement method <u>Gravity</u>
Length of casing <u>13.2'</u>	Volume <u>1.8 cu. ft</u>
Outside casing diameter <u>2.38"</u>	Backfill (if different from seal): <u>NA</u>
Inside casing diameter <u>2"</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type <u>Threaded</u>	Volume _____
Screen material <u>PVC Sch. 40</u>	Surface seal design: _____
Screen opening size <u>0.01"</u>	Material of protective casing: <u>6 inch Steel</u>
Screen length <u>10 ft</u>	Material of grout between protective casing and well casing: <u>Bent. chips below grade</u>
Depth of Well <u>21'</u>	Protective cap: _____
Filter Pack: _____	Material <u>Steel</u>
Material <u>Red Flint Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size <u>#40</u>	Well cap: _____
Volume <u>2.5 cu. ft</u>	Material <u>PVC</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>3/8" Bentonite Chips</u>	

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level 14.49' Stabilization time <5 minutes
Well development method Surged and pumped until water ran clear, removed ~475 gallons.
Average depth of frost line 4'

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

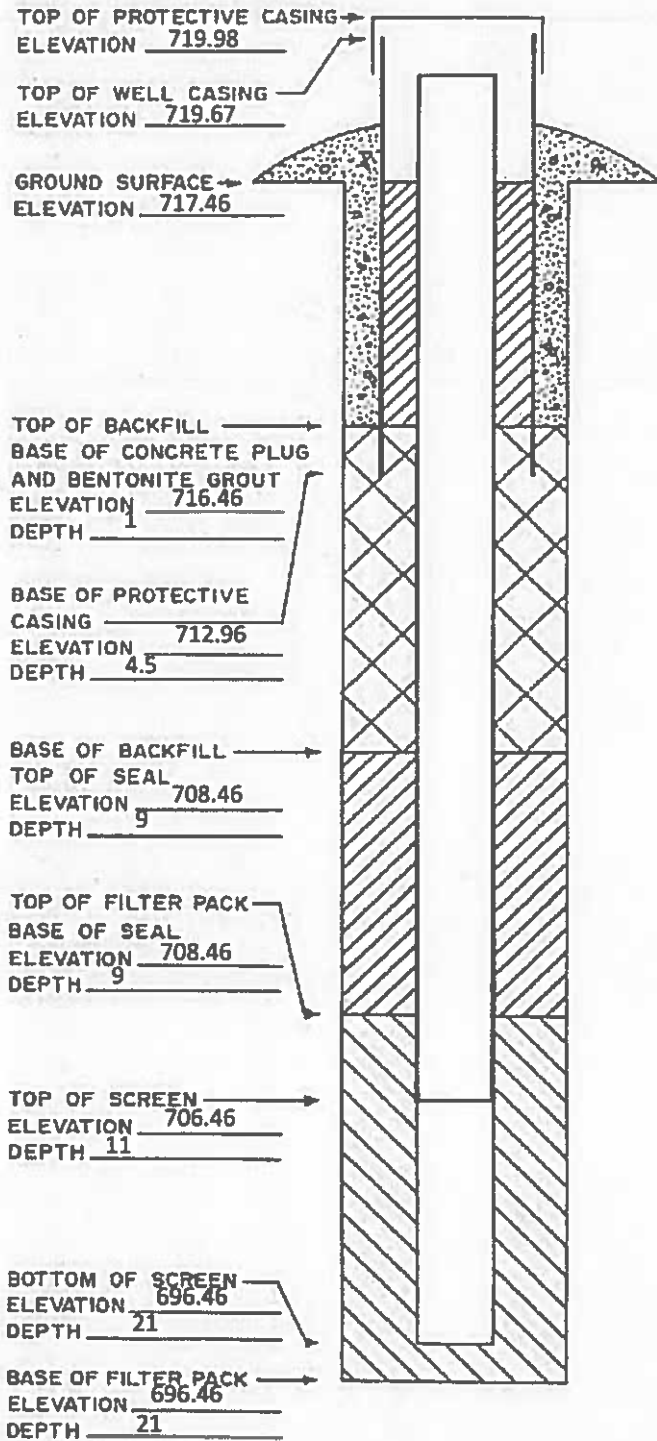
Signature [Signature] Certification # 9362 Date 11/27/18

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL
DEPTHS: ± 0.1 FT. FROM
GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name IPL - Prairie Creek Generating Station Permit No. _____
Well or Piezometer No. MW-309 Dates Started 8/5/2019 Date Completed 8/6/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site NW Distance and direction along boundary 320 E
Distance and direction from boundary to surface monitoring well 300 N
Elevation (+0.01 ft. MSL) _____
Ground Surface 708.11 Top of protective casing 712.16
Top of well casing 711.80 Benchmark elevation _____
Benchmark description _____

B. SOIL BORING INFORMATION

Construction Company Name Roberts Environmental Drilling Inc.
Address 1107 South Mulberry Street City, State, Zip Code Millstadt, IL, 62260
Name of driller Jeff Crank
Drilling method 4 1/4" HSA Drilling fluid _____ Bore Hole diameter 8.5"
Soil sampling method Split Spoon Depth of boring 17'

C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>19'</u>	Volume <u>4.4 cubic feet</u>
Outside casing diameter <u>2.4"</u>	Backfill (if different from seal): _____
Inside casing diameter <u>2.0"</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type <u>Threaded</u>	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Concrete</u>
Screen opening size <u>0.01'</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite/Filter Sand</u>
Screen length <u>10'</u>	Protective cap: _____
Depth of Well <u>15'</u>	Material <u>Steel</u>
Filter Pack:	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Filter Sand</u>	Well cap: _____
Grain Size <u>#5</u>	Material <u>Plastic</u>
Volume <u>18.9 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): _____	
Material <u>Bentonite Chips 3/8"</u>	

D. GROUNDWATER MEASUREMENT (± 0.01 foot below top of inner well casing)

Water level 9.84' Stabilization time <12 hr
Well development method _____
Average depth of frost line 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

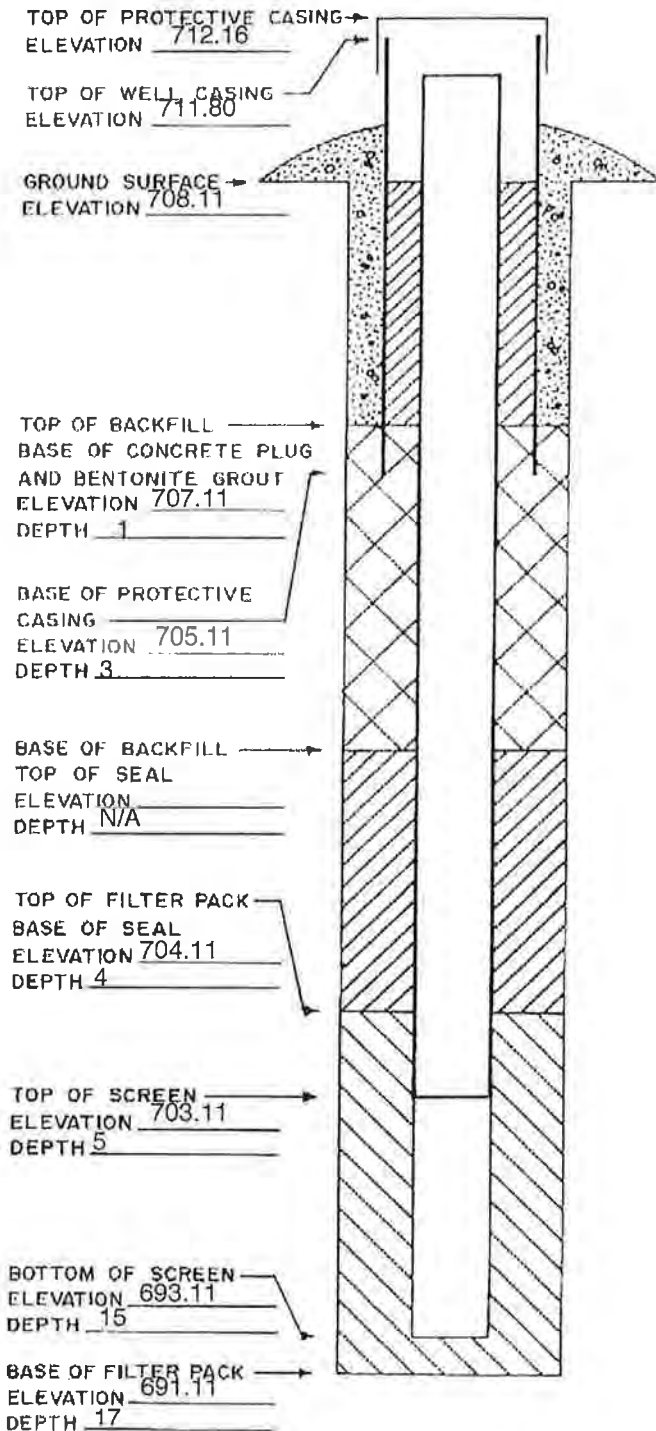
Signature *Jeff Crank* Certification # 8575 Date 10-3-19

Attachments: Driller's log, Pipe schedules and grouting schedules, 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL
DEPTHS: ± 0.1 FT. FROM
GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
(SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL).



Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Prairie Creek Generating Station SCS#: 25220057		License/Permit/Monitoring Number		Boring Number MW309A	
Boring Drilled By: Name of crew chief (first, last) and Firm Roy Buckenberger Cascade		Date Drilling Started 7/23/2020		Date Drilling Completed 7/23/2020	
Unique Well No.		DNR Well ID No.		Common Well Name MW309A	
Final Static Water Level Feet		Surface Elevation Feet		Borehole Diameter 6.0 in	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane N, E S/C/N		Lat ° ' "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of T N, R		1/4 of Section , T N, R		Long ° ' "	
Facility ID		County Linn		Civil Town/City/ or Village Cedar Rapids, Iowa	





Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
1	60		1	Topsoil. Organic material, roots, trace coarse material. 10YR2/1.	ML									
			2											
			3											
			4											
			5											
2	60		6	Silty Sand. Fine to medium grained sand. Well Graded. 10YR3/4.	SM									
			7											
			8											
			9											
			10											
3	60		11	Well graded Gravel with sand. Four inch lens of silt with sand. 7.5YR2/1. Well Graded sand with gravel towards base (14-15 feet).	GW									
			12											
			13											
			14											
			15											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>Zach Watson</i>	Firm SCS Engineers 2830 Dairy Dr., Madison, WI, 53718	Tel: Fax:
---------------------------------	---	--------------

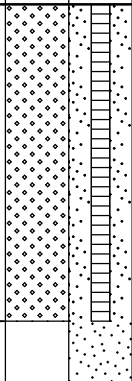
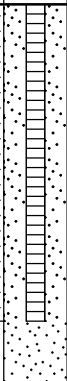
Boring Number MW309A

Page 2 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
4	60		16	Silty Sand. Fine to coarse sand with a few lenses of silt with sand. 2.5Y3/2.	SM									
			17											
5	60		18											
			19											
6	60		20	Well graded Sand. Fine to coarse grained sand. 2.5Y3/2.										
			21											
7	60		22											
			23											
8	60		24											
			25											
			26											
			27											
			28											
			29											
			30											
			31											
			32											
			33											
			34											
			35											
			36											
			37											
			38											
			39											
			40											

Boring Number MW309A

Page 3 of 3

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
9	60		41 42 43 44 45 46	Well graded Sand. Fine to coarse grained sand. 2.5Y3/2. <i>(continued)</i>	SW									

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name IPL - Prairie Creek Generating Station Permit No. _____
Well or Piezometer No. MW-310 Dates Started 8/6/2019 Date Completed 8/6/2019

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site NW Distance and direction along boundary 600 E
Distance and direction from boundary to surface monitoring well 350 N
Elevation (+0.01 ft. MSL) _____
Ground Surface 708.09 Top of protective casing 712.29
Top of well casing 711.93 Benchmark elevation _____
Benchmark description _____

B. SOIL BORING INFORMATION

Construction Company Name Roberts Environmental Drilling Inc.
Address 1107 South Mulberry Street City, State, Zip Code Millstadt, IL, 62260
Name of driller Jeff Crank
Drilling method 4 1/4" HSA Drilling fluid _____ Bore Hole diameter 8.5"
Soil sampling method Split Spoon Depth of boring 17'

C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>19'</u>	Volume <u>4.4 cubic feet</u>
Outside casing diameter <u>2.4"</u>	Backfill (if different from seal): _____
Inside casing diameter <u>2.0"</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type <u>Threaded</u>	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Concrete</u>
Screen opening size <u>0.01'</u>	Material of protective casing: <u>Steel</u>
Screen length <u>10'</u>	Material of grout between protective casing and well casing: <u>Bentonite/Filter Sand</u>
Depth of Well <u>15'</u>	Protective cap: _____
Filter Pack: _____	Material <u>Steel</u>
Material <u>Filter Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size <u>#5</u>	Well cap: _____
Volume <u>18.9 cubic feet</u>	Material <u>Plastic</u>
Seal (minimum 3 ft. length above filter pack): _____	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Material <u>Bentonite Chips 3/8"</u>	

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level 10.21' Stabilization time <3 hr
Well development method _____
Average depth of frost line 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

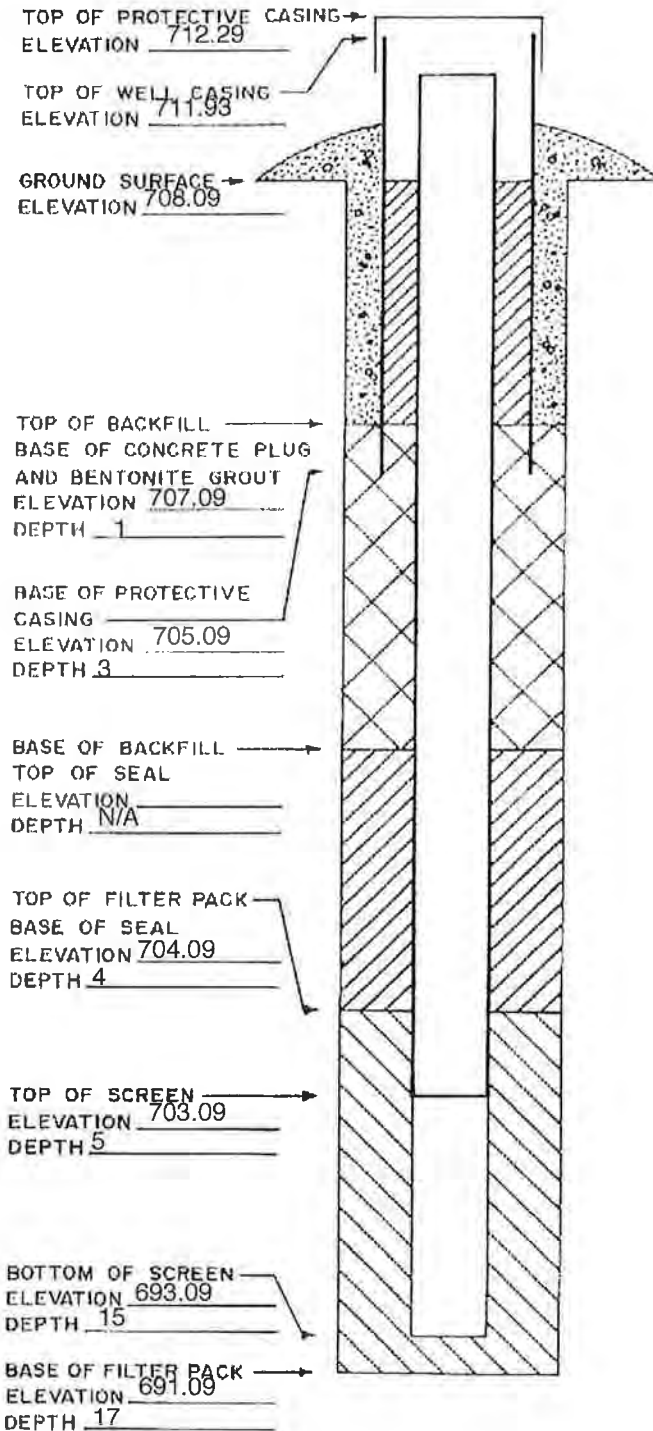
Signature *Jeff Crank* Certification # 8515 Date 10-3-19

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

ELEVATIONS: ± 0.01 FT. MSL
 DEPTHS: ± 0.1 FT. FROM
 GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
 (SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)



MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name Prairie Creek Generating Station Permit No. _____
Well or Piezometer No. MW310A Dates Started 7/23/2020 Date Completed 7/23/2020

A. SURVEYED LOCATION AND ELEVATION OF POINT (+0.5 ft.)

Specify corner of site NW of parcel 19031-7600-2 Distance and direction along boundary 600' E
Distance and direction from boundary to surface monitoring well 345' N
Elevation (+0.01 ft. MSL) _____
Ground Surface 708.2 Top of protective casing 711.01
Top of well casing 710.68 Benchmark elevation _____
Benchmark description On-site benchmark, NAVD_88 datum.

B. SOIL BORING INFORMATION

Construction Company Name Cascade Drilling
Address 301 Alderson St. City, State, Zip Code Schofield, WI, 54476
Name of driller Mike Mueller
Drilling method Rotosonic Drilling fluid Water Bore Hole diameter 6 inches
Soil sampling method 5 foot sections Depth of boring 46 feet

C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity</u>
Length of casing <u>47.5 feet</u>	Volume <u>5.9 cubic feet</u>
Outside casing diameter <u>2.4 inches</u>	Backfill (if different from seal): <u>None</u>
Inside casing diameter <u>2.0 inches</u>	Material _____
Casing joint type <u>Threaded</u>	Placement method _____
Casing/screen joint type _____	Volume _____
Screen material <u>PVC</u>	Surface seal design: <u>Cement</u>
Screen opening size <u>0.01 inches</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u>Bentonite and Filter Sand</u>
Screen length <u>5 feet</u>	Protective cap: _____
Depth of Well <u>45 feet below ground surface</u>	Material <u>Aluminium</u>
Filter Pack: <u>Red Flint Filter Pack Sand</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Material <u>Sand</u>	Well cap: _____
Grain Size _____	Material <u>Rubber</u>
Volume <u>1.4 cubic feet</u>	Vented?: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack): <u>Bentonite Chips</u>	
Material <u>Bentonite Chips</u>	

D. GROUNDWATER MEASUREMENT (+0.01 foot below top of inner well casing)

Water level 8.68 Stabilization time < 5 minutes
Well development method Surged and purged
Average depth of frost line 4 ft

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature  Certification # 9362 Date 7-23-2020

Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.

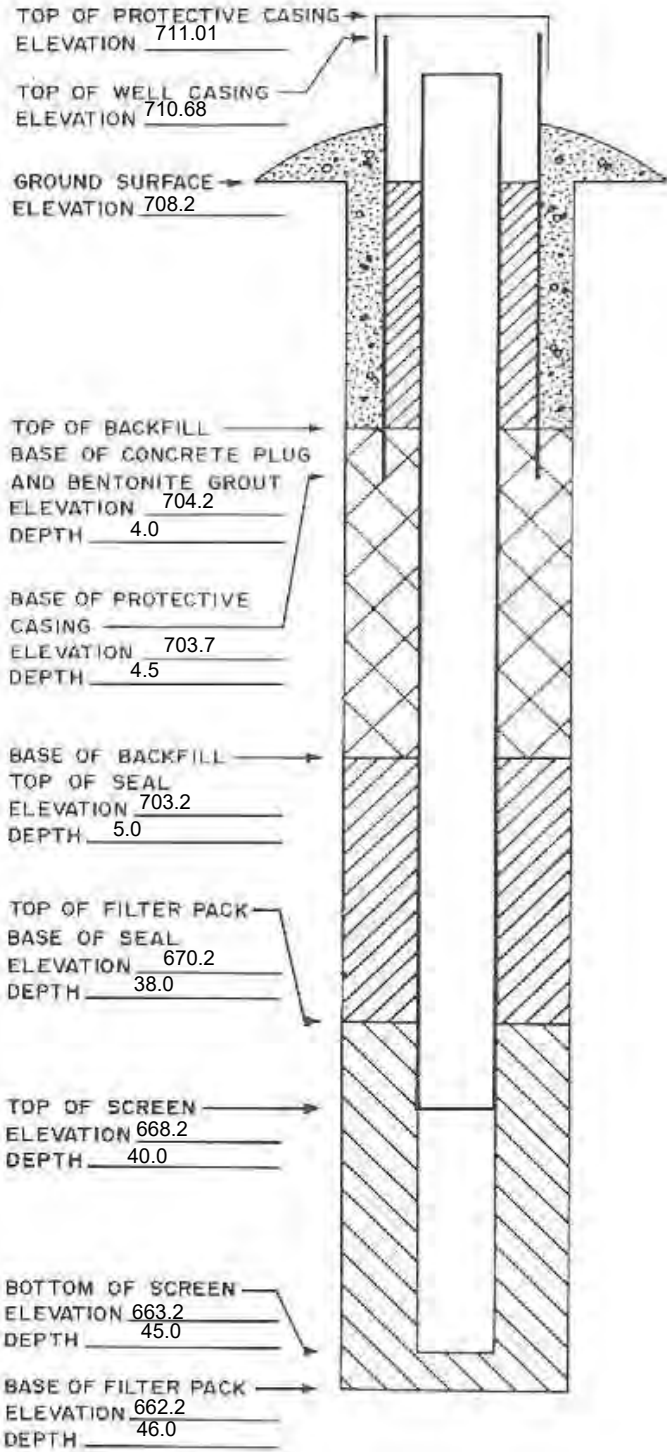
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov


09/2017 cmc

DNR Form 542-1277

ELEVATIONS: ± 0.01 FT. MSL
 DEPTHS: ± 0.1 FT. FROM
 GROUND SURFACE

SPACE TO ATTACH ENTIRE SOIL BORING LOG
 (SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL)





Appendix C

Laboratory Reports

C1 January 2020, Assessment Monitoring – New Wells

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-173619-1
Client Project/Site: Prairie Creek CCR 25216074.17

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
1/20/2020 4:43:56 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Detection Summary	5
Client Sample Results	6
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QC Sample Results	10
QC Association	13
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Certification Summary	16
Method Summary	17
Chain of Custody	18
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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Job ID: 310-173619-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-173619-1

Comments

No additional comments.

Receipt

The samples were received on 1/10/2020 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-173619-1	MW-309	Water	01/09/20 12:37	01/10/20 14:30	
310-173619-2	MW-310	Water	01/09/20 13:25	01/10/20 14:30	
310-173619-3	Field Blank	Water	01/09/20 13:20	01/10/20 14:30	

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- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Client Sample ID: MW-309

Lab Sample ID: 310-173619-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		5.0	1.5	mg/L	5		9056A	Total/NA
Fluoride	0.51		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	130		5.0	1.8	mg/L	5		9056A	Total/NA
Arsenic	110		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.84	ug/L	1		6020A	Total/NA
Boron	1000		200	110	ug/L	1		6020A	Total/NA
Calcium	130		0.50	0.10	mg/L	1		6020A	Total/NA
Cobalt	0.23	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	15		10	2.7	ug/L	1		6020A	Total/NA
Molybdenum	18		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	650		30	24	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.10				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-335.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	4.42				mg/L	1		Field Sampling	Total/NA
pH, Field	6.95				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1016				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.69				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.81				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-310

Lab Sample ID: 310-173619-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		5.0	1.5	mg/L	5		9056A	Total/NA
Fluoride	0.61		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	130		5.0	1.8	mg/L	5		9056A	Total/NA
Arsenic	28		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	140		2.0	0.84	ug/L	1		6020A	Total/NA
Boron	940		200	110	ug/L	1		6020A	Total/NA
Calcium	85		0.50	0.10	mg/L	1		6020A	Total/NA
Cobalt	0.095	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	14		10	2.7	ug/L	1		6020A	Total/NA
Molybdenum	59		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	500		30	24	mg/L	1		SM 2540C	Total/NA
pH	7.5	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.81				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-342.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	3.72				mg/L	1		Field Sampling	Total/NA
pH, Field	7.33				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	784				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.23				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.30				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-173619-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Client Sample ID: MW-309

Lab Sample ID: 310-173619-1

Date Collected: 01/09/20 12:37

Matrix: Water

Date Received: 01/10/20 14:30

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		5.0	1.5	mg/L			01/14/20 18:38	5
Fluoride	0.51		0.50	0.23	mg/L			01/14/20 18:38	5
Sulfate	130		5.0	1.8	mg/L			01/14/20 18:38	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.53		1.0	0.53	ug/L		01/14/20 07:50	01/16/20 12:06	1
Arsenic	110		2.0	0.75	ug/L		01/14/20 07:50	01/16/20 12:06	1
Barium	130		2.0	0.84	ug/L		01/14/20 07:50	01/16/20 12:06	1
Beryllium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:06	1
Boron	1000		200	110	ug/L		01/14/20 07:50	01/16/20 12:06	1
Cadmium	<0.039		0.10	0.039	ug/L		01/14/20 07:50	01/16/20 12:06	1
Calcium	130		0.50	0.10	mg/L		01/14/20 07:50	01/16/20 12:06	1
Chromium	<0.98		5.0	0.98	ug/L		01/14/20 07:50	01/16/20 12:06	1
Cobalt	0.23	J	0.50	0.091	ug/L		01/14/20 07:50	01/16/20 12:06	1
Lead	<0.27		0.50	0.27	ug/L		01/14/20 07:50	01/16/20 12:06	1
Lithium	15		10	2.7	ug/L		01/14/20 07:50	01/16/20 12:06	1
Molybdenum	18		2.0	1.1	ug/L		01/14/20 07:50	01/16/20 12:06	1
Selenium	<1.0		5.0	1.0	ug/L		01/14/20 07:50	01/16/20 12:06	1
Thallium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		01/15/20 11:46	01/16/20 13:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	650		30	24	mg/L			01/13/20 10:43	1
pH	7.4	HF	0.1	0.1	SU			01/10/20 15:23	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.10				ft			01/09/20 12:37	1
Oxidation Reduction Potential	-335.3				millivolts			01/09/20 12:37	1
Oxygen, Dissolved, Client Supplied	4.42				mg/L			01/09/20 12:37	1
pH, Field	6.95				SU			01/09/20 12:37	1
Specific Conductance, Field	1016				umhos/cm			01/09/20 12:37	1
Temperature, Field	15.69				Degrees C			01/09/20 12:37	1
Turbidity, Field	1.81				NTU			01/09/20 12:37	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Client Sample ID: MW-310

Lab Sample ID: 310-173619-2

Date Collected: 01/09/20 13:25

Matrix: Water

Date Received: 01/10/20 14:30

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		5.0	1.5	mg/L			01/14/20 19:09	5
Fluoride	0.61		0.50	0.23	mg/L			01/14/20 19:09	5
Sulfate	130		5.0	1.8	mg/L			01/14/20 19:09	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.53		1.0	0.53	ug/L		01/14/20 07:50	01/16/20 12:24	1
Arsenic	28		2.0	0.75	ug/L		01/14/20 07:50	01/16/20 12:24	1
Barium	140		2.0	0.84	ug/L		01/14/20 07:50	01/16/20 12:24	1
Beryllium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:24	1
Boron	940		200	110	ug/L		01/14/20 07:50	01/16/20 12:24	1
Cadmium	<0.039		0.10	0.039	ug/L		01/14/20 07:50	01/16/20 12:24	1
Calcium	85		0.50	0.10	mg/L		01/14/20 07:50	01/16/20 12:24	1
Chromium	<0.98		5.0	0.98	ug/L		01/14/20 07:50	01/16/20 12:24	1
Cobalt	0.095	J	0.50	0.091	ug/L		01/14/20 07:50	01/16/20 12:24	1
Lead	<0.27		0.50	0.27	ug/L		01/14/20 07:50	01/16/20 12:24	1
Lithium	14		10	2.7	ug/L		01/14/20 07:50	01/16/20 12:24	1
Molybdenum	59		2.0	1.1	ug/L		01/14/20 07:50	01/16/20 12:24	1
Selenium	<1.0		5.0	1.0	ug/L		01/14/20 07:50	01/16/20 12:24	1
Thallium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		01/15/20 11:46	01/16/20 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	500		30	24	mg/L			01/13/20 10:43	1
pH	7.5	HF	0.1	0.1	SU			01/10/20 15:25	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.81				ft			01/09/20 13:25	1
Oxidation Reduction Potential	-342.4				millivolts			01/09/20 13:25	1
Oxygen, Dissolved, Client Supplied	3.72				mg/L			01/09/20 13:25	1
pH, Field	7.33				SU			01/09/20 13:25	1
Specific Conductance, Field	784				umhos/cm			01/09/20 13:25	1
Temperature, Field	15.23				Degrees C			01/09/20 13:25	1
Turbidity, Field	3.30				NTU			01/09/20 13:25	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Client Sample ID: Field Blank

Lab Sample ID: 310-173619-3

Date Collected: 01/09/20 13:20

Matrix: Water

Date Received: 01/10/20 14:30

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.29		1.0	0.29	mg/L			01/14/20 19:25	1
Fluoride	<0.045		0.10	0.045	mg/L			01/14/20 19:25	1
Sulfate	<0.35		1.0	0.35	mg/L			01/14/20 19:25	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.53		1.0	0.53	ug/L		01/14/20 07:50	01/16/20 12:27	1
Arsenic	<0.75		2.0	0.75	ug/L		01/14/20 07:50	01/16/20 12:27	1
Barium	<0.84		2.0	0.84	ug/L		01/14/20 07:50	01/16/20 12:27	1
Beryllium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:27	1
Boron	<110		200	110	ug/L		01/14/20 07:50	01/16/20 12:27	1
Cadmium	<0.039		0.10	0.039	ug/L		01/14/20 07:50	01/16/20 12:27	1
Calcium	<0.10		0.50	0.10	mg/L		01/14/20 07:50	01/16/20 12:27	1
Chromium	<0.98		5.0	0.98	ug/L		01/14/20 07:50	01/16/20 12:27	1
Cobalt	<0.091		0.50	0.091	ug/L		01/14/20 07:50	01/16/20 12:27	1
Lead	<0.27		0.50	0.27	ug/L		01/14/20 07:50	01/16/20 12:27	1
Lithium	<2.7		10	2.7	ug/L		01/14/20 07:50	01/16/20 12:27	1
Molybdenum	<1.1		2.0	1.1	ug/L		01/14/20 07:50	01/16/20 12:27	1
Selenium	<1.0		5.0	1.0	ug/L		01/14/20 07:50	01/16/20 12:27	1
Thallium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		01/15/20 11:46	01/16/20 13:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<24		30	24	mg/L			01/13/20 10:43	1
pH	6.7	HF	0.1	0.1	SU			01/10/20 15:31	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-267641/3
Matrix: Water
Analysis Batch: 267641

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.29		1.0	0.29	mg/L			01/14/20 13:58	1
Fluoride	<0.045		0.10	0.045	mg/L			01/14/20 13:58	1
Sulfate	<0.35		1.0	0.35	mg/L			01/14/20 13:58	1

Lab Sample ID: LCS 310-267641/4
Matrix: Water
Analysis Batch: 267641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.1		mg/L		101	90 - 110
Fluoride	2.00	1.94		mg/L		97	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-267328/1-A
Matrix: Water
Analysis Batch: 267679

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 267328

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.53		1.0	0.53	ug/L		01/14/20 07:50	01/16/20 12:01	1
Arsenic	<0.75		2.0	0.75	ug/L		01/14/20 07:50	01/16/20 12:01	1
Barium	<0.84		2.0	0.84	ug/L		01/14/20 07:50	01/16/20 12:01	1
Beryllium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:01	1
Boron	<110		200	110	ug/L		01/14/20 07:50	01/16/20 12:01	1
Cadmium	<0.039		0.10	0.039	ug/L		01/14/20 07:50	01/16/20 12:01	1
Calcium	<0.10		0.50	0.10	mg/L		01/14/20 07:50	01/16/20 12:01	1
Chromium	<0.98		5.0	0.98	ug/L		01/14/20 07:50	01/16/20 12:01	1
Cobalt	<0.091		0.50	0.091	ug/L		01/14/20 07:50	01/16/20 12:01	1
Lead	<0.27		0.50	0.27	ug/L		01/14/20 07:50	01/16/20 12:01	1
Lithium	<2.7		10	2.7	ug/L		01/14/20 07:50	01/16/20 12:01	1
Molybdenum	<1.1		2.0	1.1	ug/L		01/14/20 07:50	01/16/20 12:01	1
Selenium	<1.0		5.0	1.0	ug/L		01/14/20 07:50	01/16/20 12:01	1
Thallium	<0.27		1.0	0.27	ug/L		01/14/20 07:50	01/16/20 12:01	1

Lab Sample ID: LCS 310-267328/2-A
Matrix: Water
Analysis Batch: 267679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	32.3		ug/L		81	80 - 120
Arsenic	80.0	68.9		ug/L		86	80 - 120
Barium	80.0	70.4		ug/L		88	80 - 120
Beryllium	40.0	35.4		ug/L		88	80 - 120
Boron	1760	1540		ug/L		87	80 - 120
Cadmium	40.0	36.1		ug/L		90	80 - 120
Calcium	4.00	3.54		mg/L		88	80 - 120
Chromium	80.0	70.9		ug/L		89	80 - 120
Cobalt	40.0	36.2		ug/L		90	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-267328/2-A
Matrix: Water
Analysis Batch: 267679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 267328

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	40.0	35.5		ug/L		89	80 - 120
Lithium	200	173		ug/L		87	80 - 120
Molybdenum	80.0	68.2		ug/L		85	80 - 120
Selenium	80.0	68.3		ug/L		85	80 - 120
Thallium	32.0	27.8		ug/L		87	80 - 120

Lab Sample ID: 310-173619-1 MS
Matrix: Water
Analysis Batch: 267679

Client Sample ID: MW-309
Prep Type: Total/NA
Prep Batch: 267328

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	<0.53		40.0	36.1		ug/L		90	75 - 125
Arsenic	110		80.0	176		ug/L		85	75 - 125
Barium	130		80.0	197		ug/L		83	75 - 125
Beryllium	<0.27		40.0	37.1		ug/L		93	75 - 125
Boron	1000		1760	2580		ug/L		88	75 - 125
Cadmium	<0.039		40.0	38.2		ug/L		96	75 - 125
Calcium	130		4.00	122	4	mg/L		-75	75 - 125
Chromium	<0.98		80.0	74.0		ug/L		93	75 - 125
Cobalt	0.23	J	40.0	36.9		ug/L		92	75 - 125
Lead	<0.27		40.0	38.0		ug/L		95	75 - 125
Lithium	15		200	190		ug/L		87	75 - 125
Molybdenum	18		80.0	92.5		ug/L		94	75 - 125
Selenium	<1.0		80.0	72.0		ug/L		90	75 - 125
Thallium	<0.27		32.0	29.9		ug/L		93	75 - 125

Lab Sample ID: 310-173619-1 MSD
Matrix: Water
Analysis Batch: 267679

Client Sample ID: MW-309
Prep Type: Total/NA
Prep Batch: 267328

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.53		40.0	38.3		ug/L		96	75 - 125	6	20
Arsenic	110		80.0	185		ug/L		95	75 - 125	5	20
Barium	130		80.0	208		ug/L		98	75 - 125	6	20
Beryllium	<0.27		40.0	40.0		ug/L		100	75 - 125	7	20
Boron	1000		1760	2720		ug/L		95	75 - 125	5	20
Cadmium	<0.039		40.0	40.5		ug/L		101	75 - 125	6	20
Calcium	130		4.00	130	4	mg/L		123	75 - 125	6	20
Chromium	<0.98		80.0	78.7		ug/L		98	75 - 125	6	20
Cobalt	0.23	J	40.0	39.0		ug/L		97	75 - 125	5	20
Lead	<0.27		40.0	40.1		ug/L		100	75 - 125	5	20
Lithium	15		200	201		ug/L		93	75 - 125	6	20
Molybdenum	18		80.0	98.9		ug/L		102	75 - 125	7	20
Selenium	<1.0		80.0	74.1		ug/L		93	75 - 125	3	20
Thallium	<0.27		32.0	31.1		ug/L		97	75 - 125	4	20

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-267511/1-A
 Matrix: Water
 Analysis Batch: 267699

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 267511

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		01/15/20 11:46	01/16/20 12:33	1

Lab Sample ID: LCS 310-267511/2-A
 Matrix: Water
 Analysis Batch: 267699

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 267511
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	1.67	1.57		ug/L		94	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-267222/1
 Matrix: Water
 Analysis Batch: 267222

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<24		30	24	mg/L			01/13/20 10:43	1

Lab Sample ID: LCS 310-267222/2
 Matrix: Water
 Analysis Batch: 267222

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	1000	980		mg/L		98	90 - 110

Lab Sample ID: 310-173619-1 DU
 Matrix: Water
 Analysis Batch: 267222

Client Sample ID: MW-309
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	650		640		mg/L		1	24

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-267111/1
 Matrix: Water
 Analysis Batch: 267111

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
pH	7.00	7.1		SU		101	98 - 102

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

HPLC/IC

Analysis Batch: 267641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	9056A	
310-173619-2	MW-310	Total/NA	Water	9056A	
310-173619-3	Field Blank	Total/NA	Water	9056A	
MB 310-267641/3	Method Blank	Total/NA	Water	9056A	
LCS 310-267641/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 267328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	3010A	
310-173619-2	MW-310	Total/NA	Water	3010A	
310-173619-3	Field Blank	Total/NA	Water	3010A	
MB 310-267328/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-267328/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-173619-1 MS	MW-309	Total/NA	Water	3010A	
310-173619-1 MSD	MW-309	Total/NA	Water	3010A	

Prep Batch: 267511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	7470A	
310-173619-2	MW-310	Total/NA	Water	7470A	
310-173619-3	Field Blank	Total/NA	Water	7470A	
MB 310-267511/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-267511/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 267679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	6020A	267328
310-173619-2	MW-310	Total/NA	Water	6020A	267328
310-173619-3	Field Blank	Total/NA	Water	6020A	267328
MB 310-267328/1-A	Method Blank	Total/NA	Water	6020A	267328
LCS 310-267328/2-A	Lab Control Sample	Total/NA	Water	6020A	267328
310-173619-1 MS	MW-309	Total/NA	Water	6020A	267328
310-173619-1 MSD	MW-309	Total/NA	Water	6020A	267328

Analysis Batch: 267699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	7470A	267511
310-173619-2	MW-310	Total/NA	Water	7470A	267511
310-173619-3	Field Blank	Total/NA	Water	7470A	267511
MB 310-267511/1-A	Method Blank	Total/NA	Water	7470A	267511
LCS 310-267511/2-A	Lab Control Sample	Total/NA	Water	7470A	267511

General Chemistry

Analysis Batch: 267111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	SM 4500 H+ B	
310-173619-2	MW-310	Total/NA	Water	SM 4500 H+ B	
310-173619-3	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-267111/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

General Chemistry

Analysis Batch: 267222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	SM 2540C	
310-173619-2	MW-310	Total/NA	Water	SM 2540C	
310-173619-3	Field Blank	Total/NA	Water	SM 2540C	
MB 310-267222/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-267222/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-173619-1 DU	MW-309	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 267499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	Field Sampling	
310-173619-2	MW-310	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Client Sample ID: MW-309

Lab Sample ID: 310-173619-1

Date Collected: 01/09/20 12:37

Matrix: Water

Date Received: 01/10/20 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	267641	01/14/20 18:38	ACJ	TAL CF
Total/NA	Prep	3010A			267328	01/14/20 07:50	HED	TAL CF
Total/NA	Analysis	6020A		1	267679	01/16/20 12:06	SAD	TAL CF
Total/NA	Prep	7470A			267511	01/15/20 11:46	HIS	TAL CF
Total/NA	Analysis	7470A		1	267699	01/16/20 13:23	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	267222	01/13/20 10:43	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	267111	01/10/20 15:23	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	267499	01/09/20 12:37	EAR	TAL CF

Client Sample ID: MW-310

Lab Sample ID: 310-173619-2

Date Collected: 01/09/20 13:25

Matrix: Water

Date Received: 01/10/20 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	267641	01/14/20 19:09	ACJ	TAL CF
Total/NA	Prep	3010A			267328	01/14/20 07:50	HED	TAL CF
Total/NA	Analysis	6020A		1	267679	01/16/20 12:24	SAD	TAL CF
Total/NA	Prep	7470A			267511	01/15/20 11:46	HIS	TAL CF
Total/NA	Analysis	7470A		1	267699	01/16/20 13:25	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	267222	01/13/20 10:43	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	267111	01/10/20 15:25	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	267499	01/09/20 13:25	EAR	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-173619-3

Date Collected: 01/09/20 13:20

Matrix: Water

Date Received: 01/10/20 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	267641	01/14/20 19:25	ACJ	TAL CF
Total/NA	Prep	3010A			267328	01/14/20 07:50	HED	TAL CF
Total/NA	Analysis	6020A		1	267679	01/16/20 12:27	SAD	TAL CF
Total/NA	Prep	7470A			267511	01/15/20 11:46	HIS	TAL CF
Total/NA	Analysis	7470A		1	267699	01/16/20 13:27	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	267222	01/13/20 10:43	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	267111	01/10/20 15:31	JWG	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins TestAmerica, Cedar Falls

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State Program	007	12-01-19 *

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* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins TestAmerica, Cedar Falls



Environment Testing
TestAmerica



310-173619 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: SCS Eng.			
City/State: ^{CITY} Clive	STATE IA	Project: Prairie Creek	
Receipt Information			
Date/Time Received: DATE 1-10-20	TIME 1430	Received By: LAB	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: N	Correction Factor (°C): +0.0		
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 0.4	Corrected Temp (°C): 0.4		
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Document: CF-LG-WI-002
Revision: 25
Date: 06/17/2019

Eurofins TestAmerica, Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

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Client Information		Sampler: <u>Louise Jennings</u>		Lab PM: <u>Fredrick, Sandie</u>		COC No: <u>310-46267-14561.1</u>					
Client Contact: <u>Louise Jennings</u>		Phone: <u>509 8443</u>		E-Mail: <u>sandie.fredrick@testamericainc.com</u>		Page: <u>Page 1 of 1</u>					
Company: <u>SCS Engineers</u>		Address: <u>8450 Hickman Road Suite 20</u>		City: <u>Clive</u>		Job #: _____					
State, Zip: <u>IA, 50325</u>		TAT Requested (days): _____		Due Date Requested: _____		Preservation Codes:					
Phone: _____		PO #: <u>25216066</u>		WO #: _____		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2OAS E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other: _____					
Email: <u>ljennings@scsengineers.com</u>		Project #: <u>31011020</u>		Project Name: <u>Prairie Creek CCR 25216074.17</u>		Special Instructions/Note: _____					
Site: _____		SSOW#: _____		Matrix (W=water, S=solid, O=water/sol, G=grab)		Total Number of containers: _____					
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No) <th>Performs MS/MSD (Yes or No) <th>6020A - Metals - Hg</th> <th>2640C - Calcd, 9066A - ORGM, 26D, SM4600 - H+</th> <th>903.0 - Radium 226</th> <th>904.0 - Radium 228</th> <th>Analysis Requested</th> </th>	Performs MS/MSD (Yes or No) <th>6020A - Metals - Hg</th> <th>2640C - Calcd, 9066A - ORGM, 26D, SM4600 - H+</th> <th>903.0 - Radium 226</th> <th>904.0 - Radium 228</th> <th>Analysis Requested</th>	6020A - Metals - Hg	2640C - Calcd, 9066A - ORGM, 26D, SM4600 - H+	903.0 - Radium 226	904.0 - Radium 228	Analysis Requested
MW-309	1.9.20	1237	G	Water	X	X	X	X	X	X	
MW-310	1.9.20	1305	G	Water	X	X	X	X	X	X	
Field Blank	1.9.20	1320	G	Water	X	X	X	X	X	X	
				Water							

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Polson B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify) _____

Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: Jennings Date/Time: 1.9.20 1620 Company: SCS
 Relinquished by: _____ Date/Time: _____ Company: _____
 Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Δ No Custody Seal No: _____
 Cooler Temperature(s) °C and Other Remarks: _____

Special Instructions/QC Requirements: _____
 Return To Client Disposal By Lab Archive For _____ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)



Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
MW-309	310-173619-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW-309	310-173619-B-1	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-309	310-173619-C-1	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-310	310-173619-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW-310	310-173619-B-2	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-310	310-173619-C-2	Plastic 1 liter - Nitric Acid	_____	_____	_____
Field Blank	310-173619-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
Field Blank	310-173619-B-3	Plastic 1 liter - Nitric Acid	_____	_____	_____
Field Blank	310-173619-C-3	Plastic 1 liter - Nitric Acid	_____	_____	_____

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**Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project**

#25216074.17

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	Field Blank
Appendix III Parameters (Detection Monitoring)	Boron									X	X	X
	Calcium									X	X	X
	Chloride									X	X	X
	Fluoride									X	X	X
	pH									X	X	X
	Sulfate									X	X	X
	TDS									X	X	X
Appendix IV Parameters (Assessment Monitoring)	Antimony									X	X	X
	Arsenic									X	X	X
	Barium									X	X	X
	Beryllium									X	X	X
	Cadmium									X	X	X
	Chromium									X	X	X
	Cobalt									X	X	X
	Fluoride									X	X	X
	Lead									X	X	X
	Lithium									X	X	X
	Mercury									X	X	X
	Molybdenum									X	X	X
	Selenium									X	X	X
	Thallium									X	X	X
Radium									X	X	X	
CCR Rule Field Parameters	Groundwater Elevation									X	X	
	pH									X	X	
Low-Flow Sampling Field Parameters	Well Depth									X	X	
	Specific Conductance									X	X	
	Dissolved Oxygen									X	X	
	ORP									X	X	
	Temperature									X	X	
	Turbidity									X	X	
	Color									X	X	
Odor									X	X		

Notes: All samples are unfiltered (total).

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-173619-1

Login Number: 173619

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Bindert, Lindsay A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-173619-2
Client Project/Site: Prairie Creek CCR 25216074.17

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
2/10/2020 12:53:01 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

LINKS

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results through
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Job ID: 310-173619-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-173619-2

Comments

No additional comments.

Receipt

The samples were received on 1/10/2020 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

RAD

Method 903.0: Radium-226 Prep Batch 160-456980. Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-309 (310-173619-1), MW-310 (310-173619-2), Field Blank (310-173619-3), (LCS 160-456980/1-A), (LCSD 160-456980/2-A) and (MB 160-456980/7-A)

Method 904.0: Radium-228 Prep Batch 160-456981. Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Method PrecSep_0: Radium 228 Prep Batch 160-456981: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-309 (310-173619-1), MW-310 (310-173619-2) and Field Blank (310-173619-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-456980: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-309 (310-173619-1), MW-310 (310-173619-2) and Field Blank (310-173619-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-173619-1	MW-309	Water	01/09/20 12:37	01/10/20 14:30	
310-173619-2	MW-310	Water	01/09/20 13:25	01/10/20 14:30	
310-173619-3	Field Blank	Water	01/09/20 13:20	01/10/20 14:30	

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Client Sample ID: MW-309

Lab Sample ID: 310-173619-1

Date Collected: 01/09/20 12:37

Matrix: Water

Date Received: 01/10/20 14:30

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.176		0.0737	0.0754	1.00	0.0762	pCi/L	01/16/20 11:19	02/07/20 12:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					01/16/20 11:19	02/07/20 12:15	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.366	U	0.247	0.250	1.00	0.386	pCi/L	01/16/20 11:29	01/21/20 17:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					01/16/20 11:29	01/21/20 17:52	1
Y Carrier	87.5		40 - 110					01/16/20 11:29	01/21/20 17:52	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.543		0.258	0.261	5.00	0.386	pCi/L		02/10/20 12:30	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Client Sample ID: MW-310

Lab Sample ID: 310-173619-2

Date Collected: 01/09/20 13:25

Matrix: Water

Date Received: 01/10/20 14:30

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.232		0.0835	0.0860	1.00	0.0804	pCi/L	01/16/20 11:19	02/07/20 12:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					01/16/20 11:19	02/07/20 12:15	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0413	U	0.207	0.207	1.00	0.377	pCi/L	01/16/20 11:29	01/21/20 17:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					01/16/20 11:29	01/21/20 17:52	1
Y Carrier	88.4		40 - 110					01/16/20 11:29	01/21/20 17:52	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.232	U	0.223	0.224	5.00	0.377	pCi/L		02/10/20 12:30	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Client Sample ID: Field Blank

Lab Sample ID: 310-173619-3

Date Collected: 01/09/20 13:20

Matrix: Water

Date Received: 01/10/20 14:30

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0193	U	0.0371	0.0371	1.00	0.0673	pCi/L	01/16/20 11:19	02/07/20 12:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					01/16/20 11:19	02/07/20 12:15	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0197	U	0.189	0.189	1.00	0.341	pCi/L	01/16/20 11:29	01/21/20 17:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					01/16/20 11:29	01/21/20 17:52	1
Y Carrier	91.4		40 - 110					01/16/20 11:29	01/21/20 17:52	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0193	U	0.193	0.193	5.00	0.341	pCi/L		02/10/20 12:30	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-456980/7-A
Matrix: Water
Analysis Batch: 459576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 456980

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.03438	U	0.0472	0.0473	1.00	0.0795	pCi/L	01/16/20 11:19	02/07/20 12:15	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	105		40 - 110			01/16/20 11:19	02/07/20 12:15	1		

Lab Sample ID: LCS 160-456980/1-A
Matrix: Water
Analysis Batch: 459576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 456980

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.477		0.974	1.00	0.0941	pCi/L	84	75 - 125
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	107		40 - 110						

Lab Sample ID: LCSD 160-456980/2-A
Matrix: Water
Analysis Batch: 459576

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 456980

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium-226	11.3	10.11		1.04	1.00	0.101	pCi/L	89	75 - 125	0.32	1
Carrier	LCSD LCSD		Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Ba Carrier	101		40 - 110								

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-456981/7-A
Matrix: Water
Analysis Batch: 457506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 456981

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.02902	U	0.194	0.194	1.00	0.342	pCi/L	01/16/20 11:29	01/21/20 17:52	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	105		40 - 110			01/16/20 11:29	01/21/20 17:52	1		
Y Carrier	91.7		40 - 110			01/16/20 11:29	01/21/20 17:52	1		

Eurofins TestAmerica, Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-456981/1-A
Matrix: Water
Analysis Batch: 457506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 456981

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.18	9.005		1.02	1.00	0.343	pCi/L	98	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	107		40 - 110
Y Carrier	89.0		40 - 110

Lab Sample ID: LCSD 160-456981/2-A
Matrix: Water
Analysis Batch: 457506

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 456981

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.18	8.341		0.974	1.00	0.362	pCi/L	91	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	90.2		40 - 110

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Rad

Prep Batch: 456980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	PrecSep-21	
310-173619-2	MW-310	Total/NA	Water	PrecSep-21	
310-173619-3	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-456980/7-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-456980/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-456980/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 456981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-173619-1	MW-309	Total/NA	Water	PrecSep_0	
310-173619-2	MW-310	Total/NA	Water	PrecSep_0	
310-173619-3	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-456981/7-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-456981/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-456981/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Client Sample ID: MW-309

Date Collected: 01/09/20 12:37

Date Received: 01/10/20 14:30

Lab Sample ID: 310-173619-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			456980	01/16/20 11:19	EJQ	TAL SL
Total/NA	Analysis	903.0		1	459576	02/07/20 12:15	AJD	TAL SL
Total/NA	Prep	PrecSep_0			456981	01/16/20 11:29	EJQ	TAL SL
Total/NA	Analysis	904.0		1	457506	01/21/20 17:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	459802	02/10/20 12:30	SMP	TAL SL

Client Sample ID: MW-310

Date Collected: 01/09/20 13:25

Date Received: 01/10/20 14:30

Lab Sample ID: 310-173619-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			456980	01/16/20 11:19	EJQ	TAL SL
Total/NA	Analysis	903.0		1	459576	02/07/20 12:15	AJD	TAL SL
Total/NA	Prep	PrecSep_0			456981	01/16/20 11:29	EJQ	TAL SL
Total/NA	Analysis	904.0		1	457506	01/21/20 17:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	459802	02/10/20 12:30	SMP	TAL SL

Client Sample ID: Field Blank

Date Collected: 01/09/20 13:20

Date Received: 01/10/20 14:30

Lab Sample ID: 310-173619-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			456980	01/16/20 11:19	EJQ	TAL SL
Total/NA	Analysis	903.0		1	459576	02/07/20 12:15	AJD	TAL SL
Total/NA	Prep	PrecSep_0			456981	01/16/20 11:29	EJQ	TAL SL
Total/NA	Analysis	904.0		1	457506	01/21/20 17:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	459802	02/10/20 12:30	SMP	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins TestAmerica, Cedar Falls

Accreditation/Certification Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State Program	007	12-01-19 *

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19 *
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20 *
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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Environment Testing
TestAmerica



310-173619 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: SCS Eng.			
City/State: ^{CITY} Clive	STATE IA	Project: Prairie Creek	
Receipt Information			
Date/Time Received: DATE 1-10-20	TIME 1430	Received By: LAB	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: N	Correction Factor (°C): +0.0		
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): 0.4	Corrected Temp (°C): 0.4		
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Document: CF-LG-WI-002
Revision: 25
Date: 06/17/2019

Eurofins TestAmerica, Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

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Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
MW-309	310-173619-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW-309	310-173619-B-1	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-309	310-173619-C-1	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-310	310-173619-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____
MW-310	310-173619-B-2	Plastic 1 liter - Nitric Acid	_____	_____	_____
MW-310	310-173619-C-2	Plastic 1 liter - Nitric Acid	_____	_____	_____
Field Blank	310-173619-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____
Field Blank	310-173619-B-3	Plastic 1 liter - Nitric Acid	_____	_____	_____
Field Blank	310-173619-C-3	Plastic 1 liter - Nitric Acid	_____	_____	_____

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Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-173619-2

Login Number: 173619

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Bindert, Lindsay A

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-173619-2

Login Number: 173619

List Number: 2

Creator: McKinney, Gerrod E

List Source: Eurofins TestAmerica, St. Louis

List Creation: 01/15/20 09:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25216074.17

Job ID: 310-173619-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
310-173619-1	MW-309	101	
310-173619-2	MW-310	99.1	
310-173619-3	Field Blank	107	
LCS 160-456980/1-A	Lab Control Sample	107	
LCSD 160-456980/2-A	Lab Control Sample Dup	101	
MB 160-456980/7-A	Method Blank	105	

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
310-173619-1	MW-309	101	87.5
310-173619-2	MW-310	99.1	88.4
310-173619-3	Field Blank	107	91.4
LCS 160-456981/1-A	Lab Control Sample	107	89.0
LCSD 160-456981/2-A	Lab Control Sample Dup	101	90.2
MB 160-456981/7-A	Method Blank	105	91.7

Tracer/Carrier Legend

Ba Carrier = Ba Carrier

Y Carrier = Y Carrier

C2 April 2020, Assessment Monitoring

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-180509-1
Client Project/Site: Prairie Creek 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
5/6/2020 8:15:38 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Job ID: 310-180509-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-180509-1

Receipt

The samples were received on 4/28/2020 10:15 AM; the samples arrived in good condition, properly preserved, and where required, on ice. The temperatures of the 2 coolers at receipt time were 2.1°C and 4.3°C

Department HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-180509-1) and MW-302 (310-180509-2). Elevated reporting limits (RLs) are provide

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Department Metals

The following samples were listed on the Chain of Custody (COC); however, no samples were received: MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8) and Field Blank (310-180509-9). The samples were received on the following day (4/30/2020)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Department General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Department Field Service / Mobile Lab

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-180509-1	MW-301	Water	04/27/20 08:50	04/28/20 10:15	
310-180509-2	MW-302	Water	04/27/20 10:05	04/28/20 10:15	
310-180509-3	MW-303	Water	04/27/20 11:35	04/28/20 10:15	
310-180509-4	MW-304	Water	04/27/20 14:10	04/28/20 10:15	
310-180509-5	MW-305	Water	04/27/20 16:10	04/28/20 10:15	
310-180509-6	MW-306	Water	04/27/20 17:10	04/28/20 10:15	
310-180509-7	MW-309	Water	04/27/20 13:00	04/28/20 10:15	
310-180509-8	MW-310	Water	04/27/20 15:10	04/28/20 10:15	
310-180509-9	Field Blank	Water	04/27/20 23:59	04/28/20 10:15	

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Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-301

Lab Sample ID: 310-180509-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Barium	260		2.0	0.90	ug/L	1		6020A	Total/NA
Cadmium	0.066	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	140		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	4.7	J	5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	0.23	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lead	0.27	J	0.50	0.27	ug/L	1		6020A	Total/NA
Lithium	11		10	2.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	640		30	26	mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	715.80				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	208.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	3.50				mg/L	1		Field Sampling	Total/NA
pH, Field	7.09				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	954				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	6.52				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-302

Lab Sample ID: 310-180509-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	66		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	4.4		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	210		2.0	0.90	ug/L	1		6020A	Total/NA
Cadmium	0.098	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	86		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	2.8	J	5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	0.56		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	3.8	J	10	2.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	400		30	26	mg/L	1		SM 2540C	Total/NA
pH	6.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	715.17				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	30.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.39				mg/L	1		Field Sampling	Total/NA
pH, Field	6.27				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	587.9				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	27.5				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-303

Lab Sample ID: 310-180509-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.69		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	120		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	48		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	790		100	73	ug/L	1		6020A	Total/NA
Cadmium	0.066	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-303 (Continued)

Lab Sample ID: 310-180509-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	1.1		0.50	0.091	ug/L	1		6020A	Total/NA
Lead	1.7		0.50	0.27	ug/L	1		6020A	Total/NA
Lithium	14		10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	8.4		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	630		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.10				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-143.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	6.78				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	922				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	25.9				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304

Lab Sample ID: 310-180509-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.67		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	1.0		1.0	0.58	ug/L	1		6020A	Total/NA
Arsenic	11		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	120		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	770		100	73	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.1		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	11		10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	26		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	590		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.84				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-85.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	6.84				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	841				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.63				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-305

Lab Sample ID: 310-180509-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.51		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	240		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.74	J	1.0	0.58	ug/L	1		6020A	Total/NA
Arsenic	6.2		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	1000		100	73	ug/L	1		6020A	Total/NA
Cadmium	0.072	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.1		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	12		10	2.3	ug/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-305 (Continued)

Lab Sample ID: 310-180509-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	38		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	710		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.02				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	20.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.70				mg/L	1		Field Sampling	Total/NA
pH, Field	6.82				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	971				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.97				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306

Lab Sample ID: 310-180509-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	22		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.38	J	0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	1.3	J	2.0	0.88	ug/L	1		6020A	Total/NA
Barium	73		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	2800		100	73	ug/L	1		6020A	Total/NA
Cadmium	0.090	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	54		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.20	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lead	0.48	J	0.50	0.27	ug/L	1		6020A	Total/NA
Molybdenum	250		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	420		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.35				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-142.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.18				mg/L	1		Field Sampling	Total/NA
pH, Field	6.94				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	539.7				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.92				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-309

Lab Sample ID: 310-180509-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.75		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	130		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	75		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	1100		100	73	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.35	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	13		10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	19		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	630		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.84				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-117.7				millivolts	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-309 (Continued)

Lab Sample ID: 310-180509-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oxygen, Dissolved, Client Supplied	0.06				mg/L	1		Field Sampling	Total/NA
pH, Field	7.09				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	898				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	4.21				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-310

Lab Sample ID: 310-180509-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.93		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	130		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	23		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	140		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	880		100	73	ug/L	1		6020A	Total/NA
Calcium	87		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.098	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	11		10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	55		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	520		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.53				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-148.01				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L	1		Field Sampling	Total/NA
pH, Field	7.41				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	734				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	6.30				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-180509-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-301

Lab Sample ID: 310-180509-1

Date Collected: 04/27/20 08:50

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40		5.0	2.0	mg/L			04/29/20 20:58	5
Fluoride	<0.23		0.50	0.23	mg/L			04/29/20 20:58	5
Sulfate	110		5.0	3.6	mg/L			04/29/20 20:58	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:17	1
Arsenic	<0.88		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:17	1
Barium	260		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:17	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:17	1
Boron	<73		100	73	ug/L		04/29/20 07:53	04/30/20 17:17	1
Cadmium	0.066	J	0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:17	1
Calcium	140		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:17	1
Chromium	4.7	J	5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:17	1
Cobalt	0.23	J	0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:17	1
Lead	0.27	J	0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:17	1
Lithium	11		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:17	1
Molybdenum	<1.1		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:17	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:17	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	640		30	26	mg/L			04/29/20 14:51	1
pH	6.9	HF	0.1	0.1	SU			04/28/20 14:59	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	715.80				ft			04/27/20 08:50	1
Oxidation Reduction Potential	208.3				millivolts			04/27/20 08:50	1
Oxygen, Dissolved, Client Supplied	3.50				mg/L			04/27/20 08:50	1
pH, Field	7.09				SU			04/27/20 08:50	1
Specific Conductance, Field	954				umhos/cm			04/27/20 08:50	1
Temperature, Field	11.1				Degrees C			04/27/20 08:50	1
Turbidity, Field	6.52				NTU			04/27/20 08:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-302

Lab Sample ID: 310-180509-2

Date Collected: 04/27/20 10:05

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28		5.0	2.0	mg/L			04/29/20 21:16	5
Fluoride	<0.23		0.50	0.23	mg/L			04/29/20 21:16	5
Sulfate	66		5.0	3.6	mg/L			04/29/20 21:16	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:37	1
Arsenic	4.4		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:37	1
Barium	210		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:37	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:37	1
Boron	<73		100	73	ug/L		04/29/20 07:53	04/30/20 17:37	1
Cadmium	0.098	J	0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:37	1
Calcium	86		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:37	1
Chromium	2.8	J	5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:37	1
Cobalt	0.56		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:37	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:37	1
Lithium	3.8	J	10	2.3	ug/L		04/29/20 07:53	04/30/20 17:37	1
Molybdenum	<1.1		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:37	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:37	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:37	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	400		30	26	mg/L			04/29/20 14:51	1
pH	6.7	HF	0.1	0.1	SU			04/28/20 15:12	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	715.17				ft			04/27/20 10:05	1
Oxidation Reduction Potential	30.0				millivolts			04/27/20 10:05	1
Oxygen, Dissolved, Client Supplied	1.39				mg/L			04/27/20 10:05	1
pH, Field	6.27				SU			04/27/20 10:05	1
Specific Conductance, Field	587.9				umhos/cm			04/27/20 10:05	1
Temperature, Field	8.1				Degrees C			04/27/20 10:05	1
Turbidity, Field	27.5				NTU			04/27/20 10:05	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-303

Lab Sample ID: 310-180509-3

Date Collected: 04/27/20 11:35

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18		5.0	2.0	mg/L			04/29/20 21:35	5
Fluoride	0.69		0.50	0.23	mg/L			04/29/20 21:35	5
Sulfate	120		5.0	3.6	mg/L			04/29/20 21:35	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:40	1
Arsenic	48		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:40	1
Barium	130		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:40	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:40	1
Boron	790		100	73	ug/L		04/29/20 07:53	04/30/20 17:40	1
Cadmium	0.066	J	0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:40	1
Calcium	110		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:40	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:40	1
Cobalt	1.1		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:40	1
Lead	1.7		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:40	1
Lithium	14		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:40	1
Molybdenum	8.4		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:40	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:40	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	630		30	26	mg/L			04/30/20 16:27	1
pH	7.2	HF	0.1	0.1	SU			04/28/20 14:58	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.10				ft			04/27/20 11:35	1
Oxidation Reduction Potential	-143.2				millivolts			04/27/20 11:35	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			04/27/20 11:35	1
pH, Field	6.78				SU			04/27/20 11:35	1
Specific Conductance, Field	922				umhos/cm			04/27/20 11:35	1
Temperature, Field	9.3				Degrees C			04/27/20 11:35	1
Turbidity, Field	25.9				NTU			04/27/20 11:35	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-304

Lab Sample ID: 310-180509-4

Date Collected: 04/27/20 14:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		5.0	2.0	mg/L			04/29/20 21:54	5
Fluoride	0.67		0.50	0.23	mg/L			04/29/20 21:54	5
Sulfate	110		5.0	3.6	mg/L			04/29/20 21:54	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.0		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:43	1
Arsenic	11		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:43	1
Barium	120		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:43	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:43	1
Boron	770		100	73	ug/L		04/29/20 07:53	04/30/20 17:43	1
Cadmium	<0.039		0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:43	1
Calcium	110		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:43	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:43	1
Cobalt	1.1		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:43	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:43	1
Lithium	11		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:43	1
Molybdenum	26		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:43	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:43	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	590		30	26	mg/L			04/30/20 16:27	1
pH	7.0	HF	0.1	0.1	SU			04/28/20 15:01	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.84				ft			04/27/20 14:10	1
Oxidation Reduction Potential	-85.0				millivolts			04/27/20 14:10	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			04/27/20 14:10	1
pH, Field	6.84				SU			04/27/20 14:10	1
Specific Conductance, Field	841				umhos/cm			04/27/20 14:10	1
Temperature, Field	10.1				Degrees C			04/27/20 14:10	1
Turbidity, Field	1.63				NTU			04/27/20 14:10	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-305

Lab Sample ID: 310-180509-5

Date Collected: 04/27/20 16:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		5.0	2.0	mg/L			04/29/20 22:12	5
Fluoride	0.51		0.50	0.23	mg/L			04/29/20 22:12	5
Sulfate	240		5.0	3.6	mg/L			04/29/20 22:12	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.74	J	1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:45	1
Arsenic	6.2		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:45	1
Barium	110		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:45	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:45	1
Boron	1000		100	73	ug/L		04/29/20 07:53	04/30/20 17:45	1
Cadmium	0.072	J	0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:45	1
Calcium	120		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:45	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:45	1
Cobalt	1.1		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:45	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:45	1
Lithium	12		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:45	1
Molybdenum	38		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:45	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:45	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	710		30	26	mg/L			04/30/20 16:27	1
pH	7.1	HF	0.1	0.1	SU			04/28/20 14:57	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.02				ft			04/27/20 16:10	1
Oxidation Reduction Potential	20.5				millivolts			04/27/20 16:10	1
Oxygen, Dissolved, Client Supplied	0.70				mg/L			04/27/20 16:10	1
pH, Field	6.82				SU			04/27/20 16:10	1
Specific Conductance, Field	971				umhos/cm			04/27/20 16:10	1
Temperature, Field	9.6				Degrees C			04/27/20 16:10	1
Turbidity, Field	3.97				NTU			04/27/20 16:10	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-306

Lab Sample ID: 310-180509-6

Date Collected: 04/27/20 17:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22		5.0	2.0	mg/L			04/29/20 22:31	5
Fluoride	0.38	J	0.50	0.23	mg/L			04/29/20 22:31	5
Sulfate	110		5.0	3.6	mg/L			04/29/20 22:31	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:48	1
Arsenic	1.3	J	2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:48	1
Barium	73		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:48	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:48	1
Boron	2800		100	73	ug/L		04/29/20 07:53	04/30/20 17:48	1
Cadmium	0.090	J	0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:48	1
Calcium	54		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:48	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:48	1
Cobalt	0.20	J	0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:48	1
Lead	0.48	J	0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:48	1
Lithium	<2.3		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:48	1
Molybdenum	250		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:48	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:48	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	420		30	26	mg/L			04/30/20 16:27	1
pH	7.6	HF	0.1	0.1	SU			04/28/20 14:54	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.35				ft			04/27/20 17:10	1
Oxidation Reduction Potential	-142.0				millivolts			04/27/20 17:10	1
Oxygen, Dissolved, Client Supplied	0.18				mg/L			04/27/20 17:10	1
pH, Field	6.94				SU			04/27/20 17:10	1
Specific Conductance, Field	539.7				umhos/cm			04/27/20 17:10	1
Temperature, Field	13.2				Degrees C			04/27/20 17:10	1
Turbidity, Field	3.92				NTU			04/27/20 17:10	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-309

Lab Sample ID: 310-180509-7

Date Collected: 04/27/20 13:00

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		5.0	2.0	mg/L			04/29/20 23:46	5
Fluoride	0.75		0.50	0.23	mg/L			04/29/20 23:46	5
Sulfate	130		5.0	3.6	mg/L			04/29/20 23:46	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:50	1
Arsenic	75		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:50	1
Barium	130		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:50	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:50	1
Boron	1100		100	73	ug/L		04/29/20 07:53	04/30/20 17:50	1
Cadmium	<0.039		0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:50	1
Calcium	120		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:50	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:50	1
Cobalt	0.35	J	0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:50	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:50	1
Lithium	13		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:50	1
Molybdenum	19		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:50	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:50	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	630		30	26	mg/L			04/30/20 16:27	1
pH	7.2	HF	0.1	0.1	SU			04/28/20 14:55	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.84				ft			04/27/20 13:00	1
Oxidation Reduction Potential	-117.7				millivolts			04/27/20 13:00	1
Oxygen, Dissolved, Client Supplied	0.06				mg/L			04/27/20 13:00	1
pH, Field	7.09				SU			04/27/20 13:00	1
Specific Conductance, Field	898				umhos/cm			04/27/20 13:00	1
Temperature, Field	13.2				Degrees C			04/27/20 13:00	1
Turbidity, Field	4.21				NTU			04/27/20 13:00	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-310

Lab Sample ID: 310-180509-8

Date Collected: 04/27/20 15:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20		5.0	2.0	mg/L			04/30/20 00:04	5
Fluoride	0.93		0.50	0.23	mg/L			04/30/20 00:04	5
Sulfate	130		5.0	3.6	mg/L			04/30/20 00:04	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:53	1
Arsenic	23		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:53	1
Barium	140		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:53	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:53	1
Boron	880		100	73	ug/L		04/29/20 07:53	04/30/20 17:53	1
Cadmium	<0.039		0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:53	1
Calcium	87		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:53	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:53	1
Cobalt	0.098	J	0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:53	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:53	1
Lithium	11		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:53	1
Molybdenum	55		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:53	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:53	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:53	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	520		30	26	mg/L			04/30/20 16:27	1
pH	7.3	HF	0.1	0.1	SU			04/28/20 14:51	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.53				ft			04/27/20 15:10	1
Oxidation Reduction Potential	-148.01				millivolts			04/27/20 15:10	1
Oxygen, Dissolved, Client Supplied	0.09				mg/L			04/27/20 15:10	1
pH, Field	7.41				SU			04/27/20 15:10	1
Specific Conductance, Field	734				umhos/cm			04/27/20 15:10	1
Temperature, Field	12.9				Degrees C			04/27/20 15:10	1
Turbidity, Field	6.30				NTU			04/27/20 15:10	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: Field Blank

Lab Sample ID: 310-180509-9

Date Collected: 04/27/20 23:59

Matrix: Water

Date Received: 04/28/20 10:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			04/30/20 00:23	1
Fluoride	<0.046		0.10	0.046	mg/L			04/30/20 00:23	1
Sulfate	<0.71		1.0	0.71	mg/L			04/30/20 00:23	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 18:03	1
Arsenic	<0.88		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 18:03	1
Barium	<0.90		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 18:03	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 18:03	1
Boron	<73		100	73	ug/L		04/29/20 07:53	04/30/20 18:03	1
Cadmium	<0.039		0.10	0.039	ug/L		04/29/20 07:53	04/30/20 18:03	1
Calcium	<0.19		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 18:03	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 18:03	1
Cobalt	<0.091		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 18:03	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 18:03	1
Lithium	<2.3		10	2.3	ug/L		04/29/20 07:53	04/30/20 18:03	1
Molybdenum	<1.1		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 18:03	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 18:03	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 18:03	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			04/30/20 16:27	1
pH	6.2	HF	0.1	0.1	SU			04/28/20 15:09	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-277340/3
Matrix: Water
Analysis Batch: 277340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			04/29/20 16:18	1
Fluoride	<0.046		0.10	0.046	mg/L			04/29/20 16:18	1
Sulfate	<0.71		1.0	0.71	mg/L			04/29/20 16:18	1

Lab Sample ID: LCS 310-277340/4
Matrix: Water
Analysis Batch: 277340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.63		mg/L		96	90 - 110
Fluoride	2.00	2.04		mg/L		102	90 - 110
Sulfate	10.0	10.3		mg/L		103	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-277167/1-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277167

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		04/29/20 07:53	04/30/20 17:03	1
Arsenic	<0.88		2.0	0.88	ug/L		04/29/20 07:53	04/30/20 17:03	1
Barium	<0.90		2.0	0.90	ug/L		04/29/20 07:53	04/30/20 17:03	1
Beryllium	<0.27		1.0	0.27	ug/L		04/29/20 07:53	04/30/20 17:03	1
Boron	<73		100	73	ug/L		04/29/20 07:53	04/30/20 17:03	1
Cadmium	<0.039		0.10	0.039	ug/L		04/29/20 07:53	04/30/20 17:03	1
Calcium	<0.19		0.50	0.19	mg/L		04/29/20 07:53	04/30/20 17:03	1
Chromium	<1.1		5.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:03	1
Cobalt	<0.091		0.50	0.091	ug/L		04/29/20 07:53	04/30/20 17:03	1
Lead	<0.27		0.50	0.27	ug/L		04/29/20 07:53	04/30/20 17:03	1
Lithium	<2.3		10	2.3	ug/L		04/29/20 07:53	04/30/20 17:03	1
Molybdenum	<1.1		2.0	1.1	ug/L		04/29/20 07:53	04/30/20 17:03	1
Selenium	<1.0		5.0	1.0	ug/L		04/29/20 07:53	04/30/20 17:03	1
Thallium	<0.26		1.0	0.26	ug/L		04/29/20 07:53	04/30/20 17:03	1

Lab Sample ID: LCS 310-277167/2-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	36.0		ug/L		90	80 - 120
Arsenic	80.0	77.4		ug/L		97	80 - 120
Barium	80.0	84.0		ug/L		105	80 - 120
Beryllium	40.0	42.0		ug/L		105	80 - 120
Boron	1760	1840		ug/L		105	80 - 120
Cadmium	40.0	43.3		ug/L		108	80 - 120
Calcium	4.00	4.22		mg/L		106	80 - 120
Chromium	80.0	85.6		ug/L		107	80 - 120
Cobalt	40.0	43.9		ug/L		110	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-277167/2-A
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277167

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	40.0	42.2		ug/L		105	80 - 120
Lithium	200	195		ug/L		97	80 - 120
Molybdenum	80.0	76.9		ug/L		96	80 - 120
Selenium	80.0	78.1		ug/L		98	80 - 120
Thallium	32.0	31.9		ug/L		100	80 - 120

Lab Sample ID: 310-180509-1 MS
Matrix: Water
Analysis Batch: 277453

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 277167

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	<0.58		40.0	40.5		ug/L		101	75 - 125
Arsenic	<0.88		80.0	77.4		ug/L		97	75 - 125
Barium	260		80.0	345		ug/L		100	75 - 125
Beryllium	<0.27		40.0	40.2		ug/L		101	75 - 125
Boron	<73		1760	1880		ug/L		107	75 - 125
Cadmium	0.066	J	40.0	42.5		ug/L		106	75 - 125
Calcium	140		4.00	147	4	mg/L		47	75 - 125
Chromium	4.7	J	80.0	88.9		ug/L		105	75 - 125
Cobalt	0.23	J	40.0	41.7		ug/L		104	75 - 125
Lead	0.27	J	40.0	42.1		ug/L		104	75 - 125
Lithium	11		200	195		ug/L		92	75 - 125
Molybdenum	<1.1		80.0	83.7		ug/L		105	75 - 125
Selenium	<1.0		80.0	80.9		ug/L		101	75 - 125
Thallium	<0.26		32.0	31.9		ug/L		100	75 - 125

Lab Sample ID: 310-180509-1 MSD
Matrix: Water
Analysis Batch: 277453

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 277167

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	<0.58		40.0	40.8		ug/L		102	75 - 125	1	20
Arsenic	<0.88		80.0	77.0		ug/L		96	75 - 125	0	20
Barium	260		80.0	346		ug/L		101	75 - 125	0	20
Beryllium	<0.27		40.0	39.8		ug/L		99	75 - 125	1	20
Boron	<73		1760	1910		ug/L		109	75 - 125	2	20
Cadmium	0.066	J	40.0	43.2		ug/L		108	75 - 125	2	20
Calcium	140		4.00	144	4	mg/L		-18	75 - 125	2	20
Chromium	4.7	J	80.0	88.8		ug/L		105	75 - 125	0	20
Cobalt	0.23	J	40.0	41.6		ug/L		103	75 - 125	0	20
Lead	0.27	J	40.0	42.2		ug/L		105	75 - 125	0	20
Lithium	11		200	193		ug/L		91	75 - 125	1	20
Molybdenum	<1.1		80.0	83.7		ug/L		105	75 - 125	0	20
Selenium	<1.0		80.0	78.9		ug/L		99	75 - 125	2	20
Thallium	<0.26		32.0	32.1		ug/L		100	75 - 125	1	20

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-180509-9 DU
Matrix: Water
Analysis Batch: 277453

Client Sample ID: Field Blank
Prep Type: Total/NA
Prep Batch: 277167

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Antimony	<0.58		<0.58		ug/L		NC	20
Arsenic	<0.88		<0.88		ug/L		NC	20
Barium	<0.90		<0.90		ug/L		NC	20
Beryllium	<0.27		<0.27		ug/L		NC	20
Boron	<73		<73		ug/L		NC	20
Cadmium	<0.039		<0.039		ug/L		NC	20
Calcium	<0.19		<0.19		mg/L		NC	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	<0.091		<0.091		ug/L		NC	20
Lead	<0.27		<0.27		ug/L		NC	20
Lithium	<2.3		<2.3		ug/L		NC	20
Molybdenum	<1.1		<1.1		ug/L		NC	20
Selenium	<1.0		<1.0		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-277214/1-A
Matrix: Water
Analysis Batch: 277570

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 277214

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.10		0.20	0.10	ug/L		04/29/20 11:41	05/01/20 13:13	1

Lab Sample ID: LCS 310-277214/2-A
Matrix: Water
Analysis Batch: 277570

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 277214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-277250/1
Matrix: Water
Analysis Batch: 277250

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	<26		30	26	mg/L			04/29/20 14:51	1

Lab Sample ID: LCS 310-277250/2
Matrix: Water
Analysis Batch: 277250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 310-277413/1
Matrix: Water
Analysis Batch: 277413

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L	-		04/30/20 16:27	1

Lab Sample ID: LCS 310-277413/2
Matrix: Water
Analysis Batch: 277413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	994		mg/L	-	99	90 - 110

Lab Sample ID: 310-180509-3 DU
Matrix: Water
Analysis Batch: 277413

Client Sample ID: MW-303
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	630		626		mg/L	-	0.6	24

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-277090/1
Matrix: Water
Analysis Batch: 277090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU	-	100	98 - 102

Lab Sample ID: LCS 310-277090/27
Matrix: Water
Analysis Batch: 277090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU	-	100	98 - 102

Lab Sample ID: 310-180509-8 DU
Matrix: Water
Analysis Batch: 277090

Client Sample ID: MW-310
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	HF	7.3		SU	-	0.6	20

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

HPLC/IC

Analysis Batch: 277340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	9056A	
310-180509-2	MW-302	Total/NA	Water	9056A	
310-180509-3	MW-303	Total/NA	Water	9056A	
310-180509-4	MW-304	Total/NA	Water	9056A	
310-180509-5	MW-305	Total/NA	Water	9056A	
310-180509-6	MW-306	Total/NA	Water	9056A	
310-180509-7	MW-309	Total/NA	Water	9056A	
310-180509-8	MW-310	Total/NA	Water	9056A	
310-180509-9	Field Blank	Total/NA	Water	9056A	
MB 310-277340/3	Method Blank	Total/NA	Water	9056A	
LCS 310-277340/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 277167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	3010A	
310-180509-2	MW-302	Total/NA	Water	3010A	
310-180509-3	MW-303	Total/NA	Water	3010A	
310-180509-4	MW-304	Total/NA	Water	3010A	
310-180509-5	MW-305	Total/NA	Water	3010A	
310-180509-6	MW-306	Total/NA	Water	3010A	
310-180509-7	MW-309	Total/NA	Water	3010A	
310-180509-8	MW-310	Total/NA	Water	3010A	
310-180509-9	Field Blank	Total/NA	Water	3010A	
MB 310-277167/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-277167/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-180509-1 MS	MW-301	Total/NA	Water	3010A	
310-180509-1 MSD	MW-301	Total/NA	Water	3010A	
310-180509-9 DU	Field Blank	Total/NA	Water	3010A	

Prep Batch: 277214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	7470A	
310-180509-2	MW-302	Total/NA	Water	7470A	
310-180509-3	MW-303	Total/NA	Water	7470A	
310-180509-4	MW-304	Total/NA	Water	7470A	
310-180509-5	MW-305	Total/NA	Water	7470A	
310-180509-6	MW-306	Total/NA	Water	7470A	
310-180509-7	MW-309	Total/NA	Water	7470A	
310-180509-8	MW-310	Total/NA	Water	7470A	
310-180509-9	Field Blank	Total/NA	Water	7470A	
MB 310-277214/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-277214/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 277453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	6020A	277167
310-180509-2	MW-302	Total/NA	Water	6020A	277167
310-180509-3	MW-303	Total/NA	Water	6020A	277167
310-180509-4	MW-304	Total/NA	Water	6020A	277167

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Metals (Continued)

Analysis Batch: 277453 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-5	MW-305	Total/NA	Water	6020A	277167
310-180509-6	MW-306	Total/NA	Water	6020A	277167
310-180509-7	MW-309	Total/NA	Water	6020A	277167
310-180509-8	MW-310	Total/NA	Water	6020A	277167
310-180509-9	Field Blank	Total/NA	Water	6020A	277167
MB 310-277167/1-A	Method Blank	Total/NA	Water	6020A	277167
LCS 310-277167/2-A	Lab Control Sample	Total/NA	Water	6020A	277167
310-180509-1 MS	MW-301	Total/NA	Water	6020A	277167
310-180509-1 MSD	MW-301	Total/NA	Water	6020A	277167
310-180509-9 DU	Field Blank	Total/NA	Water	6020A	277167

Analysis Batch: 277570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	7470A	277214
310-180509-2	MW-302	Total/NA	Water	7470A	277214
310-180509-3	MW-303	Total/NA	Water	7470A	277214
310-180509-4	MW-304	Total/NA	Water	7470A	277214
310-180509-5	MW-305	Total/NA	Water	7470A	277214
310-180509-6	MW-306	Total/NA	Water	7470A	277214
310-180509-7	MW-309	Total/NA	Water	7470A	277214
310-180509-8	MW-310	Total/NA	Water	7470A	277214
310-180509-9	Field Blank	Total/NA	Water	7470A	277214
MB 310-277214/1-A	Method Blank	Total/NA	Water	7470A	277214
LCS 310-277214/2-A	Lab Control Sample	Total/NA	Water	7470A	277214

General Chemistry

Analysis Batch: 277090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-180509-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-180509-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-180509-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-180509-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-180509-6	MW-306	Total/NA	Water	SM 4500 H+ B	
310-180509-7	MW-309	Total/NA	Water	SM 4500 H+ B	
310-180509-8	MW-310	Total/NA	Water	SM 4500 H+ B	
310-180509-9	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-277090/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-277090/27	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-180509-8 DU	MW-310	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 277250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	SM 2540C	
310-180509-2	MW-302	Total/NA	Water	SM 2540C	
MB 310-277250/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-277250/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

General Chemistry

Analysis Batch: 277413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-3	MW-303	Total/NA	Water	SM 2540C	
310-180509-4	MW-304	Total/NA	Water	SM 2540C	
310-180509-5	MW-305	Total/NA	Water	SM 2540C	
310-180509-6	MW-306	Total/NA	Water	SM 2540C	
310-180509-7	MW-309	Total/NA	Water	SM 2540C	
310-180509-8	MW-310	Total/NA	Water	SM 2540C	
310-180509-9	Field Blank	Total/NA	Water	SM 2540C	
MB 310-277413/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-277413/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-180509-3 DU	MW-303	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 277869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	Field Sampling	
310-180509-2	MW-302	Total/NA	Water	Field Sampling	
310-180509-3	MW-303	Total/NA	Water	Field Sampling	
310-180509-4	MW-304	Total/NA	Water	Field Sampling	
310-180509-5	MW-305	Total/NA	Water	Field Sampling	
310-180509-6	MW-306	Total/NA	Water	Field Sampling	
310-180509-7	MW-309	Total/NA	Water	Field Sampling	
310-180509-8	MW-310	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-301

Lab Sample ID: 310-180509-1

Date Collected: 04/27/20 08:50

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 20:58	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:17	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:37	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277250	04/29/20 14:51	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:59	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 08:50	ANO	TAL CF

Client Sample ID: MW-302

Lab Sample ID: 310-180509-2

Date Collected: 04/27/20 10:05

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 21:16	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:37	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:40	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277250	04/29/20 14:51	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 15:12	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 10:05	ANO	TAL CF

Client Sample ID: MW-303

Lab Sample ID: 310-180509-3

Date Collected: 04/27/20 11:35

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 21:35	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:40	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:42	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:58	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 11:35	ANO	TAL CF

Client Sample ID: MW-304

Lab Sample ID: 310-180509-4

Date Collected: 04/27/20 14:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 21:54	SAD	TAL CF

Eurofins TestAmerica, Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-304

Date Collected: 04/27/20 14:10

Date Received: 04/28/20 10:15

Lab Sample ID: 310-180509-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:43	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:44	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 15:01	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 14:10	ANO	TAL CF

Client Sample ID: MW-305

Date Collected: 04/27/20 16:10

Date Received: 04/28/20 10:15

Lab Sample ID: 310-180509-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 22:12	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:45	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:46	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:57	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 16:10	ANO	TAL CF

Client Sample ID: MW-306

Date Collected: 04/27/20 17:10

Date Received: 04/28/20 10:15

Lab Sample ID: 310-180509-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 22:31	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:48	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:52	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:54	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 17:10	ANO	TAL CF

Client Sample ID: MW-309

Date Collected: 04/27/20 13:00

Date Received: 04/28/20 10:15

Lab Sample ID: 310-180509-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/29/20 23:46	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:50	SAD	TAL CF

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Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Client Sample ID: MW-309

Lab Sample ID: 310-180509-7

Date Collected: 04/27/20 13:00

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:55	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:55	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 13:00	ANO	TAL CF

Client Sample ID: MW-310

Lab Sample ID: 310-180509-8

Date Collected: 04/27/20 15:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	277340	04/30/20 00:04	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 17:53	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:57	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 14:51	JWG	TAL CF
Total/NA	Analysis	Field Sampling		1	277869	04/27/20 15:10	ANO	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-180509-9

Date Collected: 04/27/20 23:59

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	277340	04/30/20 00:23	SAD	TAL CF
Total/NA	Prep	3010A			277167	04/29/20 07:53	HED	TAL CF
Total/NA	Analysis	6020A		1	277453	04/30/20 18:03	SAD	TAL CF
Total/NA	Prep	7470A			277214	04/29/20 11:41	HIS	TAL CF
Total/NA	Analysis	7470A		1	277570	05/01/20 13:59	HIS	TAL CF
Total/NA	Analysis	SM 2540C		1	277413	04/30/20 16:27	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	277090	04/28/20 15:09	JWG	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

1

2

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Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins TestAmerica, Cedar Falls



Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: <u>Clive IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: <u>4/28/20 1015</u>	Received By: <u>DW</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? <u>1</u>
Temperature Record		
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>0.0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): _____	Corrected Temp (°C): _____	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1 <u>PL 250 Nitric 301</u>	CONTAINER 2 _____
Uncorrected Temp (°C):	<u>4.3</u>	_____
Corrected Temp (°C):	<u>4.3</u>	_____
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: CITY <u>Clive</u> STATE <u>IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: DATE <u>4/28/20</u> TIME <u>1015</u>	Received By: <u>DN</u>	
Delivery Type: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <u>4/28/20</u> <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record		
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>+0.0</u>	
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C):	Corrected Temp (°C):	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1 <u>PL 250 Nitric 306</u>	CONTAINER 2
Uncorrected Temp (°C):	<u>21</u>	
Corrected Temp (°C):	<u>2.1</u>	
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised (e.g., bulging septa, broken/cracked bottles, frozen solid)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

Chain of Custody Record

Client Information		Sampler: <u>Louise Jennings</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>310-49422-14045.2</u>	
Client Contact: <u>Louise Jennings</u>		Phone: <u>688-509-8245</u>		E-Mail: <u>sandie.fredrick@testamericainc.com</u>		Page: <u>Page 2 of 2</u>		Job #:	
Company: <u>SCS Engineers</u>		Due Date Requested:		Analysis Requested		Total Number of containers		Preservation Codes:	
Address: <u>8450 Hickman Road Suite 20</u>		TAT Requested (days):		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		A - HCL M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDTA Z - other (specify) Other:	
City: <u>Clive</u>		PO #: <u>25220074</u>		WO #:		Project #:		Special Instructions/Note:	
State, Zip: <u>IA, 50325</u>		Email: <u>ljennings@scsengineers.com</u>		Project Name: <u>Prairie Creek 25220074</u>		SSOW#:			
Phone:		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=oil, BT=Blood, AA=Air)	
Sample Identification		4.27.20		850		S		Water	
<u>MW-301</u>									
<u>MW-302</u>				<u>1605</u>					
<u>MW-303</u>				<u>1135</u>					
<u>MW-304</u>				<u>1410</u>					
<u>MW-305</u>				<u>1610</u>					
<u>MW-306</u>				<u>1710</u>					
<u>MW-309</u>				<u>1300</u>					
<u>MW-310</u>				<u>1510</u>					
<u>FIELD BLANK</u>				<u>235A</u>					
Possible Hazard Identification		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>SCS</u>	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>	
Empty Kit Relinquished by:		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>SCS</u>	
Relinquished by: <u>[Signature]</u>		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>[Signature]</u>	
Relinquished by:		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>[Signature]</u>	
Custody Seals intact:		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>[Signature]</u>	
Custody Seal No.:		Date: <u>4/28/20</u>		Time: <u>1015</u>		Company: <u>SCS</u>		Received by: <u>[Signature]</u>	

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container		Preservative	
			pH	Temp	Added (mls)	Lot #
MW-301	310-180509-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-301	310-180509-C-1	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-301	310-180509-D-1	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-C-2	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-D-2	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-C-3	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-D-3	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-C-4	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-D-4	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-A-5	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-C-5	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-D-5	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-A-6	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-C-6	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-D-6	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-A-7	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-C-7	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-D-7	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-A-8	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-C-8	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-D-8	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-A-9	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-C-9	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-D-9	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____

Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25216074.17

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	Field Blank
Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X	X	X			X	X	X
	Calcium	X	X	X	X	X	X			X	X	X
	Chloride	X	X	X	X	X	X			X	X	X
	Fluoride	X	X	X	X	X	X			X	X	X
	pH	X	X	X	X	X	X			X	X	X
	Sulfate	X	X	X	X	X	X			X	X	X
	TDS	X	X	X	X	X	X			X	X	X
Appendix IV Parameters (Assessment Monitoring)	Antimony	X	X	X	X	X	X			X	X	X
	Arsenic	X	X	X	X	X	X			X	X	X
	Barium	X	X	X	X	X	X			X	X	X
	Beryllium	X	X	X	X	X	X			X	X	X
	Cadmium	X	X	X	X	X	X			X	X	X
	Chromium	X	X	X	X	X	X			X	X	X
	Cobalt	X	X	X	X	X	X			X	X	X
	Fluoride	X	X	X	X	X	X			X	X	X
	Lead	X	X	X	X	X	X			X	X	X
	Lithium	X	X	X	X	X	X			X	X	X
	Mercury	X	X	X	X	X	X			X	X	X
	Molybdenum	X	X	X	X	X	X			X	X	X
	Selenium	X	X	X	X	X	X			X	X	X
	Thallium	X	X	X	X	X	X			X	X	X
Radium	X	X	X	X	X	X			X	X	X	
CCR Rule Field Parameters	Groundwater Elevation	X	X	X	X	X	X			X	X	
	pH	X	X	X	X	X	X			X	X	
Low-Flow Sampling Field Parameters	Well Depth	X	X	X	X	X	X			X	X	
	Specific Conductance	X	X	X	X	X	X			X	X	
	Dissolved Oxygen	X	X	X	X	X	X			X	X	
	ORP	X	X	X	X	X	X			X	X	
	Temperature	X	X	X	X	X	X			X	X	
	Turbidity	X	X	X	X	X	X			X	X	
	Color	X	X	X	X	X	X			X	X	
	Odor	X	X	X	X	X	X			X	X	

Notes: All samples are unfiltered (total).

I:\25219074.00\Data and Calculations\Field Work Requests\[Table_1_PCS_CCR_Rule_Sampling_Rev1910.xls]Sheet1

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-180509-1

Login Number: 180509

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Prairie Creek Generating Station / SCS Engineers Project #25220074
April 2020

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-301	04/27/20 @ 0850	715.80	11.1	7.09	3.50	954	208.3	6.52
MW-302	04/27/20 @ 1005	715.17	8.1	6.27	1.39	587.9	30.0	27.5
MW-303	04/27/20 @ 1135	703.10	9.3	6.78	0.14	922	-143.2	25.9
MW-304	04/27/20 @ 1410	702.84	10.1	6.84	0.14	841	-85.0	1.63
MW-305	04/27/20 @ 1610	703.02	9.6	6.82	0.70	971	20.5	3.97
MW-306	04/27/20 @ 1710	703.35	13.2	6.94	0.18	539.7	-142.0	3.92
MW-309	04/27/20 @ 1300	702.84	13.2	7.09	0.06	898	-117.7	4.21
MW-310	04/27/20 @ 1510	702.53	12.9	7.41	0.09	734	-148.01	6.30

Abbreviations:

mg/L = milligrams per liter

µmhos/cm = micromhos per centimeter

mV = millivolts

amsl = above mean sea level

Notes:

None

Created by: JSN

Last revision by: LWJ

Checked by: LMH

Scientist QA/QC: NDK

Date: 4/30/2019

Date: 5/1/2020

Date: 5/1/2020

Date: 5/4/2020

I:\25220074.00\Data and Calculations\Tables\Field Data \[PCS_CCR_Field_April 2020.xlsx]GW Field Parameters



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-180509-2
Client Project/Site: Prairie Creek 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
6/2/2020 1:59:45 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Job ID: 310-180509-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-180509-2

Comments

No additional comments.

Receipt

The samples were received on 4/28/2020 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.1° C and 4.3° C.

RAD

Methods 903.0, 9315: Radium-226 Prep Batch 160-469588 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8), Field Blank (310-180509-9), (LCS 160-469588/1-A), (LCSD 160-469588/2-A) and (MB 160-469588/23-A)

Methods 904.0, 9320: Radium-228 Prep Batch 160-469644 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8), Field Blank (310-180509-9), (LCS 160-469644/1-A), (LCSD 160-469644/2-A) and (MB 160-469644/23-A)

Method PrecSep_0: Radium 228 Prep Batch 160-469644: The following samples were prepared at a reduced aliquot due to discoloration and cloudy appearance: MW-303 (310-180509-3) and MW-306 (310-180509-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision. Sample 310-180509-3 has a brown discoloration. Sample 310-180509-6 has a cloudy appearance.

Method PrecSep_0: Radium 228 Prep Batch 160-469644: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8) and Field Blank (310-180509-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-469588: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8) and Field Blank (310-180509-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-469588: The following samples were prepared at a reduced aliquot due to discoloration and cloudy appearance: MW-303 (310-180509-3) and MW-306 (310-180509-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision. Sample 310-180509-3 has a brown discoloration. Sample 310-180509-6 has a cloudy appearance.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Gas Flow Proportional Counter

Method 903.0: Radium 226 Prep Batch 160-469588: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8) and Field Blank (310-180509-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Job ID: 310-180509-2 (Continued)

Laboratory: Eurofins TestAmerica, Cedar Falls (Continued)

Method 903.0: Radium 226 Prep Batch 160-469588: The following samples were prepared at a reduced aliquot due to discoloration and cloudy appearance: MW-303 (310-180509-3) and MW-306 (310-180509-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision. Sample 310-180509-3 has a brown discoloration. Sample 310-180509-6 has a cloudy appearance.

Method 903.0: Radium-226 Prep Batch 160-469588 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8), Field Blank (310-180509-9), (LCS 160-469588/1-A), (LCSD 160-469588/2-A) and (MB 160-469588/23-A)

Method 904.0: Radium 228 Prep Batch 160-469644: The following samples were prepared at a reduced aliquot due to discoloration and cloudy appearance: MW-303 (310-180509-3) and MW-306 (310-180509-6). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision. Sample 310-180509-3 has a brown discoloration. Sample 310-180509-6 has a cloudy appearance.

Method 904.0: Radium 228 Prep Batch 160-469644: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8) and Field Blank (310-180509-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method 904.0: Radium-228 Prep Batch 160-469644 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-180509-1), MW-302 (310-180509-2), MW-303 (310-180509-3), MW-304 (310-180509-4), MW-305 (310-180509-5), MW-306 (310-180509-6), MW-309 (310-180509-7), MW-310 (310-180509-8), Field Blank (310-180509-9), (LCS 160-469644/1-A), (LCSD 160-469644/2-A) and (MB 160-469644/23-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-180509-1	MW-301	Water	04/27/20 08:50	04/28/20 10:15	
310-180509-2	MW-302	Water	04/27/20 10:05	04/28/20 10:15	
310-180509-3	MW-303	Water	04/27/20 11:35	04/28/20 10:15	
310-180509-4	MW-304	Water	04/27/20 14:10	04/28/20 10:15	
310-180509-5	MW-305	Water	04/27/20 16:10	04/28/20 10:15	
310-180509-6	MW-306	Water	04/27/20 17:10	04/28/20 10:15	
310-180509-7	MW-309	Water	04/27/20 13:00	04/28/20 10:15	
310-180509-8	MW-310	Water	04/27/20 15:10	04/28/20 10:15	
310-180509-9	Field Blank	Water	04/27/20 23:59	04/28/20 10:15	

- 1
- 2
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- 8
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- 10
- 11
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- 13
- 14
- 15

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-301	Lab Sample ID: 310-180509-1
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-302	Lab Sample ID: 310-180509-2
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-303	Lab Sample ID: 310-180509-3
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-304	Lab Sample ID: 310-180509-4
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-305	Lab Sample ID: 310-180509-5
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-306	Lab Sample ID: 310-180509-6
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-309	Lab Sample ID: 310-180509-7
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-310	Lab Sample ID: 310-180509-8
<input type="checkbox"/> No Detections.	
Client Sample ID: Field Blank	Lab Sample ID: 310-180509-9
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-301

Lab Sample ID: 310-180509-1

Date Collected: 04/27/20 08:50

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.283		0.103	0.106	1.00	0.104	pCi/L	05/05/20 12:28	05/29/20 04:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					05/05/20 12:28	05/29/20 04:52	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.194	U	0.192	0.192	1.00	0.311	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	92.3		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.477		0.218	0.219	5.00	0.311	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-302

Lab Sample ID: 310-180509-2

Date Collected: 04/27/20 10:05

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.113		0.0763	0.0770	1.00	0.106	pCi/L	05/05/20 12:28	05/29/20 04:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					05/05/20 12:28	05/29/20 04:52	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.279	U	0.197	0.199	1.00	0.307	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	91.6		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.392		0.211	0.213	5.00	0.307	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-303

Lab Sample ID: 310-180509-3

Date Collected: 04/27/20 11:35

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.300	U	0.223	0.225	1.00	0.324	pCi/L	05/05/20 12:28	05/29/20 04:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	65.7		40 - 110					05/05/20 12:28	05/29/20 04:52	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.11		0.633	0.641	1.00	0.955	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	65.7		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	93.8		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.41		0.671	0.679	5.00	0.955	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-304

Lab Sample ID: 310-180509-4

Date Collected: 04/27/20 14:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.232		0.0934	0.0957	1.00	0.101	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.475		0.212	0.217	1.00	0.299	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	93.8		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.707		0.232	0.237	5.00	0.299	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-305

Lab Sample ID: 310-180509-5

Date Collected: 04/27/20 16:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.148		0.0875	0.0885	1.00	0.117	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.153	U	0.200	0.201	1.00	0.333	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.1		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	96.8		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.301	U	0.218	0.220	5.00	0.333	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-306

Lab Sample ID: 310-180509-6

Date Collected: 04/27/20 17:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.123	U	0.0958	0.0965	1.00	0.140	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.456	U	0.297	0.300	1.00	0.460	pCi/L	05/05/20 12:53	05/19/20 07:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110					05/05/20 12:53	05/19/20 07:29	1
Y Carrier	93.8		40 - 110					05/05/20 12:53	05/19/20 07:29	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.578		0.312	0.315	5.00	0.460	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-309

Lab Sample ID: 310-180509-7

Date Collected: 04/27/20 13:00

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.211		0.0866	0.0886	1.00	0.0922	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.627		0.267	0.273	1.00	0.391	pCi/L	05/05/20 12:53	05/19/20 07:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					05/05/20 12:53	05/19/20 07:31	1
Y Carrier	92.3		40 - 110					05/05/20 12:53	05/19/20 07:31	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.837		0.281	0.287	5.00	0.391	pCi/L		06/02/20 13:45	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-310

Lab Sample ID: 310-180509-8

Date Collected: 04/27/20 15:10

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.226		0.0837	0.0862	1.00	0.0734	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.115	U	0.201	0.202	1.00	0.341	pCi/L	05/05/20 12:53	05/19/20 07:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					05/05/20 12:53	05/19/20 07:31	1
Y Carrier	90.5		40 - 110					05/05/20 12:53	05/19/20 07:31	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.341		0.218	0.220	5.00	0.341	pCi/L		06/02/20 13:45	1



Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: Field Blank

Lab Sample ID: 310-180509-9

Date Collected: 04/27/20 23:59

Matrix: Water

Date Received: 04/28/20 10:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0154	U	0.0308	0.0308	1.00	0.0797	pCi/L	05/05/20 12:28	05/29/20 06:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					05/05/20 12:28	05/29/20 06:40	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.287	U	0.205	0.207	1.00	0.321	pCi/L	05/05/20 12:53	05/19/20 07:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					05/05/20 12:53	05/19/20 07:31	1
Y Carrier	90.1		40 - 110					05/05/20 12:53	05/19/20 07:31	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.287	U	0.207	0.209	5.00	0.321	pCi/L		06/02/20 13:45	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-469588/23-A
Matrix: Water
Analysis Batch: 471435

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469588

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01824	U	0.0568	0.0568	1.00	0.107	pCi/L	05/05/20 12:28	05/29/20 06:41	1
Carrier	MB	MB	Limits		Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier								
Ba Carrier	96.4		40 - 110		05/05/20 12:28	05/29/20 06:41	1			

Lab Sample ID: LCS 160-469588/1-A
Matrix: Water
Analysis Batch: 471435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469588

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	10.60		1.09	1.00	0.0822	pCi/L	93	75 - 125
Carrier	LCS	LCS	Limits		Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier							
Ba Carrier	101		40 - 110		05/05/20 12:28	05/29/20 06:41	1		

Lab Sample ID: LCSD 160-469588/2-A
Matrix: Water
Analysis Batch: 471435

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469588

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium-226	11.3	9.852		1.03	1.00	0.0812	pCi/L	87	75 - 125	0.35	1
Carrier	LCSD	LCSD	Limits		Prepared	Analyzed	Dil Fac				
	%Yield	Qualifier									
Ba Carrier	97.0		40 - 110		05/05/20 12:53	05/19/20 07:32	1				

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-469644/23-A
Matrix: Water
Analysis Batch: 470883

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469644

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.03416	U	0.206	0.206	1.00	0.362	pCi/L	05/05/20 12:53	05/19/20 07:32	1
Carrier	MB	MB	Limits		Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier								
Ba Carrier	96.4		40 - 110		05/05/20 12:53	05/19/20 07:32	1			
Y Carrier	89.7		40 - 110		05/05/20 12:53	05/19/20 07:32	1			

Eurofins TestAmerica, Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-469644/1-A
Matrix: Water
Analysis Batch: 470884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469644

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	8.83	8.479		0.966	1.00	0.327	pCi/L	96	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	92.3		40 - 110

Lab Sample ID: LCSD 160-469644/2-A
Matrix: Water
Analysis Batch: 470884

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469644

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	8.83	8.251		0.948	1.00	0.325	pCi/L	93	75 - 125	0.12	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	97.0		40 - 110
Y Carrier	94.6		40 - 110



QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

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Prep Batch: 469588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	PrecSep-21	
310-180509-2	MW-302	Total/NA	Water	PrecSep-21	
310-180509-3	MW-303	Total/NA	Water	PrecSep-21	
310-180509-4	MW-304	Total/NA	Water	PrecSep-21	
310-180509-5	MW-305	Total/NA	Water	PrecSep-21	
310-180509-6	MW-306	Total/NA	Water	PrecSep-21	
310-180509-7	MW-309	Total/NA	Water	PrecSep-21	
310-180509-8	MW-310	Total/NA	Water	PrecSep-21	
310-180509-9	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-469588/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-469588/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-469588/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 469644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-180509-1	MW-301	Total/NA	Water	PrecSep_0	
310-180509-2	MW-302	Total/NA	Water	PrecSep_0	
310-180509-3	MW-303	Total/NA	Water	PrecSep_0	
310-180509-4	MW-304	Total/NA	Water	PrecSep_0	
310-180509-5	MW-305	Total/NA	Water	PrecSep_0	
310-180509-6	MW-306	Total/NA	Water	PrecSep_0	
310-180509-7	MW-309	Total/NA	Water	PrecSep_0	
310-180509-8	MW-310	Total/NA	Water	PrecSep_0	
310-180509-9	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-469644/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-469644/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-469644/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-301

Lab Sample ID: 310-180509-1

Date Collected: 04/27/20 08:50

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 04:52	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-302

Lab Sample ID: 310-180509-2

Date Collected: 04/27/20 10:05

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 04:52	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-303

Lab Sample ID: 310-180509-3

Date Collected: 04/27/20 11:35

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 04:52	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-304

Lab Sample ID: 310-180509-4

Date Collected: 04/27/20 14:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: MW-305

Lab Sample ID: 310-180509-5

Date Collected: 04/27/20 16:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-306

Lab Sample ID: 310-180509-6

Date Collected: 04/27/20 17:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470884	05/19/20 07:29	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-309

Lab Sample ID: 310-180509-7

Date Collected: 04/27/20 13:00

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470883	05/19/20 07:31	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Client Sample ID: MW-310

Lab Sample ID: 310-180509-8

Date Collected: 04/27/20 15:10

Matrix: Water

Date Received: 04/28/20 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470883	05/19/20 07:31	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Client Sample ID: Field Blank

Lab Sample ID: 310-180509-9

Date Collected: 04/27/20 23:59

Matrix: Water

Date Received: 04/28/20 10:15

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	PrecSep-21			469588	05/05/20 12:28	RBR	TAL SL
Total/NA	Analysis	903.0		1	471435	05/29/20 06:40	CJQ	TAL SL
Total/NA	Prep	PrecSep_0			469644	05/05/20 12:53	RBR	TAL SL
Total/NA	Analysis	904.0		1	470883	05/19/20 07:31	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	471825	06/02/20 13:45	SMP	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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Accreditation/Certification Summary

Client: SCS Engineers
 Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: <u>Clive IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: <u>4/28/20 1015</u>	Received By: <u>DW</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? <u>1</u>
Temperature Record		
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>0.0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): _____	Corrected Temp (°C): _____	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1 <u>PL 250 Nitric 301</u>	CONTAINER 2 _____
Uncorrected Temp (°C):	<u>4.3</u>	_____
Corrected Temp (°C):	<u>4.3</u>	_____
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: CITY <u>Clive</u> STATE <u>IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: DATE <u>4/28/20</u> TIME <u>1015</u>	Received By: <u>DN</u>	
Delivery Type: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <u>4/28/20</u> <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record		
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>+0.0</u>	
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C):	Corrected Temp (°C):	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1 <u>PL 250 Nitric 306</u>	CONTAINER 2
Uncorrected Temp (°C):	<u>21</u>	
Corrected Temp (°C):	<u>2.1</u>	
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised (e.g., bulging septa, broken/cracked bottles, frozen solid)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

Chain of Custody Record

Client Information		Sampler: <u>Louise Jennings</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>310-49422-14045.2</u>	
Client Contact: <u>Louise Jennings</u>		Phone: <u>688-509-8245</u>		E-Mail: <u>sandie.fredrick@testamericainc.com</u>		Page: <u>Page 2 of 2</u>		Job #:	
Company: <u>SCS Engineers</u>		Due Date Requested:		Analysis Requested		Total Number of containers		Preservation Codes:	
Address: <u>8450 Hickman Road Suite 20</u>		TAT Requested (days):		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		A - HCL M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDTA Z - other (specify) Other:	
City: <u>Clive</u>		PO #: <u>25220074</u>		WO #:		Project #:		Special Instructions/Note:	
State, Zip: <u>IA, 50325</u>		Email: <u>ljennings@scsengineers.com</u>		Project Name: <u>Prairie Creek 25220074</u>		SSOW#:			
Phone:		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soil, BT=Blood, AA=Air)	
Sample Identification		4.27.20		850		S		Water	
<u>MW-301</u>				<u>1605</u>					
<u>MW-302</u>				<u>1135</u>					
<u>MW-303</u>				<u>1410</u>					
<u>MW-304</u>				<u>1610</u>					
<u>MW-305</u>				<u>1710</u>					
<u>MW-306</u>				<u>1300</u>					
<u>MW-309</u>				<u>1510</u>					
<u>MW-310</u>				<u>235A</u>					
<u>FIELD BLANK</u>									
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Radiological	
Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Poison B		<input type="checkbox"/> Unknown		<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:		Archive For: <u>Months</u>	
Relinquished by: <u>[Signature]</u>		Date/Time: <u>4/28/20 1015</u>		Company: <u>SCS</u>		Received by:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Company:	
Relinquished by:		Date/Time:		Company:		Received by: <u>[Signature]</u>		Date/Time: <u>4/28/20 1015</u>	
Custody Seals intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container		Preservative	
			pH	Temp	Added (mls)	Lot #
MW-301	310-180509-A-1	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-301	310-180509-C-1	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-301	310-180509-D-1	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-A-2	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-C-2	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-302	310-180509-D-2	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-A-3	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-C-3	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-303	310-180509-D-3	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-A-4	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-C-4	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-304	310-180509-D-4	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-A-5	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-C-5	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-305	310-180509-D-5	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-A-6	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-C-6	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-306	310-180509-D-6	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-A-7	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-C-7	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-309	310-180509-D-7	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-A-8	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-C-8	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
MW-310	310-180509-D-8	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-A-9	Plastic 250ml - with Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-C-9	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____
Field Blank	310-180509-D-9	Plastic 1 liter - Nitric Acid	<2	_____	_____	_____

Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25216074.17

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	Field Blank
Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X	X	X			X	X	X
	Calcium	X	X	X	X	X	X			X	X	X
	Chloride	X	X	X	X	X	X			X	X	X
	Fluoride	X	X	X	X	X	X			X	X	X
	pH	X	X	X	X	X	X			X	X	X
	Sulfate	X	X	X	X	X	X			X	X	X
	TDS	X	X	X	X	X	X			X	X	X
Appendix IV Parameters (Assessment Monitoring)	Antimony	X	X	X	X	X	X			X	X	X
	Arsenic	X	X	X	X	X	X			X	X	X
	Barium	X	X	X	X	X	X			X	X	X
	Beryllium	X	X	X	X	X	X			X	X	X
	Cadmium	X	X	X	X	X	X			X	X	X
	Chromium	X	X	X	X	X	X			X	X	X
	Cobalt	X	X	X	X	X	X			X	X	X
	Fluoride	X	X	X	X	X	X			X	X	X
	Lead	X	X	X	X	X	X			X	X	X
	Lithium	X	X	X	X	X	X			X	X	X
	Mercury	X	X	X	X	X	X			X	X	X
	Molybdenum	X	X	X	X	X	X			X	X	X
	Selenium	X	X	X	X	X	X			X	X	X
Thallium	X	X	X	X	X	X			X	X	X	
Radium	X	X	X	X	X	X			X	X	X	
CCR Rule Field Parameters	Groundwater Elevation	X	X	X	X	X	X			X	X	
	pH	X	X	X	X	X	X			X	X	
Low-Flow Sampling Field Parameters	Well Depth	X	X	X	X	X	X			X	X	
	Specific Conductance	X	X	X	X	X	X			X	X	
	Dissolved Oxygen	X	X	X	X	X	X			X	X	
	ORP	X	X	X	X	X	X			X	X	
	Temperature	X	X	X	X	X	X			X	X	
	Turbidity	X	X	X	X	X	X			X	X	
	Color	X	X	X	X	X	X			X	X	
	Odor	X	X	X	X	X	X			X	X	

Notes: All samples are unfiltered (total).

I:\25219074.00\Data and Calculations\Field Work Requests\[Table_1_PCS_CCR_Rule_Sampling_Rev1910.xls]Sheet1

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-180509-2

Login Number: 180509

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-180509-2

Login Number: 180509

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 04/29/20 08:35 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-180509-2

Login Number: 180509

List Number: 3

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 04/30/20 06:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	Samples 6-9 were received in St. Louis, separate from 1-5, on 4/30/2020.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: SCS Engineers
 Project/Site: Prairie Creek 25220074

Job ID: 310-180509-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	
310-180509-1	MW-301	98.5	
310-180509-2	MW-302	99.7	
310-180509-3	MW-303	65.7	
310-180509-4	MW-304	95.8	
310-180509-5	MW-305	90.1	
310-180509-6	MW-306	94.0	
310-180509-7	MW-309	99.7	
310-180509-8	MW-310	100	
310-180509-9	Field Blank	104	
LCS 160-469588/1-A	Lab Control Sample	101	
LCSD 160-469588/2-A	Lab Control Sample Dup	97.0	
MB 160-469588/23-A	Method Blank	96.4	

Tracer/Carrier Legend
 Ba Carrier = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)
310-180509-1	MW-301	98.5	92.3
310-180509-2	MW-302	99.7	91.6
310-180509-3	MW-303	65.7	93.8
310-180509-4	MW-304	95.8	93.8
310-180509-5	MW-305	90.1	96.8
310-180509-6	MW-306	94.0	93.8
310-180509-7	MW-309	99.7	92.3
310-180509-8	MW-310	100	90.5
310-180509-9	Field Blank	104	90.1
LCS 160-469644/1-A	Lab Control Sample	101	92.3
LCSD 160-469644/2-A	Lab Control Sample Dup	97.0	94.6
MB 160-469644/23-A	Method Blank	96.4	89.7

Tracer/Carrier Legend
 Ba Carrier = Ba Carrier
 Y Carrier = Y Carrier

C3 May 2020 Assessment Monitoring

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-182713-1
Client Project/Site: Prairie Creek CCR 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
6/10/2020 3:51:55 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Job ID: 310-182713-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-182713-1

Comments

No additional comments.

Receipt

The samples were received on 5/28/2020 5:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

HPLC/IC

Method 9056A: The following sample was diluted due to the nature of the sample matrix: MW-307 (310-182713-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-182713-1	MW-307	Water	05/27/20 15:00	05/28/20 17:15	
310-182713-2	MW-308	Water	05/27/20 13:30	05/28/20 17:15	
310-182713-3	Field Blank	Water	05/27/20 14:25	05/28/20 17:15	

1

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Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Client Sample ID: MW-307

Lab Sample ID: 310-182713-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2	J	5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.49	J	0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	32		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.83	J	1.0	0.58	ug/L	1		6020A	Total/NA
Arsenic	6.1		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	26		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	630		100	73	ug/L	1		6020A	Total/NA
Calcium	16		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	8.3	J	10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	7.0		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	38		30	26	mg/L	1		SM 2540C	Total/NA
pH	9.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	708.14				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	109.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.19				mg/L	1		Field Sampling	Total/NA
pH, Field	8.28				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	243.5				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.98				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-308

Lab Sample ID: 310-182713-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.54		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	180		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.70	J	1.0	0.58	ug/L	1		6020A	Total/NA
Arsenic	58		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	38		2.0	0.90	ug/L	1		6020A	Total/NA
Boron	6100		400	290	ug/L	4		6020A	Total/NA
Cadmium	0.040	J	0.10	0.039	ug/L	1		6020A	Total/NA
Calcium	68		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	35		10	2.3	ug/L	1		6020A	Total/NA
Molybdenum	64		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	390		30	26	mg/L	1		SM 2540C	Total/NA
pH	9.1	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	705.64				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-22.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.86				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1008				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.33				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-182713-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	150		100	73	ug/L	1		6020A	Total/NA
pH	6.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Client Sample ID: MW-307

Lab Sample ID: 310-182713-1

Date Collected: 05/27/20 15:00

Matrix: Water

Date Received: 05/28/20 17:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2	J	5.0	2.0	mg/L			06/04/20 02:31	5
Fluoride	0.49	J	0.50	0.23	mg/L			06/04/20 02:31	5
Sulfate	32		5.0	3.6	mg/L			06/04/20 02:31	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.83	J	1.0	0.58	ug/L		06/01/20 08:18	06/02/20 17:45	1
Arsenic	6.1		2.0	0.88	ug/L		06/01/20 08:18	06/02/20 17:45	1
Barium	26		2.0	0.90	ug/L		06/01/20 08:18	06/02/20 17:45	1
Beryllium	<0.27		1.0	0.27	ug/L		06/01/20 08:18	06/02/20 17:45	1
Boron	630		100	73	ug/L		06/01/20 08:18	06/02/20 17:45	1
Cadmium	<0.039		0.10	0.039	ug/L		06/01/20 08:18	06/02/20 17:45	1
Calcium	16		0.50	0.19	mg/L		06/01/20 08:18	06/02/20 17:45	1
Chromium	<1.1		5.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:45	1
Cobalt	<0.091		0.50	0.091	ug/L		06/01/20 08:18	06/02/20 17:45	1
Lead	<0.27		0.50	0.27	ug/L		06/01/20 08:18	06/02/20 17:45	1
Lithium	8.3	J	10	2.3	ug/L		06/01/20 08:18	06/02/20 17:45	1
Molybdenum	7.0		2.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:45	1
Selenium	<1.0		5.0	1.0	ug/L		06/01/20 08:18	06/02/20 17:45	1
Thallium	<0.26		1.0	0.26	ug/L		06/01/20 08:18	06/02/20 17:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		05/29/20 14:29	06/01/20 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	38		30	26	mg/L			05/29/20 14:26	1
pH	9.2	HF	0.1	0.1	SU			05/28/20 21:54	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	708.14				ft			05/27/20 15:00	1
Oxidation Reduction Potential	109.8				millivolts			05/27/20 15:00	1
Oxygen, Dissolved, Client Supplied	0.19				mg/L			05/27/20 15:00	1
pH, Field	8.28				SU			05/27/20 15:00	1
Specific Conductance, Field	243.5				umhos/cm			05/27/20 15:00	1
Temperature, Field	12.6				Degrees C			05/27/20 15:00	1
Turbidity, Field	2.98				NTU			05/27/20 15:00	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Client Sample ID: MW-308

Lab Sample ID: 310-182713-2

Date Collected: 05/27/20 13:30

Matrix: Water

Date Received: 05/28/20 17:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		5.0	2.0	mg/L			06/04/20 02:48	5
Fluoride	0.54		0.50	0.23	mg/L			06/04/20 02:48	5
Sulfate	180		5.0	3.6	mg/L			06/04/20 02:48	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.70	J	1.0	0.58	ug/L		06/01/20 08:18	06/02/20 17:56	1
Arsenic	58		2.0	0.88	ug/L		06/01/20 08:18	06/02/20 17:56	1
Barium	38		2.0	0.90	ug/L		06/01/20 08:18	06/02/20 17:56	1
Beryllium	<0.27		1.0	0.27	ug/L		06/01/20 08:18	06/02/20 17:56	1
Boron	6100		400	290	ug/L		06/01/20 08:18	06/04/20 13:58	4
Cadmium	0.040	J	0.10	0.039	ug/L		06/01/20 08:18	06/02/20 17:56	1
Calcium	68		0.50	0.19	mg/L		06/01/20 08:18	06/02/20 17:56	1
Chromium	<1.1		5.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:56	1
Cobalt	<0.091		0.50	0.091	ug/L		06/01/20 08:18	06/02/20 17:56	1
Lead	<0.27		0.50	0.27	ug/L		06/01/20 08:18	06/02/20 17:56	1
Lithium	35		10	2.3	ug/L		06/01/20 08:18	06/02/20 17:56	1
Molybdenum	64		2.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:56	1
Selenium	<1.0		5.0	1.0	ug/L		06/01/20 08:18	06/02/20 17:56	1
Thallium	<0.26		1.0	0.26	ug/L		06/01/20 08:18	06/02/20 17:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		05/29/20 14:29	06/01/20 13:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	390		30	26	mg/L			05/29/20 14:26	1
pH	9.1	HF	0.1	0.1	SU			05/28/20 21:56	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	705.64				ft			05/27/20 13:30	1
Oxidation Reduction Potential	-22.4				millivolts			05/27/20 13:30	1
Oxygen, Dissolved, Client Supplied	0.10				mg/L			05/27/20 13:30	1
pH, Field	7.86				SU			05/27/20 13:30	1
Specific Conductance, Field	1008				umhos/cm			05/27/20 13:30	1
Temperature, Field	12.7				Degrees C			05/27/20 13:30	1
Turbidity, Field	2.33				NTU			05/27/20 13:30	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Client Sample ID: Field Blank

Lab Sample ID: 310-182713-3

Date Collected: 05/27/20 14:25

Matrix: Water

Date Received: 05/28/20 17:15

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			06/04/20 03:04	1
Fluoride	<0.046		0.10	0.046	mg/L			06/04/20 03:04	1
Sulfate	<0.71		1.0	0.71	mg/L			06/04/20 03:04	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		06/01/20 08:18	06/02/20 17:58	1
Arsenic	<0.88		2.0	0.88	ug/L		06/01/20 08:18	06/02/20 17:58	1
Barium	<0.90		2.0	0.90	ug/L		06/01/20 08:18	06/02/20 17:58	1
Beryllium	<0.27		1.0	0.27	ug/L		06/01/20 08:18	06/02/20 17:58	1
Boron	150		100	73	ug/L		06/01/20 08:18	06/02/20 17:58	1
Cadmium	<0.039		0.10	0.039	ug/L		06/01/20 08:18	06/02/20 17:58	1
Calcium	<0.19		0.50	0.19	mg/L		06/01/20 08:18	06/02/20 17:58	1
Chromium	<1.1		5.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:58	1
Cobalt	<0.091		0.50	0.091	ug/L		06/01/20 08:18	06/02/20 17:58	1
Lead	<0.27		0.50	0.27	ug/L		06/01/20 08:18	06/02/20 17:58	1
Lithium	<2.3		10	2.3	ug/L		06/01/20 08:18	06/02/20 17:58	1
Molybdenum	<1.1		2.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:58	1
Selenium	<1.0		5.0	1.0	ug/L		06/01/20 08:18	06/02/20 17:58	1
Thallium	<0.26		1.0	0.26	ug/L		06/01/20 08:18	06/02/20 17:58	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		05/29/20 14:29	06/01/20 13:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			05/29/20 14:26	1
pH	6.4	HF	0.1	0.1	SU			05/28/20 22:00	1



Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-281184/3
Matrix: Water
Analysis Batch: 281184

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			06/04/20 00:37	1
Fluoride	<0.046		0.10	0.046	mg/L			06/04/20 00:37	1
Sulfate	<0.71		1.0	0.71	mg/L			06/04/20 00:37	1

Lab Sample ID: LCS 310-281184/4
Matrix: Water
Analysis Batch: 281184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.3		mg/L		103	90 - 110
Fluoride	2.00	2.04		mg/L		102	90 - 110
Sulfate	10.0	10.3		mg/L		103	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-280615/1-A
Matrix: Water
Analysis Batch: 280866

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280615

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.58		1.0	0.58	ug/L		06/01/20 08:18	06/02/20 17:40	1
Arsenic	<0.88		2.0	0.88	ug/L		06/01/20 08:18	06/02/20 17:40	1
Barium	<0.90		2.0	0.90	ug/L		06/01/20 08:18	06/02/20 17:40	1
Beryllium	<0.27		1.0	0.27	ug/L		06/01/20 08:18	06/02/20 17:40	1
Boron	<73		100	73	ug/L		06/01/20 08:18	06/02/20 17:40	1
Cadmium	<0.039		0.10	0.039	ug/L		06/01/20 08:18	06/02/20 17:40	1
Calcium	<0.19		0.50	0.19	mg/L		06/01/20 08:18	06/02/20 17:40	1
Chromium	<1.1		5.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:40	1
Cobalt	<0.091		0.50	0.091	ug/L		06/01/20 08:18	06/02/20 17:40	1
Lead	<0.27		0.50	0.27	ug/L		06/01/20 08:18	06/02/20 17:40	1
Lithium	<2.3		10	2.3	ug/L		06/01/20 08:18	06/02/20 17:40	1
Molybdenum	<1.1		2.0	1.1	ug/L		06/01/20 08:18	06/02/20 17:40	1
Selenium	<1.0		5.0	1.0	ug/L		06/01/20 08:18	06/02/20 17:40	1
Thallium	<0.26		1.0	0.26	ug/L		06/01/20 08:18	06/02/20 17:40	1

Lab Sample ID: LCS 310-280615/2-A
Matrix: Water
Analysis Batch: 280866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	34.3		ug/L		86	80 - 120
Arsenic	80.0	68.8		ug/L		86	80 - 120
Barium	80.0	82.7		ug/L		103	80 - 120
Beryllium	40.0	42.9		ug/L		107	80 - 120
Boron	1760	1730		ug/L		98	80 - 120
Cadmium	40.0	41.4		ug/L		103	80 - 120
Calcium	4.00	4.07		mg/L		102	80 - 120
Chromium	80.0	83.8		ug/L		105	80 - 120
Cobalt	40.0	40.3		ug/L		101	80 - 120

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-280615/2-A
Matrix: Water
Analysis Batch: 280866

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	40.0	41.4		ug/L		103	80 - 120
Lithium	200	191		ug/L		96	80 - 120
Molybdenum	80.0	75.5		ug/L		94	80 - 120
Selenium	80.0	72.3		ug/L		90	80 - 120
Thallium	32.0	31.4		ug/L		98	80 - 120

Lab Sample ID: 310-182713-1 MS
Matrix: Water
Analysis Batch: 280866

Client Sample ID: MW-307
Prep Type: Total/NA
Prep Batch: 280615

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.83	J	40.0	38.2		ug/L		93	75 - 125
Arsenic	6.1		80.0	78.3		ug/L		90	75 - 125
Barium	26		80.0	108		ug/L		104	75 - 125
Beryllium	<0.27		40.0	44.1		ug/L		110	75 - 125
Boron	630		1760	2420		ug/L		102	75 - 125
Cadmium	<0.039		40.0	42.6		ug/L		106	75 - 125
Calcium	16		4.00	20.2		mg/L		105	75 - 125
Chromium	<1.1		80.0	84.8		ug/L		106	75 - 125
Cobalt	<0.091		40.0	40.2		ug/L		100	75 - 125
Lead	<0.27		40.0	42.2		ug/L		106	75 - 125
Lithium	8.3	J	200	202		ug/L		97	75 - 125
Molybdenum	7.0		80.0	88.1		ug/L		101	75 - 125
Selenium	<1.0		80.0	75.1		ug/L		94	75 - 125
Thallium	<0.26		32.0	32.1		ug/L		100	75 - 125

Lab Sample ID: 310-182713-1 MSD
Matrix: Water
Analysis Batch: 280866

Client Sample ID: MW-307
Prep Type: Total/NA
Prep Batch: 280615

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.83	J	40.0	38.9		ug/L		95	75 - 125	2	20
Arsenic	6.1		80.0	79.8		ug/L		92	75 - 125	2	20
Barium	26		80.0	111		ug/L		107	75 - 125	2	20
Beryllium	<0.27		40.0	44.0		ug/L		110	75 - 125	0	20
Boron	630		1760	2510		ug/L		107	75 - 125	4	20
Cadmium	<0.039		40.0	43.4		ug/L		108	75 - 125	2	20
Calcium	16		4.00	20.4		mg/L		110	75 - 125	1	20
Chromium	<1.1		80.0	85.2		ug/L		106	75 - 125	0	20
Cobalt	<0.091		40.0	40.8		ug/L		102	75 - 125	1	20
Lead	<0.27		40.0	43.3		ug/L		108	75 - 125	2	20
Lithium	8.3	J	200	209		ug/L		101	75 - 125	4	20
Molybdenum	7.0		80.0	89.7		ug/L		103	75 - 125	2	20
Selenium	<1.0		80.0	77.2		ug/L		96	75 - 125	3	20
Thallium	<0.26		32.0	32.9		ug/L		103	75 - 125	2	20

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-280537/1-A
Matrix: Water
Analysis Batch: 280670

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 280537

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		05/29/20 14:29	06/01/20 12:14	1

Lab Sample ID: LCS 310-280537/2-A
Matrix: Water
Analysis Batch: 280670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 280537
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	1.67	1.58		ug/L		95	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-280536/1
Matrix: Water
Analysis Batch: 280536

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			05/29/20 14:26	1

Lab Sample ID: LCS 310-280536/2
Matrix: Water
Analysis Batch: 280536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	1000	988		mg/L		99	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-280416/1
Matrix: Water
Analysis Batch: 280416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
pH	7.00	7.0		SU		100	98 - 102

Lab Sample ID: 310-182713-1 DU
Matrix: Water
Analysis Batch: 280416

Client Sample ID: MW-307
Prep Type: Total/NA
RPD

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	9.2	HF	9.2		SU		0.1	20

Eurofins TestAmerica, Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

HPLC/IC

Analysis Batch: 281184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	9056A	
310-182713-2	MW-308	Total/NA	Water	9056A	
310-182713-3	Field Blank	Total/NA	Water	9056A	
MB 310-281184/3	Method Blank	Total/NA	Water	9056A	
LCS 310-281184/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 280537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	7470A	
310-182713-2	MW-308	Total/NA	Water	7470A	
310-182713-3	Field Blank	Total/NA	Water	7470A	
MB 310-280537/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-280537/2-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 280615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	3010A	
310-182713-2	MW-308	Total/NA	Water	3010A	
310-182713-3	Field Blank	Total/NA	Water	3010A	
MB 310-280615/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-280615/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-182713-1 MS	MW-307	Total/NA	Water	3010A	
310-182713-1 MSD	MW-307	Total/NA	Water	3010A	

Analysis Batch: 280670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	7470A	280537
310-182713-2	MW-308	Total/NA	Water	7470A	280537
310-182713-3	Field Blank	Total/NA	Water	7470A	280537
MB 310-280537/1-A	Method Blank	Total/NA	Water	7470A	280537
LCS 310-280537/2-A	Lab Control Sample	Total/NA	Water	7470A	280537

Analysis Batch: 280866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	6020A	280615
310-182713-2	MW-308	Total/NA	Water	6020A	280615
310-182713-3	Field Blank	Total/NA	Water	6020A	280615
MB 310-280615/1-A	Method Blank	Total/NA	Water	6020A	280615
LCS 310-280615/2-A	Lab Control Sample	Total/NA	Water	6020A	280615
310-182713-1 MS	MW-307	Total/NA	Water	6020A	280615
310-182713-1 MSD	MW-307	Total/NA	Water	6020A	280615

Analysis Batch: 281172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-2	MW-308	Total/NA	Water	6020A	280615

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

General Chemistry

Analysis Batch: 280416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	SM 4500 H+ B	
310-182713-2	MW-308	Total/NA	Water	SM 4500 H+ B	
310-182713-3	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-280416/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-182713-1 DU	MW-307	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 280536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	SM 2540C	
310-182713-2	MW-308	Total/NA	Water	SM 2540C	
310-182713-3	Field Blank	Total/NA	Water	SM 2540C	
MB 310-280536/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-280536/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 281674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	Field Sampling	
310-182713-2	MW-308	Total/NA	Water	Field Sampling	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Client Sample ID: MW-307

Date Collected: 05/27/20 15:00

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	281184	06/04/20 02:31	ACJ	TAL CF
Total/NA	Prep	3010A			280615	06/01/20 08:18	HED	TAL CF
Total/NA	Analysis	6020A		1	280866	06/02/20 17:45	ACJ	TAL CF
Total/NA	Prep	7470A			280537	05/29/20 14:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	280670	06/01/20 13:03	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	280536	05/29/20 14:26	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	280416	05/28/20 21:54	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	281674	05/27/20 15:00	ANO	TAL CF

Client Sample ID: MW-308

Date Collected: 05/27/20 13:30

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	281184	06/04/20 02:48	ACJ	TAL CF
Total/NA	Prep	3010A			280615	06/01/20 08:18	HED	TAL CF
Total/NA	Analysis	6020A		1	280866	06/02/20 17:56	ACJ	TAL CF
Total/NA	Prep	3010A			280615	06/01/20 08:18	HED	TAL CF
Total/NA	Analysis	6020A		4	281172	06/04/20 13:58	ACJ	TAL CF
Total/NA	Prep	7470A			280537	05/29/20 14:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	280670	06/01/20 13:05	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	280536	05/29/20 14:26	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	280416	05/28/20 21:56	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	281674	05/27/20 13:30	ANO	TAL CF

Client Sample ID: Field Blank

Date Collected: 05/27/20 14:25

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	281184	06/04/20 03:04	ACJ	TAL CF
Total/NA	Prep	3010A			280615	06/01/20 08:18	HED	TAL CF
Total/NA	Analysis	6020A		1	280866	06/02/20 17:58	ACJ	TAL CF
Total/NA	Prep	7470A			280537	05/29/20 14:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	280670	06/01/20 13:07	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	280536	05/29/20 14:26	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	280416	05/28/20 22:00	JMH	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

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Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins TestAmerica, Cedar Falls



310-182713 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: <u>CITY Olive</u> STATE <u>IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: DATE <u>5/28/20</u> TIME <u>1015</u>	Received By: <u>JJ</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record		
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>1.3</u>	Corrected Temp (°C): <u>1.3</u>	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

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**Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project**

#25216074 17

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	Field Blank
Appendix III Parameters (Detection Monitoring)	Boron							X	X			X
	Calcium							X	X			X
	Chloride							X	X			X
	Fluoride							X	X			X
	pH							X	X			X
	Sulfate							X	X			X
	TDS							X	X			X
Appendix IV Parameters (Assessment Monitoring)	Antimony							X	X			X
	Arsenic							X	X			X
	Barium							X	X			X
	Beryllium							X	X			X
	Cadmium							X	X			X
	Chromium							X	X			X
	Cobalt							X	X			X
	Fluoride							X	X			X
	Lead							X	X			X
	Lithium							X	X			X
	Mercury							X	X			X
	Molybdenum							X	X			X
	Selenium							X	X			X
	Thallium							X	X			X
Radium							X	X			X	
CCR Rule Field Parameters	Groundwater Elevation							X	X			
	pH							X	X			
Low-Flow Sampling Field Parameters	Well Depth							X	X			
	Specific Conductance							X	X			
	Dissolved Oxygen							X	X			
	ORP							X	X			
	Temperature							X	X			
	Turbidity							X	X			
	Color							X	X			
Odor							X	X				

Notes: All samples are unfiltered (total).

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-182713-1

Login Number: 182713

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Prairie Creek Generating Station / SCS Engineers Project #25220074
May 2020

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-307	5/27 @ 1500	708.14	12.6	8.28	0.19	243.5	109.8	2.98
MW-308	5/27 @ 1330	705.64	12.7	7.86	0.10	1008	-22.4	2.33

Abbreviations:
 mg/L = milligrams per liter
 µmhos/cm = micromhos per centimeter

mV = millivolts amsl = above mean sea level

Notes:
 None

Created by: JSN
 Last revision by: MDB
 Checked by: JSN
 Scientist QA/QC:

Date: 4/30/2019
 Date: 6/7/2020
 Date: 6/8/2020
 Date:

C:\Users\Fredricks\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\O0MJVD03\PCS_CCR_Field_May 2020.xlsx



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-182713-2
Client Project/Site: Prairie Creek CCR 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
6/28/2020 4:47:24 PM
Robin Kintz, Project Manager II
(708)534-5200
robin.kintz@testamericainc.com

Designee for
Sandie Fredrick, Project Manager II
(920)261-1660
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Job ID: 310-182713-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-182713-2

Comments

No additional comments.

Receipt

The samples were received on 5/28/2020 5:15 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.3° C.

RAD

Methods 903.0, 9315: Radium-226 Prep Batch 160-471835:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-307 (310-182713-1), MW-308 (310-182713-2), Field Blank (310-182713-3), (LCS 160-471835/1-A), (MB 160-471835/20-A), (180-106111-E-9-A) and (180-106111-A-9-A DU)

Methods 904.0, 9320: Radium-228 Prep Batch 160-471838:

The following samples did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interferences (see prep NCM 160-196880): (180-106111-E-9-B) and (180-106111-A-9-B DU). The data have been reported with this narrative.

Methods 904.0, 9320: Radium-228 Prep Batch 160-471838:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

MW-307 (310-182713-1), MW-308 (310-182713-2), Field Blank (310-182713-3), (LCS 160-471838/1-A), (MB 160-471838/20-A), (180-106111-E-9-B) and (180-106111-A-9-B DU)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-182713-1	MW-307	Water	05/27/20 15:00	05/28/20 17:15	
310-182713-2	MW-308	Water	05/27/20 13:30	05/28/20 17:15	
310-182713-3	Field Blank	Water	05/27/20 14:25	05/28/20 17:15	

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Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Client Sample ID: MW-307

Lab Sample ID: 310-182713-1

No Detections.

Client Sample ID: MW-308

Lab Sample ID: 310-182713-2

No Detections.

Client Sample ID: Field Blank

Lab Sample ID: 310-182713-3

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Client Sample ID: MW-307

Lab Sample ID: 310-182713-1

Date Collected: 05/27/20 15:00

Matrix: Water

Date Received: 05/28/20 17:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0560	U	0.0813	0.0814	1.00	0.139	pCi/L	06/02/20 17:00	06/25/20 09:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.1		40 - 110					06/02/20 17:00	06/25/20 09:56	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.285	U	0.282	0.283	1.00	0.458	pCi/L	06/02/20 17:22	06/22/20 11:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.1		40 - 110					06/02/20 17:22	06/22/20 11:47	1
Y Carrier	86.0		40 - 110					06/02/20 17:22	06/22/20 11:47	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.341	U	0.293	0.294	5.00	0.458	pCi/L		06/26/20 09:50	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Client Sample ID: MW-308

Lab Sample ID: 310-182713-2

Date Collected: 05/27/20 13:30

Matrix: Water

Date Received: 05/28/20 17:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0618	U	0.116	0.116	1.00	0.204	pCi/L	06/02/20 17:00	06/25/20 09:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					06/02/20 17:00	06/25/20 09:56	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0552	U	0.280	0.280	1.00	0.488	pCi/L	06/02/20 17:22	06/22/20 11:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					06/02/20 17:22	06/22/20 11:47	1
Y Carrier	86.7		40 - 110					06/02/20 17:22	06/22/20 11:47	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.117	U	0.303	0.303	5.00	0.488	pCi/L		06/26/20 09:50	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Client Sample ID: Field Blank

Lab Sample ID: 310-182713-3

Date Collected: 05/27/20 14:25

Matrix: Water

Date Received: 05/28/20 17:15

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0497	U	0.0823	0.0824	1.00	0.144	pCi/L	06/02/20 17:00	06/25/20 09:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.0		40 - 110					06/02/20 17:00	06/25/20 09:56	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00465	U	0.273	0.273	1.00	0.485	pCi/L	06/02/20 17:22	06/22/20 11:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.0		40 - 110					06/02/20 17:22	06/22/20 11:47	1
Y Carrier	87.5		40 - 110					06/02/20 17:22	06/22/20 11:47	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0497	U	0.285	0.285	5.00	0.485	pCi/L		06/26/20 09:50	1



Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-471835/20-A
Matrix: Water
Analysis Batch: 474477

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471835

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.04701	U	0.0948	0.0949	1.00	0.217	pCi/L	06/02/20 17:00	06/25/20 09:56	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	99.4		40 - 110		06/02/20 17:00	06/25/20 09:56	1			

Lab Sample ID: LCS 160-471835/1-A
Matrix: Water
Analysis Batch: 474477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471835

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.1	14.33		1.61	1.00	0.208	pCi/L	95	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	82.5		40 - 110						

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-471838/20-A
Matrix: Water
Analysis Batch: 474034

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471838

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	-0.01529	U	0.300	0.300	1.00	0.542	pCi/L	06/02/20 17:22	06/22/20 11:47	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	99.4		40 - 110		06/02/20 17:22	06/22/20 11:47	1			
Y Carrier	78.5		40 - 110		06/02/20 17:22	06/22/20 11:47	1			

Lab Sample ID: LCS 160-471838/1-A
Matrix: Water
Analysis Batch: 474027

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471838

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-228	11.6	12.45		1.50	1.00	0.572	pCi/L	107	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	82.5		40 - 110						
Y Carrier	83.7		40 - 110						

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Rad

Prep Batch: 471835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	PrecSep-21	
310-182713-2	MW-308	Total/NA	Water	PrecSep-21	
310-182713-3	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-471835/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-471835/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 471838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-182713-1	MW-307	Total/NA	Water	PrecSep_0	
310-182713-2	MW-308	Total/NA	Water	PrecSep_0	
310-182713-3	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-471838/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-471838/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Client Sample ID: MW-307

Date Collected: 05/27/20 15:00

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			471835	06/02/20 17:00	MNH	TAL SL
Total/NA	Analysis	903.0		1	474477	06/25/20 09:56	AJD	TAL SL
Total/NA	Prep	PrecSep_0			471838	06/02/20 17:22	MNH	TAL SL
Total/NA	Analysis	904.0		1	474034	06/22/20 11:47	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	474647	06/26/20 09:50	SMP	TAL SL

Client Sample ID: MW-308

Date Collected: 05/27/20 13:30

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			471835	06/02/20 17:00	MNH	TAL SL
Total/NA	Analysis	903.0		1	474477	06/25/20 09:56	AJD	TAL SL
Total/NA	Prep	PrecSep_0			471838	06/02/20 17:22	MNH	TAL SL
Total/NA	Analysis	904.0		1	474034	06/22/20 11:47	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	474647	06/26/20 09:50	SMP	TAL SL

Client Sample ID: Field Blank

Date Collected: 05/27/20 14:25

Date Received: 05/28/20 17:15

Lab Sample ID: 310-182713-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			471835	06/02/20 17:00	MNH	TAL SL
Total/NA	Analysis	903.0		1	474477	06/25/20 09:56	AJD	TAL SL
Total/NA	Prep	PrecSep_0			471838	06/02/20 17:22	MNH	TAL SL
Total/NA	Analysis	904.0		1	474034	06/22/20 11:47	AJD	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	474647	06/26/20 09:50	SMP	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency
None = None
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



310-182713 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: <u>CITY Olive</u> STATE <u>IA</u>	Project: <u>Prairie Creek</u>	
Receipt Information		
Date/Time Received: DATE <u>5/28/20</u> TIME <u>1715</u>	Received By: <u>JJ</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____		
Condition of Cooler/Containers		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record		
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID: <u>N</u>	Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>1.3</u>	Corrected Temp (°C): <u>1.3</u>	
• Sample Container Temperature		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		
Exceptions Noted		
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No		
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No		
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No		
NOTE: If yes, contact PM before proceeding. If no, proceed with login		
Additional Comments		

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Chain of Custody Record

Client Information Client Contact: <u>Matthew Cahalan</u> Phone: <u>515-250-0305</u> E-Mail: <u>sandie.fredrick@testamericainc.com</u>		Lab PM: <u>Fredrick, Sandie</u> E-Mail: <u>sandie.fredrick@testamericainc.com</u>		Camer Tracking No(s): COC No: <u>310-49928-14561_1</u> Page: <u>Page 1 of 1</u> Job #:	
Due Date Requested: <u>PER TAT</u> TAT Requested (days): <u>PER CONTRACT</u>		PO #: <u>25220074</u> WO #:		Analysis Requested	
Address: <u>8450 Hickman Road Suite 207</u> City: <u>IA, 50325</u> State, Zip: <u>IA, 50325</u> Phone: <u>515-250-0305</u> Email: <u>mcabalan@scsengineers.com</u> Project Name: <u>Prairie Creek CCR 25220074</u> Project #: <u>31011020</u> SSOW#:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
Site: <u>Prairie Creek Generating Station</u>		Sample Date		Sample Time	
Sample Identification		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soil, T=tissue, A=air)	
MW-307	5/27/2020	1500	G	Water	6020A - Metals - Hg <input checked="" type="checkbox"/> D 2540C - Calcd. 9056A_ORGFM_28D, SM4500_H+ <input checked="" type="checkbox"/> N 903.0 - Radium 226 <input checked="" type="checkbox"/> D 904.0 - Radium 228 <input checked="" type="checkbox"/> D
MW-308	5/27/2020	1330	G	Water	6020A - Metals - Hg <input checked="" type="checkbox"/> D 2540C - Calcd. 9056A_ORGFM_28D, SM4500_H+ <input checked="" type="checkbox"/> N 903.0 - Radium 226 <input checked="" type="checkbox"/> D 904.0 - Radium 228 <input checked="" type="checkbox"/> D
Field Blank	5/27/2020	1425	G	Water	6020A - Metals - Hg <input checked="" type="checkbox"/> D 2540C - Calcd. 9056A_ORGFM_28D, SM4500_H+ <input checked="" type="checkbox"/> N 903.0 - Radium 226 <input checked="" type="checkbox"/> D 904.0 - Radium 228 <input checked="" type="checkbox"/> D
Total Number of Containers		Total Number of Containers		Special Instructions/Note:	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Special Instructions/Note:	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: <u>Matthew Cahalan</u>		Date/Time: <u>5/27/2020 1815</u>		Received by: <u>[Signature]</u>	
Relinquished by:		Date/Time:		Received by:	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact Δ Yes Δ No		Custody Seal No.:		Order Temperature(s) °C and Other Remarks:	



**Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project**

#25216074.17

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309	MW-310	Field Blank
Appendix III Parameters (Detection Monitoring)	Boron							X	X			X
	Calcium							X	X			X
	Chloride							X	X			X
	Fluoride							X	X			X
	pH							X	X			X
	Sulfate							X	X			X
	TDS							X	X			X
Appendix IV Parameters (Assessment Monitoring)	Antimony							X	X			X
	Arsenic							X	X			X
	Barium							X	X			X
	Beryllium							X	X			X
	Cadmium							X	X			X
	Chromium							X	X			X
	Cobalt							X	X			X
	Fluoride							X	X			X
	Lead							X	X			X
	Lithium							X	X			X
	Mercury							X	X			X
	Molybdenum							X	X			X
	Selenium							X	X			X
	Thallium							X	X			X
Radium							X	X			X	
CCR Rule Field Parameters	Groundwater Elevation							X	X			
	pH							X	X			
Low-Flow Sampling Field Parameters	Well Depth							X	X			
	Specific Conductance							X	X			
	Dissolved Oxygen							X	X			
	ORP							X	X			
	Temperature							X	X			
	Turbidity							X	X			
	Color							X	X			
Odor							X	X				

Notes: All samples are unfiltered (total).

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-182713-2

Login Number: 182713

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Homolar, Dana J

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-182713-2

Login Number: 182713

List Number: 2

Creator: Korrinhizer, Micha L

List Source: Eurofins TestAmerica, St. Louis

List Creation: 06/01/20 03:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.1° / 6.1°
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-182713-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)			
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)				
310-182713-1	MW-307	83.1				
310-182713-2	MW-308	85.2				
310-182713-3	Field Blank	89.0				
LCS 160-471835/1-A	Lab Control Sample	82.5				
MB 160-471835/20-A	Method Blank	99.4				
Tracer/Carrier Legend						
Ba Carrier = Ba Carrier						

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

			Percent Yield (Acceptance Limits)			
Lab Sample ID	Client Sample ID	Ba Carrier (40-110)	Y Carrier (40-110)			
310-182713-1	MW-307	83.1	86.0			
310-182713-2	MW-308	85.2	86.7			
310-182713-3	Field Blank	89.0	87.5			
LCS 160-471838/1-A	Lab Control Sample	82.5	83.7			
MB 160-471838/20-A	Method Blank	99.4	78.5			
Tracer/Carrier Legend						
Ba Carrier = Ba Carrier						
Y Carrier = Y Carrier						

C4 September 2020 Assessment Monitoring – New Piezometers

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-190930-1
Client Project/Site: Prairie Creek CCR 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
9/23/2020 2:22:19 PM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Job ID: 310-190930-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-190930-1

Comments

No additional comments.

Receipt

The samples were received on 9/17/2020 9:50 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4° C.

HPLC/IC

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301A (310-190930-1), MW-306A (310-190930-2), MW-309A (310-190930-3) and MW-310A (310-190930-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.



Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-190930-1	MW-301A	Water	09/15/20 13:20	09/17/20 09:50	
310-190930-2	MW-306A	Water	09/15/20 12:10	09/17/20 09:50	
310-190930-3	MW-309A	Water	09/15/20 09:30	09/17/20 09:50	
310-190930-4	MW-310A	Water	09/15/20 10:30	09/17/20 09:50	
310-190930-5	Field Blank	Water	09/15/20 12:10	09/17/20 09:50	

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Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-301A

Lab Sample ID: 310-190930-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1	J B	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	6.4		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	3.7		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	290		2.0	0.28	ug/L	1		6020A	Total/NA
Beryllium	0.98	J	1.0	0.27	ug/L	1		6020A	Total/NA
Cadmium	0.49		0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	72		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	5.1		5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	9.4		0.50	0.091	ug/L	1		6020A	Total/NA
Lead	5.6		0.50	0.11	ug/L	1		6020A	Total/NA
Lithium	4.2	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	2.1		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	440		30	26	mg/L	1		SM 2540C	Total/NA
pH	6.9	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	131.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	7.77				mg/L	1		Field Sampling	Total/NA
pH, Field	7.50				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	470.5				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	16				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	284.7				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306A

Lab Sample ID: 310-190930-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	63	B	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	330		5.0	3.6	mg/L	5		9056A	Total/NA
Barium	180		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	2100		100	80	ug/L	1		6020A	Total/NA
Cadmium	0.073	J	0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	1.9	J	5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	1.3		0.50	0.091	ug/L	1		6020A	Total/NA
Lead	1.8		0.50	0.11	ug/L	1		6020A	Total/NA
Lithium	4.1	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	8.6		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	840		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.3	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-100.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.87				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1180				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	118.1				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-309A

Lab Sample ID: 310-190930-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23	B	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Barium	170		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	530		100	80	ug/L	1		6020A	Total/NA
Calcium	100		0.50	0.19	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-309A (Continued)

Lab Sample ID: 310-190930-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.22	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	4.1	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	8.5		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	490		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-144.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	7.26				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	815				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	16.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.30				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-310A

Lab Sample ID: 310-190930-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	46	B	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	310		5.0	3.6	mg/L	5		9056A	Total/NA
Barium	210		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	330		100	80	ug/L	1		6020A	Total/NA
Calcium	180		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.54		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	3.2	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	20		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	890		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-128.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.19				mg/L	1		Field Sampling	Total/NA
pH, Field	7.25				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1304				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	16.0				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.72				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-190930-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-301A

Lab Sample ID: 310-190930-1

Date Collected: 09/15/20 13:20

Matrix: Water

Date Received: 09/17/20 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1	J B	5.0	2.0	mg/L			09/21/20 16:23	5
Fluoride	<0.23		0.50	0.23	mg/L			09/21/20 16:23	5
Sulfate	6.4		5.0	3.6	mg/L			09/21/20 16:23	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 23:18	1
Arsenic	3.7		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 23:18	1
Barium	290		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 23:18	1
Beryllium	0.98	J	1.0	0.27	ug/L		09/18/20 08:33	09/21/20 23:18	1
Boron	<80		100	80	ug/L		09/18/20 08:33	09/22/20 15:18	1
Cadmium	0.49		0.10	0.049	ug/L		09/18/20 08:33	09/21/20 23:18	1
Calcium	72		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 23:18	1
Chromium	5.1		5.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:18	1
Cobalt	9.4		0.50	0.091	ug/L		09/18/20 08:33	09/21/20 23:18	1
Lead	5.6		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 23:18	1
Lithium	4.2	J	10	2.5	ug/L		09/18/20 08:33	09/21/20 23:18	1
Molybdenum	2.1		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:18	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 23:18	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 23:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 12:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	440		30	26	mg/L			09/17/20 16:11	1
pH	6.9	HF	0.1	0.1	SU			09/17/20 15:22	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	131.6				millivolts			09/15/20 13:20	1
Oxygen, Dissolved, Client Supplied	7.77				mg/L			09/15/20 13:20	1
pH, Field	7.50				SU			09/15/20 13:20	1
Specific Conductance, Field	470.5				umhos/cm			09/15/20 13:20	1
Temperature, Field	16				Degrees C			09/15/20 13:20	1
Turbidity, Field	284.7				NTU			09/15/20 13:20	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-306A

Lab Sample ID: 310-190930-2

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63	B	5.0	2.0	mg/L			09/21/20 16:39	5
Fluoride	<0.23		0.50	0.23	mg/L			09/21/20 16:39	5
Sulfate	330		5.0	3.6	mg/L			09/21/20 16:39	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 23:21	1
Arsenic	<0.88		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 23:21	1
Barium	180		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 23:21	1
Beryllium	<0.27		1.0	0.27	ug/L		09/18/20 08:33	09/21/20 23:21	1
Boron	2100		100	80	ug/L		09/18/20 08:33	09/22/20 15:21	1
Cadmium	0.073	J	0.10	0.049	ug/L		09/18/20 08:33	09/21/20 23:21	1
Calcium	150		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 23:21	1
Chromium	1.9	J	5.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:21	1
Cobalt	1.3		0.50	0.091	ug/L		09/18/20 08:33	09/21/20 23:21	1
Lead	1.8		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 23:21	1
Lithium	4.1	J	10	2.5	ug/L		09/18/20 08:33	09/21/20 23:21	1
Molybdenum	8.6		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:21	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 23:21	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 23:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 12:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	840		30	26	mg/L			09/17/20 16:11	1
pH	7.3	HF	0.1	0.1	SU			09/17/20 15:23	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-100.3				millivolts			09/15/20 12:10	1
Oxygen, Dissolved, Client Supplied	0.13				mg/L			09/15/20 12:10	1
pH, Field	7.87				SU			09/15/20 12:10	1
Specific Conductance, Field	1180				umhos/cm			09/15/20 12:10	1
Temperature, Field	14.1				Degrees C			09/15/20 12:10	1
Turbidity, Field	118.1				NTU			09/15/20 12:10	1

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-309A

Lab Sample ID: 310-190930-3

Date Collected: 09/15/20 09:30

Matrix: Water

Date Received: 09/17/20 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23	B	5.0	2.0	mg/L			09/21/20 16:54	5
Fluoride	<0.23		0.50	0.23	mg/L			09/21/20 16:54	5
Sulfate	110		5.0	3.6	mg/L			09/21/20 16:54	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 23:24	1
Arsenic	<0.88		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 23:24	1
Barium	170		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 23:24	1
Beryllium	<0.27		1.0	0.27	ug/L		09/18/20 08:33	09/21/20 23:24	1
Boron	530		100	80	ug/L		09/18/20 08:33	09/22/20 15:24	1
Cadmium	<0.049		0.10	0.049	ug/L		09/18/20 08:33	09/21/20 23:24	1
Calcium	100		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 23:24	1
Chromium	<1.1		5.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:24	1
Cobalt	0.22	J	0.50	0.091	ug/L		09/18/20 08:33	09/21/20 23:24	1
Lead	<0.11		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 23:24	1
Lithium	4.1	J	10	2.5	ug/L		09/18/20 08:33	09/21/20 23:24	1
Molybdenum	8.5		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:24	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 23:24	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 23:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 12:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	490		30	26	mg/L			09/17/20 16:11	1
pH	7.2	HF	0.1	0.1	SU			09/17/20 15:24	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-144.8				millivolts			09/15/20 09:30	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			09/15/20 09:30	1
pH, Field	7.26				SU			09/15/20 09:30	1
Specific Conductance, Field	815				umhos/cm			09/15/20 09:30	1
Temperature, Field	16.1				Degrees C			09/15/20 09:30	1
Turbidity, Field	1.30				NTU			09/15/20 09:30	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-310A

Lab Sample ID: 310-190930-4

Date Collected: 09/15/20 10:30

Matrix: Water

Date Received: 09/17/20 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46	B	5.0	2.0	mg/L			09/21/20 17:10	5
Fluoride	<0.23		0.50	0.23	mg/L			09/21/20 17:10	5
Sulfate	310		5.0	3.6	mg/L			09/21/20 17:10	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 23:26	1
Arsenic	<0.88		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 23:26	1
Barium	210		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 23:26	1
Beryllium	<0.27		1.0	0.27	ug/L		09/18/20 08:33	09/21/20 23:26	1
Boron	330		100	80	ug/L		09/18/20 08:33	09/22/20 15:26	1
Cadmium	<0.049		0.10	0.049	ug/L		09/18/20 08:33	09/21/20 23:26	1
Calcium	180		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 23:26	1
Chromium	<1.1		5.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:26	1
Cobalt	0.54		0.50	0.091	ug/L		09/18/20 08:33	09/21/20 23:26	1
Lead	<0.11		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 23:26	1
Lithium	3.2	J	10	2.5	ug/L		09/18/20 08:33	09/21/20 23:26	1
Molybdenum	20		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:26	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 23:26	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 23:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 12:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	890		30	26	mg/L			09/17/20 16:11	1
pH	7.6	HF	0.1	0.1	SU			09/17/20 15:32	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-128.9				millivolts			09/15/20 10:30	1
Oxygen, Dissolved, Client Supplied	0.19				mg/L			09/15/20 10:30	1
pH, Field	7.25				SU			09/15/20 10:30	1
Specific Conductance, Field	1304				umhos/cm			09/15/20 10:30	1
Temperature, Field	16.0				Degrees C			09/15/20 10:30	1
Turbidity, Field	1.72				NTU			09/15/20 10:30	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: Field Blank

Lab Sample ID: 310-190930-5

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			09/22/20 10:20	1
Fluoride	<0.046		0.10	0.046	mg/L			09/22/20 10:20	1
Sulfate	<0.71		1.0	0.71	mg/L			09/22/20 10:20	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 23:32	1
Arsenic	<0.88		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 23:32	1
Barium	<0.28		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 23:32	1
Beryllium	<0.27		1.0	0.27	ug/L		09/18/20 08:33	09/21/20 23:32	1
Boron	<80		100	80	ug/L		09/18/20 08:33	09/22/20 15:31	1
Cadmium	<0.049		0.10	0.049	ug/L		09/18/20 08:33	09/21/20 23:32	1
Calcium	<0.19		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 23:32	1
Chromium	<1.1		5.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:32	1
Cobalt	<0.091		0.50	0.091	ug/L		09/18/20 08:33	09/21/20 23:32	1
Lead	<0.11		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 23:32	1
Lithium	<2.5		10	2.5	ug/L		09/18/20 08:33	09/21/20 23:32	1
Molybdenum	<1.1		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 23:32	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 23:32	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 23:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 12:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			09/17/20 16:11	1
pH	6.0	HF	0.1	0.1	SU			09/18/20 14:36	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-292870/3
Matrix: Water
Analysis Batch: 292870

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.519	J	1.0	0.40	mg/L			09/21/20 12:45	1
Fluoride	<0.046		0.10	0.046	mg/L			09/21/20 12:45	1
Sulfate	<0.71		1.0	0.71	mg/L			09/21/20 12:45	1

Lab Sample ID: LCS 310-292870/4
Matrix: Water
Analysis Batch: 292870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.60		mg/L		96	90 - 110
Fluoride	2.00	1.87		mg/L		93	90 - 110
Sulfate	10.0	9.46		mg/L		95	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-292370/1-A
Matrix: Water
Analysis Batch: 292687

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292370

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		09/18/20 08:33	09/21/20 22:23	1
Arsenic	<0.88		2.0	0.88	ug/L		09/18/20 08:33	09/21/20 22:23	1
Barium	<0.28		2.0	0.28	ug/L		09/18/20 08:33	09/21/20 22:23	1
Beryllium	<0.27		1.0	0.27	ug/L		09/18/20 08:33	09/21/20 22:23	1
Cadmium	<0.049		0.10	0.049	ug/L		09/18/20 08:33	09/21/20 22:23	1
Calcium	<0.19		0.50	0.19	mg/L		09/18/20 08:33	09/21/20 22:23	1
Chromium	<1.1		5.0	1.1	ug/L		09/18/20 08:33	09/21/20 22:23	1
Cobalt	<0.091		0.50	0.091	ug/L		09/18/20 08:33	09/21/20 22:23	1
Lead	<0.11		0.50	0.11	ug/L		09/18/20 08:33	09/21/20 22:23	1
Lithium	<2.5		10	2.5	ug/L		09/18/20 08:33	09/21/20 22:23	1
Molybdenum	<1.1		2.0	1.1	ug/L		09/18/20 08:33	09/21/20 22:23	1
Selenium	<1.0		5.0	1.0	ug/L		09/18/20 08:33	09/21/20 22:23	1
Thallium	<0.26		1.0	0.26	ug/L		09/18/20 08:33	09/21/20 22:23	1

Lab Sample ID: MB 310-292370/1-A
Matrix: Water
Analysis Batch: 292820

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 292370

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<80		100	80	ug/L		09/18/20 08:33	09/22/20 14:41	1

Lab Sample ID: LCS 310-292370/2-A
Matrix: Water
Analysis Batch: 292687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	200	202		ug/L		101	80 - 120
Arsenic	200	191		ug/L		96	80 - 120
Barium	100	105		ug/L		105	80 - 120
Beryllium	100	92.6		ug/L		93	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-292370/2-A
Matrix: Water
Analysis Batch: 292687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	100	101		ug/L		101	80 - 120
Calcium	2.00	1.71		mg/L		86	80 - 120
Chromium	100	98.4		ug/L		98	80 - 120
Cobalt	100	101		ug/L		101	80 - 120
Lead	200	206		ug/L		103	80 - 120
Lithium	200	179		ug/L		89	80 - 120
Molybdenum	200	195		ug/L		98	80 - 120
Selenium	400	384		ug/L		96	80 - 120

Lab Sample ID: LCS 310-292370/2-A
Matrix: Water
Analysis Batch: 292820

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	200	190		ug/L		95	80 - 120

Lab Sample ID: LCS 310-292370/2-A ^10
Matrix: Water
Analysis Batch: 292687

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Thallium	200	175		ug/L		87	80 - 120

Lab Sample ID: 310-190930-4 DU
Matrix: Water
Analysis Batch: 292687

Client Sample ID: MW-310A
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.51		<0.51		ug/L		NC	20
Arsenic	<0.88		<0.88		ug/L		NC	20
Barium	210		208		ug/L		0.7	20
Cadmium	<0.049		<0.049		ug/L		NC	20
Calcium	180		182		mg/L		0.4	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	0.54		0.516		ug/L		5	20
Lead	<0.11		<0.11		ug/L		NC	20
Molybdenum	20		19.8		ug/L		0.3	20
Selenium	<1.0		<1.0		ug/L		NC	20
Thallium	<0.26		<0.26		ug/L		NC	20

Lab Sample ID: 310-190930-4 DU
Matrix: Water
Analysis Batch: 292820

Client Sample ID: MW-310A
Prep Type: Total/NA
Prep Batch: 292370

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	330		327		ug/L		0.8	20

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-292733/1-A
 Matrix: Water
 Analysis Batch: 292898

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 292733

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.20	0.10	ug/L		09/22/20 11:29	09/23/20 11:49	1

Lab Sample ID: LCS 310-292733/2-A
 Matrix: Water
 Analysis Batch: 292898

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 292733

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.67	1.80		ug/L		108	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-292321/1
 Matrix: Water
 Analysis Batch: 292321

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			09/17/20 16:11	1

Lab Sample ID: LCS 310-292321/2
 Matrix: Water
 Analysis Batch: 292321

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	982		mg/L		98	90 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-292303/1
 Matrix: Water
 Analysis Batch: 292303

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	98 - 102

Lab Sample ID: LCS 310-292442/1
 Matrix: Water
 Analysis Batch: 292442

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101	98 - 102

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

HPLC/IC

Analysis Batch: 292870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	9056A	
310-190930-2	MW-306A	Total/NA	Water	9056A	
310-190930-3	MW-309A	Total/NA	Water	9056A	
310-190930-4	MW-310A	Total/NA	Water	9056A	
310-190930-5	Field Blank	Total/NA	Water	9056A	
MB 310-292870/3	Method Blank	Total/NA	Water	9056A	
LCS 310-292870/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 292370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	3010A	
310-190930-2	MW-306A	Total/NA	Water	3010A	
310-190930-3	MW-309A	Total/NA	Water	3010A	
310-190930-4	MW-310A	Total/NA	Water	3010A	
310-190930-5	Field Blank	Total/NA	Water	3010A	
MB 310-292370/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-292370/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCS 310-292370/2-A ^10	Lab Control Sample	Total/NA	Water	3010A	
310-190930-4 DU	MW-310A	Total/NA	Water	3010A	

Analysis Batch: 292687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	6020A	292370
310-190930-2	MW-306A	Total/NA	Water	6020A	292370
310-190930-3	MW-309A	Total/NA	Water	6020A	292370
310-190930-4	MW-310A	Total/NA	Water	6020A	292370
310-190930-5	Field Blank	Total/NA	Water	6020A	292370
MB 310-292370/1-A	Method Blank	Total/NA	Water	6020A	292370
LCS 310-292370/2-A	Lab Control Sample	Total/NA	Water	6020A	292370
LCS 310-292370/2-A ^10	Lab Control Sample	Total/NA	Water	6020A	292370
310-190930-4 DU	MW-310A	Total/NA	Water	6020A	292370

Prep Batch: 292733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	7470A	
310-190930-2	MW-306A	Total/NA	Water	7470A	
310-190930-3	MW-309A	Total/NA	Water	7470A	
310-190930-4	MW-310A	Total/NA	Water	7470A	
310-190930-5	Field Blank	Total/NA	Water	7470A	
MB 310-292733/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-292733/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 292820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	6020A	292370
310-190930-2	MW-306A	Total/NA	Water	6020A	292370
310-190930-3	MW-309A	Total/NA	Water	6020A	292370
310-190930-4	MW-310A	Total/NA	Water	6020A	292370
310-190930-5	Field Blank	Total/NA	Water	6020A	292370

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Metals (Continued)

Analysis Batch: 292820 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-292370/1-A	Method Blank	Total/NA	Water	6020A	292370
LCS 310-292370/2-A	Lab Control Sample	Total/NA	Water	6020A	292370
310-190930-4 DU	MW-310A	Total/NA	Water	6020A	292370

Analysis Batch: 292898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	7470A	292733
310-190930-2	MW-306A	Total/NA	Water	7470A	292733
310-190930-3	MW-309A	Total/NA	Water	7470A	292733
310-190930-4	MW-310A	Total/NA	Water	7470A	292733
310-190930-5	Field Blank	Total/NA	Water	7470A	292733
MB 310-292733/1-A	Method Blank	Total/NA	Water	7470A	292733
LCS 310-292733/2-A	Lab Control Sample	Total/NA	Water	7470A	292733

General Chemistry

Analysis Batch: 292303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	SM 4500 H+ B	
310-190930-2	MW-306A	Total/NA	Water	SM 4500 H+ B	
310-190930-3	MW-309A	Total/NA	Water	SM 4500 H+ B	
310-190930-4	MW-310A	Total/NA	Water	SM 4500 H+ B	
LCS 310-292303/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 292321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	SM 2540C	
310-190930-2	MW-306A	Total/NA	Water	SM 2540C	
310-190930-3	MW-309A	Total/NA	Water	SM 2540C	
310-190930-4	MW-310A	Total/NA	Water	SM 2540C	
310-190930-5	Field Blank	Total/NA	Water	SM 2540C	
MB 310-292321/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-292321/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 292442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-5	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-292442/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Field Service / Mobile Lab

Analysis Batch: 292874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	Field Sampling	
310-190930-2	MW-306A	Total/NA	Water	Field Sampling	
310-190930-3	MW-309A	Total/NA	Water	Field Sampling	
310-190930-4	MW-310A	Total/NA	Water	Field Sampling	

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Lab Chronicle

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-301A

Lab Sample ID: 310-190930-1

Date Collected: 09/15/20 13:20

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	292870	09/21/20 16:23	CJT	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292687	09/21/20 23:18	SAD	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292820	09/22/20 15:18	SAD	TAL CF
Total/NA	Prep	7470A			292733	09/22/20 11:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	292898	09/23/20 12:19	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	292321	09/17/20 16:11	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	292303	09/17/20 15:22	ARG	TAL CF
Total/NA	Analysis	Field Sampling		1	292874	09/15/20 13:20	SLD	TAL CF

Client Sample ID: MW-306A

Lab Sample ID: 310-190930-2

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	292870	09/21/20 16:39	CJT	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292687	09/21/20 23:21	SAD	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292820	09/22/20 15:21	SAD	TAL CF
Total/NA	Prep	7470A			292733	09/22/20 11:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	292898	09/23/20 12:21	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	292321	09/17/20 16:11	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	292303	09/17/20 15:23	ARG	TAL CF
Total/NA	Analysis	Field Sampling		1	292874	09/15/20 12:10	SLD	TAL CF

Client Sample ID: MW-309A

Lab Sample ID: 310-190930-3

Date Collected: 09/15/20 09:30

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	292870	09/21/20 16:54	CJT	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292687	09/21/20 23:24	SAD	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292820	09/22/20 15:24	SAD	TAL CF
Total/NA	Prep	7470A			292733	09/22/20 11:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	292898	09/23/20 12:23	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	292321	09/17/20 16:11	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	292303	09/17/20 15:24	ARG	TAL CF
Total/NA	Analysis	Field Sampling		1	292874	09/15/20 09:30	SLD	TAL CF

Eurofins TestAmerica, Cedar Falls

Lab Chronicle

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Client Sample ID: MW-310A

Lab Sample ID: 310-190930-4

Date Collected: 09/15/20 10:30

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	292870	09/21/20 17:10	CJT	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292687	09/21/20 23:26	SAD	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292820	09/22/20 15:26	SAD	TAL CF
Total/NA	Prep	7470A			292733	09/22/20 11:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	292898	09/23/20 12:25	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	292321	09/17/20 16:11	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	292303	09/17/20 15:32	ARG	TAL CF
Total/NA	Analysis	Field Sampling		1	292874	09/15/20 10:30	SLD	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-190930-5

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	292870	09/22/20 10:20	CJT	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292687	09/21/20 23:32	SAD	TAL CF
Total/NA	Prep	3010A			292370	09/18/20 08:33	HED	TAL CF
Total/NA	Analysis	6020A		1	292820	09/22/20 15:31	SAD	TAL CF
Total/NA	Prep	7470A			292733	09/22/20 11:29	HIS	TAL CF
Total/NA	Analysis	7470A		1	292898	09/23/20 12:27	ACJ	TAL CF
Total/NA	Analysis	SM 2540C		1	292321	09/17/20 16:11	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	292442	09/18/20 14:36	ARG	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

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Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins TestAmerica, Cedar Falls



Environment Testing
TestAmerica



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: SCS Engineers			
City/State:	<small>CITY</small> Clive	<small>STATE</small> IA	Project: Prairie Creek CCR 25220074
Receipt Information			
Date/Time Received:	<small>DATE</small> 9-17-20	<small>TIME</small> 0950	Received By: ER
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: 0		Correction Factor (°C): +0.1	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):		Corrected Temp (°C):	
• Sample Container Temperature			
Container(s) used:	<small>CONTAINER 1</small> plastic 1L	<small>CONTAINER 2</small>	
Uncorrected Temp (°C):	2.3		
Corrected Temp (°C):	2.1		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Chain of Custody Record

Client Information Client Contact: <i>Meghan Blodgett</i> Company: SCS Engineers Address: 8450 Hickman Road Suite 20 City: Clive State/Zip: IA, 50325 Phone: <i>608-224-2830</i> Email: <i>MBlodgett@scsengineers.com</i> Project Name: Prairie Creek CCR 25220074 Site: <i>Prairie Creek Generating Station</i>		Sampler: <i>Adam Watson</i> Lab PM: Fredrick, Sandie Phone: <i>608-250-9985</i> E-Mail: sandra.fredrick@eurofins.com		Carmer Tracking No(s): COC No: 310-52802-14561.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: 25220074 WO #:		Analysis Requested			
Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers	
Sample Identification MW-301A MW-306A MW-309A MW-310A FIELD BLANK		Sample Date 9/15/2020 ↓ 12:10 9:30 10:30 12:10	Sample Time 1320 12:10 9:30 10:30 12:10	Sample Type (C=comp, G=grab) Preservation Code:	Matrix (W=water, S=solid, O=wastefl, BT=tissue, A=air) Water Water Water Water Water Water
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: <i>Adam Watson</i>		Date/Time: 9/16/2020, 1415		Date/Time: 09-17-20 0800	
Relinquished by:		Date/Time:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:	
Custody Seals Intact Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	
Special Instructions/Note: Was only able to get 1 radium bottle sample for MW-301A, please sample for both radium 226 and 228					

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-190930-1

Login Number: 190930

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Ramos, Eric F

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Prairie Creek Generating Station / SCS Engineers Project #25220074
September 2020

Sample	Sample Date/Time	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-301A	9/15/2020 @1320	16	7.50	7.77	470.5	131.6	284.7
MW-306A	9/15/2020 @1210	14.1	7.87	0.13	1180	-100.3	118.1
MW-309A	9/15/2020 @ 0930	16.1	7.26	0.14	815	-144.8	1.30
MW-310A	9/15/20 @ 1030	16.0	7.25	0.19	1304	-128.9	1.72

Abbreviations:

mg/L = milligrams per liter

µmhos/cm = micromhos per centimeter

mV = millivolts

amsl = above mean sea level

Notes:

None

Created by: JSN Date: 4/30/2019
 Last revision by: MDB Date: 9/21/2020
 Checked by: LMH Date: 9/21/2020
 Scientist QA/QC: _____ Date: _____

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ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-190930-2
Client Project/Site: Prairie Creek CCR 25220074
Revision: 1

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
11/6/2020 11:26:53 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Job ID: 310-190930-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-190930-2

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 10/30/2020. The report (revision 1) is being revised due to: Revised report to recalculate results for MW-306A. The analyst inadvertently used the incorrect method code when creating the calculation batch. Thus, TALS used the incorrect calculation (used negative values in the calculation).

Receipt

The samples were received on 9/17/2020 9:50 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.4° C.

RAD

Methods 903.0, 9315: 903/9315 prep batch: 160-483450 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-306A (310-190930-2), MW-309A (310-190930-3), MW-310A (310-190930-4), Field Blank (310-190930-5), (240-136492-G-1-A), (240-136492-A-1-A MS) and (240-136492-A-1-B MSD)

Methods 903.0, 9315: Radium-226 prep batch 160-484436; The Ra-226 laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery (153%/134%) associated with the following sample is outside the upper QC limit of (125%) indicating a potential positive bias for that analyte. This analyte was observed above the MDC/RL in the associated sample. All other QC are within limits (MB, RER/RPD). Per client request, the data have been reported with this narrative. MW-301A (310-190930-1), (LCS 160-484436/1-A), (LCSD 160-484436/2-A) and (MB 160-484436/23-A)

Methods 903.0, 9315: Radium-226 prep batch 160-484436: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301A (310-190930-1), (LCS 160-484436/1-A), (LCSD 160-484436/2-A) and (MB 160-484436/23-A)

Methods 904.0, 9320: Radium-228 prep batch 160-483458: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-306A (310-190930-2), MW-309A (310-190930-3), MW-310A (310-190930-4), Field Blank (310-190930-5), (LCS 160-483458/1-A), (MB 160-483458/22-A), (240-136492-G-1-B), (240-136492-A-1-C MS) and (240-136492-A-1-D MSD)

Methods 904.0, 9320: Ra 228 prep batch: 160-484437 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301A (310-190930-1)

Method 904.0: 904 Prep Batch 160-484437 The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interferences. The data have been reported with this narrative. MW-301A (310-190930-1)

Method PrecSep_0: Radium 228 Prep Batch 160-483458: The following sample was prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: MW-301A (310-190930-1). The following sample was prepared at a further reduced aliquot due to brown discoloration and a cloudy appearance: MW-301A (310-190930-1).

Method PrecSep_0: Radium 228 Prep Batch 160-483458: Samples 310-190930-2, 240-136492-7, 240-136492-9, and 240-136492-10 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance: MW-306A (310-190930-2). Sample 240-136492-4 was prepared at a reduced aliquot due to a cloudy appearance: MW-306A (310-190930-2).

Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Job ID: 310-190930-2 (Continued)

Laboratory: Eurofins TestAmerica, Cedar Falls (Continued)

Method PrecSep_0: Radium 228 Prep Batch 160-484437: Sample 310-190930-1 was prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: The heavy sediment in sample 310-190930-1 was allowed to settle to the bottom of the bottle and then decanted off: Sample 240-137215-3 contained a small amount of black specs in the sample, but was not reduced:

Method PrecSep_0: Radium 228 Prep Batch 160-484437: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301A (310-190930-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-483450: The following sample was prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: MW-301A (310-190930-1). The following sample was prepared at a further reduced aliquot due to brown discoloration and a cloudy appearance: MW-301A (310-190930-1).

Method PrecSep-21: Radium 226 Prep Batch 160-483450: Samples 310-190930-2, 240-136492-7, 240-136492-9, and 240-136492-10 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance: MW-306A (310-190930-2). Sample 240-136492-4 was prepared at a reduced aliquot due to a cloudy appearance: MW-306A (310-190930-2).

Method PrecSep-21: Radium 226 Prep Batch 160-484436: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301A (310-190930-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-484436: Samples 310-190930-1 and 480-175703-1 were prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: The heavy sediment in sample 310-190930-1 was allowed to settle to the bottom of the bottle and then decanted off: Sample 240-137215-3 contained a small amount of black specs in the sample, but was not reduced:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-190930-1	MW-301A	Water	09/15/20 13:20	09/17/20 09:50	
310-190930-2	MW-306A	Water	09/15/20 12:10	09/17/20 09:50	
310-190930-3	MW-309A	Water	09/15/20 09:30	09/17/20 09:50	
310-190930-4	MW-310A	Water	09/15/20 10:30	09/17/20 09:50	
310-190930-5	Field Blank	Water	09/15/20 12:10	09/17/20 09:50	

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Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-301A **Lab Sample ID: 310-190930-1**

No Detections.

Client Sample ID: MW-306A **Lab Sample ID: 310-190930-2**

No Detections.

Client Sample ID: MW-309A **Lab Sample ID: 310-190930-3**

No Detections.

Client Sample ID: MW-310A **Lab Sample ID: 310-190930-4**

No Detections.

Client Sample ID: Field Blank **Lab Sample ID: 310-190930-5**

No Detections.

- 1
- 2
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- 5
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- 7
- 8
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- 10
- 11
- 12
- 13
- 14
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This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-301A

Lab Sample ID: 310-190930-1

Date Collected: 09/15/20 13:20

Matrix: Water

Date Received: 09/17/20 09:50

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	3.93	*	0.735	0.816	1.00	0.398	pCi/L	10/02/20 06:38	10/26/20 09:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110					10/02/20 06:38	10/26/20 09:54	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	4.37	G	1.06	1.13	1.00	1.28	pCi/L	10/02/20 07:05	10/20/20 12:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110					10/02/20 07:05	10/20/20 12:48	1
Y Carrier	74.0		40 - 110					10/02/20 07:05	10/20/20 12:48	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	8.30		1.29	1.39	5.00	1.28	pCi/L		10/30/20 14:07	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-306A

Lab Sample ID: 310-190930-2

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.453		0.224	0.228	1.00	0.270	pCi/L	09/23/20 11:17	10/15/20 20:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.3		40 - 110					09/23/20 11:17	10/15/20 20:09	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0262	U	0.550	0.550	1.00	0.988	pCi/L	09/23/20 11:41	10/09/20 12:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.3		40 - 110					09/23/20 11:41	10/09/20 12:14	1
Y Carrier	83.0		40 - 110					09/23/20 11:41	10/09/20 12:14	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.453	U	0.594	0.595	5.00	0.988	pCi/L		11/06/20 09:20	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-309A

Lab Sample ID: 310-190930-3

Date Collected: 09/15/20 09:30

Matrix: Water

Date Received: 09/17/20 09:50

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.230		0.110	0.112	1.00	0.128	pCi/L	09/23/20 11:17	10/15/20 20:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		40 - 110					09/23/20 11:17	10/15/20 20:09	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.553		0.328	0.332	1.00	0.501	pCi/L	09/23/20 11:41	10/09/20 12:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.0		40 - 110					09/23/20 11:41	10/09/20 12:14	1
Y Carrier	81.1		40 - 110					09/23/20 11:41	10/09/20 12:14	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.783		0.346	0.350	5.00	0.501	pCi/L		10/19/20 16:59	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-310A

Lab Sample ID: 310-190930-4

Date Collected: 09/15/20 10:30

Matrix: Water

Date Received: 09/17/20 09:50

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.484		0.144	0.150	1.00	0.119	pCi/L	09/23/20 11:17	10/15/20 20:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.6		40 - 110					09/23/20 11:17	10/15/20 20:11	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.725		0.339	0.346	1.00	0.495	pCi/L	09/23/20 11:41	10/09/20 12:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.6		40 - 110					09/23/20 11:41	10/09/20 12:15	1
Y Carrier	79.6		40 - 110					09/23/20 11:41	10/09/20 12:15	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.21		0.368	0.377	5.00	0.495	pCi/L		10/19/20 16:59	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: Field Blank

Lab Sample ID: 310-190930-5

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.379		0.133	0.137	1.00	0.124	pCi/L	09/23/20 11:17	10/15/20 20:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.9		40 - 110					09/23/20 11:17	10/15/20 20:29	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00272	U	0.289	0.289	1.00	0.515	pCi/L	09/23/20 11:41	10/09/20 12:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.9		40 - 110					09/23/20 11:41	10/09/20 12:15	1
Y Carrier	82.6		40 - 110					09/23/20 11:41	10/09/20 12:15	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.382	U	0.318	0.320	5.00	0.515	pCi/L		10/19/20 16:59	1



Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Qualifiers

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-483450/22-A
Matrix: Water
Analysis Batch: 485909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 483450

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.5175		0.139	0.146	1.00	0.111	pCi/L	09/23/20 11:17	10/15/20 22:11	1
Carrier	MB	MB	Limits			Prepared	Analyzed		Dil Fac	
Ba Carrier	%Yield	Qualifier	40 - 110			09/23/20 11:17	10/15/20 22:11		1	

Lab Sample ID: LCS 160-483450/1-A
Matrix: Water
Analysis Batch: 485909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 483450

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-226	11.3	10.81		1.16	1.00	0.128	pCi/L	95	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	82.2								

Lab Sample ID: MB 160-484436/23-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484436

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1527	U	0.117	0.118	1.00	0.166	pCi/L	10/02/20 06:38	10/26/20 11:48	1
Carrier	MB	MB	Limits			Prepared	Analyzed		Dil Fac	
Ba Carrier	%Yield	Qualifier	40 - 110			10/02/20 06:38	10/26/20 11:48		1	
	93.5									

Lab Sample ID: LCS 160-484436/1-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484436

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-226	11.3	17.39	*	1.87	1.00	0.187	pCi/L	153	75 - 125
Carrier	LCS	LCS	Limits						
Ba Carrier	%Yield	Qualifier	40 - 110						
	74.0								

Lab Sample ID: LCSD 160-484436/2-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 484436

Analyte	Spike Added	LCSD	LCSD	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
		Result	Qual	Uncert. (2σ+/-)							
Radium-226	11.3	15.16	*	1.65	1.00	0.181	pCi/L	134	75 - 125	0.64	1

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-484436/2-A
Matrix: Water
Analysis Batch: 486850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 484436

Carrier	LCS D %Yield	LCS D Qualifier	Limits
Ba Carrier	79.0		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-483458/22-A
Matrix: Water
Analysis Batch: 485238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 483458

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.3565	U	0.248	0.250	1.00	0.386	pCi/L	09/23/20 11:41	10/09/20 12:17	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	91.7		40 - 110		09/23/20 11:41	10/09/20 12:17	1			
Y Carrier	87.1		40 - 110		09/23/20 11:41	10/09/20 12:17	1			

Lab Sample ID: LCS 160-483458/1-A
Matrix: Water
Analysis Batch: 485229

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 483458

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
									%Rec	Limits
Radium-228	7.75	7.387		0.951	1.00	0.488	pCi/L	95	75 - 125	
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	82.2		40 - 110							
Y Carrier	83.0		40 - 110							

Lab Sample ID: MB 160-484437/23-A
Matrix: Water
Analysis Batch: 486271

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 484437

Analyte	MB MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.2421	U	0.285	0.286	1.00	0.470	pCi/L	10/02/20 07:05	10/20/20 12:57	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	93.5		40 - 110		10/02/20 07:05	10/20/20 12:57	1			
Y Carrier	79.6		40 - 110		10/02/20 07:05	10/20/20 12:57	1			

Lab Sample ID: LCS 160-484437/1-A
Matrix: Water
Analysis Batch: 486425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484437

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
									%Rec	Limits
Radium-228	7.72	8.355		1.08	1.00	0.498	pCi/L	108	75 - 125	

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-484437/1-A
Matrix: Water
Analysis Batch: 486425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 484437

Carrier	LCS		Limits
	%Yield	Qualifier	
Ba Carrier	74.0		40 - 110
Y Carrier	82.2		40 - 110

Lab Sample ID: LCSD 160-484437/2-A
Matrix: Water
Analysis Batch: 486425

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 484437

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		RER	RER Limit
									75 - 125	0.46	1	
Radium-228	7.72	7.414		0.983	1.00	0.465	pCi/L	96	75 - 125	0.46	1	

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	79.0		40 - 110
Y Carrier	77.8		40 - 110

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Rad

Prep Batch: 483450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-2	MW-306A	Total/NA	Water	PrecSep-21	
310-190930-3	MW-309A	Total/NA	Water	PrecSep-21	
310-190930-4	MW-310A	Total/NA	Water	PrecSep-21	
310-190930-5	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-483450/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-483450/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 483458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-2	MW-306A	Total/NA	Water	PrecSep_0	
310-190930-3	MW-309A	Total/NA	Water	PrecSep_0	
310-190930-4	MW-310A	Total/NA	Water	PrecSep_0	
310-190930-5	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-483458/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-483458/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 484436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	PrecSep-21	
MB 160-484436/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-484436/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCS 160-484436/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 484437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-190930-1	MW-301A	Total/NA	Water	PrecSep_0	
MB 160-484437/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-484437/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCS 160-484437/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	



Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: MW-301A

Lab Sample ID: 310-190930-1

Date Collected: 09/15/20 13:20

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			484436	10/02/20 06:38	AVB	TAL SL
Total/NA	Analysis	903.0		1	486850	10/26/20 09:54	SCB	TAL SL
Total/NA	Prep	PrecSep_0			484437	10/02/20 07:05	AVB	TAL SL
Total/NA	Analysis	904.0		1	486425	10/20/20 12:48	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	487347	10/30/20 14:07	CAH	TAL SL

Client Sample ID: MW-306A

Lab Sample ID: 310-190930-2

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			483450	09/23/20 11:17	AVB	TAL SL
Total/NA	Analysis	903.0		1	485909	10/15/20 20:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			483458	09/23/20 11:41	AVB	TAL SL
Total/NA	Analysis	904.0		1	485229	10/09/20 12:14	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	488442	11/06/20 09:20	TJR	TAL SL

Client Sample ID: MW-309A

Lab Sample ID: 310-190930-3

Date Collected: 09/15/20 09:30

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			483450	09/23/20 11:17	AVB	TAL SL
Total/NA	Analysis	903.0		1	485909	10/15/20 20:09	FLC	TAL SL
Total/NA	Prep	PrecSep_0			483458	09/23/20 11:41	AVB	TAL SL
Total/NA	Analysis	904.0		1	485229	10/09/20 12:14	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	486225	10/19/20 16:59	GRW	TAL SL

Client Sample ID: MW-310A

Lab Sample ID: 310-190930-4

Date Collected: 09/15/20 10:30

Matrix: Water

Date Received: 09/17/20 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			483450	09/23/20 11:17	AVB	TAL SL
Total/NA	Analysis	903.0		1	485909	10/15/20 20:11	FLC	TAL SL
Total/NA	Prep	PrecSep_0			483458	09/23/20 11:41	AVB	TAL SL
Total/NA	Analysis	904.0		1	485229	10/09/20 12:15	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	486225	10/19/20 16:59	GRW	TAL SL

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Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Client Sample ID: Field Blank

Lab Sample ID: 310-190930-5

Date Collected: 09/15/20 12:10

Matrix: Water

Date Received: 09/17/20 09:50

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Prep	PrecSep-21			483450	09/23/20 11:17	AVB	TAL SL
Total/NA	Analysis	903.0		1	485729	10/15/20 20:29	FLC	TAL SL
Total/NA	Prep	PrecSep_0			483458	09/23/20 11:41	AVB	TAL SL
Total/NA	Analysis	904.0		1	485229	10/09/20 12:15	SCB	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	486225	10/19/20 16:59	GRW	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Accreditation/Certification Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-20
Iowa	State	373	12-01-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Eurofins TestAmerica, Cedar Falls

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Environment Testing
TestAmerica



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: SCS Engineers			
City/State: Clive IA	CITY	STATE	Project: Prairie Creek CCR 25220074
Receipt Information			
Date/Time Received: 9-17-20 0950	DATE	TIME	Received By: ER
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: 0	Correction Factor (°C): +0.1		
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	Corrected Temp (°C):		
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 plastic 1L	CONTAINER 2	
Uncorrected Temp (°C):	2.3		
Corrected Temp (°C):	2.4		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-190930-2

Login Number: 190930

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Ramos, Eric F

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-190930-2

Login Number: 190930

List Number: 2

Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

List Creation: 09/18/20 04:49 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
 Project/Site: Prairie Creek CCR 25220074

Job ID: 310-190930-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
310-190930-1	MW-301A	75.4	
310-190930-2	MW-306A	79.3	
310-190930-3	MW-309A	82.0	
310-190930-4	MW-310A	79.6	
310-190930-5	Field Blank	76.9	
LCS 160-483450/1-A	Lab Control Sample	82.2	
LCS 160-484436/1-A	Lab Control Sample	74.0	
LCSD 160-484436/2-A	Lab Control Sample Dup	79.0	
MB 160-483450/22-A	Method Blank	91.7	
MB 160-484436/23-A	Method Blank	93.5	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
310-190930-1	MW-301A	75.4	74.0
310-190930-2	MW-306A	79.3	83.0
310-190930-3	MW-309A	82.0	81.1
310-190930-4	MW-310A	79.6	79.6
310-190930-5	Field Blank	76.9	82.6
LCS 160-483458/1-A	Lab Control Sample	82.2	83.0
LCS 160-484437/1-A	Lab Control Sample	74.0	82.2
LCSD 160-484437/2-A	Lab Control Sample Dup	79.0	77.8
MB 160-483458/22-A	Method Blank	91.7	87.1
MB 160-484437/23-A	Method Blank	93.5	79.6
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

C5 October 2020 Detection Monitoring

ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-193626-1
Client Project/Site: Prairie Creek - 25220074

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
11/2/2020 9:32:50 AM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Job ID: 310-193626-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-193626-1

Comments

No additional comments.

Receipt

The samples were received on 10/21/2020 4:20 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.1° C, 1.1° C, 2.6° C and 3.9° C.

HPLC/IC

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-193626-1), MW-301A (310-193626-2), MW-302 (310-193626-3), MW-306A (310-193626-8), MW-307 (310-193626-9), MW-308 (310-193626-10), MW-309A (310-193626-12), MW-310 (310-193626-13) and MW-310A (310-193626-14). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6020A: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following sample: MW-308 (310-193626-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-193626-1	MW-301	Water	10/19/20 12:44	10/21/20 16:20	
310-193626-2	MW-301A	Water	10/21/20 14:05	10/21/20 16:20	
310-193626-3	MW-302	Water	10/19/20 14:30	10/21/20 16:20	
310-193626-4	MW-303	Water	10/20/20 16:14	10/21/20 16:20	
310-193626-5	MW-304	Water	10/20/20 14:35	10/21/20 16:20	
310-193626-6	MW-305	Water	10/20/20 12:48	10/21/20 16:20	
310-193626-7	MW-306	Water	10/20/20 10:57	10/21/20 16:20	
310-193626-8	MW-306A	Water	10/20/20 08:47	10/21/20 16:20	
310-193626-9	MW-307	Water	10/19/20 17:00	10/21/20 16:20	
310-193626-10	MW-308	Water	10/19/20 10:35	10/21/20 16:20	
310-193626-11	MW-309	Water	10/21/20 09:20	10/21/20 16:20	
310-193626-12	MW-309A	Water	10/21/20 10:25	10/21/20 16:20	
310-193626-13	MW-310	Water	10/21/20 12:00	10/21/20 16:20	
310-193626-14	MW-310A	Water	10/21/20 13:00	10/21/20 16:20	
310-193626-15	Field Blank	Water	10/21/20 13:30	10/21/20 16:20	

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-301

Lab Sample ID: 310-193626-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	67	F1	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	98	F1	5.0	3.6	mg/L	5		9056A	Total/NA
Barium	270		2.0	0.28	ug/L	1		6020A	Total/NA
Cadmium	0.073	J	0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	4.9	J	5.0	1.1	ug/L	1		6020A	Total/NA
Lithium	15		10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	660		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	714.77				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	67.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	3.69				mg/L	1		Field Sampling	Total/NA
pH, Field	6.89				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	983				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	6.01				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-301A

Lab Sample ID: 310-193626-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.6	J	5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	7.8		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	1.9	J	2.0	0.88	ug/L	1		6020A	Total/NA
Barium	190		2.0	0.28	ug/L	1		6020A	Total/NA
Cadmium	0.054	J	0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	76		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	1.1	J	5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	2.0		0.50	0.091	ug/L	1		6020A	Total/NA
Lead	1.0		0.50	0.11	ug/L	1		6020A	Total/NA
Lithium	4.1	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	3.1		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	310		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-92.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.77				mg/L	1		Field Sampling	Total/NA
pH, Field	6.85				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	551.4				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	11.6				Degrees C	1		Field Sampling	Total/NA

Client Sample ID: MW-302

Lab Sample ID: 310-193626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	49		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	78		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	2.0		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	200		2.0	0.28	ug/L	1		6020A	Total/NA
Cadmium	0.062	J	0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Chromium	2.2	J	5.0	1.1	ug/L	1		6020A	Total/NA
Cobalt	0.33	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	8.2	J	10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	480		30	26	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-302 (Continued)

Lab Sample ID: 310-193626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	713.75				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	21.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	2.22				mg/L	1		Field Sampling	Total/NA
pH, Field	6.67				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	761				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.6				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	8.15				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-303

Lab Sample ID: 310-193626-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.67		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	130		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	56		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	120		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	1300		100	80	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.43	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lead	0.18	J	0.50	0.11	ug/L	1		6020A	Total/NA
Lithium	21		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	17		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	580		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.16				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-147.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.08				mg/L	1		Field Sampling	Total/NA
pH, Field	7.08				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	853				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.1				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.80				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-304

Lab Sample ID: 310-193626-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.56		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	1.0		1.0	0.51	ug/L	1		6020A	Total/NA
Arsenic	14		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	860		100	80	ug/L	1		6020A	Total/NA
Calcium	98		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.1		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	17		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	28		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	500		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.0	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.13				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-99.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.08				mg/L	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-304 (Continued)

Lab Sample ID: 310-193626-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH, Field	6.84				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	771				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.02				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-305

Lab Sample ID: 310-193626-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.37	J	0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	230		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.79	J	1.0	0.51	ug/L	1		6020A	Total/NA
Arsenic	9.8		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	140		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	1300		100	80	ug/L	1		6020A	Total/NA
Calcium	130		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.73		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	20		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	58		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	660		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.02				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-86.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.07				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	930				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.02				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-306

Lab Sample ID: 310-193626-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.29	J	0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	120		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	1.1	J	2.0	0.88	ug/L	1		6020A	Total/NA
Barium	67		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	2800		100	80	ug/L	1		6020A	Total/NA
Cadmium	0.10		0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	54		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.17	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lead	0.42	J	0.50	0.11	ug/L	1		6020A	Total/NA
Molybdenum	260		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	360		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.7	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	702.26				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-199.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.66				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	538.5				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	19.93				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-306A

Lab Sample ID: 310-193626-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	65		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	350		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.64	J	1.0	0.51	ug/L	1		6020A	Total/NA
Barium	170		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	2400		100	80	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.49	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lead	0.79		0.50	0.11	ug/L	1		6020A	Total/NA
Lithium	6.3	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	13		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	800		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-139.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.29				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1,054				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	20.8				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-307

Lab Sample ID: 310-193626-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.29	J	0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	30		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	1.0		1.0	0.51	ug/L	1		6020A	Total/NA
Arsenic	6.7		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	45		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	890		100	80	ug/L	1		6020A	Total/NA
Calcium	21		0.50	0.19	mg/L	1		6020A	Total/NA
Lithium	16		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	5.2		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	80		30	26	mg/L	1		SM 2540C	Total/NA
pH	9.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	706.56				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-123.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L	1		Field Sampling	Total/NA
pH, Field	9.26				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	145.2				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	18.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.09				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-308

Lab Sample ID: 310-193626-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.4		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	150		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	1.4		1.0	0.51	ug/L	1		6020A	Total/NA
Arsenic	50		8.0	3.5	ug/L	4		6020A	Total/NA
Barium	53		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	6400		400	320	ug/L	4		6020A	Total/NA
Cadmium	0.071	J	0.10	0.049	ug/L	1		6020A	Total/NA
Calcium	54		2.0	0.76	mg/L	4		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-308 (Continued)

Lab Sample ID: 310-193626-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	47		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	58		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	370		30	26	mg/L	1		SM 2540C	Total/NA
pH	9.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	703.87				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-178.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.21				mg/L	1		Field Sampling	Total/NA
pH, Field	9.23				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	318.1				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.9				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.08				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-309

Lab Sample ID: 310-193626-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13		5.0	2.0	mg/L	5		9056A	Total/NA
Fluoride	0.61		0.50	0.23	mg/L	5		9056A	Total/NA
Sulfate	170		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	89		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	1800		100	80	ug/L	1		6020A	Total/NA
Calcium	120		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.14	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	19		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	21		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	620		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	701.97				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-145.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.10				mg/L	1		Field Sampling	Total/NA
pH, Field	7.22				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	955				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	18.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.86				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-309A

Lab Sample ID: 310-193626-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	24		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	110		5.0	3.6	mg/L	5		9056A	Total/NA
Barium	170		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	470		100	80	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.32	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	5.9	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	7.1		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	460		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-181.6				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	7.33				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	749				umhos/cm	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-309A (Continued)

Lab Sample ID: 310-193626-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature, Field	15.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	1.46				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-310

Lab Sample ID: 310-193626-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	170		5.0	3.6	mg/L	5		9056A	Total/NA
Arsenic	36		2.0	0.88	ug/L	1		6020A	Total/NA
Barium	160		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	1300		100	80	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.11	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	18		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	71		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	580		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	701.78				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-162.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.14				mg/L	1		Field Sampling	Total/NA
pH, Field	7.20				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	894				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	17.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.72				NTU	1		Field Sampling	Total/NA

Client Sample ID: MW-310A

Lab Sample ID: 310-193626-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	48		5.0	2.0	mg/L	5		9056A	Total/NA
Sulfate	330		5.0	3.6	mg/L	5		9056A	Total/NA
Antimony	0.66	J	1.0	0.51	ug/L	1		6020A	Total/NA
Barium	210		2.0	0.28	ug/L	1		6020A	Total/NA
Boron	340		100	80	ug/L	1		6020A	Total/NA
Calcium	180		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	2.1		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	5.3	J	10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	21		2.0	1.1	ug/L	1		6020A	Total/NA
Total Dissolved Solids	850		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.4	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	-165.8				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.11				mg/L	1		Field Sampling	Total/NA
pH, Field	7.24				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1,168				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.82				NTU	1		Field Sampling	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-193626-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	6.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-301

Lab Sample ID: 310-193626-1

Date Collected: 10/19/20 12:44

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	67	F1	5.0	2.0	mg/L			10/26/20 13:57	5
Fluoride	<0.23	F2	0.50	0.23	mg/L			10/26/20 13:57	5
Sulfate	98	F1	5.0	3.6	mg/L			10/26/20 13:57	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:27	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:27	1
Barium	270		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:27	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:27	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 15:27	1
Cadmium	0.073	J	0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:27	1
Calcium	150		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:27	1
Chromium	4.9	J	5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:27	1
Cobalt	<0.091		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:27	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:27	1
Lithium	15		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:27	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	660		30	26	mg/L			10/23/20 15:19	1
pH	7.0	HF	0.1	0.1	SU			10/21/20 16:53	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	714.77				ft			10/19/20 12:44	1
Oxidation Reduction Potential	67.9				millivolts			10/19/20 12:44	1
Oxygen, Dissolved, Client Supplied	3.69				mg/L			10/19/20 12:44	1
pH, Field	6.89				SU			10/19/20 12:44	1
Specific Conductance, Field	983				umhos/cm			10/19/20 12:44	1
Temperature, Field	11.8				Degrees C			10/19/20 12:44	1
Turbidity, Field	6.01				NTU			10/19/20 12:44	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-301A

Lab Sample ID: 310-193626-2

Date Collected: 10/21/20 14:05

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.6	J	5.0	2.0	mg/L			10/25/20 15:15	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 15:15	5
Sulfate	7.8		5.0	3.6	mg/L			10/25/20 15:15	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:30	1
Arsenic	1.9	J	2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:30	1
Barium	190		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:30	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:30	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 15:30	1
Cadmium	0.054	J	0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:30	1
Calcium	76		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:30	1
Chromium	1.1	J	5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:30	1
Cobalt	2.0		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:30	1
Lead	1.0		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:30	1
Lithium	4.1	J	10	2.5	ug/L		10/23/20 08:00	10/29/20 15:30	1
Molybdenum	3.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	310		30	26	mg/L			10/26/20 15:50	1
pH	7.0	HF	0.1	0.1	SU			10/21/20 16:51	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-92.6				millivolts			10/21/20 14:05	1
Oxygen, Dissolved, Client Supplied	1.77				mg/L			10/21/20 14:05	1
pH, Field	6.85				SU			10/21/20 14:05	1
Specific Conductance, Field	551.4				umhos/cm			10/21/20 14:05	1
Temperature, Field	11.6				Degrees C			10/21/20 14:05	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-302

Lab Sample ID: 310-193626-3

Date Collected: 10/19/20 14:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	49		5.0	2.0	mg/L			10/25/20 15:31	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 15:31	5
Sulfate	78		5.0	3.6	mg/L			10/25/20 15:31	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:32	1
Arsenic	2.0		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:32	1
Barium	200		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:32	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:32	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 15:32	1
Cadmium	0.062 J		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:32	1
Calcium	110		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:32	1
Chromium	2.2 J		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:32	1
Cobalt	0.33 J		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:32	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:32	1
Lithium	8.2 J		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:32	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	480		30	26	mg/L			10/23/20 15:19	1
pH	6.8	HF	0.1	0.1	SU			10/21/20 16:50	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	713.75				ft			10/19/20 14:30	1
Oxidation Reduction Potential	21.5				millivolts			10/19/20 14:30	1
Oxygen, Dissolved, Client Supplied	2.22				mg/L			10/19/20 14:30	1
pH, Field	6.67				SU			10/19/20 14:30	1
Specific Conductance, Field	761				umhos/cm			10/19/20 14:30	1
Temperature, Field	13.6				Degrees C			10/19/20 14:30	1
Turbidity, Field	8.15				NTU			10/19/20 14:30	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-303

Lab Sample ID: 310-193626-4

Date Collected: 10/20/20 16:14

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		5.0	2.0	mg/L			10/25/20 15:46	5
Fluoride	0.67		0.50	0.23	mg/L			10/25/20 15:46	5
Sulfate	130		5.0	3.6	mg/L			10/25/20 15:46	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:35	1
Arsenic	56		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:35	1
Barium	120		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:35	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:35	1
Boron	1300		100	80	ug/L		10/23/20 08:00	10/29/20 15:35	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:35	1
Calcium	110		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:35	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:35	1
Cobalt	0.43	J	0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:35	1
Lead	0.18	J	0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:35	1
Lithium	21		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:35	1
Molybdenum	17		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	580		30	26	mg/L			10/23/20 15:31	1
pH	7.2	HF	0.1	0.1	SU			10/21/20 16:49	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.16				ft			10/20/20 16:14	1
Oxidation Reduction Potential	-147.8				millivolts			10/20/20 16:14	1
Oxygen, Dissolved, Client Supplied	0.08				mg/L			10/20/20 16:14	1
pH, Field	7.08				SU			10/20/20 16:14	1
Specific Conductance, Field	853				umhos/cm			10/20/20 16:14	1
Temperature, Field	15.1				Degrees C			10/20/20 16:14	1
Turbidity, Field	0.80				NTU			10/20/20 16:14	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-304

Lab Sample ID: 310-193626-5

Date Collected: 10/20/20 14:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		5.0	2.0	mg/L			10/25/20 16:02	5
Fluoride	0.56		0.50	0.23	mg/L			10/25/20 16:02	5
Sulfate	110		5.0	3.6	mg/L			10/25/20 16:02	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.0		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:38	1
Arsenic	14		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:38	1
Barium	110		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:38	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:38	1
Boron	860		100	80	ug/L		10/23/20 08:00	10/29/20 15:38	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:38	1
Calcium	98		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:38	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:38	1
Cobalt	1.1		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:38	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:38	1
Lithium	17		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:38	1
Molybdenum	28		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	500		30	26	mg/L			10/23/20 15:31	1
pH	7.0	HF	0.1	0.1	SU			10/21/20 16:48	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.13				ft			10/20/20 14:35	1
Oxidation Reduction Potential	-99.3				millivolts			10/20/20 14:35	1
Oxygen, Dissolved, Client Supplied	0.08				mg/L			10/20/20 14:35	1
pH, Field	6.84				SU			10/20/20 14:35	1
Specific Conductance, Field	771				umhos/cm			10/20/20 14:35	1
Temperature, Field	15.7				Degrees C			10/20/20 14:35	1
Turbidity, Field	0.02				NTU			10/20/20 14:35	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-305

Lab Sample ID: 310-193626-6

Date Collected: 10/20/20 12:48

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		5.0	2.0	mg/L			10/25/20 16:17	5
Fluoride	0.37	J	0.50	0.23	mg/L			10/25/20 16:17	5
Sulfate	230		5.0	3.6	mg/L			10/25/20 16:17	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.79	J	1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:43	1
Arsenic	9.8		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:43	1
Barium	140		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:43	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:43	1
Boron	1300		100	80	ug/L		10/23/20 08:00	10/29/20 15:43	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:43	1
Calcium	130		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:43	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:43	1
Cobalt	0.73		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:43	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:43	1
Lithium	20		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:43	1
Molybdenum	58		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	660		30	26	mg/L			10/23/20 15:31	1
pH	7.2	HF	0.1	0.1	SU			10/21/20 16:44	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.02				ft			10/20/20 12:48	1
Oxidation Reduction Potential	-86.4				millivolts			10/20/20 12:48	1
Oxygen, Dissolved, Client Supplied	0.10				mg/L			10/20/20 12:48	1
pH, Field	7.07				SU			10/20/20 12:48	1
Specific Conductance, Field	930				umhos/cm			10/20/20 12:48	1
Temperature, Field	15.5				Degrees C			10/20/20 12:48	1
Turbidity, Field	0.02				NTU			10/20/20 12:48	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-306

Lab Sample ID: 310-193626-7

Date Collected: 10/20/20 10:57

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		5.0	2.0	mg/L			10/25/20 16:33	5
Fluoride	0.29	J	0.50	0.23	mg/L			10/25/20 16:33	5
Sulfate	120		5.0	3.6	mg/L			10/25/20 16:33	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:46	1
Arsenic	1.1	J	2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:46	1
Barium	67		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:46	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:46	1
Boron	2800		100	80	ug/L		10/23/20 08:00	10/29/20 15:46	1
Cadmium	0.10		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:46	1
Calcium	54		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:46	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:46	1
Cobalt	0.17	J	0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:46	1
Lead	0.42	J	0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:46	1
Lithium	<2.5		10	2.5	ug/L		10/23/20 08:00	10/29/20 15:46	1
Molybdenum	260		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		30	26	mg/L			10/23/20 15:31	1
pH	7.7	HF	0.1	0.1	SU			10/21/20 17:20	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	702.26				ft			10/20/20 10:57	1
Oxidation Reduction Potential	-199.7				millivolts			10/20/20 10:57	1
Oxygen, Dissolved, Client Supplied	0.13				mg/L			10/20/20 10:57	1
pH, Field	7.66				SU			10/20/20 10:57	1
Specific Conductance, Field	538.5				umhos/cm			10/20/20 10:57	1
Temperature, Field	12.5				Degrees C			10/20/20 10:57	1
Turbidity, Field	19.93				NTU			10/20/20 10:57	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-306A

Lab Sample ID: 310-193626-8

Date Collected: 10/20/20 08:47

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65		5.0	2.0	mg/L			10/25/20 16:49	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 16:49	5
Sulfate	350		5.0	3.6	mg/L			10/25/20 16:49	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.64	J	1.0	0.51	ug/L		10/23/20 08:00	10/29/20 15:59	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 15:59	1
Barium	170		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 15:59	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 15:59	1
Boron	2400		100	80	ug/L		10/23/20 08:00	10/29/20 15:59	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 15:59	1
Calcium	150		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 15:59	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:59	1
Cobalt	0.49	J	0.50	0.091	ug/L		10/23/20 08:00	10/29/20 15:59	1
Lead	0.79		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 15:59	1
Lithium	6.3	J	10	2.5	ug/L		10/23/20 08:00	10/29/20 15:59	1
Molybdenum	13		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 15:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	800		30	26	mg/L			10/23/20 15:31	1
pH	7.4	HF	0.1	0.1	SU			10/21/20 17:18	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-139.7				millivolts			10/20/20 08:47	1
Oxygen, Dissolved, Client Supplied	0.13				mg/L			10/20/20 08:47	1
pH, Field	7.29				SU			10/20/20 08:47	1
Specific Conductance, Field	1,054				umhos/cm			10/20/20 08:47	1
Temperature, Field	12.7				Degrees C			10/20/20 08:47	1
Turbidity, Field	20.8				NTU			10/20/20 08:47	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-307

Lab Sample ID: 310-193626-9

Date Collected: 10/19/20 17:00

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		5.0	2.0	mg/L			10/25/20 17:04	5
Fluoride	0.29	J	0.50	0.23	mg/L			10/25/20 17:04	5
Sulfate	30		5.0	3.6	mg/L			10/25/20 17:04	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.0		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:01	1
Arsenic	6.7		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:01	1
Barium	45		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:01	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:01	1
Boron	890		100	80	ug/L		10/23/20 08:00	10/29/20 16:01	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:01	1
Calcium	21		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:01	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:01	1
Cobalt	<0.091		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:01	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:01	1
Lithium	16		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:01	1
Molybdenum	5.2		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	80		30	26	mg/L			10/23/20 15:19	1
pH	9.4	HF	0.1	0.1	SU			10/21/20 17:14	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	706.56				ft			10/19/20 17:00	1
Oxidation Reduction Potential	-123.4				millivolts			10/19/20 17:00	1
Oxygen, Dissolved, Client Supplied	0.09				mg/L			10/19/20 17:00	1
pH, Field	9.26				SU			10/19/20 17:00	1
Specific Conductance, Field	145.2				umhos/cm			10/19/20 17:00	1
Temperature, Field	18.7				Degrees C			10/19/20 17:00	1
Turbidity, Field	2.09				NTU			10/19/20 17:00	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-308

Lab Sample ID: 310-193626-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.4		5.0	2.0	mg/L			10/25/20 17:20	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 17:20	5
Sulfate	150		5.0	3.6	mg/L			10/25/20 17:20	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	1.4		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:04	1
Arsenic	50		8.0	3.5	ug/L		10/23/20 08:00	10/30/20 14:24	4
Barium	53		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:04	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:04	1
Boron	6400		400	320	ug/L		10/23/20 08:00	10/30/20 14:24	4
Cadmium	0.071	J	0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:04	1
Calcium	54		2.0	0.76	mg/L		10/23/20 08:00	10/30/20 14:24	4
Chromium	<4.4		20	4.4	ug/L		10/23/20 08:00	10/30/20 14:24	4
Cobalt	<0.36		2.0	0.36	ug/L		10/23/20 08:00	10/30/20 14:24	4
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:04	1
Lithium	47		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:04	1
Molybdenum	58		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	370		30	26	mg/L			10/23/20 15:19	1
pH	9.4	HF	0.1	0.1	SU			10/21/20 16:58	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	703.87				ft			10/19/20 10:35	1
Oxidation Reduction Potential	-178.0				millivolts			10/19/20 10:35	1
Oxygen, Dissolved, Client Supplied	0.21				mg/L			10/19/20 10:35	1
pH, Field	9.23				SU			10/19/20 10:35	1
Specific Conductance, Field	318.1				umhos/cm			10/19/20 10:35	1
Temperature, Field	14.9				Degrees C			10/19/20 10:35	1
Turbidity, Field	1.08				NTU			10/19/20 10:35	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-309

Lab Sample ID: 310-193626-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		5.0	2.0	mg/L			10/25/20 17:35	5
Fluoride	0.61		0.50	0.23	mg/L			10/25/20 17:35	5
Sulfate	170		5.0	3.6	mg/L			10/25/20 17:35	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:07	1
Arsenic	89		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:07	1
Barium	130		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:07	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:07	1
Boron	1800		100	80	ug/L		10/23/20 08:00	10/29/20 16:07	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:07	1
Calcium	120		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:07	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:07	1
Cobalt	0.14	J	0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:07	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:07	1
Lithium	19		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:07	1
Molybdenum	21		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	620		30	26	mg/L			10/26/20 16:45	1
pH	7.4	HF	0.1	0.1	SU			10/21/20 16:57	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	701.97				ft			10/21/20 09:20	1
Oxidation Reduction Potential	-145.9				millivolts			10/21/20 09:20	1
Oxygen, Dissolved, Client Supplied	0.10				mg/L			10/21/20 09:20	1
pH, Field	7.22				SU			10/21/20 09:20	1
Specific Conductance, Field	955				umhos/cm			10/21/20 09:20	1
Temperature, Field	18.8				Degrees C			10/21/20 09:20	1
Turbidity, Field	1.86				NTU			10/21/20 09:20	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-309A

Lab Sample ID: 310-193626-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24		5.0	2.0	mg/L			10/25/20 18:22	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 18:22	5
Sulfate	110		5.0	3.6	mg/L			10/25/20 18:22	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:09	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:09	1
Barium	170		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:09	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:09	1
Boron	470		100	80	ug/L		10/23/20 08:00	10/29/20 16:09	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:09	1
Calcium	110		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:09	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:09	1
Cobalt	0.32 J		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:09	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:09	1
Lithium	5.9 J		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:09	1
Molybdenum	7.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	460		30	26	mg/L			10/26/20 16:45	1
pH	7.4	HF	0.1	0.1	SU			10/21/20 16:54	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-181.6				millivolts			10/21/20 10:25	1
Oxygen, Dissolved, Client Supplied	0.13				mg/L			10/21/20 10:25	1
pH, Field	7.33				SU			10/21/20 10:25	1
Specific Conductance, Field	749				umhos/cm			10/21/20 10:25	1
Temperature, Field	15.7				Degrees C			10/21/20 10:25	1
Turbidity, Field	1.46				NTU			10/21/20 10:25	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-310

Lab Sample ID: 310-193626-13

Date Collected: 10/21/20 12:00

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20		5.0	2.0	mg/L			10/25/20 18:38	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 18:38	5
Sulfate	170		5.0	3.6	mg/L			10/25/20 18:38	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:12	1
Arsenic	36		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:12	1
Barium	160		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:12	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:12	1
Boron	1300		100	80	ug/L		10/23/20 08:00	10/29/20 16:12	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:12	1
Calcium	110		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:12	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:12	1
Cobalt	0.11	J	0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:12	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:12	1
Lithium	18		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:12	1
Molybdenum	71		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	580		30	26	mg/L			10/26/20 16:45	1
pH	7.4	HF	0.1	0.1	SU			10/21/20 17:22	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	701.78				ft			10/21/20 12:00	1
Oxidation Reduction Potential	-162.5				millivolts			10/21/20 12:00	1
Oxygen, Dissolved, Client Supplied	0.14				mg/L			10/21/20 12:00	1
pH, Field	7.20				SU			10/21/20 12:00	1
Specific Conductance, Field	894				umhos/cm			10/21/20 12:00	1
Temperature, Field	17.5				Degrees C			10/21/20 12:00	1
Turbidity, Field	3.72				NTU			10/21/20 12:00	1

Client Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-310A

Lab Sample ID: 310-193626-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48		5.0	2.0	mg/L			10/25/20 18:53	5
Fluoride	<0.23		0.50	0.23	mg/L			10/25/20 18:53	5
Sulfate	330		5.0	3.6	mg/L			10/25/20 18:53	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.66	J	1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:41	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:41	1
Barium	210		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:41	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:41	1
Boron	340		100	80	ug/L		10/23/20 08:00	10/29/20 16:41	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:41	1
Calcium	180		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:41	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:41	1
Cobalt	2.1		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:41	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:41	1
Lithium	5.3	J	10	2.5	ug/L		10/23/20 08:00	10/29/20 16:41	1
Molybdenum	21		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	850		30	26	mg/L			10/26/20 16:45	1
pH	7.4	HF	0.1	0.1	SU			10/21/20 17:19	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	-165.8				millivolts			10/21/20 13:00	1
Oxygen, Dissolved, Client Supplied	0.11				mg/L			10/21/20 13:00	1
pH, Field	7.24				SU			10/21/20 13:00	1
Specific Conductance, Field	1,168				umhos/cm			10/21/20 13:00	1
Temperature, Field	15.3				Degrees C			10/21/20 13:00	1
Turbidity, Field	2.82				NTU			10/21/20 13:00	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: Field Blank

Lab Sample ID: 310-193626-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.40		1.0	0.40	mg/L			10/25/20 19:09	1
Fluoride	<0.046		0.10	0.046	mg/L			10/25/20 19:09	1
Sulfate	<0.71		1.0	0.71	mg/L			10/25/20 19:09	1

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:51	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:51	1
Barium	<0.28		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:51	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:51	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 16:51	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:51	1
Calcium	<0.19		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:51	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:51	1
Cobalt	<0.091		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:51	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:51	1
Lithium	<2.5		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:51	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			10/26/20 16:45	1
pH	6.2	HF	0.1	0.1	SU			10/21/20 17:15	1



Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-297019/3
Matrix: Water
Analysis Batch: 297019

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<0.40		1.0	0.40	mg/L			10/25/20 13:26	1
Fluoride	<0.046		0.10	0.046	mg/L			10/25/20 13:26	1
Sulfate	<0.71		1.0	0.71	mg/L			10/25/20 13:26	1

Lab Sample ID: LCS 310-297019/4
Matrix: Water
Analysis Batch: 297019

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	2.00	2.14		mg/L		107	90 - 110
Sulfate	10.0	10.3		mg/L		103	90 - 110

Lab Sample ID: 310-193626-1 MS
Matrix: Water
Analysis Batch: 297019

Client Sample ID: MW-301
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.23	F2	5.00	5.31		mg/L		106	80 - 120
Sulfate	98	F1	25.0	121		mg/L		91	80 - 120

Lab Sample ID: 310-193626-1 MSD
Matrix: Water
Analysis Batch: 297019

Client Sample ID: MW-301
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.23	F2	5.00	4.37	F2	mg/L		87	80 - 120	19	15
Sulfate	98	F1	25.0	116	F1	mg/L		73	80 - 120	4	15

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-296662/1-A
Matrix: Water
Analysis Batch: 297620

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296662

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 14:45	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 14:45	1
Barium	<0.28		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 14:45	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 14:45	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 14:45	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 14:45	1
Calcium	<0.19		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 14:45	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 14:45	1
Cobalt	<0.091		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 14:45	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 14:45	1
Lithium	<2.5		10	2.5	ug/L		10/23/20 08:00	10/29/20 14:45	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 14:45	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 310-296662/2-A
Matrix: Water
Analysis Batch: 297620

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296662

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	200	227		ug/L		113	80 - 120
Arsenic	200	223		ug/L		112	80 - 120
Barium	100	111		ug/L		111	80 - 120
Beryllium	100	106		ug/L		106	80 - 120
Boron	200	203		ug/L		101	80 - 120
Cadmium	100	105		ug/L		105	80 - 120
Calcium	2.00	1.86		mg/L		93	80 - 120
Chromium	100	105		ug/L		105	80 - 120
Cobalt	100	106		ug/L		106	80 - 120
Lead	200	220		ug/L		110	80 - 120
Lithium	200	215		ug/L		107	80 - 120
Molybdenum	200	203		ug/L		101	80 - 120

Lab Sample ID: 310-193626-5 DU
Matrix: Water
Analysis Batch: 297620

Client Sample ID: MW-304
Prep Type: Total/NA
Prep Batch: 296662

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Antimony	1.0		1.04		ug/L		0.2	20
Arsenic	14		14.2		ug/L		0.9	20
Barium	110		113		ug/L		0.5	20
Beryllium	<0.27		<0.27		ug/L		NC	20
Boron	860		870		ug/L		1	20
Cadmium	<0.049		<0.049		ug/L		NC	20
Calcium	98		99.9		mg/L		2	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	1.1		1.07		ug/L		3	20
Lead	<0.11		<0.11		ug/L		NC	20
Lithium	17		17.1		ug/L		1	20
Molybdenum	28		28.9		ug/L		1	20

Lab Sample ID: MB 310-296664/1-A
Matrix: Water
Analysis Batch: 297620

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296664

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.51		1.0	0.51	ug/L		10/23/20 08:00	10/29/20 16:22	1
Arsenic	<0.88		2.0	0.88	ug/L		10/23/20 08:00	10/29/20 16:22	1
Barium	<0.28		2.0	0.28	ug/L		10/23/20 08:00	10/29/20 16:22	1
Beryllium	<0.27		1.0	0.27	ug/L		10/23/20 08:00	10/29/20 16:22	1
Boron	<80		100	80	ug/L		10/23/20 08:00	10/29/20 16:22	1
Cadmium	<0.049		0.10	0.049	ug/L		10/23/20 08:00	10/29/20 16:22	1
Calcium	<0.19		0.50	0.19	mg/L		10/23/20 08:00	10/29/20 16:22	1
Chromium	<1.1		5.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:22	1
Cobalt	<0.091		0.50	0.091	ug/L		10/23/20 08:00	10/29/20 16:22	1
Lead	<0.11		0.50	0.11	ug/L		10/23/20 08:00	10/29/20 16:22	1
Lithium	<2.5		10	2.5	ug/L		10/23/20 08:00	10/29/20 16:22	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/23/20 08:00	10/29/20 16:22	1

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-296664/2-A
Matrix: Water
Analysis Batch: 297620

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296664
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	200	220		ug/L		110	80 - 120
Arsenic	200	216		ug/L		108	80 - 120
Barium	100	107		ug/L		107	80 - 120
Beryllium	100	101		ug/L		101	80 - 120
Boron	200	212		ug/L		106	80 - 120
Cadmium	100	103		ug/L		103	80 - 120
Calcium	2.00	1.79		mg/L		90	80 - 120
Chromium	100	102		ug/L		102	80 - 120
Cobalt	100	103		ug/L		103	80 - 120
Lead	200	216		ug/L		108	80 - 120
Lithium	200	207		ug/L		103	80 - 120
Molybdenum	200	196		ug/L		98	80 - 120

Lab Sample ID: 310-193626-14 MS
Matrix: Water
Analysis Batch: 297620

Client Sample ID: MW-310A
Prep Type: Total/NA
Prep Batch: 296664
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.66	J	200	214		ug/L		107	75 - 125
Arsenic	<0.88		200	210		ug/L		105	75 - 125
Barium	210		100	296		ug/L		84	75 - 125
Beryllium	<0.27		100	99.4		ug/L		99	75 - 125
Boron	340		200	539		ug/L		97	75 - 125
Cadmium	<0.049		100	99.1		ug/L		99	75 - 125
Calcium	180		2.00	177	4	mg/L		-344	75 - 125
Chromium	<1.1		100	94.7		ug/L		95	75 - 125
Cobalt	2.1		100	96.4		ug/L		94	75 - 125
Lead	<0.11		200	197		ug/L		99	75 - 125
Lithium	5.3	J	200	207		ug/L		101	75 - 125
Molybdenum	21		200	216		ug/L		97	75 - 125

Lab Sample ID: 310-193626-14 MSD
Matrix: Water
Analysis Batch: 297620

Client Sample ID: MW-310A
Prep Type: Total/NA
Prep Batch: 296664
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.66	J	200	239		ug/L		119	75 - 125	11	20
Arsenic	<0.88		200	220		ug/L		110	75 - 125	5	20
Barium	210		100	320		ug/L		109	75 - 125	8	20
Beryllium	<0.27		100	108		ug/L		108	75 - 125	9	20
Boron	340		200	567		ug/L		111	75 - 125	5	20
Cadmium	<0.049		100	108		ug/L		108	75 - 125	9	20
Calcium	180		2.00	186	4	mg/L		138	75 - 125	5	20
Chromium	<1.1		100	101		ug/L		101	75 - 125	6	20
Cobalt	2.1		100	102		ug/L		100	75 - 125	5	20
Lead	<0.11		200	212		ug/L		106	75 - 125	7	20
Lithium	5.3	J	200	223		ug/L		109	75 - 125	8	20
Molybdenum	21		200	235		ug/L		107	75 - 125	8	20

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-296824/1
Matrix: Water
Analysis Batch: 296824

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			10/23/20 15:19	1

Lab Sample ID: LCS 310-296824/2
Matrix: Water
Analysis Batch: 296824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	974		mg/L		97	90 - 110

Lab Sample ID: 310-193626-1 DU
Matrix: Water
Analysis Batch: 296824

Client Sample ID: MW-301
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	660		662		mg/L		0.9	24

Lab Sample ID: MB 310-296825/1
Matrix: Water
Analysis Batch: 296825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			10/23/20 15:31	1

Lab Sample ID: LCS 310-296825/2
Matrix: Water
Analysis Batch: 296825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	966		mg/L		97	90 - 110

Lab Sample ID: 310-193626-5 DU
Matrix: Water
Analysis Batch: 296825

Client Sample ID: MW-304
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	500		490		mg/L		2	24

Lab Sample ID: MB 310-297086/1
Matrix: Water
Analysis Batch: 297086

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			10/26/20 15:50	1

Lab Sample ID: LCS 310-297086/2
Matrix: Water
Analysis Batch: 297086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	940		mg/L		94	90 - 110

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-297091/1
Matrix: Water
Analysis Batch: 297091

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			10/26/20 16:45	1

Lab Sample ID: LCS 310-297091/2
Matrix: Water
Analysis Batch: 297091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	958		mg/L		96	90 - 110

Lab Sample ID: 310-193626-11 DU
Matrix: Water
Analysis Batch: 297091

Client Sample ID: MW-309
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	620		624		mg/L		0.6	24

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-296493/1
Matrix: Water
Analysis Batch: 296493

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	98 - 102

Lab Sample ID: LCS 310-296493/34
Matrix: Water
Analysis Batch: 296493

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	98 - 102

Lab Sample ID: 310-193626-6 DU
Matrix: Water
Analysis Batch: 296493

Client Sample ID: MW-305
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.2	HF	7.2		SU		0.4	20

QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

HPLC/IC

Analysis Batch: 297019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	9056A	
310-193626-2	MW-301A	Total/NA	Water	9056A	
310-193626-3	MW-302	Total/NA	Water	9056A	
310-193626-4	MW-303	Total/NA	Water	9056A	
310-193626-5	MW-304	Total/NA	Water	9056A	
310-193626-6	MW-305	Total/NA	Water	9056A	
310-193626-7	MW-306	Total/NA	Water	9056A	
310-193626-8	MW-306A	Total/NA	Water	9056A	
310-193626-9	MW-307	Total/NA	Water	9056A	
310-193626-10	MW-308	Total/NA	Water	9056A	
310-193626-11	MW-309	Total/NA	Water	9056A	
310-193626-12	MW-309A	Total/NA	Water	9056A	
310-193626-13	MW-310	Total/NA	Water	9056A	
310-193626-14	MW-310A	Total/NA	Water	9056A	
310-193626-15	Field Blank	Total/NA	Water	9056A	
MB 310-297019/3	Method Blank	Total/NA	Water	9056A	
LCS 310-297019/4	Lab Control Sample	Total/NA	Water	9056A	
310-193626-1 MS	MW-301	Total/NA	Water	9056A	
310-193626-1 MSD	MW-301	Total/NA	Water	9056A	

Metals

Prep Batch: 296662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	3010A	
310-193626-2	MW-301A	Total/NA	Water	3010A	
310-193626-3	MW-302	Total/NA	Water	3010A	
310-193626-4	MW-303	Total/NA	Water	3010A	
310-193626-5	MW-304	Total/NA	Water	3010A	
310-193626-6	MW-305	Total/NA	Water	3010A	
310-193626-7	MW-306	Total/NA	Water	3010A	
310-193626-8	MW-306A	Total/NA	Water	3010A	
310-193626-9	MW-307	Total/NA	Water	3010A	
310-193626-10	MW-308	Total/NA	Water	3010A	
310-193626-11	MW-309	Total/NA	Water	3010A	
310-193626-12	MW-309A	Total/NA	Water	3010A	
310-193626-13	MW-310	Total/NA	Water	3010A	
MB 310-296662/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-296662/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-193626-5 DU	MW-304	Total/NA	Water	3010A	

Prep Batch: 296664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-14	MW-310A	Total/NA	Water	3010A	
310-193626-15	Field Blank	Total/NA	Water	3010A	
MB 310-296664/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-296664/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-193626-14 MS	MW-310A	Total/NA	Water	3010A	
310-193626-14 MSD	MW-310A	Total/NA	Water	3010A	

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Metals

Analysis Batch: 297620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	6020A	296662
310-193626-2	MW-301A	Total/NA	Water	6020A	296662
310-193626-3	MW-302	Total/NA	Water	6020A	296662
310-193626-4	MW-303	Total/NA	Water	6020A	296662
310-193626-5	MW-304	Total/NA	Water	6020A	296662
310-193626-6	MW-305	Total/NA	Water	6020A	296662
310-193626-7	MW-306	Total/NA	Water	6020A	296662
310-193626-8	MW-306A	Total/NA	Water	6020A	296662
310-193626-9	MW-307	Total/NA	Water	6020A	296662
310-193626-10	MW-308	Total/NA	Water	6020A	296662
310-193626-11	MW-309	Total/NA	Water	6020A	296662
310-193626-12	MW-309A	Total/NA	Water	6020A	296662
310-193626-13	MW-310	Total/NA	Water	6020A	296662
310-193626-14	MW-310A	Total/NA	Water	6020A	296664
310-193626-15	Field Blank	Total/NA	Water	6020A	296664
MB 310-296662/1-A	Method Blank	Total/NA	Water	6020A	296662
MB 310-296664/1-A	Method Blank	Total/NA	Water	6020A	296664
LCS 310-296662/2-A	Lab Control Sample	Total/NA	Water	6020A	296662
LCS 310-296664/2-A	Lab Control Sample	Total/NA	Water	6020A	296664
310-193626-14 MS	MW-310A	Total/NA	Water	6020A	296664
310-193626-14 MSD	MW-310A	Total/NA	Water	6020A	296664
310-193626-5 DU	MW-304	Total/NA	Water	6020A	296662

Analysis Batch: 297770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-10	MW-308	Total/NA	Water	6020A	296662

General Chemistry

Analysis Batch: 296493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-193626-2	MW-301A	Total/NA	Water	SM 4500 H+ B	
310-193626-3	MW-302	Total/NA	Water	SM 4500 H+ B	
310-193626-4	MW-303	Total/NA	Water	SM 4500 H+ B	
310-193626-5	MW-304	Total/NA	Water	SM 4500 H+ B	
310-193626-6	MW-305	Total/NA	Water	SM 4500 H+ B	
310-193626-7	MW-306	Total/NA	Water	SM 4500 H+ B	
310-193626-8	MW-306A	Total/NA	Water	SM 4500 H+ B	
310-193626-9	MW-307	Total/NA	Water	SM 4500 H+ B	
310-193626-10	MW-308	Total/NA	Water	SM 4500 H+ B	
310-193626-11	MW-309	Total/NA	Water	SM 4500 H+ B	
310-193626-12	MW-309A	Total/NA	Water	SM 4500 H+ B	
310-193626-13	MW-310	Total/NA	Water	SM 4500 H+ B	
310-193626-14	MW-310A	Total/NA	Water	SM 4500 H+ B	
310-193626-15	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-296493/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-296493/34	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
310-193626-6 DU	MW-305	Total/NA	Water	SM 4500 H+ B	

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

General Chemistry

Analysis Batch: 296824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	SM 2540C	
310-193626-3	MW-302	Total/NA	Water	SM 2540C	
310-193626-9	MW-307	Total/NA	Water	SM 2540C	
310-193626-10	MW-308	Total/NA	Water	SM 2540C	
MB 310-296824/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-296824/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-193626-1 DU	MW-301	Total/NA	Water	SM 2540C	

Analysis Batch: 296825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-4	MW-303	Total/NA	Water	SM 2540C	
310-193626-5	MW-304	Total/NA	Water	SM 2540C	
310-193626-6	MW-305	Total/NA	Water	SM 2540C	
310-193626-7	MW-306	Total/NA	Water	SM 2540C	
310-193626-8	MW-306A	Total/NA	Water	SM 2540C	
MB 310-296825/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-296825/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-193626-5 DU	MW-304	Total/NA	Water	SM 2540C	

Analysis Batch: 297086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-2	MW-301A	Total/NA	Water	SM 2540C	
MB 310-297086/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-297086/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 297091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-11	MW-309	Total/NA	Water	SM 2540C	
310-193626-12	MW-309A	Total/NA	Water	SM 2540C	
310-193626-13	MW-310	Total/NA	Water	SM 2540C	
310-193626-14	MW-310A	Total/NA	Water	SM 2540C	
310-193626-15	Field Blank	Total/NA	Water	SM 2540C	
MB 310-297091/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-297091/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-193626-11 DU	MW-309	Total/NA	Water	SM 2540C	

Field Service / Mobile Lab

Analysis Batch: 297733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	Field Sampling	
310-193626-2	MW-301A	Total/NA	Water	Field Sampling	
310-193626-3	MW-302	Total/NA	Water	Field Sampling	
310-193626-4	MW-303	Total/NA	Water	Field Sampling	
310-193626-5	MW-304	Total/NA	Water	Field Sampling	
310-193626-6	MW-305	Total/NA	Water	Field Sampling	
310-193626-7	MW-306	Total/NA	Water	Field Sampling	
310-193626-8	MW-306A	Total/NA	Water	Field Sampling	
310-193626-9	MW-307	Total/NA	Water	Field Sampling	
310-193626-10	MW-308	Total/NA	Water	Field Sampling	
310-193626-11	MW-309	Total/NA	Water	Field Sampling	

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Field Service / Mobile Lab (Continued)

Analysis Batch: 297733 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-12	MW-309A	Total/NA	Water	Field Sampling	
310-193626-13	MW-310	Total/NA	Water	Field Sampling	
310-193626-14	MW-310A	Total/NA	Water	Field Sampling	

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Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-301

Date Collected: 10/19/20 12:44

Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/26/20 13:57	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:27	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296824	10/23/20 15:19	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:53	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/19/20 12:44	ANO	TAL CF

Client Sample ID: MW-301A

Date Collected: 10/21/20 14:05

Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 15:15	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:30	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297086	10/26/20 15:50	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:51	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/21/20 14:05	ANO	TAL CF

Client Sample ID: MW-302

Date Collected: 10/19/20 14:30

Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 15:31	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:32	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296824	10/23/20 15:19	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:50	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/19/20 14:30	ANO	TAL CF

Client Sample ID: MW-303

Date Collected: 10/20/20 16:14

Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 15:46	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:35	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296825	10/23/20 15:31	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:49	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/20/20 16:14	ANO	TAL CF

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Lab Chronicle

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-304
Date Collected: 10/20/20 14:35
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 16:02	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:38	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296825	10/23/20 15:31	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:48	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/20/20 14:35	ANO	TAL CF

Client Sample ID: MW-305
Date Collected: 10/20/20 12:48
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 16:17	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:43	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296825	10/23/20 15:31	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:44	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/20/20 12:48	ANO	TAL CF

Client Sample ID: MW-306
Date Collected: 10/20/20 10:57
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 16:33	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:46	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296825	10/23/20 15:31	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:20	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/20/20 10:57	ANO	TAL CF

Client Sample ID: MW-306A
Date Collected: 10/20/20 08:47
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 16:49	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 15:59	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296825	10/23/20 15:31	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:18	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/20/20 08:47	ANO	TAL CF

Eurofins TestAmerica, Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-307

Lab Sample ID: 310-193626-9

Date Collected: 10/19/20 17:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 17:04	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:01	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296824	10/23/20 15:19	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:14	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/19/20 17:00	ANO	TAL CF

Client Sample ID: MW-308

Lab Sample ID: 310-193626-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 17:20	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:04	SAD	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		4	297770	10/30/20 14:24	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	296824	10/23/20 15:19	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:58	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/19/20 10:35	ANO	TAL CF

Client Sample ID: MW-309

Lab Sample ID: 310-193626-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 17:35	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:07	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297091	10/26/20 16:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:57	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/21/20 09:20	ANO	TAL CF

Client Sample ID: MW-309A

Lab Sample ID: 310-193626-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 18:22	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:09	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297091	10/26/20 16:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 16:54	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/21/20 10:25	ANO	TAL CF

Eurofins TestAmerica, Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Client Sample ID: MW-310

Lab Sample ID: 310-193626-13

Date Collected: 10/21/20 12:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 18:38	CJT	TAL CF
Total/NA	Prep	3010A			296662	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:12	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297091	10/26/20 16:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:22	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/21/20 12:00	ANO	TAL CF

Client Sample ID: MW-310A

Lab Sample ID: 310-193626-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	297019	10/25/20 18:53	CJT	TAL CF
Total/NA	Prep	3010A			296664	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:41	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297091	10/26/20 16:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:19	AJW	TAL CF
Total/NA	Analysis	Field Sampling		1	297733	10/21/20 13:00	ANO	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-193626-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	297019	10/25/20 19:09	CJT	TAL CF
Total/NA	Prep	3010A			296664	10/23/20 08:00	HED	TAL CF
Total/NA	Analysis	6020A		1	297620	10/29/20 16:51	SAD	TAL CF
Total/NA	Analysis	SM 2540C		1	297091	10/26/20 16:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	296493	10/21/20 17:15	AJW	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
SM 4500 H+ B	pH	SM	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

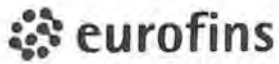


Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SLS Engineers</u>			
City/State:	CITY: <u>Clive</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Goods/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>+0.0</u>
Note: Blank temperature. If no temp blank or temp blank temperature above criteria proceed to Sample Container Temperature.			
Uncorrected Temp (°C):	<u>3.9</u>	Corrected Temp (°C):	<u>3.9</u>
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted:			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY: <u>MI</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type:	<input type="checkbox"/> UPS	<input type="checkbox"/> FedEx	<input type="checkbox"/> FedEx Ground
	<input type="checkbox"/> Lab Courier	<input type="checkbox"/> Lab Field Services	<input checked="" type="checkbox"/> Client Drop-off
		<input type="checkbox"/> US Mail	<input type="checkbox"/> Spee-Dee
		<input type="checkbox"/> Other: _____	
Condition of Cooler/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>4</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice	<input type="checkbox"/> Blue ice	<input type="checkbox"/> Dry ice
			<input type="checkbox"/> Other: _____
			<input type="checkbox"/> NONE
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>+0.0</u>
Temp Blank Temperature: If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>0.1</u>	Corrected Temp (°C):	<u>0.1</u>
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions/Notes			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u>	STATE: <u>IA</u>	Project:
Receiving Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>+0.0</u>	
<small>Enter Blank Temperature if no temp. Blank or temp. Blank temperature above criteria, proceed to Sample Container temperature</small>			
Uncorrected Temp (°C): <u>2.6</u>		Corrected Temp (°C): <u>2.6</u>	
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions/Notes			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY: <u>CHIVE</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Conditions			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>+0.0</u>	
Temp Blank Temperature: If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>1.1</u>		Corrected Temp (°C): <u>1.1</u>	
Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Chain of Custody Record

Client Information		Sampler: <u>Tantzen Buszka</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>310-54741-14045.1</u>	
Client Contact: <u>Tantzen Buszka</u>		Phone: <u>264-993-0855</u>		E-Mail: <u>sandra.fredrick@eurofinset.com</u>		Page: <u>Page 1 of 2</u>		Job #:	
Company: <u>SCS Engineers</u>		Due Date Requested:		Analysis Requested		Total Number of Containers		Preservation Codes:	
Address: <u>8450 Hickman Road Suite 207</u>		TAT Requested (days):		Field Filtered Sample (Yes or No)		Form MS/MSD (Yes or No)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
City: <u>Clive</u>		PO # <u>25220074</u>		6020A - Metals - Hg		2540C, Calcd, 9056A, ORGFM, 28D, SM4500, H+		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
State/Zip: <u>IA, 50325</u>		WO #		903.0 - Radium 226		904.0 - Radium 228		Special Instructions/Note:	
Phone: <u>264-993-0855</u>		Project # <u>31011020</u>		X		X		Other Filtered Metals	
Email: <u>tbuszka@scsengineers.com</u>		SSOW#		X		X		- F. Heavy Metals not filtered	
Project Name: <u>Prairie Creek, 25220074</u>		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastefl, BT=tissue, A=air)	
Site: <u>↓</u>		10.19.20		12:44		G		Water	
		10.21.20		11:05		G		Water	
		10.19.20		14:30		G		Water	
		10.20.20		16:14		G		Water	
		10.20.20		14:35		G		Water	
		10.20.20		12:48		G		Water	
		10.20.20		10:51		G		Water	
		10.20.20		8:47		G		Water	
		10.19.20		17:00		G		Water	
		10.19.20		10:35		G		Water	
		10.21.20		9:20		G		Water	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Radiological	
Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Poison B		<input checked="" type="checkbox"/> Unknown		<input type="checkbox"/> Return To Client		<input checked="" type="checkbox"/> Disposal By Lab	
Empty Kit Relinquished by:		Date:		Time:		Special Instructions/OC Requirements:		Archive For: _____ Months	
Relinquished by: <u>Tantzen Buszka</u>		Date/Time: <u>10-21-20 16:15</u>		Date/Time:		Received by: <u>PM</u>		Date/Time: <u>10-21-20 16:25</u>	
Relinquished by:		Date/Time:		Date/Time:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:		Received by:		Date/Time:	
Custody Seals Intact: <u>Δ Yes Δ No</u>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Company: <u>SCS</u>		Company: <u>SCS</u>	



Chain of Custody Record

Client Information		Sampler: <u>Tantem Buszka</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>310-54741-14045.2</u>	
Client Contact: <u>Tantem Buszka</u>		Phone: <u>269-943-0855</u>		E-Mail: <u>sandra.fredrick@eurofinset.com</u>		Page: <u>2 of 2</u>		Job #:	
Company: <u>SCS Engineers</u>		Due Date Requested:		Analysis Requested		Total Number of Containers		Preservation Codes:	
Address: <u>8450 Hickman Road Suite 207</u>		TAT Requested (days):		Perform MS/MSD (Yes or No)		Field Filtered Sample (Yes or No)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
City: <u>Clive</u>		PO #: <u>25220074</u>		WO #:		Project #: <u>31011020</u>		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
State, Zip: <u>IA, 50325</u>		Email: <u>tbuszka@scsengineers.com</u>		Site: <u>Prairie Creek 25220074</u>		SSOW#:		Special Instructions/Note: <u>One Filtered Metals</u>	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=wastelil, BT=tissue, A=air)	6020A - Metals - Hg	2540C, Calcd, 9056A, ORGFM, 28D, SM4500_H+	903.0 - Radium 226	904.0 - Radium 228
MW-309A	10-21-20	10:25	G		Water	X	X	X	X
MW-310	10-21-20	12:00	G		Water	X	X	X	X
MW-310A	10-21-20	13:00	G		Water	X	X	X	X
Field Blank	10-21-20	13:30	G		Water	X	X	X	X
					Water				
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (specify)									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Relinquished by: <u>Tantem Buszka</u>		Date/Time: <u>10-21-20 16:15</u>		Company: <u>SCS</u>		Received by: <u>MT</u>		<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Custody Seals Intact: <u>Yes</u>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-193626-1

Login Number: 193626

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Marzen, Brita K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater Monitoring Results - Field Parameters
Prairie Creek Generating Station / SCS Engineers Project #25220074
October 2020

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
MW-301	10/19/20 1244	714.77	11.8	6.89	3.69	983	67.9	6.01
MW-301A	10/19/20 1405	NM	11.6	6.85	1.77	551.4	-92.6	NA
MW-302	10/19/20 1430	713.75	13.6	6.67	2.22	761	21.5	8.15
MW-303	10/20/20 1614	702.16	15.1	7.08	0.08	853	-147.8	0.80
MW-304	10/20/20 1435	702.13	15.7	6.84	0.08	771	-99.3	0.02
MW-305	10/20/20 1248	702.02	15.5	7.07	0.10	930	-86.4	0.02
MW-306	10/20/20 1057	702.26	12.5	7.66	0.13	538.5	-199.7	19.93
MW-306A	10/20/20 0847	NM	12.7	7.29	0.13	1,054	-139.7	20.8
MW-307	10/19/20 1700	706.56	18.7	9.26	0.09	145.2	-123.4	2.09
MW-308	10/19/20 1035	703.87	14.9	9.23	0.21	318.1	-178.0	1.08
MW-309	10/21/20 0920	701.97	18.8	7.22	0.10	955	-145.9	1.86
MW-309A	10/21/20 1025	NM	15.7	7.33	0.13	749	-181.6	1.46
MW-310	10/21/20 1200	701.78	17.5	7.20	0.14	894	-162.5	3.72
MW-310A	10/21/20 1300	NM	15.3	7.24	0.11	1,168	-165.8	2.82

Abbreviations:

mg/L = milligrams per liter
 NA = Not Analyzed

mV = millivolts amsl = above mean sea level
 NM = Not measured

Created by: JSN
 Last revision by: JSN

Date: 4/30/2019
 Date: 10/26/2020

Groundwater Monitoring Results - Field Parameters
Prairie Creek Generating Station / SCS Engineers Project #25220074
October 2020

Sample	Sample Date/Time	GW Elevation (ft amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)	Turbidity
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Checked by: ACW Date: 10/28/2020
 Scientist QA/QC: NDK Date: 10/29/2020

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\0ZXLNP22\[PCS_CCR_Field_October 2020.xlsx]GW Field P



ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-193626-2
Client Project/Site: Prairie Creek - 25220074
Revision: 1

For:
SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:
1/14/2021 3:07:56 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

LINKS

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results through
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Job ID: 310-193626-2

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-193626-2

Comments

No additional comments.

Revision

The report being provided is a revision of the original report sent on 12/28/2020. The report (revision 1) is being revised due to: Updated result for sample 7. See case narrative letter for details.

Receipt

The samples were received on 10/21/2020 4:20 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.1° C, 1.1° C, 2.6° C and 3.9° C.

RAD

Method 903.0: Radium-226 prep batch 160-487651: The following sample was inadvertently counted on a detector in which the initial daily check failed. The re-count of the daily check passed, however a second passing daily check was inadvertently missed. The detector passed the daily check prior to the day the sample counted (12/15/2020) and the day after (12/17/2020). We do not believe this excursion adversely affects the data. The data have been reported with this narrative. MW-302 (310-193626-3)

Methods 903.0, 9315: Radium-226 prep batch 160-487651: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-193626-1), MW-301A (310-193626-2), MW-302 (310-193626-3), MW-303 (310-193626-4), MW-304 (310-193626-5), MW-305 (310-193626-6), MW-306 (310-193626-7), MW-306A (310-193626-8), (LCS 160-487651/1-A), (LCSD 160-487651/2-A) and (MB 160-487651/23-A)

Method 903.0: 903 Prep batch 160-487318 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-307 (310-193626-9), MW-308 (310-193626-10), MW-309 (310-193626-11), MW-309A (310-193626-12), MW-310 (310-193626-13), MW-310A (310-193626-14), Field Blank (310-193626-15), (LCS 160-487318/1-A), (LCSD 160-487318/2-A) and (MB 160-487318/23-A)

Methods 904.0, 9320: Radium-228 prep batch 160-487652: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-301 (310-193626-1), MW-301A (310-193626-2), MW-302 (310-193626-3), MW-303 (310-193626-4), MW-304 (310-193626-5), MW-305 (310-193626-6), MW-306A (310-193626-8), (LCS 160-487652/1-A) and (LCSD 160-487652/2-A)

Method 904.0: 904 Prep batch 160-487322 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-307 (310-193626-9), MW-308 (310-193626-10), MW-309 (310-193626-11), MW-309A (310-193626-12), MW-310 (310-193626-13), MW-310A (310-193626-14) and Field Blank (310-193626-15)

Methods 904.0, 9320: Radium-228 prep batch 160-487652: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. (MB 160-487652/23-A)

Method 904.0: Ra228 prep batch 487652 The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interferences. The data have been reported with this narrative. MW-306 (310-193626-7)

Method 904.0: Ra228 prep batch 487652 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-306 (310-193626-7)

Method PrecSep_0: Radium 228 Prep Batch 160-487322: Samples 310-193626-10 and 310-193674-2 were prepared at a reduced



Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Job ID: 310-193626-2 (Continued)

Laboratory: Eurofins TestAmerica, Cedar Falls (Continued)

aliquot due to yellow discoloration: Sample 310-193674-8 was prepared at a reduced aliquot due to a cloudy appearance:

Method PrecSep_0: Radium 228 Prep Batch 160-487322: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-307 (310-193626-9), MW-308 (310-193626-10), MW-309 (310-193626-11), MW-309A (310-193626-12), MW-310 (310-193626-13), MW-310A (310-193626-14) and Field Blank (310-193626-15). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-487652: Samples 310-193626-7 and 310-193626-8 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance: Samples 280-141888-23 and 280-141888-25 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance

Method PrecSep_0: Radium 228 Prep Batch 160-487652: The following sample was prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: MW-301A (310-193626-2). The following sample contained a cloudy appearance: MW-301A (310-193626-2).

Method PrecSep_0: Radium 228 Prep Batch 160-487652: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-193626-1), MW-301A (310-193626-2), MW-302 (310-193626-3), MW-303 (310-193626-4), MW-304 (310-193626-5), MW-305 (310-193626-6), MW-306 (310-193626-7) and MW-306A (310-193626-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-487318: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-307 (310-193626-9), MW-308 (310-193626-10), MW-309 (310-193626-11), MW-309A (310-193626-12), MW-310 (310-193626-13), MW-310A (310-193626-14) and Field Blank (310-193626-15). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-487318: Samples 310-193626-10 and 310-193674-2 were prepared at a reduced aliquot due to yellow discoloration: Sample 310-193674-8 was prepared at a reduced aliquot due to a cloudy appearance:

Method PrecSep-21: Radium 226 Prep Batch 160-487651: Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-301 (310-193626-1), MW-301A (310-193626-2), MW-302 (310-193626-3), MW-303 (310-193626-4), MW-304 (310-193626-5), MW-305 (310-193626-6), MW-306 (310-193626-7) and MW-306A (310-193626-8). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-487652: The following sample was prepared at a reduced aliquot to insure sufficient volume remains if needed for analysis: MW-301A (310-193626-2). The following sample contained a cloudy appearance: MW-301A (310-193626-2).

Method PrecSep-21: Radium 226 Prep Batch 160-487651: Samples 310-193626-7 and 310-193626-8 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance: Samples 280-141888-23 and 280-141888-25 were prepared at a reduced aliquot due to brown discoloration and a cloudy appearance

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Environment Testing TestAmerica

January 13, 2021

Tom Karwoski
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project IA CCR Monitoring – Incorrect Background Subtraction Blank Applied

Dear Mr. Karwoski

It is the policy of Eurofins TestAmerica to conduct its business with honesty and integrity, to produce accurate and useable environmental analytical test results and related services, and to provide the best possible service to our clients.

Eurofins TestAmerica St. Louis conducts monthly background counts on each Gas Flow Proportional Counting (GFPC) detector for an extended period of time (1000 min). This background count is then used as a blank subtraction for all samples counted on that detector for the next month. The laboratory recently discovered that the data for certain samples were being processed with the incorrect blank subtraction result.

Listed below is a summary of the affected samples with the original and revised results.

Lab ID	Sample Name	Analyte	Method	Original Result (pCi/L)	Original MDC (pCi/L)	Corrected Result (pCi/L)	Corrected MDC (pCi/L)
310-193626-7	MW-306	Ra-228	904	-3.66	1.66	0.252	1.24
310-193626-7	MW-306	Ra-226+Ra-228	N/A	0.135	1.66	0.387	1.24

To ensure this error does not happen again, the laboratory has updated the affected software to prevent this error in the future.

Eurofins TestAmerica St. Louis prides itself on supplying its clients with reliable quality data. We deeply apologize for the error resulting in biased data and the difficulties this has caused. If you have any questions regarding this matter, please feel free to contact me.

Regards,

Kristen Ely
Quality Assurance Manager
Kristen.Ely@eurofinset.com

CC Meghan Blodgett
Nicole Kron



Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-193626-1	MW-301	Water	10/19/20 12:44	10/21/20 16:20	
310-193626-2	MW-301A	Water	10/21/20 14:05	10/21/20 16:20	
310-193626-3	MW-302	Water	10/19/20 14:30	10/21/20 16:20	
310-193626-4	MW-303	Water	10/20/20 16:14	10/21/20 16:20	
310-193626-5	MW-304	Water	10/20/20 14:35	10/21/20 16:20	
310-193626-6	MW-305	Water	10/20/20 12:48	10/21/20 16:20	
310-193626-7	MW-306	Water	10/20/20 10:57	10/21/20 16:20	
310-193626-8	MW-306A	Water	10/20/20 08:47	10/21/20 16:20	
310-193626-9	MW-307	Water	10/19/20 17:00	10/21/20 16:20	
310-193626-10	MW-308	Water	10/19/20 10:35	10/21/20 16:20	
310-193626-11	MW-309	Water	10/21/20 09:20	10/21/20 16:20	
310-193626-12	MW-309A	Water	10/21/20 10:25	10/21/20 16:20	
310-193626-13	MW-310	Water	10/21/20 12:00	10/21/20 16:20	
310-193626-14	MW-310A	Water	10/21/20 13:00	10/21/20 16:20	
310-193626-15	Field Blank	Water	10/21/20 13:30	10/21/20 16:20	

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-301	Lab Sample ID: 310-193626-1
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-301A	Lab Sample ID: 310-193626-2
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-302	Lab Sample ID: 310-193626-3
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-303	Lab Sample ID: 310-193626-4
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-304	Lab Sample ID: 310-193626-5
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-305	Lab Sample ID: 310-193626-6
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-306	Lab Sample ID: 310-193626-7
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-306A	Lab Sample ID: 310-193626-8
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-307	Lab Sample ID: 310-193626-9
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-308	Lab Sample ID: 310-193626-10
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-309	Lab Sample ID: 310-193626-11
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-309A	Lab Sample ID: 310-193626-12
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-310	Lab Sample ID: 310-193626-13
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-310A	Lab Sample ID: 310-193626-14
<input type="checkbox"/> No Detections.	
Client Sample ID: Field Blank	Lab Sample ID: 310-193626-15
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-301

Lab Sample ID: 310-193626-1

Date Collected: 10/19/20 12:44

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.656		0.302	0.307	1.00	0.375	pCi/L	11/02/20 06:26	12/16/20 08:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.4		40 - 110					11/02/20 06:26	12/16/20 08:00	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.319	U	0.289	0.291	1.00	0.463	pCi/L	11/02/20 07:00	12/15/20 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.4		40 - 110					11/02/20 07:00	12/15/20 13:48	1
Y Carrier	83.0		40 - 110					11/02/20 07:00	12/15/20 13:48	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.975		0.418	0.423	5.00	0.463	pCi/L		12/20/20 20:20	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-301A

Lab Sample ID: 310-193626-2

Date Collected: 10/21/20 14:05

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.441		0.292	0.295	1.00	0.383	pCi/L	11/02/20 06:26	12/16/20 08:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.5		40 - 110					11/02/20 06:26	12/16/20 08:01	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.03		0.444	0.454	1.00	0.636	pCi/L	11/02/20 07:00	12/15/20 13:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.5		40 - 110					11/02/20 07:00	12/15/20 13:48	1
Y Carrier	83.0		40 - 110					11/02/20 07:00	12/15/20 13:48	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.47		0.531	0.541	5.00	0.636	pCi/L		12/20/20 20:20	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-302

Lab Sample ID: 310-193626-3

Date Collected: 10/19/20 14:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.540		0.288	0.292	1.00	0.362	pCi/L	11/02/20 06:26	12/16/20 08:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	62.5		40 - 110					11/02/20 06:26	12/16/20 08:01	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.684		0.421	0.425	1.00	0.643	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	62.5		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	82.2		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.22		0.510	0.516	5.00	0.643	pCi/L		12/20/20 20:20	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-303

Lab Sample ID: 310-193626-4

Date Collected: 10/20/20 16:14

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.508		0.237	0.241	1.00	0.267	pCi/L	11/02/20 06:26	12/16/20 08:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.5		40 - 110					11/02/20 06:26	12/16/20 08:01	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0517	U	0.284	0.284	1.00	0.501	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.5		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	80.7		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.560		0.370	0.372	5.00	0.501	pCi/L		12/20/20 20:20	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-304

Lab Sample ID: 310-193626-5

Date Collected: 10/20/20 14:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.152	U	0.171	0.171	1.00	0.274	pCi/L	11/02/20 06:26	12/16/20 08:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.4		40 - 110					11/02/20 06:26	12/16/20 08:02	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.807		0.372	0.379	1.00	0.532	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.4		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	78.9		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.958		0.409	0.416	5.00	0.532	pCi/L		12/20/20 20:20	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-305

Lab Sample ID: 310-193626-6

Date Collected: 10/20/20 12:48

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.297	U	0.232	0.233	1.00	0.331	pCi/L	11/02/20 06:26	12/16/20 08:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	61.0		40 - 110					11/02/20 06:26	12/16/20 08:02	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.228	U	0.410	0.411	1.00	0.696	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	61.0		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	77.4		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.525	U	0.471	0.472	5.00	0.696	pCi/L		12/20/20 20:20	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-306

Lab Sample ID: 310-193626-7

Date Collected: 10/20/20 10:57

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.135	U	0.255	0.256	1.00	0.459	pCi/L	11/02/20 06:26	12/16/20 08:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	55.7		40 - 110					11/02/20 06:26	12/16/20 08:02	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.252	U G	0.663	0.663	1.00	1.14	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	55.7		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	78.1		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.387	U	0.710	0.711	5.00	1.14	pCi/L		12/28/20 11:04	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-306A

Lab Sample ID: 310-193626-8

Date Collected: 10/20/20 08:47

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.413		0.286	0.289	1.00	0.395	pCi/L	11/02/20 06:26	12/16/20 08:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	73.0		40 - 110					11/02/20 06:26	12/16/20 08:02	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.485	U	0.436	0.438	1.00	0.700	pCi/L	11/02/20 07:00	12/15/20 13:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	73.0		40 - 110					11/02/20 07:00	12/15/20 13:49	1
Y Carrier	84.5		40 - 110					11/02/20 07:00	12/15/20 13:49	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.898		0.521	0.525	5.00	0.700	pCi/L		12/20/20 20:20	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-307
Date Collected: 10/19/20 17:00
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-9
Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0430	U	0.189	0.189	1.00	0.399	pCi/L	10/30/20 09:53	12/21/20 20:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	77.7		40 - 110					10/30/20 09:53	12/21/20 20:24	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.233	U	0.295	0.295	1.00	0.488	pCi/L	10/30/20 10:37	12/21/20 12:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	77.7		40 - 110					10/30/20 10:37	12/21/20 12:12	1
Y Carrier	84.1		40 - 110					10/30/20 10:37	12/21/20 12:12	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.233	U	0.350	0.350	5.00	0.488	pCi/L		12/28/20 11:05	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-308

Lab Sample ID: 310-193626-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.210	U	0.254	0.255	1.00	0.599	pCi/L	10/30/20 09:53	12/21/20 20:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110					10/30/20 09:53	12/21/20 20:24	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.05		0.479	0.488	1.00	0.696	pCi/L	10/30/20 10:37	12/21/20 12:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	75.4		40 - 110					10/30/20 10:37	12/21/20 12:12	1
Y Carrier	82.2		40 - 110					10/30/20 10:37	12/21/20 12:12	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.05		0.542	0.551	5.00	0.696	pCi/L		12/28/20 11:05	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-309

Lab Sample ID: 310-193626-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.199	U	0.238	0.239	1.00	0.390	pCi/L	10/30/20 09:53	12/21/20 20:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	68.9		40 - 110					10/30/20 09:53	12/21/20 20:25	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.616		0.360	0.365	1.00	0.545	pCi/L	10/30/20 10:37	12/21/20 12:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	68.9		40 - 110					10/30/20 10:37	12/21/20 12:12	1
Y Carrier	81.1		40 - 110					10/30/20 10:37	12/21/20 12:12	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.815		0.432	0.436	5.00	0.545	pCi/L		12/24/20 15:24	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-309A

Lab Sample ID: 310-193626-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0367	U	0.263	0.263	1.00	0.499	pCi/L	10/30/20 09:53	12/21/20 20:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.0		40 - 110					10/30/20 09:53	12/21/20 20:25	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.473	U	0.323	0.326	1.00	0.502	pCi/L	10/30/20 10:37	12/21/20 12:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.0		40 - 110					10/30/20 10:37	12/21/20 12:12	1
Y Carrier	82.2		40 - 110					10/30/20 10:37	12/21/20 12:12	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.509		0.417	0.419	5.00	0.502	pCi/L		12/24/20 15:24	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-310
Date Collected: 10/21/20 12:00
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-13
Matrix: Water

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.170	U	0.280	0.281	1.00	0.484	pCi/L	10/30/20 09:53	12/21/20 20:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.5		40 - 110					10/30/20 09:53	12/21/20 20:25	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.182	U	0.339	0.339	1.00	0.574	pCi/L	10/30/20 10:37	12/21/20 12:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.5		40 - 110					10/30/20 10:37	12/21/20 12:13	1
Y Carrier	80.7		40 - 110					10/30/20 10:37	12/21/20 12:13	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.351	U	0.440	0.440	5.00	0.574	pCi/L		12/24/20 15:24	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-310A

Lab Sample ID: 310-193626-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.495	U	0.389	0.392	1.00	0.585	pCi/L	10/30/20 09:53	12/21/20 20:26	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	59.5		40 - 110					10/30/20 09:53	12/21/20 20:26	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.779		0.478	0.483	1.00	0.735	pCi/L	10/30/20 10:37	12/21/20 12:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	59.5		40 - 110					10/30/20 10:37	12/21/20 12:13	1
Y Carrier	77.8		40 - 110					10/30/20 10:37	12/21/20 12:13	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.27		0.616	0.622	5.00	0.735	pCi/L		12/24/20 15:24	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: Field Blank

Lab Sample ID: 310-193626-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0614	U	0.280	0.280	1.00	0.523	pCi/L	10/30/20 09:53	12/21/20 20:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.7		40 - 110					10/30/20 09:53	12/21/20 20:25	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.102	U	0.305	0.305	1.00	0.565	pCi/L	10/30/20 10:37	12/21/20 12:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	70.7		40 - 110					10/30/20 10:37	12/21/20 12:13	1
Y Carrier	78.5		40 - 110					10/30/20 10:37	12/21/20 12:13	1

Method: Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.0614	U	0.414	0.414	5.00	0.565	pCi/L		12/28/20 11:05	1



Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-487318/23-A
Matrix: Water
Analysis Batch: 492806

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 487318

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1509	U	0.201	0.201	1.00	0.337	pCi/L	10/30/20 09:53	12/22/20 09:10	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed					
Ba Carrier	76.5		40 - 110			10/30/20 09:53	12/22/20 09:10	1		

Lab Sample ID: LCS 160-487318/1-A
Matrix: Water
Analysis Batch: 492601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487318

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	11.08		1.44	1.00	0.401	pCi/L	98	75 - 125
Carrier	LCS	LCS	Limits			Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed				
Ba Carrier	78.3		40 - 110			10/30/20 09:53	12/22/20 09:10	1	

Lab Sample ID: LCSD 160-487318/2-A
Matrix: Water
Analysis Batch: 492601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 487318

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
				Uncert. (2σ+/-)							
Radium-226	11.3	9.983		1.33	1.00	0.381	pCi/L	88	75 - 125	0.39	1
Carrier	LCSD	LCSD	Limits			Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed						
Ba Carrier	80.4		40 - 110			10/30/20 09:53	12/22/20 09:10	1			

Lab Sample ID: MB 160-487651/23-A
Matrix: Water
Analysis Batch: 491983

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 487651

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1130	U	0.158	0.159	1.00	0.268	pCi/L	11/02/20 06:26	12/16/20 08:02	1
Carrier	MB	MB	Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed					
Ba Carrier	72.4		40 - 110			11/02/20 06:26	12/16/20 08:02	1		

Lab Sample ID: LCS 160-487651/1-A
Matrix: Water
Analysis Batch: 492301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487651

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.3	9.830		1.17	1.00	0.206	pCi/L	87	75 - 125

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QC Sample Results

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-487651/1-A
Matrix: Water
Analysis Batch: 492301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487651

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	76.5		40 - 110

Lab Sample ID: LCSD 160-487651/2-A
Matrix: Water
Analysis Batch: 492301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 487651

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.3	10.65		1.29	1.00	0.252	pCi/L	94	75 - 125	0.34	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	64.2		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-487322/23-A
Matrix: Water
Analysis Batch: 492601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 487322

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1984	U	0.272	0.273	1.00	0.454	pCi/L	10/30/20 10:37	12/21/20 12:16	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	76.5		40 - 110	10/30/20 10:37	12/21/20 12:16	1
Y Carrier	86.4		40 - 110	10/30/20 10:37	12/21/20 12:16	1

Lab Sample ID: LCS 160-487322/1-A
Matrix: Water
Analysis Batch: 492638

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487322

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	7.56	6.900		0.918	1.00	0.495	pCi/L	91	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	78.3		40 - 110
Y Carrier	83.0		40 - 110

Lab Sample ID: LCSD 160-487322/2-A
Matrix: Water
Analysis Batch: 492638

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 487322

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	7.56	7.301		0.966	1.00	0.546	pCi/L	97	75 - 125	0.21	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-487322/2-A
Matrix: Water
Analysis Batch: 492638

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 487322

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	80.4		40 - 110
Y Carrier	79.3		40 - 110

Lab Sample ID: MB 160-487652/23-A
Matrix: Water
Analysis Batch: 491763

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 487652

Analyte	MB		Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
Radium-228	0.2612	U	0.338	0.339	1.00	0.562	pCi/L	11/02/20 07:00	12/15/20 13:50	1

Carrier	MB		Limits	Prepared	Analyzed	Dil Fac
	%Yield	Qualifier				
Ba Carrier	72.4		40 - 110	11/02/20 07:00	12/15/20 13:50	1
Y Carrier	76.3		40 - 110	11/02/20 07:00	12/15/20 13:50	1

Lab Sample ID: LCS 160-487652/1-A
Matrix: Water
Analysis Batch: 491762

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 487652

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits

Carrier	LCS		Limits
	%Yield	Qualifier	
Ba Carrier	76.5		40 - 110
Y Carrier	78.5		40 - 110

Lab Sample ID: LCSD 160-487652/2-A
Matrix: Water
Analysis Batch: 491762

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 487652

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit

Carrier	LCSD		Limits
	%Yield	Qualifier	
Ba Carrier	64.2		40 - 110
Y Carrier	74.4		40 - 110

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Rad

Prep Batch: 487318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-9	MW-307	Total/NA	Water	PrecSep-21	
310-193626-10	MW-308	Total/NA	Water	PrecSep-21	
310-193626-11	MW-309	Total/NA	Water	PrecSep-21	
310-193626-12	MW-309A	Total/NA	Water	PrecSep-21	
310-193626-13	MW-310	Total/NA	Water	PrecSep-21	
310-193626-14	MW-310A	Total/NA	Water	PrecSep-21	
310-193626-15	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-487318/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-487318/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-487318/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 487322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-9	MW-307	Total/NA	Water	PrecSep_0	
310-193626-10	MW-308	Total/NA	Water	PrecSep_0	
310-193626-11	MW-309	Total/NA	Water	PrecSep_0	
310-193626-12	MW-309A	Total/NA	Water	PrecSep_0	
310-193626-13	MW-310	Total/NA	Water	PrecSep_0	
310-193626-14	MW-310A	Total/NA	Water	PrecSep_0	
310-193626-15	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-487322/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-487322/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-487322/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 487651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	PrecSep-21	
310-193626-2	MW-301A	Total/NA	Water	PrecSep-21	
310-193626-3	MW-302	Total/NA	Water	PrecSep-21	
310-193626-4	MW-303	Total/NA	Water	PrecSep-21	
310-193626-5	MW-304	Total/NA	Water	PrecSep-21	
310-193626-6	MW-305	Total/NA	Water	PrecSep-21	
310-193626-7	MW-306	Total/NA	Water	PrecSep-21	
310-193626-8	MW-306A	Total/NA	Water	PrecSep-21	
MB 160-487651/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-487651/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-487651/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 487652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193626-1	MW-301	Total/NA	Water	PrecSep_0	
310-193626-2	MW-301A	Total/NA	Water	PrecSep_0	
310-193626-3	MW-302	Total/NA	Water	PrecSep_0	
310-193626-4	MW-303	Total/NA	Water	PrecSep_0	
310-193626-5	MW-304	Total/NA	Water	PrecSep_0	
310-193626-6	MW-305	Total/NA	Water	PrecSep_0	
310-193626-7	MW-306	Total/NA	Water	PrecSep_0	
310-193626-8	MW-306A	Total/NA	Water	PrecSep_0	
MB 160-487652/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-487652/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-487652/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

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Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-301

Lab Sample ID: 310-193626-1

Date Collected: 10/19/20 12:44

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:00	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:48	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Client Sample ID: MW-301A

Lab Sample ID: 310-193626-2

Date Collected: 10/21/20 14:05

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:48	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Client Sample ID: MW-302

Lab Sample ID: 310-193626-3

Date Collected: 10/19/20 14:30

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Client Sample ID: MW-303

Lab Sample ID: 310-193626-4

Date Collected: 10/20/20 16:14

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:01	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

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Lab Chronicle

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-304
Date Collected: 10/20/20 14:35
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:02	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Client Sample ID: MW-305
Date Collected: 10/20/20 12:48
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:02	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Client Sample ID: MW-306
Date Collected: 10/20/20 10:57
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:02	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493161	12/28/20 11:04	SCB	TAL SL

Client Sample ID: MW-306A
Date Collected: 10/20/20 08:47
Date Received: 10/21/20 16:20

Lab Sample ID: 310-193626-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487651	11/02/20 06:26	AVB	TAL SL
Total/NA	Analysis	903.0		1	491983	12/16/20 08:02	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487652	11/02/20 07:00	AVB	TAL SL
Total/NA	Analysis	904.0		1	491763	12/15/20 13:49	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	492490	12/20/20 20:20	GRW	TAL SL

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-307

Lab Sample ID: 310-193626-9

Date Collected: 10/19/20 17:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:24	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:12	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493162	12/28/20 11:05	SCB	TAL SL

Client Sample ID: MW-308

Lab Sample ID: 310-193626-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:24	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:12	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493162	12/28/20 11:05	SCB	TAL SL

Client Sample ID: MW-309

Lab Sample ID: 310-193626-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:25	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:12	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493012	12/24/20 15:24	GRW	TAL SL

Client Sample ID: MW-309A

Lab Sample ID: 310-193626-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:25	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:12	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493012	12/24/20 15:24	GRW	TAL SL

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Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Client Sample ID: MW-310

Lab Sample ID: 310-193626-13

Date Collected: 10/21/20 12:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:25	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493012	12/24/20 15:24	GRW	TAL SL

Client Sample ID: MW-310A

Lab Sample ID: 310-193626-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:26	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493012	12/24/20 15:24	GRW	TAL SL

Client Sample ID: Field Blank

Lab Sample ID: 310-193626-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			487318	10/30/20 09:53	AVB	TAL SL
Total/NA	Analysis	903.0		1	492601	12/21/20 20:25	FLC	TAL SL
Total/NA	Prep	PrecSep_0			487322	10/30/20 10:37	AVB	TAL SL
Total/NA	Analysis	904.0		1	492638	12/21/20 12:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	493162	12/28/20 11:05	SCB	TAL SL

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	01-04-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
Ra226_Ra228 Pos	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SLS Engineers</u>			
City/State:	CITY <u>Clive</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>0-21-20</u>	TIME <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Goods/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>+0.0</u>
Error: Blank? <input type="checkbox"/> Temperature: If no temp blank or temp blank temperature above criteria proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>3.9</u>	Corrected Temp (°C):	<u>3.9</u>
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted:			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY: <u>MI</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type:	<input type="checkbox"/> UPS	<input type="checkbox"/> FedEx	<input type="checkbox"/> FedEx Ground
	<input type="checkbox"/> Lab Courier	<input type="checkbox"/> Lab Field Services	<input checked="" type="checkbox"/> Client Drop-off
		<input type="checkbox"/> US Mail	<input type="checkbox"/> Spee-Dee
		<input type="checkbox"/> Other: _____	
Condition of Cooler/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>4</u>
Cooler Custody Seals Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice	<input type="checkbox"/> Blue ice	<input type="checkbox"/> Dry ice
			<input type="checkbox"/> Other: _____
			<input type="checkbox"/> NONE
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>+0.0</u>
Temp Blank Temperature: If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>0.1</u>	Corrected Temp (°C):	<u>0.1</u>
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions/Notes			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Container			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>0</u>	Correction Factor (°C): <u>+0.0</u>	
<small>Enter Blank Temperature if no temp. Blank or temp. Blank temperature above criteria, proceed to Sample Container temperature</small>			
Uncorrected Temp (°C):	<u>2.6</u>	Corrected Temp (°C): <u>2.6</u>	
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions/Notes			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY: <u>CHIVE</u>	STATE: <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>0-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Conditions			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>4</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>0</u>	Correction Factor (°C):	<u>+0.0</u>
Temp Blank Temperature - If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<u>1.1</u>	Corrected Temp (°C):	<u>1.1</u>
Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
a) If yes: Is there evidence that the chilling process began?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Chain of Custody Record

Client Information		Sampler: <u>Tantzen Buszka</u>		Lab PM: <u>Fredrick, Sandie</u>		Carrier Tracking No(s):		COC No: <u>310-54741-14045.1</u>	
Client Contact: <u>Tantzen Buszka</u>		Phone: <u>264-993-0855</u>		E-Mail: <u>sandra.fredrick@eurofinset.com</u>		Page: <u>Page 1 of 2</u>		Job #:	
Company: <u>SCS Engineers</u>		Due Date Requested:		Analysis Requested		Total Number of Containers		Preservation Codes:	
Address: <u>8450 Hickman Road Suite 207</u>		TAT Requested (days):		Field Filtered Sample (Yes or No)		Form MS/MSD (Yes or No)		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
City: <u>Clive</u>		PO # <u>25220074</u>		Matrix (W=water, S=solid, O=wastewater, BT=Tissue, Air)		2540C, Calcd, 9056A, ORGFM, 28D, SM4500, H+		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
State/Zip: <u>IA, 50325</u>		WO #		Sample Type (C=comp, G=grab)		6020A - Metals - Hg		Other:	
Phone: <u>264-993-0855</u>		Project # <u>31011020</u>		Sample Time		903.0 - Radium 226		Special Instructions/Note:	
Email: <u>tbuszka@scsengineers.com</u>		SSOW#		Sample Date		904.0 - Radium 228		Other Filtered Metals - F. Heavy Metals not filtered	
Project Name: <u>Prairie Creek 25220074</u>		Sample Date		Sample Time		D			
Site: <u></u>		Sample Date		Sample Time		D			
Sample Identification		Sample Date		Sample Time		D			
MW-301		10.19.20	12:44	G	Water	X	X	X	
MW-301A		10.21.20	11:05	G	Water	X	X	X	
MW-302		10.19.20	14:30	G	Water	X	X	X	
MW-303		10.20.20	16:14	G	Water	X	X	X	
MW-304		10.20.20	14:35	G	Water	X	X	X	
MW-305		10.20.20	12:48	G	Water	X	X	X	
MW-306		10.20.20	10:51	G	Water	X	X	X	
MW-306A		10.20.20	8:47	G	Water	X	X	X	
MW-307		10.19.20	17:00	G	Water	X	X	X	
MW-308		10.19.20	10:35	G	Water	X	X	X	
MW-309		10.21.20	9:20	G	Water	X	X	X	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		Special Instructions/OC Requirements:	
Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <u>Tantzen Buszka</u>		Date/Time: <u>10-21-20 16:15</u>		Company: <u>SCS</u>		Received by: <u>PM</u>		Date/Time: <u>10-21-20 16:25</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <u>Δ Yes Δ No</u>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-193626-2

Login Number: 193626

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Marzen, Brita K

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-193626-2

Login Number: 193626

List Number: 2

Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis

List Creation: 10/23/20 03:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: SCS Engineers
 Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
310-193626-1	MW-301	72.4	
310-193626-2	MW-301A	81.5	
310-193626-3	MW-302	62.5	
310-193626-4	MW-303	76.5	
310-193626-5	MW-304	72.4	
310-193626-6	MW-305	61.0	
310-193626-7	MW-306	55.7	
310-193626-8	MW-306A	73.0	
310-193626-9	MW-307	77.7	
310-193626-10	MW-308	75.4	
310-193626-11	MW-309	68.9	
310-193626-12	MW-309A	76.0	
310-193626-13	MW-310	74.5	
310-193626-14	MW-310A	59.5	
310-193626-15	Field Blank	70.7	
LCS 160-487318/1-A	Lab Control Sample	78.3	
LCS 160-487651/1-A	Lab Control Sample	76.5	
LCSD 160-487318/2-A	Lab Control Sample Dup	80.4	
LCSD 160-487651/2-A	Lab Control Sample Dup	64.2	
MB 160-487318/23-A	Method Blank	76.5	
MB 160-487651/23-A	Method Blank	72.4	

Tracer/Carrier Legend
 Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Yield (Acceptance Limits)	
		Ba (40-110)	Y (40-110)
310-193626-1	MW-301	72.4	83.0
310-193626-2	MW-301A	81.5	83.0
310-193626-3	MW-302	62.5	82.2
310-193626-4	MW-303	76.5	80.7
310-193626-5	MW-304	72.4	78.9
310-193626-6	MW-305	61.0	77.4
310-193626-7	MW-306	55.7	78.1
310-193626-8	MW-306A	73.0	84.5
310-193626-9	MW-307	77.7	84.1
310-193626-10	MW-308	75.4	82.2
310-193626-11	MW-309	68.9	81.1
310-193626-12	MW-309A	76.0	82.2
310-193626-13	MW-310	74.5	80.7
310-193626-14	MW-310A	59.5	77.8
310-193626-15	Field Blank	70.7	78.5
LCS 160-487322/1-A	Lab Control Sample	78.3	83.0
LCS 160-487652/1-A	Lab Control Sample	76.5	78.5
LCSD 160-487322/2-A	Lab Control Sample Dup	80.4	79.3
LCSD 160-487652/2-A	Lab Control Sample Dup	64.2	74.4

Eurofins TestAmerica, Cedar Falls

Tracer/Carrier Summary

Client: SCS Engineers
Project/Site: Prairie Creek - 25220074

Job ID: 310-193626-2

Method: 904.0 - Radium-228 (GFPC) (Continued)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Ba</u> <u>(40-110)</u>	<u>Y</u> <u>(40-110)</u>
MB 160-487322/23-A	Method Blank	76.5	86.4
MB 160-487652/23-A	Method Blank	72.4	76.3

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

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ANALYTICAL REPORT

Eurofins TestAmerica, Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-193631-1

Client Project/Site: Prairie Creek, 25220074 MNA Parameters

For:

SCS Engineers
2830 Dairy Drive
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:
11/3/2020 10:16:57 AM*

Sandie Fredrick, Project Manager II
(920)261-1660
sandra.fredrick@eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Job ID: 310-193631-1

Laboratory: Eurofins TestAmerica, Cedar Falls

Narrative

Job Narrative 310-193631-1

Comments

No additional comments.

Receipt

The samples were received on 10/21/2020 4:20 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.1° C, 1.1° C, 2.6° C and 3.9° C.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Sample Summary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-193631-1	MW-301	Water	10/19/20 12:44	10/21/20 16:20	
310-193631-2	MW-301A	Water	10/21/20 14:05	10/21/20 16:20	
310-193631-3	MW-302	Water	10/19/20 14:30	10/21/20 16:20	
310-193631-4	MW-303	Water	10/20/20 16:14	10/21/20 16:20	
310-193631-5	MW-304	Water	10/20/20 14:35	10/21/20 16:20	
310-193631-6	MW-305	Water	10/20/20 12:48	10/21/20 16:20	
310-193631-7	MW-306	Water	10/20/20 10:57	10/21/20 16:20	
310-193631-8	MW-306A	Water	10/20/20 08:47	10/21/20 16:20	
310-193631-9	MW-307	Water	10/19/20 17:00	10/21/20 16:20	
310-193631-10	MW-308	Water	10/19/20 10:35	10/21/20 16:20	
310-193631-11	MW-309	Water	10/21/20 09:20	10/21/20 16:20	
310-193631-12	MW-309A	Water	10/21/20 10:25	10/21/20 16:20	
310-193631-13	MW-310	Water	10/21/20 12:00	10/21/20 16:20	
310-193631-14	MW-310A	Water	10/21/20 13:00	10/21/20 16:20	
310-193631-15	Field Blank	Water	10/21/20 13:30	10/21/20 16:20	

Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-301

Lab Sample ID: 310-193631-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	150000		500	190	ug/L	1		6020A	Total/NA
Iron	73	J	100	50	ug/L	1		6020A	Total/NA
Magnesium	44000		500	100	ug/L	1		6020A	Total/NA
Potassium	930		500	150	ug/L	1		6020A	Total/NA
Sodium	14000		1000	810	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	470		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	470		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-301A

Lab Sample ID: 310-193631-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	75000		500	190	ug/L	1		6020A	Total/NA
Iron	1000		100	50	ug/L	1		6020A	Total/NA
Magnesium	23000		500	100	ug/L	1		6020A	Total/NA
Manganese	700		10	4.0	ug/L	1		6020A	Total/NA
Potassium	2100		500	150	ug/L	1		6020A	Total/NA
Sodium	14000		1000	810	ug/L	1		6020A	Total/NA
Iron	97	J	100	50	ug/L	1		6020A	Dissolved
Manganese	690		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	330		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	330		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-302

Lab Sample ID: 310-193631-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110000		500	190	ug/L	1		6020A	Total/NA
Iron	2200		100	50	ug/L	1		6020A	Total/NA
Magnesium	33000		500	100	ug/L	1		6020A	Total/NA
Manganese	89		10	4.0	ug/L	1		6020A	Total/NA
Potassium	640		500	150	ug/L	1		6020A	Total/NA
Sodium	16000		1000	810	ug/L	1		6020A	Total/NA
Iron	430		100	50	ug/L	1		6020A	Dissolved
Manganese	77		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	310		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	310		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-303

Lab Sample ID: 310-193631-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	100000		500	190	ug/L	1		6020A	Total/NA
Iron	3400		100	50	ug/L	1		6020A	Total/NA
Magnesium	35000		500	100	ug/L	1		6020A	Total/NA
Manganese	1400		10	4.0	ug/L	1		6020A	Total/NA
Potassium	4800		500	150	ug/L	1		6020A	Total/NA
Sodium	34000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	53		2.0	0.88	ug/L	1		6020A	Dissolved
Iron	3100		100	50	ug/L	1		6020A	Dissolved
Manganese	1400		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	370		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	370		10	3.8	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-304

Lab Sample ID: 310-193631-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	92000		500	190	ug/L	1		6020A	Total/NA
Iron	2000		100	50	ug/L	1		6020A	Total/NA
Magnesium	29000		500	100	ug/L	1		6020A	Total/NA
Manganese	1200		10	4.0	ug/L	1		6020A	Total/NA
Potassium	5200		500	150	ug/L	1		6020A	Total/NA
Sodium	40000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	14		2.0	0.88	ug/L	1		6020A	Dissolved
Iron	2000		100	50	ug/L	1		6020A	Dissolved
Manganese	1200		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	350		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	350		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-305

Lab Sample ID: 310-193631-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	120000		500	190	ug/L	1		6020A	Total/NA
Iron	220		100	50	ug/L	1		6020A	Total/NA
Magnesium	36000		500	100	ug/L	1		6020A	Total/NA
Manganese	1200		10	4.0	ug/L	1		6020A	Total/NA
Potassium	5400		500	150	ug/L	1		6020A	Total/NA
Sodium	46000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	8.0		2.0	0.88	ug/L	1		6020A	Dissolved
Iron	180		100	50	ug/L	1		6020A	Dissolved
Manganese	1100		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	340		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	340		5.0	1.9	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306

Lab Sample ID: 310-193631-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	54000		500	190	ug/L	1		6020A	Total/NA
Iron	1800		100	50	ug/L	1		6020A	Total/NA
Magnesium	12000		500	100	ug/L	1		6020A	Total/NA
Manganese	110		10	4.0	ug/L	1		6020A	Total/NA
Potassium	860		500	150	ug/L	1		6020A	Total/NA
Sodium	54000		1000	810	ug/L	1		6020A	Total/NA
Iron	1500		100	50	ug/L	1		6020A	Dissolved
Manganese	100		10	4.0	ug/L	1		6020A	Dissolved
Molybdenum	250		2.0	1.1	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	160		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	160		5.0	1.9	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-306A

Lab Sample ID: 310-193631-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	140000		500	190	ug/L	1		6020A	Total/NA
Iron	2800		100	50	ug/L	1		6020A	Total/NA
Magnesium	45000		500	100	ug/L	1		6020A	Total/NA
Manganese	410		10	4.0	ug/L	1		6020A	Total/NA
Potassium	1600		500	150	ug/L	1		6020A	Total/NA
Sodium	33000		1000	810	ug/L	1		6020A	Total/NA
Iron	1700		100	50	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-306A (Continued)

Lab Sample ID: 310-193631-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	360		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	200		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	200		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-307

Lab Sample ID: 310-193631-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	19000		500	190	ug/L	1		6020A	Total/NA
Magnesium	2300		500	100	ug/L	1		6020A	Total/NA
Potassium	1600		500	150	ug/L	1		6020A	Total/NA
Sodium	4600		1000	810	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	41		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	41		5.0	1.9	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-308

Lab Sample ID: 310-193631-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	43000		500	190	ug/L	1		6020A	Total/NA
Magnesium	3100		500	100	ug/L	1		6020A	Total/NA
Manganese	47		10	4.0	ug/L	1		6020A	Total/NA
Potassium	5300		500	150	ug/L	1		6020A	Total/NA
Sodium	33000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	44		2.0	0.88	ug/L	1		6020A	Dissolved
Manganese	52		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	82		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	41		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	120		5.0	1.9	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-309

Lab Sample ID: 310-193631-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	100000		500	190	ug/L	1		6020A	Total/NA
Iron	1200		100	50	ug/L	1		6020A	Total/NA
Magnesium	33000		500	100	ug/L	1		6020A	Total/NA
Manganese	920		10	4.0	ug/L	1		6020A	Total/NA
Potassium	4800		500	150	ug/L	1		6020A	Total/NA
Sodium	34000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	78		2.0	0.88	ug/L	1		6020A	Dissolved
Iron	1200		100	50	ug/L	1		6020A	Dissolved
Manganese	980		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	360		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	360		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-309A

Lab Sample ID: 310-193631-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	100000		500	190	ug/L	1		6020A	Total/NA
Iron	7500		100	50	ug/L	1		6020A	Total/NA
Magnesium	29000		500	100	ug/L	1		6020A	Total/NA
Manganese	710		10	4.0	ug/L	1		6020A	Total/NA
Potassium	1700		500	150	ug/L	1		6020A	Total/NA
Sodium	14000		1000	810	ug/L	1		6020A	Total/NA
Iron	7600		100	50	ug/L	1		6020A	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Detection Summary

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-309A (Continued)

Lab Sample ID: 310-193631-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	710		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	280		5.0	1.9	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	280		5.0	1.9	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-310

Lab Sample ID: 310-193631-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	100000		500	190	ug/L	1		6020A	Total/NA
Iron	4400		100	50	ug/L	1		6020A	Total/NA
Magnesium	26000		500	100	ug/L	1		6020A	Total/NA
Manganese	980		10	4.0	ug/L	1		6020A	Total/NA
Potassium	5800		500	150	ug/L	1		6020A	Total/NA
Sodium	53000		1000	810	ug/L	1		6020A	Total/NA
Arsenic	32		2.0	0.88	ug/L	1		6020A	Dissolved
Iron	4100		100	50	ug/L	1		6020A	Dissolved
Manganese	960		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	300		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	300		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-310A

Lab Sample ID: 310-193631-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	180000		500	190	ug/L	1		6020A	Total/NA
Iron	6300		100	50	ug/L	1		6020A	Total/NA
Magnesium	48000		500	100	ug/L	1		6020A	Total/NA
Manganese	520		10	4.0	ug/L	1		6020A	Total/NA
Potassium	1100		500	150	ug/L	1		6020A	Total/NA
Sodium	15000		1000	810	ug/L	1		6020A	Total/NA
Iron	6100		100	50	ug/L	1		6020A	Dissolved
Manganese	490		10	4.0	ug/L	1		6020A	Dissolved
Bicarbonate Alkalinity as CaCO3	320		10	3.8	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	320		10	3.8	mg/L	1		SM 2320B	Total/NA

Client Sample ID: Field Blank

Lab Sample ID: 310-193631-15

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-301

Lab Sample ID: 310-193631-1

Date Collected: 10/19/20 12:44

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	150000		500	190	ug/L		10/26/20 07:40	10/30/20 18:06	1
Iron	73	J	100	50	ug/L		10/26/20 07:40	10/30/20 18:06	1
Magnesium	44000		500	100	ug/L		10/26/20 07:40	10/30/20 18:06	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:06	1
Potassium	930		500	150	ug/L		10/26/20 07:40	10/30/20 18:06	1
Sodium	14000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<50		100	50	ug/L		10/26/20 07:43	10/30/20 19:32	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:43	10/30/20 19:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	470		10	3.8	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	470		10	3.8	mg/L			10/29/20 11:29	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-301A

Lab Sample ID: 310-193631-2

Date Collected: 10/21/20 14:05

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	75000		500	190	ug/L		10/26/20 07:40	10/30/20 18:28	1
Iron	1000		100	50	ug/L		10/26/20 07:40	10/30/20 18:28	1
Magnesium	23000		500	100	ug/L		10/26/20 07:40	10/30/20 18:28	1
Manganese	700		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:28	1
Potassium	2100		500	150	ug/L		10/26/20 07:40	10/30/20 18:28	1
Sodium	14000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:28	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	97	J	100	50	ug/L		10/26/20 08:03	10/27/20 15:50	1
Manganese	690		10	4.0	ug/L		10/26/20 08:03	10/27/20 15:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	330		10	3.8	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	330		10	3.8	mg/L			10/29/20 11:29	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-302

Lab Sample ID: 310-193631-3

Date Collected: 10/19/20 14:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	110000		500	190	ug/L		10/26/20 07:40	10/30/20 18:31	1
Iron	2200		100	50	ug/L		10/26/20 07:40	10/30/20 18:31	1
Magnesium	33000		500	100	ug/L		10/26/20 07:40	10/30/20 18:31	1
Manganese	89		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:31	1
Potassium	640		500	150	ug/L		10/26/20 07:40	10/30/20 18:31	1
Sodium	16000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	430		100	50	ug/L		10/26/20 07:43	10/30/20 19:54	1
Manganese	77		10	4.0	ug/L		10/26/20 07:43	10/30/20 19:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	310		10	3.8	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	310		10	3.8	mg/L			10/29/20 11:29	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-303

Lab Sample ID: 310-193631-4

Date Collected: 10/20/20 16:14

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		500	190	ug/L		10/26/20 07:40	10/30/20 18:33	1
Iron	3400		100	50	ug/L		10/26/20 07:40	10/30/20 18:33	1
Magnesium	35000		500	100	ug/L		10/26/20 07:40	10/30/20 18:33	1
Manganese	1400		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:33	1
Potassium	4800		500	150	ug/L		10/26/20 07:40	10/30/20 18:33	1
Sodium	34000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:33	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	53		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 19:56	1
Iron	3100		100	50	ug/L		10/26/20 07:43	10/30/20 19:56	1
Manganese	1400		10	4.0	ug/L		10/26/20 07:43	10/30/20 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	370		10	3.8	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	370		10	3.8	mg/L			10/29/20 11:29	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-304

Lab Sample ID: 310-193631-5

Date Collected: 10/20/20 14:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	92000		500	190	ug/L		10/26/20 07:40	10/30/20 18:36	1
Iron	2000		100	50	ug/L		10/26/20 07:40	10/30/20 18:36	1
Magnesium	29000		500	100	ug/L		10/26/20 07:40	10/30/20 18:36	1
Manganese	1200		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:36	1
Potassium	5200		500	150	ug/L		10/26/20 07:40	10/30/20 18:36	1
Sodium	40000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:36	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	14		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 19:59	1
Iron	2000		100	50	ug/L		10/26/20 07:43	10/30/20 19:59	1
Manganese	1200		10	4.0	ug/L		10/26/20 07:43	10/30/20 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	350		10	3.8	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	350		10	3.8	mg/L			10/29/20 11:29	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-305

Lab Sample ID: 310-193631-6

Date Collected: 10/20/20 12:48

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	120000		500	190	ug/L		10/26/20 07:40	10/30/20 18:39	1
Iron	220		100	50	ug/L		10/26/20 07:40	10/30/20 18:39	1
Magnesium	36000		500	100	ug/L		10/26/20 07:40	10/30/20 18:39	1
Manganese	1200		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:39	1
Potassium	5400		500	150	ug/L		10/26/20 07:40	10/30/20 18:39	1
Sodium	46000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.0		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 20:02	1
Iron	180		100	50	ug/L		10/26/20 07:43	10/30/20 20:02	1
Manganese	1100		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	340		5.0	1.9	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	340		5.0	1.9	mg/L			10/30/20 08:35	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-306

Lab Sample ID: 310-193631-7

Date Collected: 10/20/20 10:57

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	54000		500	190	ug/L		10/26/20 07:40	10/30/20 18:41	1
Iron	1800		100	50	ug/L		10/26/20 07:40	10/30/20 18:41	1
Magnesium	12000		500	100	ug/L		10/26/20 07:40	10/30/20 18:41	1
Manganese	110		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:41	1
Potassium	860		500	150	ug/L		10/26/20 07:40	10/30/20 18:41	1
Sodium	54000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1500		100	50	ug/L		10/26/20 07:43	10/30/20 20:04	1
Manganese	100		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:04	1
Molybdenum	250		2.0	1.1	ug/L		10/26/20 07:43	10/30/20 20:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	160		5.0	1.9	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	160		5.0	1.9	mg/L			10/30/20 08:35	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-306A

Lab Sample ID: 310-193631-8

Date Collected: 10/20/20 08:47

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	140000		500	190	ug/L		10/26/20 07:40	10/30/20 18:44	1
Iron	2800		100	50	ug/L		10/26/20 07:40	10/30/20 18:44	1
Magnesium	45000		500	100	ug/L		10/26/20 07:40	10/30/20 18:44	1
Manganese	410		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:44	1
Potassium	1600		500	150	ug/L		10/26/20 07:40	10/30/20 18:44	1
Sodium	33000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:44	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1700		100	50	ug/L		10/26/20 07:43	10/30/20 20:07	1
Manganese	360		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	200		10	3.8	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	200		10	3.8	mg/L			10/30/20 08:35	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-307
 Date Collected: 10/19/20 17:00
 Date Received: 10/21/20 16:20

Lab Sample ID: 310-193631-9
 Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000		500	190	ug/L		10/26/20 07:40	10/30/20 18:47	1
Iron	<50		100	50	ug/L		10/26/20 07:40	10/30/20 18:47	1
Magnesium	2300		500	100	ug/L		10/26/20 07:40	10/30/20 18:47	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:47	1
Potassium	1600		500	150	ug/L		10/26/20 07:40	10/30/20 18:47	1
Sodium	4600		1000	810	ug/L		10/26/20 07:40	10/30/20 18:47	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<50		100	50	ug/L		10/26/20 07:43	10/30/20 20:10	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	41		5.0	1.9	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	41		5.0	1.9	mg/L			10/29/20 11:29	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-308

Lab Sample ID: 310-193631-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	43000		500	190	ug/L		10/26/20 07:40	10/30/20 18:49	1
Iron	<50		100	50	ug/L		10/26/20 07:40	10/30/20 18:49	1
Magnesium	3100		500	100	ug/L		10/26/20 07:40	10/30/20 18:49	1
Manganese	47		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:49	1
Potassium	5300		500	150	ug/L		10/26/20 07:40	10/30/20 18:49	1
Sodium	33000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	44		2.0	0.88	ug/L		10/26/20 07:43	11/02/20 13:03	1
Iron	<50		100	50	ug/L		10/26/20 07:43	11/02/20 13:03	1
Manganese	52		10	4.0	ug/L		10/26/20 07:43	11/02/20 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	82		5.0	1.9	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	41		5.0	1.9	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	120		5.0	1.9	mg/L			10/29/20 11:29	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-309

Lab Sample ID: 310-193631-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		500	190	ug/L		10/26/20 07:40	10/30/20 18:52	1
Iron	1200		100	50	ug/L		10/26/20 07:40	10/30/20 18:52	1
Magnesium	33000		500	100	ug/L		10/26/20 07:40	10/30/20 18:52	1
Manganese	920		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:52	1
Potassium	4800		500	150	ug/L		10/26/20 07:40	10/30/20 18:52	1
Sodium	34000		1000	810	ug/L		10/26/20 07:40	10/30/20 18:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	78		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 20:26	1
Iron	1200		100	50	ug/L		10/26/20 07:43	10/30/20 20:26	1
Manganese	980		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	360		10	3.8	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	360		10	3.8	mg/L			10/30/20 08:35	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-309A

Lab Sample ID: 310-193631-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		500	190	ug/L		10/26/20 07:40	10/30/20 19:08	1
Iron	7500		100	50	ug/L		10/26/20 07:40	10/30/20 19:08	1
Magnesium	29000		500	100	ug/L		10/26/20 07:40	10/30/20 19:08	1
Manganese	710		10	4.0	ug/L		10/26/20 07:40	10/30/20 19:08	1
Potassium	1700		500	150	ug/L		10/26/20 07:40	10/30/20 19:08	1
Sodium	14000		1000	810	ug/L		10/26/20 07:40	10/30/20 19:08	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7600		100	50	ug/L		10/26/20 07:43	10/30/20 20:28	1
Manganese	710		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	280		5.0	1.9	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	280		5.0	1.9	mg/L			10/30/20 08:35	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-310
 Date Collected: 10/21/20 12:00
 Date Received: 10/21/20 16:20

Lab Sample ID: 310-193631-13
 Matrix: Water

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	100000		500	190	ug/L		10/26/20 07:40	10/30/20 19:11	1
Iron	4400		100	50	ug/L		10/26/20 07:40	10/30/20 19:11	1
Magnesium	26000		500	100	ug/L		10/26/20 07:40	10/30/20 19:11	1
Manganese	980		10	4.0	ug/L		10/26/20 07:40	10/30/20 19:11	1
Potassium	5800		500	150	ug/L		10/26/20 07:40	10/30/20 19:11	1
Sodium	53000		1000	810	ug/L		10/26/20 07:40	10/30/20 19:11	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	32		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 20:34	1
Iron	4100		100	50	ug/L		10/26/20 07:43	10/30/20 20:34	1
Manganese	960		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	300		10	3.8	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	300		10	3.8	mg/L			10/30/20 08:35	1



Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-310A

Lab Sample ID: 310-193631-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	180000		500	190	ug/L		10/26/20 07:40	10/30/20 19:13	1
Iron	6300		100	50	ug/L		10/26/20 07:40	10/30/20 19:13	1
Magnesium	48000		500	100	ug/L		10/26/20 07:40	10/30/20 19:13	1
Manganese	520		10	4.0	ug/L		10/26/20 07:40	10/30/20 19:13	1
Potassium	1100		500	150	ug/L		10/26/20 07:40	10/30/20 19:13	1
Sodium	15000		1000	810	ug/L		10/26/20 07:40	10/30/20 19:13	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	6100		100	50	ug/L		10/26/20 07:43	10/30/20 20:36	1
Manganese	490		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	320		10	3.8	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<3.8		10	3.8	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	320		10	3.8	mg/L			10/30/20 08:35	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: Field Blank

Lab Sample ID: 310-193631-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<190		500	190	ug/L		10/26/20 07:40	10/30/20 19:16	1
Iron	<50		100	50	ug/L		10/26/20 07:40	10/30/20 19:16	1
Magnesium	<100		500	100	ug/L		10/26/20 07:40	10/30/20 19:16	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:40	10/30/20 19:16	1
Potassium	<150		500	150	ug/L		10/26/20 07:40	10/30/20 19:16	1
Sodium	<810		1000	810	ug/L		10/26/20 07:40	10/30/20 19:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.88		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 20:39	1
Iron	<50		100	50	ug/L		10/26/20 07:43	10/30/20 20:39	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:43	10/30/20 20:39	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/26/20 07:43	10/30/20 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:18	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:18	1
Total Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:18	1

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Definitions/Glossary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-296958/1-A
Matrix: Water
Analysis Batch: 297770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296958

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Calcium	<190		500	190	ug/L		10/26/20 07:40	10/30/20 18:01	1
Iron	<50		100	50	ug/L		10/26/20 07:40	10/30/20 18:01	1
Magnesium	<100		500	100	ug/L		10/26/20 07:40	10/30/20 18:01	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:40	10/30/20 18:01	1
Potassium	<150		500	150	ug/L		10/26/20 07:40	10/30/20 18:01	1
Sodium	<810		1000	810	ug/L		10/26/20 07:40	10/30/20 18:01	1

Lab Sample ID: LCS 310-296958/2-A
Matrix: Water
Analysis Batch: 297770

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	200	203		ug/L		102	80 - 120
Magnesium	2000	1970		ug/L		98	80 - 120
Manganese	100	96.5		ug/L		96	80 - 120
Potassium	2000	1910		ug/L		95	80 - 120
Sodium	2000	2090		ug/L		105	80 - 120

Lab Sample ID: 310-193631-1 MS
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	73	J	200	270		ug/L		99	75 - 125
Magnesium	44000		2000	45200	4	ug/L		67	75 - 125
Manganese	<4.0		100	99.8		ug/L		100	75 - 125
Potassium	930		2000	2810		ug/L		94	75 - 125
Sodium	14000		2000	15700	4	ug/L		83	75 - 125

Lab Sample ID: 310-193631-1 MSD
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-301
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	73	J	200	286		ug/L		107	75 - 125	6	20
Magnesium	44000		2000	44300	4	ug/L		18	75 - 125	2	20
Manganese	<4.0		100	96.0		ug/L		96	75 - 125	4	20
Potassium	930		2000	2740		ug/L		91	75 - 125	3	20
Sodium	14000		2000	15400	4	ug/L		71	75 - 125	2	20

Lab Sample ID: 310-193631-11 DU
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-309
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-193631-11 DU
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-309
Prep Type: Total/NA
Prep Batch: 296958

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iron	1200		1300		ug/L		7	20
Magnesium	33000		35800		ug/L		7	20
Manganese	920		982		ug/L		7	20
Potassium	4800		4960		ug/L		4	20
Sodium	34000		35800		ug/L		4	20

Lab Sample ID: MB 310-296959/1-A
Matrix: Water
Analysis Batch: 297770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296959

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.88		2.0	0.88	ug/L		10/26/20 07:43	10/30/20 19:27	1
Iron	<50		100	50	ug/L		10/26/20 07:43	10/30/20 19:27	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 07:43	10/30/20 19:27	1
Molybdenum	<1.1		2.0	1.1	ug/L		10/26/20 07:43	10/30/20 19:27	1

Lab Sample ID: LCS 310-296959/2-A
Matrix: Water
Analysis Batch: 297770

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296959

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	200	209		ug/L		104	80 - 120
Iron	200	201		ug/L		100	80 - 120
Manganese	100	97.4		ug/L		97	80 - 120
Molybdenum	200	192		ug/L		96	80 - 120

Lab Sample ID: 310-193631-1 MS
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-301
Prep Type: Dissolved
Prep Batch: 296959

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.88		200	202		ug/L		101	75 - 125
Iron	<50		200	194		ug/L		97	75 - 125
Manganese	<4.0		100	92.7		ug/L		93	75 - 125
Molybdenum	<1.1		200	199		ug/L		99	75 - 125

Lab Sample ID: 310-193631-1 MSD
Matrix: Water
Analysis Batch: 297770

Client Sample ID: MW-301
Prep Type: Dissolved
Prep Batch: 296959

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	<0.88		200	205		ug/L		102	75 - 125	1	20
Iron	<50		200	194		ug/L		97	75 - 125	0	20
Manganese	<4.0		100	93.2		ug/L		93	75 - 125	1	20
Molybdenum	<1.1		200	204		ug/L		102	75 - 125	2	20

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 310-193631-12 DU
 Matrix: Water
 Analysis Batch: 297770

Client Sample ID: MW-309A
 Prep Type: Dissolved
 Prep Batch: 296959

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	<0.88		<0.88		ug/L		NC	20
Iron	7600		7370		ug/L		3	20
Manganese	710		700		ug/L		2	20
Molybdenum	6.9		6.86		ug/L		0.9	20

Lab Sample ID: MB 310-296901/1-B
 Matrix: Water
 Analysis Batch: 297286

Client Sample ID: Method Blank
 Prep Type: Dissolved
 Prep Batch: 296967

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	<50		100	50	ug/L		10/26/20 08:03	10/27/20 15:32	1
Manganese	<4.0		10	4.0	ug/L		10/26/20 08:03	10/27/20 15:32	1

Lab Sample ID: LCS 310-296901/2-B
 Matrix: Water
 Analysis Batch: 297286

Client Sample ID: Lab Control Sample
 Prep Type: Dissolved
 Prep Batch: 296967

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	100	103		ug/L		103	80 - 120

Method: 2320B - Alkalinity (Low Level)

Lab Sample ID: MB 310-297552/1
 Matrix: Water
 Analysis Batch: 297552

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bicarbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:15	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:15	1
Total Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 14:15	1

Lab Sample ID: LCS 310-297552/2
 Matrix: Water
 Analysis Batch: 297552

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 310-297531/1
 Matrix: Water
 Analysis Batch: 297531

Client Sample ID: Method Blank
 Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Bicarbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 11:29	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/29/20 11:29	1
Total Alkalinity as CaCO3 to pH 4.5	<1.9		5.0	1.9	mg/L			10/29/20 11:29	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 310-297531/2
Matrix: Water
Analysis Batch: 297531

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	1000	953		mg/L		95	90 - 110

Lab Sample ID: MB 310-297618/1
Matrix: Water
Analysis Batch: 297618

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1
Carbonate Alkalinity as CaCO3	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1
Total Alkalinity as CaCO3 to pH 4.5	<1.9		5.0	1.9	mg/L			10/30/20 08:35	1

Lab Sample ID: LCS 310-297618/2
Matrix: Water
Analysis Batch: 297618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	1000	1000		mg/L		100	90 - 110

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Metals

Filtration Batch: 296901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-2	MW-301A	Dissolved	Water	Filtration	
MB 310-296901/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 310-296901/2-B	Lab Control Sample	Dissolved	Water	Filtration	

Prep Batch: 296958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-1	MW-301	Total/NA	Water	3010A	
310-193631-2	MW-301A	Total/NA	Water	3010A	
310-193631-3	MW-302	Total/NA	Water	3010A	
310-193631-4	MW-303	Total/NA	Water	3010A	
310-193631-5	MW-304	Total/NA	Water	3010A	
310-193631-6	MW-305	Total/NA	Water	3010A	
310-193631-7	MW-306	Total/NA	Water	3010A	
310-193631-8	MW-306A	Total/NA	Water	3010A	
310-193631-9	MW-307	Total/NA	Water	3010A	
310-193631-10	MW-308	Total/NA	Water	3010A	
310-193631-11	MW-309	Total/NA	Water	3010A	
310-193631-12	MW-309A	Total/NA	Water	3010A	
310-193631-13	MW-310	Total/NA	Water	3010A	
310-193631-14	MW-310A	Total/NA	Water	3010A	
310-193631-15	Field Blank	Total/NA	Water	3010A	
MB 310-296958/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-296958/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-193631-1 MS	MW-301	Total/NA	Water	3010A	
310-193631-1 MSD	MW-301	Total/NA	Water	3010A	
310-193631-11 DU	MW-309	Total/NA	Water	3010A	

Prep Batch: 296959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-1	MW-301	Dissolved	Water	3010A	
310-193631-3	MW-302	Dissolved	Water	3010A	
310-193631-4	MW-303	Dissolved	Water	3010A	
310-193631-5	MW-304	Dissolved	Water	3010A	
310-193631-6	MW-305	Dissolved	Water	3010A	
310-193631-7	MW-306	Dissolved	Water	3010A	
310-193631-8	MW-306A	Dissolved	Water	3010A	
310-193631-9	MW-307	Dissolved	Water	3010A	
310-193631-10	MW-308	Dissolved	Water	3010A	
310-193631-11	MW-309	Dissolved	Water	3010A	
310-193631-12	MW-309A	Dissolved	Water	3010A	
310-193631-13	MW-310	Dissolved	Water	3010A	
310-193631-14	MW-310A	Dissolved	Water	3010A	
310-193631-15	Field Blank	Dissolved	Water	3010A	
MB 310-296959/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-296959/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-193631-1 MS	MW-301	Dissolved	Water	3010A	
310-193631-1 MSD	MW-301	Dissolved	Water	3010A	
310-193631-12 DU	MW-309A	Dissolved	Water	3010A	

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QC Association Summary

Client: SCS Engineers
 Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Metals

Prep Batch: 296967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-2	MW-301A	Dissolved	Water	3010A	296901
MB 310-296901/1-B	Method Blank	Dissolved	Water	3010A	296901
LCS 310-296901/2-B	Lab Control Sample	Dissolved	Water	3010A	296901

Analysis Batch: 297286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-2	MW-301A	Dissolved	Water	6020A	296967
MB 310-296901/1-B	Method Blank	Dissolved	Water	6020A	296967
LCS 310-296901/2-B	Lab Control Sample	Dissolved	Water	6020A	296967

Analysis Batch: 297770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-1	MW-301	Dissolved	Water	6020A	296959
310-193631-1	MW-301	Total/NA	Water	6020A	296958
310-193631-2	MW-301A	Total/NA	Water	6020A	296958
310-193631-3	MW-302	Dissolved	Water	6020A	296959
310-193631-3	MW-302	Total/NA	Water	6020A	296958
310-193631-4	MW-303	Dissolved	Water	6020A	296959
310-193631-4	MW-303	Total/NA	Water	6020A	296958
310-193631-5	MW-304	Dissolved	Water	6020A	296959
310-193631-5	MW-304	Total/NA	Water	6020A	296958
310-193631-6	MW-305	Dissolved	Water	6020A	296959
310-193631-6	MW-305	Total/NA	Water	6020A	296958
310-193631-7	MW-306	Dissolved	Water	6020A	296959
310-193631-7	MW-306	Total/NA	Water	6020A	296958
310-193631-8	MW-306A	Dissolved	Water	6020A	296959
310-193631-8	MW-306A	Total/NA	Water	6020A	296958
310-193631-9	MW-307	Dissolved	Water	6020A	296959
310-193631-9	MW-307	Total/NA	Water	6020A	296958
310-193631-10	MW-308	Total/NA	Water	6020A	296958
310-193631-11	MW-309	Dissolved	Water	6020A	296959
310-193631-11	MW-309	Total/NA	Water	6020A	296958
310-193631-12	MW-309A	Dissolved	Water	6020A	296959
310-193631-12	MW-309A	Total/NA	Water	6020A	296958
310-193631-13	MW-310	Dissolved	Water	6020A	296959
310-193631-13	MW-310	Total/NA	Water	6020A	296958
310-193631-14	MW-310A	Dissolved	Water	6020A	296959
310-193631-14	MW-310A	Total/NA	Water	6020A	296958
310-193631-15	Field Blank	Dissolved	Water	6020A	296959
310-193631-15	Field Blank	Total/NA	Water	6020A	296958
MB 310-296958/1-A	Method Blank	Total/NA	Water	6020A	296958
MB 310-296959/1-A	Method Blank	Total/NA	Water	6020A	296959
LCS 310-296958/2-A	Lab Control Sample	Total/NA	Water	6020A	296958
LCS 310-296959/2-A	Lab Control Sample	Total/NA	Water	6020A	296959
310-193631-1 MS	MW-301	Dissolved	Water	6020A	296959
310-193631-1 MS	MW-301	Total/NA	Water	6020A	296958
310-193631-1 MSD	MW-301	Dissolved	Water	6020A	296959
310-193631-1 MSD	MW-301	Total/NA	Water	6020A	296958
310-193631-11 DU	MW-309	Total/NA	Water	6020A	296958
310-193631-12 DU	MW-309A	Dissolved	Water	6020A	296959

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QC Association Summary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Metals

Analysis Batch: 297927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-10	MW-308	Dissolved	Water	6020A	296959

General Chemistry

Analysis Batch: 297531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-1	MW-301	Total/NA	Water	SM 2320B	
310-193631-2	MW-301A	Total/NA	Water	SM 2320B	
310-193631-3	MW-302	Total/NA	Water	SM 2320B	
310-193631-4	MW-303	Total/NA	Water	SM 2320B	
310-193631-5	MW-304	Total/NA	Water	SM 2320B	
310-193631-9	MW-307	Total/NA	Water	SM 2320B	
310-193631-10	MW-308	Total/NA	Water	SM 2320B	
MB 310-297531/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-297531/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 297552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-15	Field Blank	Total/NA	Water	2320B	
MB 310-297552/1	Method Blank	Total/NA	Water	2320B	
LCS 310-297552/2	Lab Control Sample	Total/NA	Water	2320B	

Analysis Batch: 297618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-193631-6	MW-305	Total/NA	Water	SM 2320B	
310-193631-7	MW-306	Total/NA	Water	SM 2320B	
310-193631-8	MW-306A	Total/NA	Water	SM 2320B	
310-193631-11	MW-309	Total/NA	Water	SM 2320B	
310-193631-12	MW-309A	Total/NA	Water	SM 2320B	
310-193631-13	MW-310	Total/NA	Water	SM 2320B	
310-193631-14	MW-310A	Total/NA	Water	SM 2320B	
MB 310-297618/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-297618/2	Lab Control Sample	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-301

Lab Sample ID: 310-193631-1

Date Collected: 10/19/20 12:44

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 19:32	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:06	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-301A

Lab Sample ID: 310-193631-2

Date Collected: 10/21/20 14:05

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			296901	10/24/20 16:51	HED	TAL CF
Dissolved	Prep	3010A			296967	10/26/20 08:03	HED	TAL CF
Dissolved	Analysis	6020A		1	297286	10/27/20 15:50	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:28	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-302

Lab Sample ID: 310-193631-3

Date Collected: 10/19/20 14:30

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 19:54	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:31	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-303

Lab Sample ID: 310-193631-4

Date Collected: 10/20/20 16:14

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 19:56	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:33	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-304

Lab Sample ID: 310-193631-5

Date Collected: 10/20/20 14:35

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 19:59	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:36	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-305

Lab Sample ID: 310-193631-6

Date Collected: 10/20/20 12:48

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:02	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:39	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Client Sample ID: MW-306

Lab Sample ID: 310-193631-7

Date Collected: 10/20/20 10:57

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:04	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:41	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Client Sample ID: MW-306A

Lab Sample ID: 310-193631-8

Date Collected: 10/20/20 08:47

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:07	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:44	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-307

Lab Sample ID: 310-193631-9

Date Collected: 10/19/20 17:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:10	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:47	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-308

Lab Sample ID: 310-193631-10

Date Collected: 10/19/20 10:35

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297927	11/02/20 13:03	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:49	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297531	10/29/20 11:29	LBB	TAL CF

Client Sample ID: MW-309

Lab Sample ID: 310-193631-11

Date Collected: 10/21/20 09:20

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:26	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 18:52	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Client Sample ID: MW-309A

Lab Sample ID: 310-193631-12

Date Collected: 10/21/20 10:25

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:28	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 19:08	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Eurofins TestAmerica, Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Client Sample ID: MW-310

Lab Sample ID: 310-193631-13

Date Collected: 10/21/20 12:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:34	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 19:11	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Client Sample ID: MW-310A

Lab Sample ID: 310-193631-14

Date Collected: 10/21/20 13:00

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:36	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 19:13	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	297618	10/30/20 08:35	WJF	TAL CF

Client Sample ID: Field Blank

Lab Sample ID: 310-193631-15

Date Collected: 10/21/20 13:30

Matrix: Water

Date Received: 10/21/20 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3010A			296959	10/26/20 07:43	HED	TAL CF
Dissolved	Analysis	6020A		1	297770	10/30/20 20:39	SAD	TAL CF
Total/NA	Prep	3010A			296958	10/26/20 07:40	HED	TAL CF
Total/NA	Analysis	6020A		1	297770	10/30/20 19:16	SAD	TAL CF
Total/NA	Analysis	2320B		1	297552	10/29/20 14:18	LBB	TAL CF

Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Laboratory: Eurofins TestAmerica, Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: SCS Engineers
Project/Site: Prairie Creek, 25220074 MNA Parameters

Job ID: 310-193631-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
2320B	Alkalinity (Low Level)	SM	TAL CF
SM 2320B	Alkalinity	SM	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF
Filtration	Sample Filtration	None	TAL CF

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

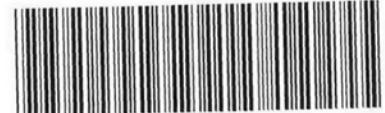
Laboratory References:

TAL CF = Eurofins TestAmerica, Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401





Environment Testing
TestAmerica



310-193631 Chain of Custody

Cooler/Sample Receipt and Temperature

Client/Commission				
Client: <u>SOS Engineers</u>				
City/State: <u>Clive</u>		STATE: <u>IA</u>	Project:	
Date/Time Received:	DATE: <u>10-21-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____				
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID:				
Multiple Coolers? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler # <u>1</u> of <u>4</u>				
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓				
Temperature Record				
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE				
Thermometer ID: <u>0</u>			Correction Factor (°C): <u>+0.0</u>	
Uncorrected Temp (°C): <u>3.9</u>			Corrected Temp (°C): <u>3.9</u>	
Container(s) used:		CONTAINER 1	CONTAINER 2	
Uncorrected Temp (°C):				
Corrected Temp (°C):				
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No				
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No				
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No				
NOTE: If yes, contact PM before proceeding. If no, proceed with login				
Additional Comments				

Document: CF-LG-WI-002
Revision: 25
Date: 06/17/2019

Eurofins TestAmerica, Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY: <u>Ume</u>	STATE: <u>IA</u>	Project:
Date/Time Received:	DATE: <u>02-20</u>	TIME: <u>1620</u>	Received By: <u>EF</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID: _____			
Multiple Coolers? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler # <u>2</u> of <u>4</u>			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>+0.0</u>	
Uncorrected Temp (°C): <u>0.1</u>		Corrected Temp (°C): <u>0.1</u>	
Sample Container			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
TestAmerica

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	<u>Clive IA</u>	STATE:	<u>IA</u>
Date/Time Received:		DATE	TIME
		<u>02-20</u>	<u>1620</u>
Received By:		<u>EF</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes: Cooler ID:</i>			
Multiple Coolers? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes: Cooler #</i> <u>3 of 4</u>			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Cooler custody seals intact?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Sample custody seals intact?</i> <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes: Which VOA samples are in cooler?</i> ↓			
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>+0.0</u>	
Uncorrected Temp (°C): <u>2.6</u>		Corrected Temp (°C): <u>2.6</u>	
Sample Container(s) used			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Reception Notes			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Cooler/Sample Receipt and Temperature Log Form

Client: <u>SCS Engineers</u>				
City/State: <u>MI</u> <u>MI</u>		STATE: <u>IA</u>	Project:	
Date/Time Received: <u>02-20</u>	DATE	TIME: <u>1620</u>	Received By: <u>ER</u>	
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input checked="" type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____				
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:		
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>4</u> of <u>4</u>		
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓		
Temperature Record				
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE				
Thermometer ID: <u>0</u>		Correction Factor (°C): <u>+0.0</u>		
Uncorrected Temp (°C): <u>1.1</u>		Corrected Temp (°C): <u>1.1</u>		
Container(s) used:		CONTAINER 1		
Uncorrected Temp (°C):		CONTAINER 2		
Corrected Temp (°C):				
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No				
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No				
NOTE: If yes, contact PM before proceeding. If no, proceed with login				
Additional Comments				

Client Information Company: SCS Engineers Address: 8450 Hickman Road Suite 20 27 City: Clive State, Zip: IA, 50325 Phone: 769-943-0855 Email: tbuszka@scsengineers.com Project Name: Prairie Creek, 25220074 MNA Parameters Site: ↓		Due Date Requested: TAT Requested (days): PO #: 25220074 WO #: Project #: 31011020 SSOW#:		Sampler: Tawnten Buszka Lab PM: Fredrick, Sandie Phone: 269-943-0855 E-Mail: sandra.fredrick@eurofins.com		Camer Tracking No(s): COC No: 310-54844-16416.1 Page: Page 1 of 2 Job #:									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform M/MSD (Yes or No)	2328 - Alkalinity - Carb/Bicarb	6020A - Total Metals (6)	6020A - Dissolved Metals (24)	Analysis Requested		Special Instructions/Note:		
MW-301		10-19-20	12:44	G	Water	✓	✓	✓	✓	✓			One Filtered Metals - Diss Metals are unfiltered		
MW-301A		10-21-20	14:05	G	Water	✓	✓	✓	✓	✓					
MW-302		10-19-20	14:30	G	Water	✓	✓	✓	✓	✓					
MW-303		10-20-20	16:14	G	Water	✓	✓	✓	✓	✓					
MW-304		10-20-20	14:35	G	Water	✓	✓	✓	✓	✓					
MW-305		10-20-20	12:48	G	Water	✓	✓	✓	✓	✓					
MW-306		10-20-20	10:57	G	Water	✓	✓	✓	✓	✓					
MW-306A		10-20-20	6:47	G	Water	✓	✓	✓	✓	✓					
MW-307		10-19-20	17:00	G	Water	✓	✓	✓	✓	✓					
MW-308		10-19-20	10:35	G	Water	✓	✓	✓	✓	✓					
MW-309		10-21-20	9:20	G	Water	✓	✓	✓	✓	✓					
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)												Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by:												Method of Shipment:			
Relinquished by: Tawnten Buszka		Date/Time: 10-21-20 16:15		Company: SCS		Received by: [Signature]		Date/Time: 10/20/20		Company: E7A		Date/Time: [Blank]		Company: [Blank]	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:											



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program
Groundwater Monitoring - Prairie Creek Generating Station / SCS Engineers Project #25220074

Parameter	MW-301	MW-301A	MW-302	MW-303	MW-304	MW-305	MW-306	MW-306A	MW-307	MW-308	MW-309	MW-309A	MW-310	MW-310A	Field Blank	TOTAL
Appendix III Parameters (Detection Monitoring)	Boron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	TDS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Antimony	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Cobalt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
	Fluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Lithium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15	
Mercury															0	
Molybdenum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Selenium																0
Thallium																0
Radium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	15
Groundwater Elevation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Well Depth	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Specific Conductance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Dissolved Oxygen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
ORP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Color	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Odor	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Alkalinity - Carbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Alkalinity - Bicarbonate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Calcium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Magnesium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Potassium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Sodium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Arsenic																6
Iron	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Manganese	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Molybdenum																1
Sulfide, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Total Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14
Ferrous Iron, Field	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14

COCS #1 (non-radium) & #2 (radium) - CCR Rule Parameters

COCS #3 - MNA Parameters



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-193631-1

Login Number: 193631

List Source: Eurofins TestAmerica, Cedar Falls

List Number: 1

Creator: Marzen, Brita K

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix D

Historical Results

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-301																		
Number of Sampling Dates: 16																		
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/28/2019	4/27/2020	10/19/2020	
Boron	ug/L	<50	<50	25.2	23.8	37.3	40.8	24.6	28.9	26.8	22.8	30.9	30.6	<110	<110	<73	<80	
Calcium	mg/L	137	140	148	144	112	106	136	142	139	155	154	163	130	160	140	150	
Chloride	mg/L	19.5	24.1	24.4	23.3	19.2	19.1	26.2	30.4	33.6	51.4	57.4	62	43	46	40	67	
Fluoride	mg/L	0.13	0.079	0.13	0.1	0.1	<0.1	0.15	0.21	0.17	0.2	0.16	0.22	<0.23	<0.23	<0.23	<0.23	
Field pH	Std. Units	6.78	6.8	6.57	6.9	6.41	6.41	7	6.97	7.46	7.51	6.81	7.63	6.99	6.69	7.09	6.89	
Sulfate	mg/L	108	101	99.2	107	82.5	74.7	108	101	95.5	117	113	131	100	110	110	98	
Total Dissolved Solids	mg/L	556	587	611	615	495	479	642	640	621	784	747	743	610	680	640	660	
Antimony	ug/L	0.28	0.2	0.057	0.06	0.034	0.065	0.088	0.18	--	0.041	<0.15	<0.078	<0.53	<0.53	<0.58	<0.51	
Arsenic	ug/L	0.7	0.69	0.55	0.54	0.55	0.5	0.62	1.8	--	0.54	1.1	0.67	<0.75	<0.75	<0.88	<0.88	
Barium	ug/L	250	257	264	264	211	205	265	291	--	282	281	261	230	270	260	270	
Beryllium	ug/L	<0.08	<0.08	0.075	0.012	0.023	0.016	<0.012	0.14	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	
Cadmium	ug/L	<0.029	0.059	0.066	0.072	0.063	0.061	0.073	0.12	--	0.069	0.096	0.075	<0.077	0.064	0.066	0.073	
Chromium	ug/L	3.9	4.3	4.5	4.4	4.7	3.4	3.9	9.9	--	4.1	5.8	5.2	3.6	5.4	4.7	4.9	
Cobalt	ug/L	<0.5	<0.5	0.25	0.11	0.28	0.18	0.057	2.1	--	0.028	0.52	0.084	0.12	0.12	0.23	<0.091	
Lead	ug/L	<0.19	0.23	0.16	0.086	0.4	0.25	0.058	1.9	--	<0.033	0.66	0.17	<0.27	<0.27	0.27	<0.11	
Lithium	ug/L	14.9	13.4	11.1	12.6	8.6	6.1	8.9	16.8	--	13.6	5.4	13.3	8.5	12	11	15	
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	
Molybdenum	ug/L	0.61	0.34	0.38	0.45	0.23	0.26	0.33	0.44	--	0.35	0.44	<0.57	<1.1	<1.1	<1.1	<1.1	
Selenium	ug/L	0.97	1.2	0.98	1	0.72	0.69	1.1	1.2	--	1.3	1.3	0.95	1.1	1.7	<1	--	
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.12	0.043	0.081	0.3	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--	
Total Radium	pCi/L	1.06	0.957	1.42	1.42	1.14	0.877	2.53	1.52	--	1	1.07	1.09	--	0.708	0.477	0.975	
Radium-226	pCi/L	0	0.404	0.438	0.665	0.479	0.379	0.793	0.576	--	0.484	0.429	0.478	--	0.259	0.283	0.656	
Radium-228	pCi/L	1.06	0.553	0.981	0.75	0.662	0.498	1.74	0.946	--	0.516	0.643	0.612	--	<0.512	<0.311	0.319	
pH at 25 Degrees C	Std. Units	7	8	7.2	6.8	6.8	7.1	7.3	7.2	7.4	7	7.1	7.1	6.9	6.9	6.9	7	
Field Oxidation Potential	mV	91.3	54.7	175.5	120.8	141.5	155	143.1	90.3	191	32.7	237	60	38.2	-7.3	208.3	67.9	
Field Specific Conductance	umhos/cm	1370	895	918	1350	1400	694	901	1326	949	1060	1105	1052	987	1036	954	983	
Field Temperature	deg C	11.7	11.2	10.7	10.2	9.9	10.45	11.1	12.2	12.6	10.5	12.3	14.9	10.53	11.34	11.1	11.8	
Groundwater Elevation	feet	716.05	716.05	715.87	715.8	716.7	717.08	716.1	715.35	714.36	713.95	714.3	715.74	716.44	715.86	715.8	714.77	
Oxygen, Dissolved	mg/L	2.54	2.75	2.42	3.22	3.88	4.19	2.46	3.21	2.4	38.3	3.6	4.03	6.68	4.63	3.5	3.69	
Turbidity	NTU	3.57	6.66	4.57	11.36	1.61	0.78	0.61	95.83	124.2	0.72	17.05	9.97	6.92	2.8	6.52	6.01	
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	470	
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	470	
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	150000	
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73	
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44000	
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4	
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<50	
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4	
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	930	
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14000	

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-301A			
Number of Sampling Dates: 2			
Parameter Name	Units	9/15/2020	10/21/2020
Boron	ug/L	<80	<80
Calcium	mg/L	72	76
Chloride	mg/L	4.1	2.6
Fluoride	mg/L	<0.23	<0.23
Field pH	Std. Units	7.5	6.85
Sulfate	mg/L	6.4	7.8
Total Dissolved Solids	mg/L	440	310
Antimony	ug/L	<0.51	<0.51
Arsenic	ug/L	3.7	1.9
Barium	ug/L	290	190
Beryllium	ug/L	0.98	<0.27
Cadmium	ug/L	0.49	0.054
Chromium	ug/L	5.1	1.1
Cobalt	ug/L	9.4	2
Lead	ug/L	5.6	1
Lithium	ug/L	4.2	4.1
Mercury	ug/L	<0.1	--
Molybdenum	ug/L	2.1	3.1
Selenium	ug/L	<1	--
Thallium	ug/L	<0.26	--
Total Radium	pCi/L	8.3	1.47
Radium-226	pCi/L	3.93	0.441
Radium-228	pCi/L	4.37	1.03
pH at 25 Degrees C	Std. Units	6.9	7
Field Oxidation Potential	mV	131.6	-92.6
Field Specific Conductance	umhos/cm	470.5	551.4
Field Temperature	deg C	16	11.6
Oxygen, Dissolved	mg/L	7.77	1.77
Turbidity	NTU	284.7	--
Bicarbonate Alkalinity as CaCO3	mg/L	--	330
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	330
Calcium, total	ug/L	--	75000
Iron, total	ug/L	--	1000
Magnesium, total	ug/L	--	23000
Manganese, total	ug/L	--	700
Iron, dissolved	ug/L	--	97
Manganese, dissolved	ug/L	--	690
Potassium, total	ug/L	--	2100
Sodium, total	ug/L	--	14000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-302																	
Number of Sampling Dates: 16																	
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/28/2019	4/27/2020	10/19/2020
Boron	ug/L	<50	<50	30.1	33.7	36.5	51.6	51.8	45.1	36.5	22.4	38.1	65	<110	<110	<73	<80
Calcium	mg/L	107	106	95	95	102	41.4	66.7	93.1	109	125	106	63.3	67	81	86	110
Chloride	mg/L	22.6	21.4	19.2	21.6	19.9	8.1	9.6	20.7	36.4	69.4	33.6	20.2	19	23	28	49
Fluoride	mg/L	0.16	0.079	0.1	<0.1	0.12	<0.1	0.15	0.2	0.19	0.23	0.17	0.21	<0.23	<0.23	<0.23	<0.23
Field pH	Std. Units	6.36	6.72	6.38	6.66	6.44	6.27	6.6	6.23	7.71	6.98	6.55	6.5	6.64	6.37	6.27	6.67
Sulfate	mg/L	77.7	75.6	69.7	72.9	66.4	28.9	49.5	70	82.9	69.6	72.2	55.1	56	72	66	78
Total Dissolved Solids	mg/L	465	463	416	432	445	203	341	432	505	718	503	314	320	420	400	480
Antimony	ug/L	0.32	0.14	0.049	0.067	0.028	0.077	0.067	0.11	--	0.048	0.17	0.092	<0.53	<0.53	<0.58	<0.51
Arsenic	ug/L	2.3	1.7	1.6	2.7	2.4	3.2	1.6	1.9	--	0.79	9	4.5	2.1	7	4.4	2
Barium	ug/L	200	194	166	187	176	109	133	175	--	213	254	141	130	220	210	200
Beryllium	ug/L	<0.08	<0.08	0.078	0.023	<0.012	0.019	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	0.04	0.036	0.042	0.021	0.035	0.03	--	0.041	0.084	<0.033	<0.077	0.053	0.098	0.062
Chromium	ug/L	3.3	2.1	1.7	1.4	1.5	0.8	0.91	1.5	--	1.2	4.4	0.78	<0.98	2.1	2.8	2.2
Cobalt	ug/L	2.7	2.2	3	4.7	2.1	2.1	1.2	1.4	--	3.2	1.6	3.2	2.1	1.2	0.56	0.33
Lead	ug/L	0.55	<0.19	0.14	0.2	0.083	0.16	0.034	<0.033	--	0.035	1.2	0.13	<0.27	<0.27	<0.27	<0.11
Lithium	ug/L	8.7	7.7	3.4	5.3	4.9	<2.9	<2.9	11.9	--	5.4	<4.6	4.6	4.7	5.3	3.8	8.2
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	0.76	0.43	0.45	0.38	0.52	0.28	0.38	0.38	--	0.99	0.78	0.67	<1.1	<1.1	<1.1	<1.1
Selenium	ug/L	0.55	0.36	0.37	0.43	0.44	0.28	0.44	0.46	--	0.54	1.4	0.37	<1	1.1	<1	--
Thallium	ug/L	<0.5	<0.5	0.05	0.044	0.058	<0.036	<0.036	0.18	--	0.039	--	<0.099	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	0.597	0.138	0.655	0.447	0.713	1.3	1.12	1.21	--	0.699	3.61	1.09	--	0.562	0.392	1.22
Radium-226	pCi/L	0	0.138	0.267	0.239	0.311	0.49	0.265	0.211	--	0.507	2.15	0.54	--	0.228	0.113	0.54
Radium-228	pCi/L	0.597	-0.321	0.388	0.208	0.402	0.809	0.852	0.997	--	0.192	1.46	0.554	--	<0.385	<0.307	0.684
pH at 25 Degrees C	Std. Units	6.8	7.2	6.6	6.4	6.8	6.9	7.3	6.6	6.8	6.9	6.9	7	6.8	6.6	6.7	6.8
Field Oxidation Potential	mV	-9.4	-12.1	40.7	-44.7	54.5	29.2	53.3	90.2	181	-10.9	61	-32	-0.2	-5.8	30	21.5
Field Specific Conductance	umhos/cm	1182	712.2	624.9	1053	1283	317	481.6	876	824	708.6	786	515	533	587	587.9	761
Field Temperature	deg C	10.6	7.8	6.5	6.4	8.1	10.59	12.8	15.3	15	7.5	16	16.7	7.86	13.74	8.1	13.6
Groundwater Elevation	feet	715.39	715.77	715.55	715.45	716.07	716.27	715.22	714.47	713.92	713.53	713.83	716.72	715.69	715.27	715.17	713.75
Oxygen, Dissolved	mg/L	2.57	2.78	1.73	2.22	2.43	0.9	1.23	1.69	1.4	3.1	1.7	0.5	3.34	1.8	1.39	2.22
Turbidity	NTU	19.02	0.95	0.8	4.89	0.82	1.52	0.5	0.61	4.75	1.75	8.95	10.52	90.3	6.92	27.5	8.15
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110000
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2200
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	89
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	430
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	77
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	640
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-303																		
Number of Sampling Dates: 16																		
Parameter Name	Units	12/20/2016	1/23/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/29/2019	4/27/2020	10/20/2020	
Boron	ug/L	767	773	851	852	705	644	603	650	598	772	753	932	800	940	790	1300	
Calcium	mg/L	68.7	71.4	85.4	82.7	71.5	67.8	63.5	66.2	59.9	102	85.4	99.9	130	120	110	110	
Chloride	mg/L	17.6	18.7	19.6	18.9	20.2	21	19.7	19.4	19.9	26.1	20.2	23.9	33	20	18	13	
Fluoride	mg/L	0.55	0.55	0.44	0.48	0.54	0.45	0.53	0.7	0.8	0.5	0.6	0.71	0.35	0.51	0.69	0.67	
Field pH	Std. Units	7.37	7.55	7.09	7.57	7.18	7.11	7.2	7.22	7.94	7.23	7.2	7.13	7.31	7.12	6.78	7.08	
Sulfate	mg/L	72.6	72.7	82.4	80.4	65.1	56	76.2	83.5	60	146	83.3	74.7	88	95	120	130	
Total Dissolved Solids	mg/L	346	375	413	414	372	367	365	397	329	580	475	515	650	580	630	580	
Antimony	ug/L	2	1.7	1.2	1	1	0.86	0.84	1.6	--	0.61	1.1	0.72	<0.53	<0.53	<0.58	<0.51	
Arsenic	ug/L	20.8	23.1	23.4	25	22.9	23.6	24.2	30	--	26.9	35.1	44.5	26	52	48	56	
Barium	ug/L	68.8	66	75.4	74.6	67.6	66.6	65.8	62.5	--	87.5	82.7	94.3	150	120	130	120	
Beryllium	ug/L	<0.08	<0.08	0.072	0.013	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27	
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	--	<0.018	0.24	<0.033	<0.077	<0.039	0.066	<0.049	
Chromium	ug/L	1.1	0.6	0.28	<0.054	0.14	0.21	0.18	0.29	--	0.19	0.62	0.55	<0.98	<0.98	<1.1	<1.1	
Cobalt	ug/L	<0.5	<0.5	0.4	0.3	0.3	0.3	0.35	0.3	--	0.31	0.66	0.43	1.3	0.87	1.1	0.43	
Lead	ug/L	0.36	<0.19	0.037	<0.033	0.095	0.12	0.12	0.057	--	0.078	0.48	0.31	0.3	0.43	1.7	0.18	
Lithium	ug/L	19	20.5	17.7	19.8	14.6	15.4	13.1	18.8	--	19	15.4	19.9	17	17	14	21	
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--	
Molybdenum	ug/L	37.8	30.5	26.7	26.7	23.2	20.6	25.6	35.2	--	23.1	20.7	21.7	12	20	8.4	17	
Selenium	ug/L	<0.18	<0.18	<0.086	0.14	0.15	0.11	0.11	0.33	--	0.24	0.46	0.21	<1	<1	<1	--	
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	<0.036	0.089	<0.036	0.18	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--	
Total Radium	pCi/L	0.925	0.647	0.375	0.53	0.71	0.977	1.55	0.995	--	1.26	0.847	1.08	--	<0.522	1.41	0.56	
Radium-226	pCi/L	0.545	0.535	0	0.192	0.0625	0.112	0.383	0.537	--	0.242	-0.126	0.62	--	0.164	<0.324	0.508	
Radium-228	pCi/L	0.38	0.112	0.375	0.338	0.647	0.865	1.17	0.458	--	1.02	0.847	0.457	--	<0.522	1.11	0.0517	
pH at 25 Degrees C	Std. Units	7	8	7.4	7.2	7.3	7.4	7.8	7.5	7.5	7.4	7.4	7.5	7.4	7.2	7.2	7.2	
Field Oxidation Potential	mV	-58.2	-58.1	4.1	-118.3	-6.4	-12.2	192.3	79.8	-85	-92.8	-126	-87	-110.3	-139.1	-143.2	-147.8	
Field Specific Conductance	umhos/cm	916	602.3	663.2	1024	1107	549	941	834	564	836	764	881	1084	981	922	853	
Field Temperature	deg C	13	11.7	10.9	11.3	11.7	13.26	13.9	15.1	16.4	9.5	16	17.4	9.59	14.47	9.3	15.1	
Groundwater Elevation	feet	703.36	704.64	704.46	703.81	705.07	705.37	703.96	702.83	702.95	705.36	702.62	707.86	703.83	704.1	703.1	702.16	
Oxygen, Dissolved	mg/L	0.18	0.17	0.13	0.12	0.13	0.26	0.27	0.05	0	1.7	0.1	0.2	1.14	0.35	0.14	0.08	
Turbidity	NTU	9.52	0.5	0.3	0.01	0.19	0.34	2.72	0.11	3.58	1.08	4.99	17.2	18.4	3.02	25.9	0.8	
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	370	
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	370	
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100000	
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3400	
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35000	
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	53	
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3100	
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4800	
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34000	

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-304																			
Number of Sampling Dates: 17																			
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/26/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	3/11/2019	4/22/2019	10/29/2019	4/27/2020	10/20/2020	
Boron	ug/L	372	323	277	224	218	212	310	412	386	384	841	661	--	770	610	770	860	
Calcium	mg/L	71	68.2	73.6	63.6	66.6	63.5	62.9	55.4	49.3	73.5	93	89	--	130	96	110	98	
Chloride	mg/L	20.2	20.6	21.4	23.7	21.7	22.1	20.1	22.9	23.4	24.6	36.6	33.6	--	27	20	15	12	
Fluoride	mg/L	0.84	0.8	0.72	0.78	0.87	0.79	0.86	0.84	0.78	0.58	0.55	0.61	--	0.41	0.51	0.67	0.56	
Field pH	Std. Units	7.09	7.25	7.01	7.58	7.23	7.23	7.4	7.34	8.16	7.31	6.92	7.5	5.82	7.08	6.9	6.84	6.84	
Sulfate	mg/L	93.8	96.1	107	109	111	115	132	85.9	55.1	77.3	193	167	--	140	110	110	110	
Total Dissolved Solids	mg/L	396	399	402	411	406	418	468	359	298	423	630	541	--	680	490	590	500	
Antimony	ug/L	2.4	2.1	1.9	1.9	1.9	2.1	2.2	2.6	--	1.3	1.3	1.4	--	1.2	1.5	1	1	
Arsenic	ug/L	11.4	11.7	12	10.1	9.4	16.6	10.2	8.6	--	15	12.3	14.4	12.9	11	14	11	14	
Barium	ug/L	65.3	59.8	56.4	51.6	46.6	95	51.1	48.7	--	95	121	110	--	140	110	120	110	
Beryllium	ug/L	<0.08	<0.08	0.064	<0.012	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	--	<0.27	<0.27	<0.27	<0.27	
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	0.018	0.023	<0.018	--	<0.018	<0.07	<0.033	--	<0.077	0.074	<0.039	<0.049	
Chromium	ug/L	0.58	0.5	0.41	<0.054	0.99	0.2	0.16	0.32	--	0.15	0.34	0.31	--	<0.98	<0.98	<1.1	<1.1	
Cobalt	ug/L	0.75	0.72	0.79	0.83	0.63	0.74	0.83	0.55	--	0.57	1.1	0.75	--	1.4	1.2	1.1	1.1	
Lead	ug/L	<0.19	<0.19	0.11	0.043	0.061	0.1	0.042	0.034	--	0.045	0.24	<0.13	--	<0.27	0.27	<0.27	<0.11	
Lithium	ug/L	12.1	12	10.6	8.2	9.6	8.6	9.9	14.4	--	10.8	6.9	13.4	--	17	13	11	17	
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	--	<0.1	<0.1	<0.1	--	
Molybdenum	ug/L	33.5	29.3	27.5	28.4	28.3	28.5	32.6	33.8	--	19.8	25.4	27.6	--	23	31	26	28	
Selenium	ug/L	1.1	1	1.4	1.2	1.5	1.8	1.7	0.85	--	0.12	0.23	0.16	--	<1	<1	<1	--	
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.12	0.037	0.068	<0.036	--	<0.036	--	<0.099	--	<0.27	<0.27	<0.26	--	
Total Radium	pCi/L	1.74	0.439	0.162	0.311	0.632	0.964	1.15	0.384	--	1.26	0.768	1.31	--	--	<0.513	0.707	0.958	
Radium-226	pCi/L	0.522	0.131	0.162	0.261	0.497	0.412	0.0708	0.355	--	0.589	0.271	0.175	--	--	<0.141	0.232	0.152	
Radium-228	pCi/L	1.22	0.308	-0.0742	0.0497	0.135	0.552	1.08	0.0285	--	0.666	0.497	1.13	--	--	<0.513	0.475	0.807	
pH at 25 Degrees C	Std. Units	6.9	7.9	7.4	7.2	7.3	7.6	8	7.3	7.6	7.2	7.2	7.2	--	7.2	7	7	7	
Field Oxidation Potential	mV	-72.9	-66.6	-80	-111.7	-15.1	-17.7	79.1	-40.9	-123	-151	-89	-18.1	-84.2	-62	-74.3	-85	-99.3	
Field Specific Conductance	umhos/cm	993	622.8	621.3	1028	1144	602	1124	856	532	514	934	812	537	1125	816	841	771	
Field Temperature	deg C	16.1	12.6	10.8	9.9	10.3	11.9	14.4	18.7	20.6	11.8	18.1	18.8	8.8	9.64	15.67	10.1	15.7	
Groundwater Elevation	feet	703.42	704.56	704.65	703.99	705.08	705.37	704.16	702.96	703.17	705.54	702.62	707.81	704.24	703.93	704.15	702.84	702.13	
Oxygen, Dissolved	mg/L	0.07	0.12	0.14	0.15	0.13	0.2	0.23	0.18	0	0.1	0.2	0.21	0.86	0.93	0.28	0.14	0.08	
Turbidity	NTU	3.65	0.91	0.43	1.13	2.23	1.4	1.76	3.9	12.65	3.98	10.26	9.07	8.73	4.99	2.96	1.63	0.02	
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	350	
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<3.8	
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	350	
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	92000	
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2000	
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	29000	
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200	
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2000	
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200	
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5200	
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40000	

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-305																		
Number of Sampling Dates: 17																		
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/27/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	3/11/2019	4/22/2019	10/29/2019	4/27/2020	10/20/2020
Boron	ug/L	363	353	316	274	229	243	342	537	462	437	589	634	--	790	890	1000	1300
Calcium	mg/L	65.1	67.8	71.3	58.4	65	68.5	61.4	58.7	51.4	61	71.1	82.7	--	94	130	120	130
Chloride	mg/L	18	18.6	19.2	21	19.5	19.8	19.3	18	18.6	18.9	18.9	18.3	--	17	18	16	15
Fluoride	mg/L	0.63	0.56	0.53	0.55	0.66	0.57	0.68	0.65	0.63	0.61	0.62	0.61	--	0.45	0.31	0.51	0.37
Field pH	Std. Units	7.32	7.51	7.13	7.65	7.42	7.42	7.49	7.58	8.08	7.65	7.12	7.05	6.92	7.12	6.89	6.82	7.07
Sulfate	mg/L	72.1	79.8	79	88.7	104	104	112	59.4	44	61.9	98.2	98.9	--	150	210	240	230
Total Dissolved Solids	mg/L	370	359	389	383	383	400	416	347	307	348	434	424	--	520	650	710	660
Antimony	ug/L	2.7	2.7	2	2	2.1	2.5	2.4	2.6	--	1.6	1.6	1.1	--	0.92	1	0.74	0.79
Arsenic	ug/L	15.4	15.4	16	15.2	13.9	14.7	14.9	16.7	--	14.3	13	6.6	11.6	5.9	7.3	6.2	9.8
Barium	ug/L	71.4	67.4	65.3	60.1	56.5	60.7	61.9	59	--	63.7	90.3	95.6	--	110	130	110	140
Beryllium	ug/L	<0.08	<0.08	0.064	0.016	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	--	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	0.034	0.038	0.03	0.024	--	0.032	<0.07	0.04	--	0.081	0.053	0.072	<0.049
Chromium	ug/L	0.55	0.49	0.44	<0.054	1.9	0.2	0.2	0.5	--	0.18	0.28	0.14	--	<0.98	<0.98	<1.1	<1.1
Cobalt	ug/L	<0.5	<0.5	0.56	0.6	0.43	0.34	0.53	0.36	--	0.42	0.64	0.6	--	0.63	0.77	1.1	0.73
Lead	ug/L	<0.19	<0.19	0.07	<0.033	0.058	0.08	0.061	0.048	--	<0.033	0.42	<0.13	--	<0.27	0.56	<0.27	<0.11
Lithium	ug/L	15.5	13.5	9.7	8.6	9.6	7.1	8.1	16.4	--	10.7	9.5	13.3	--	15	14	12	20
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	--	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	30.7	31	29	28.3	28.3	28.2	32.2	33.2	--	27.9	29	32	--	26	32	38	58
Selenium	ug/L	1.3	1.2	0.92	1	1.5	2	2.4	1.4	--	0.22	0.24	0.23	--	<1	<1	<1	--
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	0.051	<0.036	<0.036	0.38	--	<0.036	--	<0.099	--	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	0.665	0.567	0.209	0.396	0.463	0.339	2.59	0.492	--	2.07	1.38	1.38	--	--	<0.484	<0.333	0.525
Radium-226	pCi/L	0	0.374	0	0.192	0	0.215	0.431	-0.062	--	0.108	0.172	0.512	--	--	0.16	0.148	0.297
Radium-228	pCi/L	0.665	0.193	0.209	0.204	0.463	0.124	2.16	0.492	--	1.96	1.21	0.864	--	--	<0.484	<0.333	0.228
pH at 25 Degrees C	Std. Units	7.1	8	7.6	7.3	7.5	7.7	7.8	7.5	7.6	7.6	7.4	7.4	--	7.3	7.1	7.1	7.2
Field Oxidation Potential	mV	-22.4	-40.4	17.2	-52.8	-31.4	3.9	110.2	-6.8	-11	-31.9	-80	168	-78.9	4.7	-11.9	20.5	-86.4
Field Specific Conductance	umhos/cm	938	599.5	602.3	938	1107	605	1063	831	537	423.7	679	719	526	810	980	971	930
Field Temperature	deg C	14.4	12	11	10.8	11.2	12.23	14.6	18	19.9	10.9	18.5	18.3	7.54	9.48	15.87	9.6	15.5
Groundwater Elevation	feet	703.46	704.59	704.67	704.09	705.04	705.29	704.11	702.91	703.21	705.61	702.56	707.73	704.05	703.93	704.17	703.02	702.02
Oxygen, Dissolved	mg/L	0.16	0.16	0.1	0.19	0.16	0.17	0.2	0.16	0	0.08	0.19	0.2	1.58	1.1	0.3	0.7	0.1
Turbidity	NTU	0.65	1.14	0.4	0.46	0.66	0.22	1.16	0.29	2.29	0.65	3.43	9.54	3.61	4.58	1.79	3.97	0.02
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	340
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.9
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	340
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120000
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	220
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	36000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1200
Arsenic, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	180
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1100
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5400
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-306																	
Number of Sampling Dates: 16																	
Parameter Name	Units	12/21/2016	1/24/2017	2/23/2017	3/28/2017	4/27/2017	5/25/2017	6/28/2017	8/17/2017	10/17/2017	5/8/2018	8/6/2018	10/9/2018	4/22/2019	10/29/2019	4/27/2020	10/20/2020
Boron	ug/L	2990	3050	3160	3060	3080	2890	3080	2850	2910	2930	2770	2890	3000	2400	2800	2800
Calcium	mg/L	52.4	48.4	51.2	48.8	52.8	49.1	47.5	47.7	48.1	56.2	58.7	65.1	59	61	54	54
Chloride	mg/L	45.4	40.3	36.8	38.1	32.4	34.5	32.6	31.7	28.7	28.6	28.9	30.3	25	23	22	19
Fluoride	mg/L	0.26	0.23	0.26	0.25	0.29	0.24	0.28	0.33	0.3	0.3	0.26	0.32	<0.23	<0.23	0.38	0.29
Field pH	Std. Units	7.53	7.71	7.31	7.84	7.5	7.53	7.77	7.36	8.45	7.47	7.45	7.4	7.58	7.63	6.94	7.66
Sulfate	mg/L	142	128	130	133	137	136	144	132	139	151	195	233	160	140	110	120
Total Dissolved Solids	mg/L	444	398	423	421	426	430	421	402	403	454	506	494	440	400	420	360
Antimony	ug/L	0.25	0.091	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	--	<0.026	<0.15	<0.078	<0.53	<0.53	<0.58	<0.51
Arsenic	ug/L	0.82	0.58	0.5	0.61	0.55	0.6	0.59	0.57	--	0.58	0.7	0.72	1.9	1.6	1.3	1.1
Barium	ug/L	53	47.4	47.7	47.2	47.8	50.1	48.8	46.1	--	54.4	59.3	62.1	110	82	73	67
Beryllium	ug/L	<0.08	<0.08	0.068	0.021	<0.012	<0.012	<0.012	<0.012	--	<0.012	--	<0.089	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.029	<0.029	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	--	0.043	0.085	0.075	<0.077	0.095	0.09	0.1
Chromium	ug/L	0.65	<0.34	0.34	<0.054	0.14	0.16	0.18	0.46	--	0.21	0.55	0.11	<0.98	<0.98	<1.1	<1.1
Cobalt	ug/L	<0.5	<0.5	0.16	0.11	0.077	0.068	0.078	0.065	--	0.071	0.43	0.079	0.49	0.26	0.2	0.17
Lead	ug/L	<0.19	<0.19	0.075	0.13	0.15	0.3	0.068	0.037	--	0.075	1	<0.13	0.4	0.31	0.48	0.42
Lithium	ug/L	<4.9	<4.9	<2.9	<2.9	3.5	<2.9	<2.9	4	--	<4.6	<4.6	<4.6	3	<2.7	<2.3	<2.5
Mercury	ug/L	<0.039	<0.039	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	--	<0.09	--	<0.09	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	272	277	282	287	278	275	272	278	--	271	234	235	200	230	250	260
Selenium	ug/L	<0.18	<0.18	<0.086	<0.086	<0.086	0.091	<0.086	<0.086	--	<0.086	<0.16	<0.085	<1	<1	<1	--
Thallium	ug/L	<0.5	<0.5	<0.036	<0.036	<0.036	<0.036	<0.036	0.22	--	<0.036	--	<0.099	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	0.843	0.481	0.391	1.07	0.785	0.831	1.14	1.05	--	0.645	1.21	1.42	--	<0.476	0.578	0.387
Radium-226	pCi/L	0	0	-0.245	0.493	0.525	0.452	0.37	0.652	--	0.394	0.541	0.157	--	<0.134	<0.14	0.135
Radium-228	pCi/L	0.843	0.481	0.391	0.575	0.26	0.379	0.774	0.398	--	0.251	0.669	1.26	--	<0.476	<0.46	0.252
pH at 25 Degrees C	Std. Units	7.2	7.8	7.7	7.2	7.4	7.7	7.8	7.6	7.6	7.6	7.7	7.6	7.6	7.6	7.6	7.7
Field Oxidation Potential	mV	-80.4	-88.9	-48.1	-140.5	-64.3	-111.6	36.6	-31.2	-128	-94	-81	-41.1	-97.6	-145.7	-142	-199.7
Field Specific Conductance	umhos/cm	1079	644	629	1023	1165	624	1067	828	636	663	731	736	703	633	539.7	538.5
Field Temperature	deg C	13.2	13.4	13.4	13.6	13.1	13.49	13.5	13.6	14.7	13.6	16.4	15.6	12.87	12.56	13.2	12.5
Groundwater Elevation	feet	703.32	704.49	704.59	703.99	704.98	705.34	703.94	702.74	703.16	705.51	702.68	707.88	704.23	704.4	703.35	702.26
Oxygen, Dissolved	mg/L	0.11	0.23	0.13	0.12	0.17	0.15	0.21	0.04	0.8	3	1.4	0.45	0.99	0.29	0.18	0.13
Turbidity	NTU	1.97	2.25	0.79	0.77	0.43	0.3	0.59	1.04	3.45	0.62	14.59	1.74	21.3	8.16	3.92	19.93
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<1.9
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160
Calcium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54000
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1800
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12000
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	110
Iron, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1500
Manganese, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100
Molybdenum, dissolved	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	860
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-306A			
Number of Sampling Dates: 2			
Parameter Name	Units	9/15/2020	10/20/2020
Boron	ug/L	2100	2400
Calcium	mg/L	150	150
Chloride	mg/L	63	65
Fluoride	mg/L	<0.23	<0.23
Field pH	Std. Units	7.87	7.29
Sulfate	mg/L	330	350
Total Dissolved Solids	mg/L	840	800
Antimony	ug/L	<0.51	0.64
Arsenic	ug/L	<0.88	<0.88
Barium	ug/L	180	170
Beryllium	ug/L	<0.27	<0.27
Cadmium	ug/L	0.073	<0.049
Chromium	ug/L	1.9	<1.1
Cobalt	ug/L	1.3	0.49
Lead	ug/L	1.8	0.79
Lithium	ug/L	4.1	6.3
Mercury	ug/L	<0.1	--
Molybdenum	ug/L	8.6	13
Selenium	ug/L	<1	--
Thallium	ug/L	<0.26	--
Total Radium	pCi/L	0.427	0.898
Radium-226	pCi/L	0.453	0.413
Radium-228	pCi/L	-0.0262	0.485
pH at 25 Degrees C	Std. Units	7.3	7.4
Field Oxidation Potential	mV	-100.3	-139.7
Field Specific Conductance	umhos/cm	1180	1054
Field Temperature	deg C	14.1	12.7
Oxygen, Dissolved	mg/L	0.13	0.13
Turbidity	NTU	118.1	20.8
Bicarbonate Alkalinity as CaCO3	mg/L	--	200
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	200
Calcium, total	ug/L	--	140000
Iron, total	ug/L	--	2800
Magnesium, total	ug/L	--	45000
Manganese, total	ug/L	--	410
Iron, dissolved	ug/L	--	1700
Manganese, dissolved	ug/L	--	360
Potassium, total	ug/L	--	1600
Sodium, total	ug/L	--	33000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-307					
Number of Sampling Dates: 4					
Parameter Name	Units	4/23/2019	10/28/2019	5/27/2020	10/19/2020
Boron	ug/L	840	730	630	890
Calcium	mg/L	22	18	16	21
Chloride	mg/L	15	3.5	4.2	<2
Fluoride	mg/L	0.54	0.67	0.49	0.29
Field pH	Std. Units	10.05	9.58	8.28	9.26
Sulfate	mg/L	52	32	32	30
Total Dissolved Solids	mg/L	150	140	38	80
Antimony	ug/L	0.92	1.2	0.83	1
Arsenic	ug/L	3.8	7.4	6.1	6.7
Barium	ug/L	30	34	26	45
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.077	<0.039	<0.039	<0.049
Chromium	ug/L	<0.98	<0.98	<1.1	<1.1
Cobalt	ug/L	0.091	<0.091	<0.091	<0.091
Lead	ug/L	<0.27	<0.27	<0.27	<0.11
Lithium	ug/L	10	15	8.3	16
Mercury	ug/L	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	5.8	5.2	7	5.2
Selenium	ug/L	<1	<1	<1	--
Thallium	ug/L	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	--	<0.377	<0.458	0.233
Radium-226	pCi/L	--	<0.135	<0.139	-0.043
Radium-228	pCi/L	--	<0.377	<0.458	0.233
pH at 25 Degrees C	Std. Units	9.8	9.6	9.2	9.4
Field Oxidation Potential	mV	-53.1	-29.9	109.8	-123.4
Field Specific Conductance	umhos/cm	225	157	243.5	145.2
Field Temperature	deg C	11.72	18.43	12.6	18.7
Groundwater Elevation	feet	709.86	708.57	708.14	706.56
Oxygen, Dissolved	mg/L	1.54	0.27	0.19	0.09
Turbidity	NTU	15.6	2.16	2.98	2.09
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	41
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<1.9
Total Alkalinity as CaCO3	mg/L	--	--	--	41
Calcium, total	ug/L	--	--	--	19000
Iron, total	ug/L	--	--	--	<50
Magnesium, total	ug/L	--	--	--	2300
Manganese, total	ug/L	--	--	--	<4
Iron, dissolved	ug/L	--	--	--	<50
Manganese, dissolved	ug/L	--	--	--	<4
Potassium, total	ug/L	--	--	--	1600
Sodium, total	ug/L	--	--	--	4600

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-308					
Number of Sampling Dates: 4					
Parameter Name	Units	4/23/2019	10/28/2019	5/27/2020	10/19/2020
Boron	ug/L	5700	6100	6100	6400
Calcium	mg/L	59	60	68	54
Chloride	mg/L	15	13	11	8.4
Fluoride	mg/L	0.77	0.26	0.54	<0.23
Field pH	Std. Units	9.24	9.19	7.86	9.23
Sulfate	mg/L	190	190	180	150
Total Dissolved Solids	mg/L	450	460	390	370
Antimony	ug/L	1.4	1.7	0.7	1.4
Arsenic	ug/L	45	63	58	50
Barium	ug/L	39	38	38	53
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.077	0.077	0.04	0.071
Chromium	ug/L	<0.98	<0.98	<1.1	<4.4
Cobalt	ug/L	<0.091	<0.091	<0.091	<0.36
Lead	ug/L	<0.27	<0.27	<0.27	<0.11
Lithium	ug/L	29	31	35	47
Mercury	ug/L	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	58	58	64	58
Selenium	ug/L	<1	2.2	<1	--
Thallium	ug/L	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	--	<0.488	<0.488	1.05
Radium-226	pCi/L	--	<0.127	<0.204	-0.21
Radium-228	pCi/L	--	<0.488	<0.488	1.05
pH at 25 Degrees C	Std. Units	8.9	9.2	9.1	9.4
Field Oxidation Potential	mV	-62.5	-58.1	-22.4	-178
Field Specific Conductance	umhos/cm	659	618	1008	318.1
Field Temperature	deg C	12.11	15.05	12.7	14.9
Groundwater Elevation	feet	706.19	706.31	705.64	703.87
Oxygen, Dissolved	mg/L	1.16	0.43	0.1	0.21
Turbidity	NTU	2.13	2.44	2.33	1.08
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	82
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	41
Total Alkalinity as CaCO3	mg/L	--	--	--	120
Calcium, total	ug/L	--	--	--	43000
Iron, total	ug/L	--	--	--	<50
Magnesium, total	ug/L	--	--	--	3100
Manganese, total	ug/L	--	--	--	47
Arsenic, dissolved	ug/L	--	--	--	44
Iron, dissolved	ug/L	--	--	--	<50
Manganese, dissolved	ug/L	--	--	--	52
Potassium, total	ug/L	--	--	--	5300
Sodium, total	ug/L	--	--	--	33000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-309					
Number of Sampling Dates: 4					
Parameter Name	Units	10/29/2019	1/9/2020	4/27/2020	10/21/2020
Boron	ug/L	1000	1000	1100	1800
Calcium	mg/L	120	130	120	120
Chloride	mg/L	18	17	16	13
Fluoride	mg/L	0.68	0.51	0.75	0.61
Field pH	Std. Units	7.33	6.95	7.09	7.22
Sulfate	mg/L	130	130	130	170
Total Dissolved Solids	mg/L	550	650	630	620
Antimony	ug/L	<0.53	<0.53	<0.58	<0.51
Arsenic	ug/L	140	110	75	89
Barium	ug/L	130	130	130	130
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.039	<0.039	<0.049
Chromium	ug/L	<0.98	<0.98	<1.1	<1.1
Cobalt	ug/L	0.42	0.23	0.35	0.14
Lead	ug/L	0.54	<0.27	<0.27	<0.11
Lithium	ug/L	15	15	13	19
Mercury	ug/L	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	19	18	19	21
Selenium	ug/L	<1	<1	<1	--
Thallium	ug/L	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	0.801	0.543	0.837	0.815
Radium-226	pCi/L	0.346	0.176	0.211	0.199
Radium-228	pCi/L	0.455	<0.386	0.627	0.616
pH at 25 Degrees C	Std. Units	7.4	7.4	7.2	7.4
Field Oxidation Potential	mV	-103.8	-335.3	-117.7	-145.9
Field Specific Conductance	umhos/cm	931	1016	898	955
Field Temperature	deg C	18.6	15.69	13.2	18.8
Groundwater Elevation	feet	703.84	703.1	702.84	701.97
Oxygen, Dissolved	mg/L	7.45	4.42	0.06	0.1
Turbidity	NTU	4.96	1.81	4.21	1.86
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	360
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	--	--	360
Calcium, total	ug/L	--	--	--	100000
Iron, total	ug/L	--	--	--	1200
Magnesium, total	ug/L	--	--	--	33000
Manganese, total	ug/L	--	--	--	920
Arsenic, dissolved	ug/L	--	--	--	78
Iron, dissolved	ug/L	--	--	--	1200
Manganese, dissolved	ug/L	--	--	--	980
Potassium, total	ug/L	--	--	--	4800
Sodium, total	ug/L	--	--	--	34000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-309A			
Number of Sampling Dates: 2			
Parameter Name	Units	9/15/2020	10/21/2020
Boron	ug/L	530	470
Calcium	mg/L	100	110
Chloride	mg/L	23	24
Fluoride	mg/L	<0.23	<0.23
Field pH	Std. Units	7.26	7.33
Sulfate	mg/L	110	110
Total Dissolved Solids	mg/L	490	460
Antimony	ug/L	<0.51	<0.51
Arsenic	ug/L	<0.88	<0.88
Barium	ug/L	170	170
Beryllium	ug/L	<0.27	<0.27
Cadmium	ug/L	<0.049	<0.049
Chromium	ug/L	<1.1	<1.1
Cobalt	ug/L	0.22	0.32
Lead	ug/L	<0.11	<0.11
Lithium	ug/L	4.1	5.9
Mercury	ug/L	<0.1	--
Molybdenum	ug/L	8.5	7.1
Selenium	ug/L	<1	--
Thallium	ug/L	<0.26	--
Total Radium	pCi/L	0.783	0.509
Radium-226	pCi/L	0.23	0.0367
Radium-228	pCi/L	0.553	0.473
pH at 25 Degrees C	Std. Units	7.2	7.4
Field Oxidation Potential	mV	-144.8	-181.6
Field Specific Conductance	umhos/cm	815	749
Field Temperature	deg C	16.1	15.7
Oxygen, Dissolved	mg/L	0.14	0.13
Turbidity	NTU	1.3	1.46
Bicarbonate Alkalinity as CaCO3	mg/L	--	280
Carbonate Alkalinity as CaCO3	mg/L	--	<1.9
Total Alkalinity as CaCO3	mg/L	--	280
Calcium, total	ug/L	--	100000
Iron, total	ug/L	--	7500
Magnesium, total	ug/L	--	29000
Manganese, total	ug/L	--	710
Iron, dissolved	ug/L	--	7600
Manganese, dissolved	ug/L	--	710
Potassium, total	ug/L	--	1700
Sodium, total	ug/L	--	14000

Single Location


Name: IPL - Prairie Creek Generating Station

Location ID: MW-310					
Number of Sampling Dates: 4					
Parameter Name	Units	10/29/2019	1/9/2020	4/27/2020	10/21/2020
Boron	ug/L	950	940	880	1300
Calcium	mg/L	88	85	87	110
Chloride	mg/L	20	19	20	20
Fluoride	mg/L	0.53	0.61	0.93	<0.23
Field pH	Std. Units	7.3	7.33	7.41	7.2
Sulfate	mg/L	130	130	130	170
Total Dissolved Solids	mg/L	430	500	520	580
Antimony	ug/L	<0.53	<0.53	<0.58	<0.51
Arsenic	ug/L	31	28	23	36
Barium	ug/L	130	140	140	160
Beryllium	ug/L	<0.27	<0.27	<0.27	<0.27
Cadmium	ug/L	<0.039	<0.039	<0.039	<0.049
Chromium	ug/L	<0.98	<0.98	<1.1	<1.1
Cobalt	ug/L	0.17	0.095	0.098	0.11
Lead	ug/L	<0.27	<0.27	<0.27	<0.11
Lithium	ug/L	15	14	11	18
Mercury	ug/L	<0.1	<0.1	<0.1	--
Molybdenum	ug/L	60	59	55	71
Selenium	ug/L	<1	<1	<1	--
Thallium	ug/L	<0.27	<0.27	<0.26	--
Total Radium	pCi/L	<0.471	<0.377	0.341	0.351
Radium-226	pCi/L	0.211	0.232	0.226	0.17
Radium-228	pCi/L	<0.471	<0.377	<0.341	0.182
pH at 25 Degrees C	Std. Units	7.3	7.5	7.3	7.4
Field Oxidation Potential	mV	-129.8	-342.4	-148.01	-162.5
Field Specific Conductance	umhos/cm	801	784	734	894
Field Temperature	deg C	16.48	15.23	12.9	17.5
Groundwater Elevation	feet	703.71	702.81	702.53	701.78
Oxygen, Dissolved	mg/L	7.59	3.72	0.09	0.14
Turbidity	NTU	3.03	3.3	6.3	3.72
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	300
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	--	--	300
Calcium, total	ug/L	--	--	--	100000
Iron, total	ug/L	--	--	--	4400
Magnesium, total	ug/L	--	--	--	26000
Manganese, total	ug/L	--	--	--	980
Arsenic, dissolved	ug/L	--	--	--	32
Iron, dissolved	ug/L	--	--	--	4100
Manganese, dissolved	ug/L	--	--	--	960
Potassium, total	ug/L	--	--	--	5800
Sodium, total	ug/L	--	--	--	53000

Single Location

Name: IPL - Prairie Creek Generating Station

Location ID: MW-310A			
Number of Sampling Dates: 2			
Parameter Name	Units	9/15/2020	10/21/2020
Boron	ug/L	330	340
Calcium	mg/L	180	180
Chloride	mg/L	46	48
Fluoride	mg/L	<0.23	<0.23
Field pH	Std. Units	7.25	7.24
Sulfate	mg/L	310	330
Total Dissolved Solids	mg/L	890	850
Antimony	ug/L	<0.51	0.66
Arsenic	ug/L	<0.88	<0.88
Barium	ug/L	210	210
Beryllium	ug/L	<0.27	<0.27
Cadmium	ug/L	<0.049	<0.049
Chromium	ug/L	<1.1	<1.1
Cobalt	ug/L	0.54	2.1
Lead	ug/L	<0.11	<0.11
Lithium	ug/L	3.2	5.3
Mercury	ug/L	<0.1	--
Molybdenum	ug/L	20	21
Selenium	ug/L	<1	--
Thallium	ug/L	<0.26	--
Total Radium	pCi/L	1.21	1.27
Radium-226	pCi/L	0.484	0.495
Radium-228	pCi/L	0.725	0.779
pH at 25 Degrees C	Std. Units	7.6	7.4
Field Oxidation Potential	mV	-128.9	-165.8
Field Specific Conductance	umhos/cm	1304	1168
Field Temperature	deg C	16	15.3
Oxygen, Dissolved	mg/L	0.19	0.11
Turbidity	NTU	1.72	2.82
Bicarbonate Alkalinity as CaCO3	mg/L	--	320
Carbonate Alkalinity as CaCO3	mg/L	--	<3.8
Total Alkalinity as CaCO3	mg/L	--	320
Calcium, total	ug/L	--	180000
Iron, total	ug/L	--	6300
Magnesium, total	ug/L	--	48000
Manganese, total	ug/L	--	520
Iron, dissolved	ug/L	--	6100
Manganese, dissolved	ug/L	--	490
Potassium, total	ug/L	--	1100
Sodium, total	ug/L	--	15000

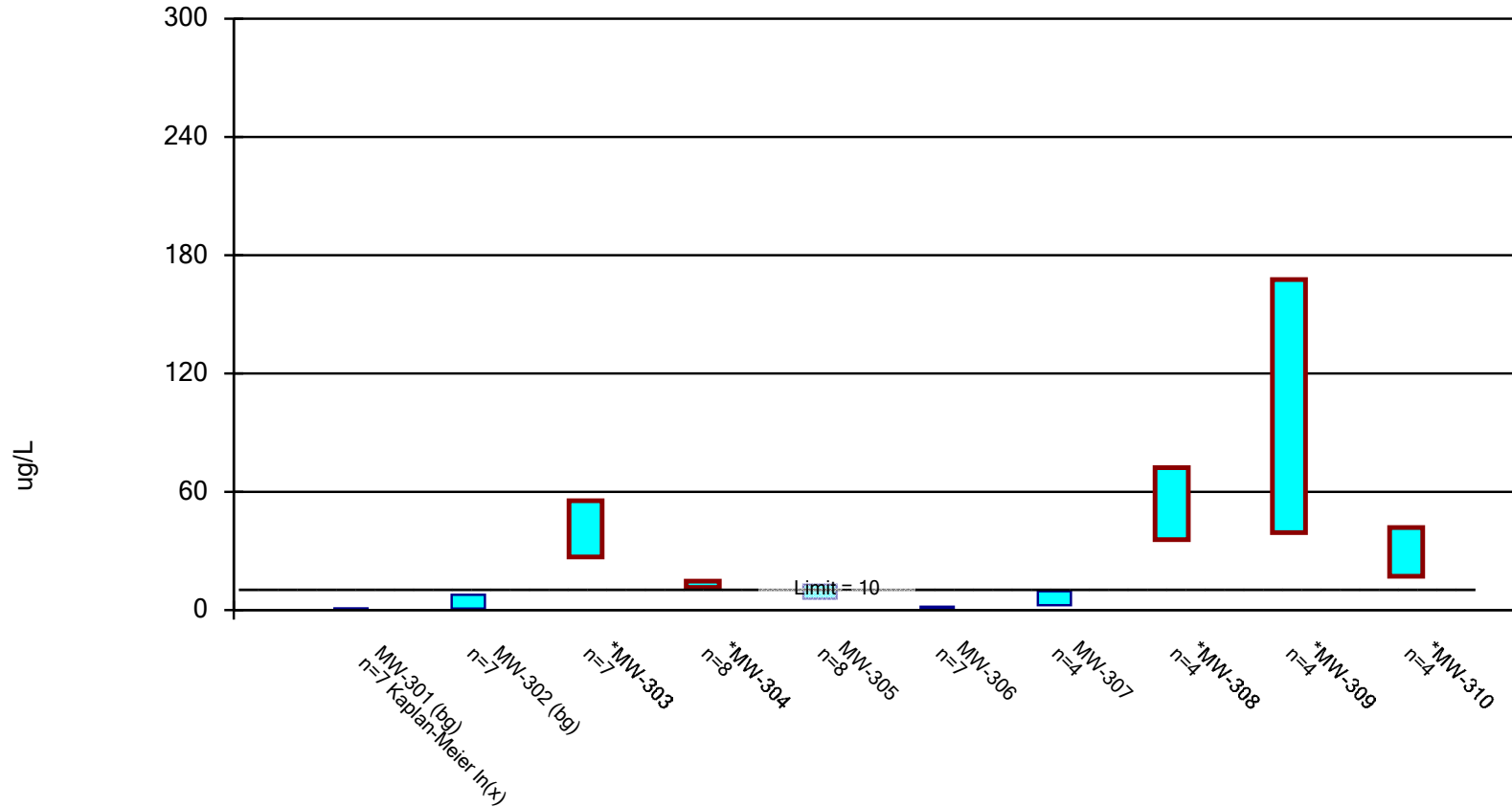


Appendix E

Statistical Evaluation

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 1/20/2021 4:25 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

Confidence Interval

Constituent: Arsenic (ug/L) Analysis Run 1/20/2021 4:30 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309
5/8/2018	0.54 (J)	0.79 (J)	26.9	15	14.3	0.58 (J)			
8/6/2018	1.1	9	35.1	12.3	13	0.7 (J)			
10/9/2018	0.67 (J)	4.5	44.5	14.4	6.6	0.72 (J)			
3/11/2019				12.9	11.6				
4/22/2019	<0.75 (U)	2.1	26	11	5.9	1.9 (J)			
4/23/2019							3.8	45	
10/28/2019	<0.75 (U)	7					7.4	63	
10/29/2019			52	14	7.3	1.6 (J)			140
1/9/2020									110
4/27/2020	<0.88 (U)	4.4	48	11	6.2	1.3 (J)			75
5/27/2020							6.1	58	
10/19/2020	<0.88 (U)	2					6.7	50	
10/20/2020			56	14	9.8	1.1 (J)			
10/21/2020									89
Mean	0.5629	4.256	41.21	13.08	9.338	1.129	6	54	103.5
Std. Dev.	0.2586	2.94	12.01	1.531	3.31	0.4998	1.56	8.042	28.27
Upper Lim.	0.8654	7.748	55.48	14.7	12.85	1.722	9.542	72.26	167.7
Lower Lim.	0.4968	0.7634	26.95	11.45	5.829	0.5348	2.458	35.74	39.32

Confidence Interval

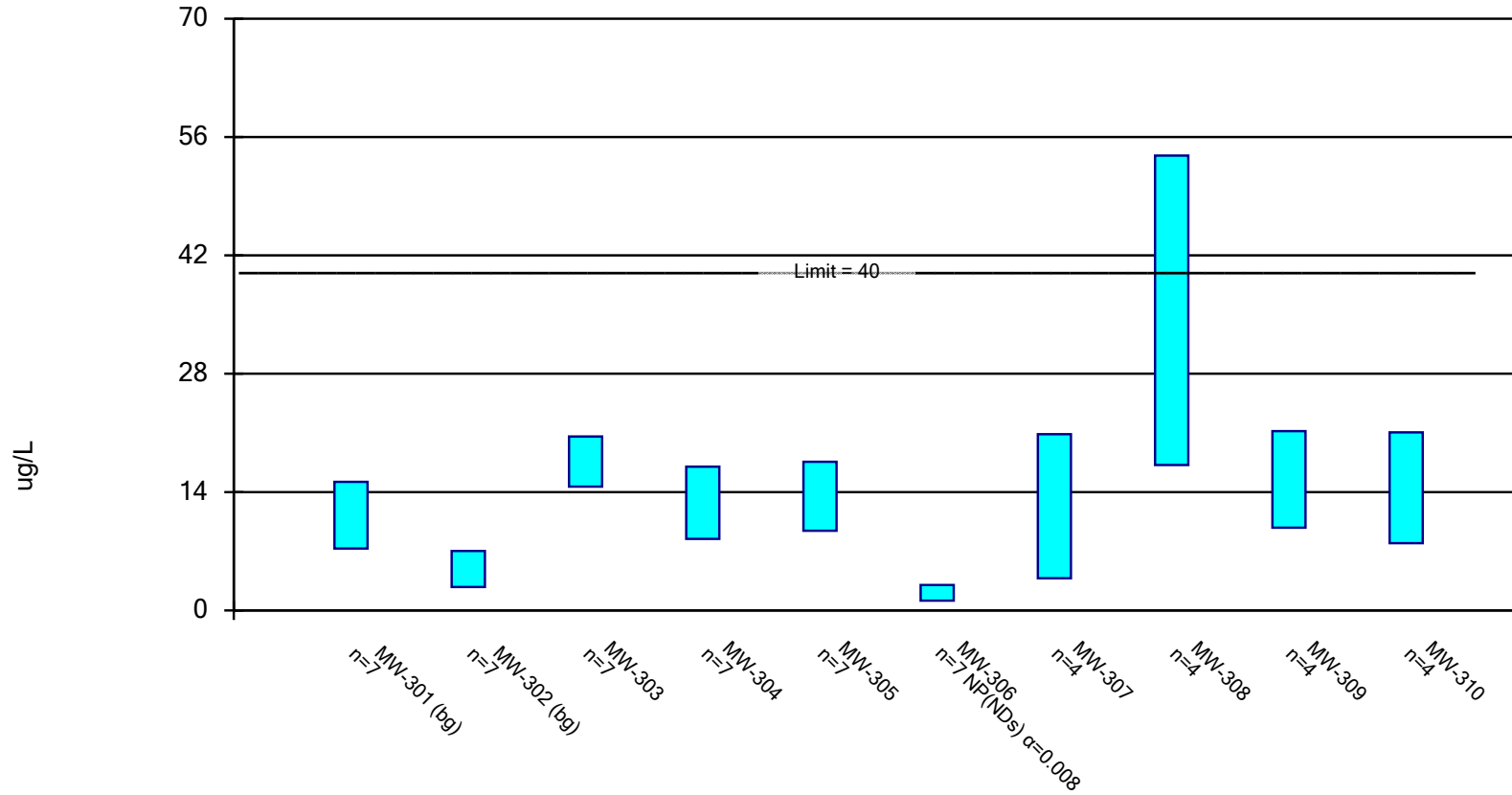
Constituent: Arsenic (ug/L) Analysis Run 1/20/2021 4:30 PM
Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

MW-310

5/8/2018	
8/6/2018	
10/9/2018	
3/11/2019	
4/22/2019	
4/23/2019	
10/28/2019	
10/29/2019	31
1/9/2020	28
4/27/2020	23
5/27/2020	
10/19/2020	
10/20/2020	
10/21/2020	36
Mean	29.5
Std. Dev.	5.447
Upper Lim.	41.87
Lower Lim.	17.13

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 1/20/2021 4:25 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 1/20/2021 4:30 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309
5/8/2018	13.6	5.4 (J)	19	10.8	10.7	<4.6 (U)			
8/6/2018	5.4 (J)	<4.6 (U)	15.4	6.9 (J)	9.5 (J)	<4.6 (U)			
10/9/2018	13.3	4.6 (J)	19.9	13.4	13.3	<4.6 (U)			
4/22/2019	8.5 (J)	4.7 (J)	17	17	15	3 (J)			
4/23/2019							10	29	
10/28/2019	12	5.3 (J)					15	31	
10/29/2019			17	13	14	<2.7 (U)			15
1/9/2020									15
4/27/2020	11	3.8 (J)	14	11	12	<2.3 (U)			13
5/27/2020							8.3 (J)	35	
10/19/2020	15	8.2 (J)					16	47	
10/20/2020			21	17	20	<2.5 (U)			
10/21/2020									19
Mean	11.26	4.9	17.61	12.73	13.5	1.95	12.33	35.5	15.5
Std. Dev.	3.322	1.798	2.494	3.598	3.437	0.7024	3.754	8.062	2.517
Upper Lim.	15.2	7.036	20.58	17	17.58	3	20.85	53.8	21.21
Lower Lim.	7.312	2.764	14.65	8.454	9.417	1.15	3.803	17.2	9.786

Confidence Interval

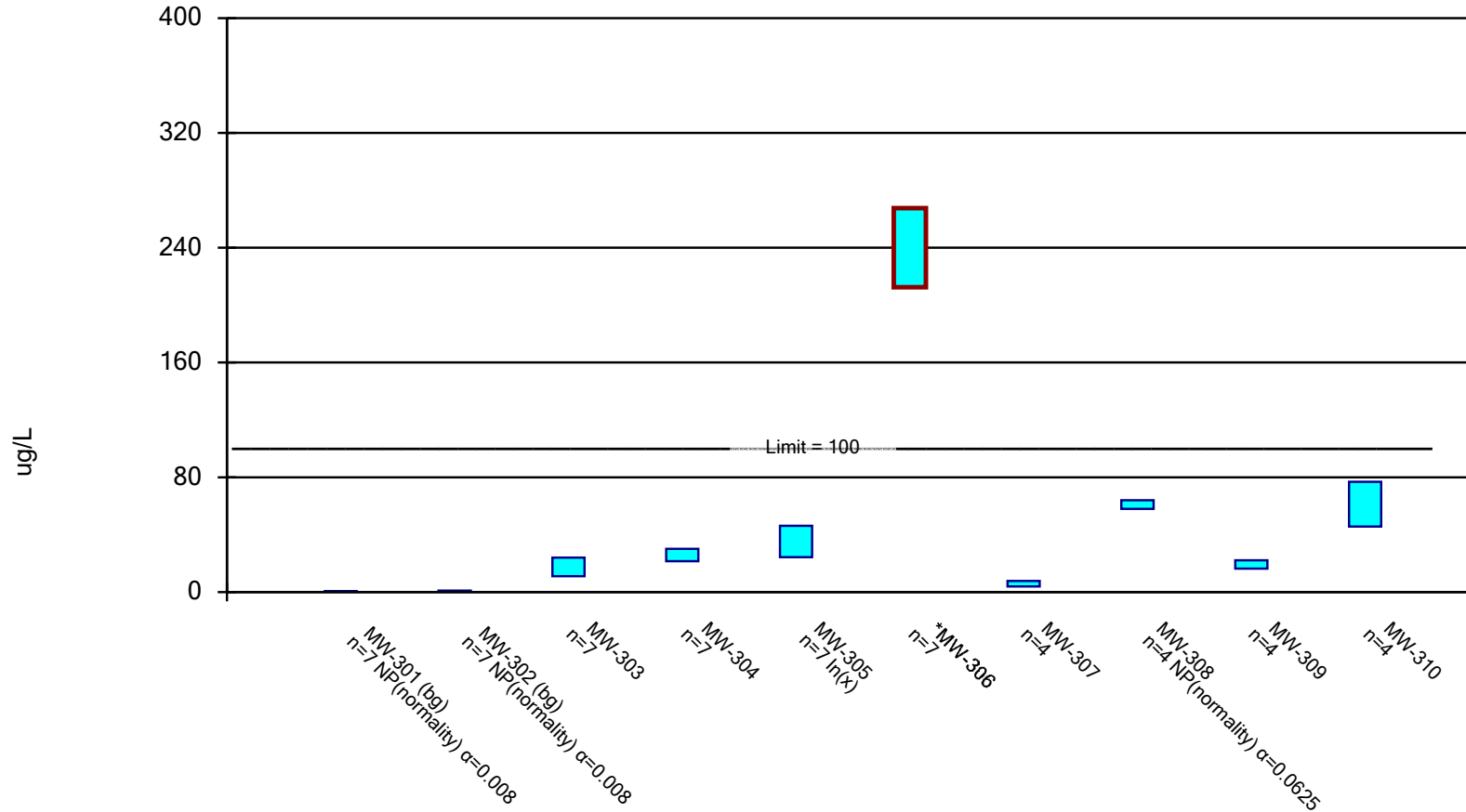
Constituent: Lithium (ug/L) Analysis Run 1/20/2021 4:30 PM
Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

MW-310

5/8/2018	
8/6/2018	
10/9/2018	
4/22/2019	
4/23/2019	
10/28/2019	
10/29/2019	15
1/9/2020	14
4/27/2020	11
5/27/2020	
10/19/2020	
10/20/2020	
10/21/2020	18
Mean	14.5
Std. Dev.	2.887
Upper Lim.	21.05
Lower Lim.	7.946

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 1/20/2021 4:26 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 1/20/2021 4:30 PM

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-309
5/8/2018	0.35 (J)	0.99 (J)	23.1	19.8	27.9	271			
8/6/2018	0.44 (J)	0.78 (J)	20.7	25.4	29	234			
10/9/2018	<0.57 (U)	0.67 (J)	21.7	27.6	32	235			
4/22/2019	<1.1 (U)	<1.1 (U)	12	23	26	200			
4/23/2019							5.8	58	
10/28/2019	<1.1 (U)	<1.1 (U)					5.2	58	
10/29/2019			20	31	32	230			19
1/9/2020									18
4/27/2020	<1.1 (U)	<1.1 (U)	8.4	26	38	250			19
5/27/2020							7	64	
10/19/2020	<1.1 (U)	<1.1 (U)					5.2	58	
10/20/2020			17	28	58	260			
10/21/2020									21
Mean	0.4679	0.6629	17.56	25.83	34.7	240	5.8	59.5	19.25
Std. Dev.	0.1119	0.1692	5.459	3.632	10.98	23.17	0.8485	3	1.258
Upper Lim.	0.55	0.99	24.04	30.14	46.23	267.5	7.726	64	22.11
Lower Lim.	0.285	0.55	11.07	21.51	24.3	212.5	3.874	58	16.39

Confidence Interval

Constituent: Molybdenum (ug/L) Analysis Run 1/20/2021 4:30 PM
Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020

MW-310

5/8/2018	
8/6/2018	
10/9/2018	
4/22/2019	
4/23/2019	
10/28/2019	
10/29/2019	60
1/9/2020	59
4/27/2020	55
5/27/2020	
10/19/2020	
10/20/2020	
10/21/2020	71
Mean	61.25
Std. Dev.	6.85
Upper Lim.	76.8
Lower Lim.	45.7

Confidence Interval

Prairie Creek Generating Station Client: SCS Engineers Data: PCS - Chem-export-Dec2020 Printed 1/20/2021, 4:30 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-301 (bg)	0.8654	0.4968	10	No	7	57.14	Kapla...	ln(x)	0.01	Param.
Arsenic (ug/L)	MW-302 (bg)	7.748	0.7634	10	No	7	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-303	55.48	26.95	10	Yes	7	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-304	14.7	11.45	10	Yes	8	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-305	12.85	5.829	10	No	8	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-306	1.722	0.5348	10	No	7	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-307	9.542	2.458	10	No	4	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-308	72.26	35.74	10	Yes	4	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-309	167.7	39.32	10	Yes	4	0	None	No	0.01	Param.
Arsenic (ug/L)	MW-310	41.87	17.13	10	Yes	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-301 (bg)	15.2	7.312	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-302 (bg)	7.036	2.764	40	No	7	14.29	None	No	0.01	Param.
Lithium (ug/L)	MW-303	20.58	14.65	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	17	8.454	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-305	17.58	9.417	40	No	7	0	None	No	0.01	Param.
Lithium (ug/L)	MW-306	3	1.15	40	No	7	85.71	None	No	0.008	NP (NDs)
Lithium (ug/L)	MW-307	20.85	3.803	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-308	53.8	17.2	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-309	21.21	9.786	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-310	21.05	7.946	40	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-301 (bg)	0.55	0.285	100	No	7	71.43	None	No	0.008	NP (normality)
Molybdenum (ug/L)	MW-302 (bg)	0.99	0.55	100	No	7	57.14	None	No	0.008	NP (normality)
Molybdenum (ug/L)	MW-303	24.04	11.07	100	No	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-304	30.14	21.51	100	No	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-305	46.23	24.3	100	No	7	0	None	ln(x)	0.01	Param.
Molybdenum (ug/L)	MW-306	267.5	212.5	100	Yes	7	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-307	7.726	3.874	100	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-308	64	58	100	No	4	0	None	No	0.0625	NP (normality)
Molybdenum (ug/L)	MW-309	22.11	16.39	100	No	4	0	None	No	0.01	Param.
Molybdenum (ug/L)	MW-310	76.8	45.7	100	No	4	0	None	No	0.01	Param.