

# 2021 Annual Groundwater Monitoring and Corrective Action Report

Sutherland Generating Station  
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Prepared for:



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**SCS ENGINEERS**

25222076.00 | July 29, 2022

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## OVERVIEW OF CURRENT STATUS

### Sutherland Generating Station 2021 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 the Sutherland Generating Station (SGS), monitors the capped inactive multisystem of impoundments. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
<b>Monitoring Status – Start of Year</b>	(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
<b>Monitoring Status – End of Year</b>	(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
<b>Statistically Significant Increases (SSIs)</b>	(iii) If it was determined that there was an SSI 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 2021</u> Boron: MW-303, MW-304, MW-305, MW-306  Calcium: MW-304, MW-305, MW-306  Chloride*: MW-303, MW-304, MW-305, MW-306  Fluoride*: MW-303, MW-304, MW-305, MW-306  Sulfate*: MW-303, MW-304, MW-305, MW-306

Category	Rule Requirement	Site Status
SSIs (continued)		<p>*April 2021 results had anomalously high F, SO<sub>4</sub>, Cl, that was not repeated in October, the issue is described in <b>Section 4.5.1</b>.</p> <p>Total Dissolved Solids: MW-304, MW-305, MW-306</p> <p><u>July 2021</u> Field pH: MW-306</p> <p><u>October 2021</u> Boron: MW-303, MW-304, MW-305, MW-306</p> <p>Calcium: MW-303, MW-304, MW-305, MW-306</p> <p>Sulfate: MW-303, MW-304, MW-305, MW-306</p> <p>Total Dissolved Solids: MW-306</p>
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	January 13, 2020

Category	Rule Requirement	Site Status
<b>Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)</b>	(iv) If it was determined that there was an SSL above the GPS 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;	Lithium: MW-306  Lithium was determined to be at an SSL above the GPS on October 25, 2021, based on the February, April, and July 2021 monitoring results. For the October 2021 monitoring event (evaluated in 2022), lithium was again determined to be at an SSL above the GPS.
	(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	January 23, 2022
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	The public meeting has not yet occurred while evaluation of the nature and extent of lithium concentrations continues.
	(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.	June 22, 2022
<b>Selection of Remedy</b>	(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 in Progress
<b>Corrective Action</b>	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Remedial activities not yet initiated

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## 1.0 INTRODUCTION

This 2021 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” published by the U.S. Environmental Protection Agency (U.S. EPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*; Final Rule, dated April 17, 2015 (U.S. EPA, 2015) and subsequent amendments. Specifically, this report was prepared to fulfill the requirements of 40 Code of Federal Regulations (CFR) 257.100 and 40 CFR 257.90(e) for inactive CCR surface impoundments. The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2021 Annual Groundwater Monitoring and Corrective Action Report for the CCR unit.

This report covers the period of groundwater monitoring from January 1, 2021, through December 31, 2021.

The groundwater monitoring network at Sutherland Generating Station (SGS) is a multiunit system for the closure area that includes the following inactive CCR units:

- SGS North Primary Pond (inactive surface impoundment – closed June 2020)
- SGS South Primary Pond (inactive surface impoundment – closed June 2020)
- SGS Main Pond (inactive surface impoundment – closed June 2020)
- SGS Polishing Pond (inactive surface impoundment – closed June 2020)

The system is designed to detect monitored constituents at the waste boundary of the SGS CCR units as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two upgradient, four downgradient monitoring wells, and two delineation wells (**Table 1, Figure 1, and Figure 2**).

## 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 requirement sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

### 2.1 GEOLOGY AND HYDROGEOLOGY

#### 2.1.1 Regional Information

For the purposes of groundwater monitoring, the surficial alluvium aquifer, composed of glacial drift, sand, and gravel, is considered to be the uppermost aquifer unit, as defined under 40 CFR 257.53, at SGS. Immediately underlying the surficial alluvium aquifer are the Pennsylvanian and Mississippian shale and limestone units. Devonian aged units underlie the Mississippian limestone and are composed of shale, dolomite, and limestone. Silurian dolomite underlies the Devonian shale, dolomite, and limestone (**Appendix A**).

The Iowa River and associated alluvial aquifers are a major source of surface water and shallow groundwater in the area.



Unconsolidated deposits at the site consist of clays overlain by loess, which are not productive sources of groundwater (U.S. Department of Agriculture and Soil Conservation Service [USDA], 1981). The uppermost Pennsylvanian bedrock unit is considered to be a regional aquitard.

Regional information indicates that groundwater flow within the Mississippian limestone is to the south-southeast.

### **2.1.2 Site Information**

During drilling of CCR wells MW-301 through MW-308 the unconsolidated materials were identified as consisting primarily of sand, lean clay, and silty sand. The boring logs for the SGS monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within interbedded sands, lean clays, and silty sand units.

The shallow groundwater flow at the water table is generally to the east, as shown on the April and October 2021 shallow water table maps (**Figure 3** and **Figure 4**). This flow direction is consistent with previous water table maps, and the regional groundwater flow. The groundwater monitoring well network summary is provided in **Table 1**. The sampling event summary is provided in **Table 2**, and the groundwater elevation data for the CCR monitoring wells are provided in **Table 3**. Estimated horizontal gradients and flow velocities for flow at the shallow and deep levels within the aquifer are provided in **Table 4**, and the horizontal gradient measurement locations are provided in **Appendix C**.

## **2.2 CCR RULE MONITORING SYSTEM**

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and four downgradient monitoring wells (**Table 1** and **Figure 2**). The background wells include MW-301 and MW-302. The downgradient wells include MW-303, MW-304, MW-305, and MW-306. Following the detection of lithium at an SSL above the GPS at monitoring well MW-306, additional upgradient wells MW-307 and MW-308 were installed in November 2021 to provide information on groundwater quality at locations expected to be downgradient from the former coal pile and upgradient from the pond closure area. The CCR Rule wells are installed in the primarily poorly graded sands, clays, and silty sands. Well depths range from approximately 16 to 19 feet, measured from the top of the well casing.

## **3.0 257.100(e)(5) GROUNDWATER MONITORING AND CORRECTIVE ACTION FOR INACTIVE CCR SURFACE IMPOUNDMENTS**

*The owner or operator of the inactive CCR surface impoundment must: (i) No later than April 17, 2019, comply with groundwater monitoring requirements set forth in §§ 257.90(b) and 257.94(b); and (ii) No later than August 1, 2019, prepare the initial groundwater monitoring and corrective action report as set forth in § 257.90(e).*

This report is submitted to fulfill the report requirement.

## 4.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

*Annual groundwater monitoring and corrective action report.* 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:

### 4.1 §257.90(e)(1) SITE MAP

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

A map of the location of the site is provided as **Figure 1**. A map showing the site layout and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 2**.

### 4.2 §257.90(e)(2) MONITORING SYSTEM CHANGES

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

Two new monitoring wells, MW-307 and MW-308, were installed November 30, 2021, to characterize site conditions in accordance with § 257.95(g)(1). The monitoring well logs and well construction forms are included in **Appendix B**.

### 4.3 §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 for the SGS CCR units in 2021. Assessment monitoring continued in 2021 with semiannual sampling events in April and October as well as supplemental sampling events that occurred in February and July 2021 at MW-306. Initial samples were collected in December 2021 from newly installed monitoring wells, MW-307 and MW-308. A summary of the groundwater samples collected for analysis from each monitoring well, the dates the samples were collected, and the type of sample collected is included in **Table 2**.

Groundwater samples collected in the April and October semiannual sampling events were analyzed for both Appendix III and Appendix IV constituents. The samples collected at MW-306 in the February and July events were analyzed for field pH and lithium. The February and July samples were supplemental samples collected as a follow-up to the semi-annual monitoring events to further characterize lithium concentrations at this well. The samples collected from new wells MW-307 and MW-308 were analyzed for Appendix III and Appendix IV parameters.

The sampling results for Appendix III and Appendix IV parameters in 2021 are summarized in **Table 5**. All field parameter results for the 2021 sampling events are provided in **Table 6**. The analytical laboratory reports from the February through October 2021 monitoring events are provided in **Appendix D**. Historical results monitoring wells MW-301 through MW-306 are summarized in **Appendix E**.

#### **4.4 §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);*

Assessment monitoring for the site was initiated in January 2020. Assessment monitoring continued in 2021.

In accordance with the Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. EPA, 2009), the comparison of assessment monitoring results to the Groundwater Protection Standard (GPS) was based on the lower confidence limit (LCL) for the arithmetic mean. The LCL evaluation was completed for lithium, which is the only Appendix IV parameter that has been detected at a concentration exceeding the GPS in at least one sample result since assessment monitoring was initiated. The LCLs were calculated with Sanitas™ using historical concentrations measured since assessment monitoring began in December 2019. The LCL evaluations completed for the 2021 monitoring events are provided in **Appendix F**.

On October 25, 2021, lithium was determined to be at a statistically significant level (SSL) above the GPS at monitoring well MW-306 based on the evaluation of the July 2021 supplemental sampling event. An assessment of corrective measures (ACM) was initiated on January 23, 2022.

#### **4.5 §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 2021 Annual Groundwater Monitoring and Corrective Action Report for the CCR units.

##### **4.5.1 §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.

## 4.5.2 §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.** In 2021, the groundwater monitoring and corrective action program was in assessment monitoring. An ACM was initiated in January 2022.

### **Summary of Key Actions Completed.**

- Statistical evaluation for the October 2020 assessment monitoring event, completed in January 2021.
- Two supplemental sampling events for lithium at MW-306 (February and July 2021).
- Two semiannual groundwater sampling and analysis events (April and October 2021).
- Statistical evaluation for the February 2021 supplemental sampling event (June 2021).
- Statistical evaluation for the April 2021 semiannual groundwater sampling event (July 2021).
- Statistical evaluation for the July 2021 supplemental sampling event (October 2021).
- Installation of monitoring wells MW-307 and MW-308 (November 2021).
- One supplemental sampling event for initial samples at newly installed monitoring wells MW-307 and MW-308 (December 2021).

### **Description of Any Problems Encountered.**

Analytical results for the April 2021 semiannual monitoring event had chloride and fluoride results for all upgradient and downgradient wells that were approximately five times typical levels, and a laboratory error is suspected. Sulfate levels in the four samples analyzed on April 12, 2021, in the same run as chloride and fluoride analyses, were elevated above typical levels, although not by as consistent a factor as was observed for chloride and fluoride.

### **Discussion of Actions to Resolve the Problems.**

Although the laboratory has not been able to identify an error in their records or procedures, it is very unlikely that a consistent, site-wide 5-fold change in these parameters would occur in groundwater. Results from the October semiannual sampling event were consistent with sample results prior to April 2021.

Because the site is already in assessment monitoring and the elevated fluoride concentrations did not exceed the GPS, the elevated results did not affect the site's status with respect to monitoring and corrective action under the CCR Rule. The April 2021 chloride and fluoride results for the

background wells (MW-301 and MW-302) will be evaluated for potential exclusion as outliers for purposes of statistical analysis when the next interwell UPL update is completed for the site.

**Projection of Key Activities for the Upcoming Year (2022):**

- Statistical evaluation and determination of any SSLs exceeding the GPS for the October 2021 monitoring event (January 18, 2022).
- Installation and sampling of additional monitoring wells to evaluate the nature and extent of lithium impacts in groundwater downgradient from the CCR unit closure area.
- Collect supplemental parameters to better define the downgradient chemistry and evolution with flow in support of the ongoing selection-of-remedy process.
- Two semiannual groundwater sampling and analysis events (April and October 2022).
- Complete ACM (June 2022).
- Statistical evaluation and determination of any SSLs exceeding the GPS for the April 2022 monitoring event.
- First semiannual progress report for the Selection of Remedy Process (December 2022).

**4.5.3 §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. SGS is no longer in detection monitoring.

**4.5.4 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring**

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

Not applicable. No alternative source demonstration was completed in 2021.

**4.5.5 §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.

#### **4.5.6 §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 2021 assessment monitoring results, background upper prediction limits (UPLs), and GPSs established for SGS are provided in **Table 5**. The laboratory reports are provided in **Appendix D**. Historical monitoring results are summarized in **Appendix E**.

#### **4.5.7 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring**

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

Not applicable. No alternative source demonstration for assessment monitoring was completed in 2021.

#### **4.5.8 §257.96(a) Extension of Time for Corrective Measures Assessment**

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

Not applicable. Corrective measures assessment had not been initiated in 2021.

## **5.0 REFERENCES**

U.S. Department of Agriculture and Soil Conservation Service, 1981, Soil Survey on Marshall County Iowa.

U.S. Environmental Protection Agency (U.S. EPA), 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, EPA 530-R-09-007, March 2009.

U.S. Environmental Protection Agency, 2015, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, April 2015.

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- 4 Horizontal Gradients and Flow Velocity
- 5 Groundwater Analytical Results – Assessment  
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**Table 1. Groundwater Monitoring Well Network  
Sutherland Generating Station / SCS Engineers Project #25221076.00**

<b>Monitoring Well</b>	<b>Location in Monitoring Network</b>	<b>Role in Monitoring Network</b>
MW-301	Upgradient	Background
MW-302	Upgradient	Background
MW-303	Downgradient	Compliance
MW-304	Downgradient	Compliance
MW-305	Downgradient	Compliance
MW-306	Downgradient	Compliance
MW-307	Upgradient	Delineation
MW-308	Upgradient	Delineation

Created by: RM  
 Last revision by: RM  
 Checked by: SCC

Date: 12/14/2020  
 Date: 7/5/2022  
 Date: 7/10/2022

**Table 2. Groundwater Samples Summary**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**

Sample Dates	Compliance Wells				Delineation Wells		Background Wells	
	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	MW-301	MW-302
2/24/2021	--	--	--	R-A	--	--	--	--
4/6/2021	A	A	A	A	--	--	A	A
7/14/2021	--	--	--	R-A	--	--	--	--
10/26/2021	A	A	A	A	--	--	A	A
12/9/2021	--	--	--	--	A	A	--	--
Total Samples	2	2	2	4	1	1	2	2

Abbreviations:

A = Assessment Monitoring Program sampling event

R-A = Assessment Monitoring Program resampling event

Created by: NDK                      Date: 3/9/2021  
Last revision by: RM                      Date: 7/5/2022  
Checked by: TK                              Date: 7/18/2022

I:\25222076.00\Deliverables\2021 Fed. Annual Report\Tables\[Table 2 - GW Samples Summary Table.xlsx]GW Summary

**Table 3. Groundwater Elevation Summary**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**

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
<b>Top of Casing Elevation (feet amsl)</b>	866.61	863.08	859.54	860.79	859.81	861.13	864.87	863.07
<b>Screen Length (ft)</b>	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
<b>Total Depth (ft from top of casing)</b>	18.80	18.50	18.65	18.80	19.08	18.71	17.50	16.00
<b>Top of Well Screen Elevation (ft)</b>	857.81	854.58	850.89	851.99	850.73	852.42	857.37	857.07
<b>Measurement Date</b>								
November 29, 2017	853.76	853.81	851.98	851.74	851.68	851.36	NI	NI
March 26-27, 2018	855.23	855.97	854.35	853.79	853.64	853.49	NI	NI
May 23, 2018	855.45	855.32	854.07	853.92	853.99	854.11	NI	NI
June 26, 2018	856.24	856.55	854.97	854.64	854.55	854.57	NI	NI
July 26, 2018	855.96	855.75	854.14	853.86	854.00	853.94	NI	NI
September 11, 2018	857.41	857.06	855.96	855.66	855.94	856.48	NI	NI
November 28, 2018	856.99	856.74	855.01	854.79	854.87	854.91	NI	NI
January 9, 2019	856.85	856.82	855.11	854.93	854.94	854.94	NI	NI
February 12, 2019	856.59	856.43	854.58	854.41	854.56	854.75	NI	NI
April 2, 2019	857.33	857.12	855.60	855.47	855.67	855.96	NI	NI
October 16, 2019	856.15	855.30	854.90	854.78	854.99	852.16	NI	NI
December 11-12, 2019	857.05	856.11	854.47	854.29	854.33	854.39	NI	NI
February 3, 2020	856.24	856.59	854.57	854.35	854.28	854.14	NI	NI
April 7, 2020	856.16	856.23	854.63	854.54	854.64	854.70	NI	NI
May 11, 2020	NM	NM	NM	NM	853.78	853.71	NI	NI
October 13, 2020	854.44	854.38	851.70	851.30	851.32	851.13	NI	NI
February 24, 2021	NM	NM	NM	NM	NM	850.56	NI	NI
April 6, 2021	854.38	854.85	853.21	853.15	853.02	852.79	NI	NI
July 14, 2021	NM	NM	NM	NM	NM	850.67	NI	NI
October 26, 2021	852.42	852.68	850.54	850.13	850.12	850.00	NI	NI
December 9, 2021	NM	NM	NM	NM	NM	NM	851.56	851.87
<b>Bottom of Well Elevation (ft)</b>	847.81	844.58	840.89	841.99	840.73	842.42	847.37	847.07

Notes:  
 NM = not measured  
 NI = not installed

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

Date: 1/15/2018  
 Date: 2/14/2022  
 Date: 2/14/2022

**Table 4. Horizontal Gradients and Flow Velocity  
Sutherland Generating Station /  
SCS Engineers Project #25221076.00  
January - December 2021**

Sampling Dates	East				
	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
4/6/2021	854.00	853.02	1230.92	0.0008	0.12
10/26/2021	851.00	850.12	511.05	0.002	0.26

Well	K Value (cm/sec)	K Value (ft/d)
MW-301	6.5E-02	184
MW-302	4.0E-02	113
MW-303	1.7E-02	48
MW-304	1.2E-02	34
MW-305	3.9E-02	111
MW-306	2.6E-02	75
Geometric Mean	2.2E-02	61

Assumed Porosity, n
0.40

Note: Geometric Mean calculation does not include the upgradient wells

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

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: JAO  
Checked by: NDK

Date: 12/29/2020  
Date: 2/21/2022  
Date: 2/21/2022

**Table 5. Groundwater Analytical Results - Assessment Monitoring  
Sutherland Generating Station / SCS Engineers Project #25221076.00**

Parameter Name	UPL Method	UPL	GPS	Background Wells				Compliance Wells				Compliance Wells				Delineation Wells				
				MW-301		MW-302		MW-303		MW-304		MW-305		MW-306		MW-307	MW-308			
				4/6/2021	10/26/2021	4/6/2021	10/26/2021	4/6/2021	10/26/2021	4/6/2021	10/26/2021	4/6/2021	10/26/2021	2/24/2021	4/6/2021	7/14/2021	10/26/2021	12/9/2021	12/9/2021	
<b>Appendix III</b>																				
Boron, ug/L	P	307		76 J	62 J	67 J	<58	360	400	570	480	1400	1800	--	3400	--	4,400	460	330	
Calcium, mg/L	P	96		70	81	80	95	80	87	130	110	150	110	--	210	--	150	150	96	
Chloride, mg/L	P	63.5		85	9.0	85	7.2	81	3.8 J	80	<0.28	91	24	--	95	--	20	19	17	
Fluoride, mg/L	P	0.32		2.5	<0.28	2.5	<0.28	2.7	<0.28	2.5	<0.28	2.7	<0.28	--	2.5	--	<0.28	<0.28	<0.28	
Field pH, Std. Units	P	7.78		6.69	6.21	6.96	7.30	7.04	6.84	6.61	7.04	6.68	7.58	7.61	7.64	8.11	7.44	6.53	6.96	
Sulfate, mg/L	P	95.6		160	83	180	43	250	160	430	170	470	240	--	710	--	440	320	89	
Total Dissolved Solids, mg/L	P	516		260	200	300	270	340	300	600	450	800	500	--	1200	--	690	700	390	
<b>Appendix IV</b>																				
Antimony, ug/L	P	2.9	6	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	
Arsenic, ug/L	P	40	40	<0.75	<0.75	3	7.4	0.96 J	4.8	<0.75	<0.75	6.4	7.4	--	4.0	--	4.1	2.6	<0.75	
Barium, ug/L	NP	1,100	2,000	59	130	130	140	39	91	16	23	32	47	--	110	--	74	47	69	
Beryllium, ug/L	NP	1.3	4	<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	0.97	5	<0.051	0.080 J	<0.051	<0.051	0.086 J	0.16	0.15	0.24	0.052 J	<0.051	--	<0.051	--	<0.051	0.18	<0.051	
Chromium, ug/L	P	3.7	100	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	--	<1.1	--	<1.1	<1.1	<1.1	
Cobalt, ug/L	P	8.8	8.8	0.18 J	0.24 J	4.7	1.6	0.31 J	0.66	<0.091	0.3 J	1.7	0.63	--	0.71	--	0.59	6.8	2.0	
Fluoride, mg/L	P	0.32	4	2.5	<0.28	2.5	<0.28	2.7	<0.28	2.5	<0.28	2.7	<0.28	--	2.5	--	<0.28	<0.28	<0.28	
Lead, ug/L	P	2.9	15	<0.21	0.52 B	<0.21	0.31 J,B	<0.21	0.5 B	<0.21	0.75 B	<0.21	<0.21	--	<0.21	--	0.58 B	<0.21	0.21 J	
Lithium, ug/L	NP	13	40	2.5 J	2.8 J	2.8 J	2.9 J	17	20	<2.5	6.8 J	29	35	55	48	59	55	22	11	
Mercury, ug/L	DQ	DQ	2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	--	<0.15	--	<0.15	<0.15	<0.15	
Molybdenum, ug/L	P	18	100	<1.3	<1.3	<1.3	<1.3	11	5.9	<1.3	<1.3	41	55	--	59	--	66	6.5	<1.3	
Selenium, ug/L	P	16	50	<0.96	2.8 J	2.5 J	1.3 J	<0.96	26	1.1 J	<0.96	<0.96	<0.96	--	<0.96	--	<0.96	<0.96	<0.96	
Thallium, ug/L	NP*	0.43	2	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	--	<0.26	--	<0.26	<0.26	<0.26	
Radium 226/228 Combined, pCi/L	P	3.2	5	0.256	1.07	0.6	0.614	0.268	0.666	0.0369	0.721	0.340	1.02	--	0.261	--	0.307	1.83	1.67	
<b>Additional Parameters</b>																				
Iron, ug/L	UPL or GPS not applicable			120	170	210	1000	420	2900	<36	71 J	250	230	--	61 J	--	220	--	--	
Magnesium				21000	16000	25000	26000	23000	21000	34000	29000	40000	25000	--	55000	--	26000	--	--	--
Manganese, ug/L				2000	1000	590	1000	930	700	180	270	1400	520	--	3400	--	1900	--	--	--
Potassium, ug/L				1700	1600	320 J	440 J	3300	3900	<150	600	3900	5900	--	7000	--	7400	--	--	--
Sodium, ug/L				7900	13000	12000	9200	19000	18000	38000	33000	48000	38000	--	46000	--	41000	--	--	--
Total Alkalinity, mg/L				250	220	280	400	240	230	230	350	200	230	--	170	--	100	--	--	--
Carbonate Alkalinity, mg/L				<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	--	<4.2	--	<4.6	--	--	--
Bicarbonate Alkalinity, mg/L				250	220	280	400	240	230	230	350	200	230	--	170	--	100	--	--	--

Blue shaded cell indicates the compliance well result exceeds the UPL and the LOQ  
 Yellow shaded cell indicates the compliance well result exceeds the GPS.  
 Grayscale indicates Additional Parameters sampled for selection of remedy and evaluation of Monitored Natural Attenuation

**Table 5. Groundwater Analytical Results - Assessment Monitoring  
Sutherland Generating Station / SCS Engineers Project #25221076.00**

Abbreviations:

UPL = Upper Prediction Limit  
ug/L= micrograms per Liter  
mg/L = milligrams per Liter  
LOD = Limit of Detection

P = Parametric UPL with 1-of-2 retesting  
NP= Nonparametric UPL (highest background value)  
DQ= Double Quantification (not detected in background)  
LOQ = Limit of Quantification  
GPS = Groundwater Protection Standard  
-- = Not Analyzed

Lab Notes/Qualifiers:

B = Analyte found in sample and associated blank.  
J = Result is less than the reporting limit but greater than limits or equal to the method detection limit and the concentration is an approximate value.

Notes:

1. An individual result above the UPL or GPS does not constitute a statistically significant increase (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 (MCL), 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: <u>NDK</u>	Date: <u>4/30/2021</u>
Last revision by: <u>RM</u>	Date: <u>7/5/2022</u>
Checked by: <u>NDK</u>	Date: <u>7/18/2022</u>
Proj Mgr QA/QC: <u>TK</u>	Date: <u>7/18/2022</u>

**Table 6. 2021 Groundwater Field Data Summary**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**  
**January - December 2021**

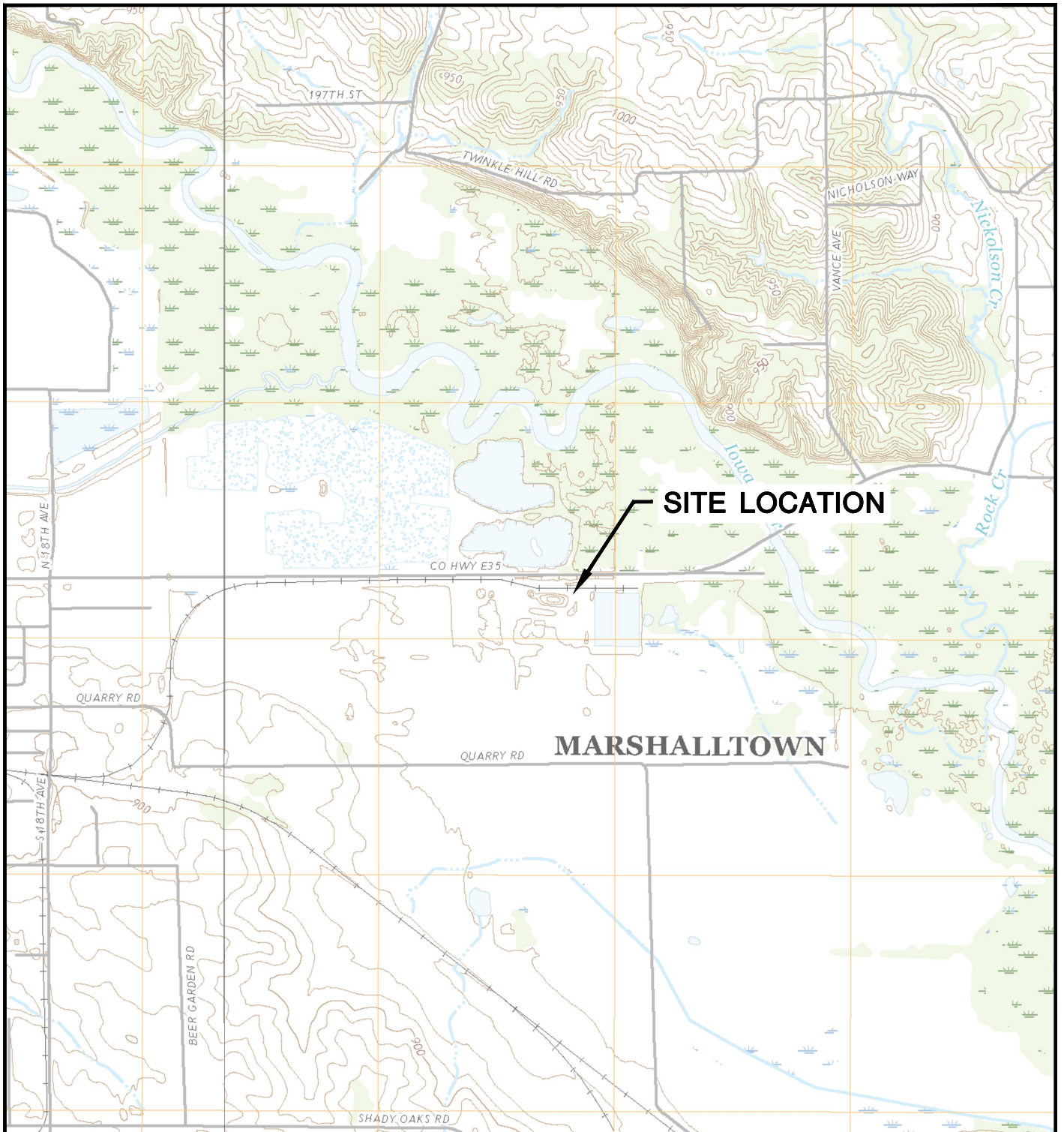
Well	Sample Date	Groundwater Elevation (feet)	Field Temperature (deg C)	Field pH (Std. Units)	Oxygen, Dissolved (mg/L)	Field Specific Conductance (umhos/cm)	Field Oxidation Potential (mV)	Turbidity (NTU)
MW-301	4/6/2021	854.38	9.9	6.69	0.16	502	180.2	25.1
	10/26/2021	852.42	14.3	6.21	1.44	485	148.3	110
MW-302	4/6/2021	854.85	9.3	6.96	0.49	581	161.9	2.69
	10/26/2021	852.68	13.2	7.30	1.34	624	146.4	23.2
MW-303	4/6/2021	853.21	8.0	7.04	0.15	601	68.5	3.55
	10/26/2021	850.54	13.5	6.84	2.57	577	167.1	110
MW-304	4/6/2021	853.15	8.4	6.61	5.83	957	182.1	0.79
	10/26/2021	850.13	13.8	7.04	1.58	831	152.1	19.8
MW-305	4/6/2021	853.02	10.9	6.68	0.15	1171	69.8	3.44
	10/26/2021	850.12	14.8	7.58	1.15	807	134.7	19.9
MW-306	2/24/2021	850.56	11.5	7.61	0.09	1479	-38.8	0.02
	4/6/2021	852.79	12.0	7.64	0.11	1464	-29.8	0.02
	7/14/2021	850.67	14.1	8.11	0.13	1178	57.7	0.78
	10/26/2021	850.00	15.7	7.44	1.22	1038	161.0	19.8
MW-307	12/9/2021	851.56	14.3	6.53	2.37	1137	52.5	13.0
MW-308	12/9/2021	851.87	13.3	6.96	6.33	739	-37.3	14.0

Created by: RM Date: 12/22/2020  
Last revision by: NDK Date: 2/28/2022  
Checked by: JAO Date: 2/28/2022

## Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Water Table Map April 2021
- 4 Water Table Map October 2021





**SITE LOCATION**

**MARSHALLTOWN**






LE GRAND QUADRANGLE  
 IOWA—MARSHALL COUNTY  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'



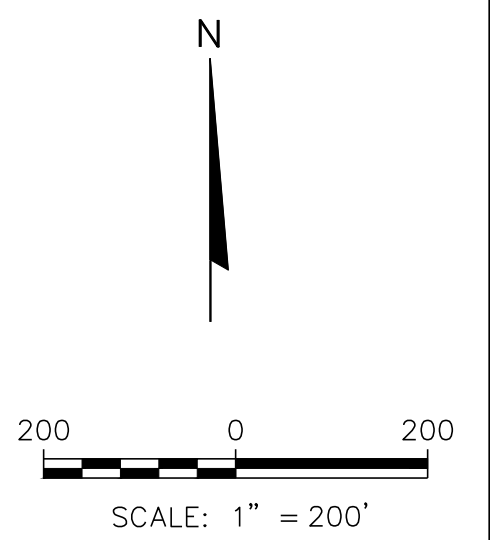
CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718		SITE	ALLIANT ENERGY SUTHERLAND GENERATING STATION MARSHALLTOWN, IOWA		ENGINEER	SITE LOCATION MAP	
	PROJECT NO.	25222076.00		DRAWN BY:	BSS		<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	FIGURE
DRAWN:	11/15/2019	CHECKED BY:	MDB	1				
REVISED:	01/14/2020	APPROVED BY:	TK 3/20/2022					



**LEGEND**

	CCR MONITORING WELL
	CCR BACKGROUND MONITORING WELL
	CCR UNIT

- NOTES:**
1. 2020 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRIID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
  2. MONITORING WELLS MW-301 THROUGH MW-306 WERE INSTALLED BY DIRECT PUSH ANALYTICAL, NOVEMBER 20-21, 2017.
  3. MONITORING WELLS MW-307 AND MW-308 WERE INSTALLED BY TERRACON, INC. IN NOVEMBER 30, 2021
  4. CCR UNIT LIMITS ARE APPROXIMATE.
  5. THE BACKGROUND MONITORING WELLS FOR THE SUTHERLAND GENERATING STATION ARE MW-301 AND MW-302.



PROJECT NO.	25222076.00	DRAWN BY:	BSS	<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT	ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	SITE ALLIANT ENERGY SUTHERLAND GENERATING STATION MASHALLTOWN, IOWA	SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE	2
DRAWN:	11/14/2019	CHECKED BY:	TK/NDK		ENGINEER					
REVISED:	02/17/2022	APPROVED BY:	TK 3/20/2022							

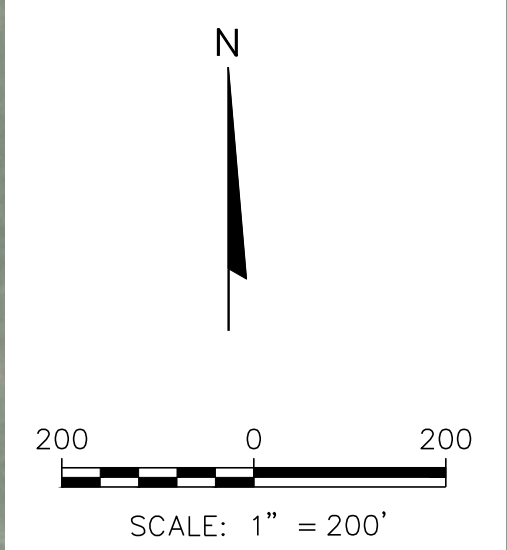
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- LEGEND**
- CCR MONITORING WELL
  - CCR BACKGROUND MONITORING WELL
  - CCR UNITS
  - 854.38** WATER TABLE ELEVATION (APRIL 6, 2021)
  - WATER TABLE CONTOUR
  - APPROXIMATE GROUNDWATER FLOW DIRECTION

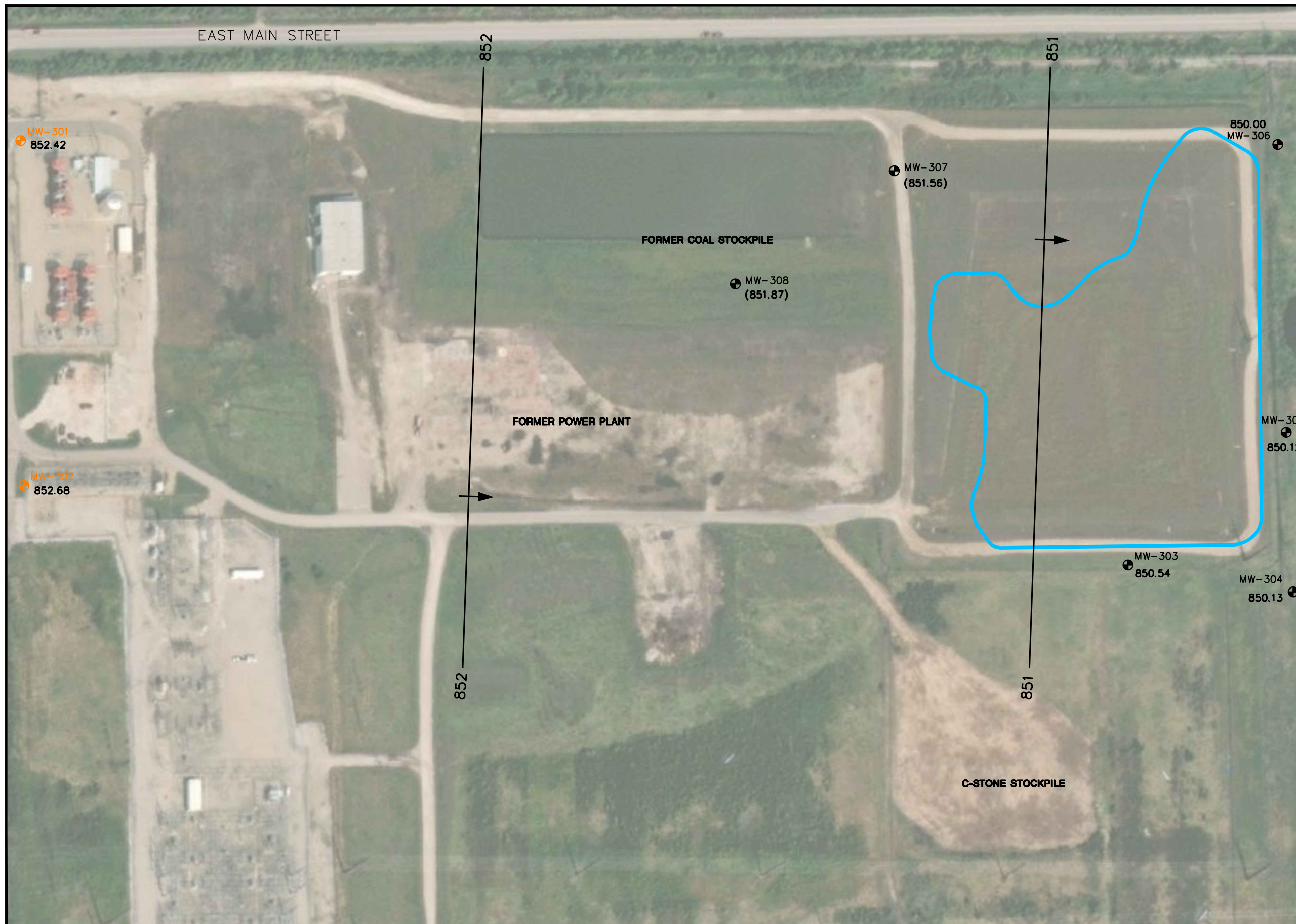
**NOTE:**

1. THE BACKGROUND MONITORING WELLS FOR THE SUTHERLAND GENERATING STATION ARE MW-301 AND MW-302.



PROJECT NO. 25222076.00	DRAWN BY: KP	<b>ENGINEER</b> <b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b> ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b> ALLIANT ENERGY SUTHERLAND GENERATING STATION MASHALLTOWN, IOWA	WATER TABLE MAP APRIL 2021	FIGURE
DRAWN: 05/12/2021	CHECKED BY: RM					3
REVISED: 02/28/2022	APPROVED BY: TK 3/20/2022					

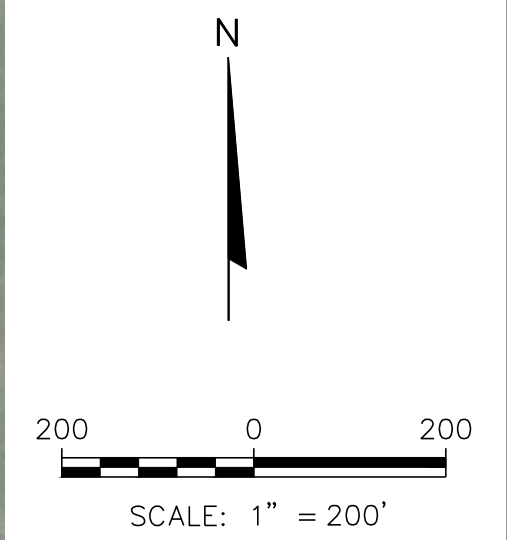
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- LEGEND**
- CCR MONITORING WELL
  - CCR BACKGROUND MONITORING WELL
  - CCR UNITS
  - 854.38** WATER TABLE ELEVATION (OCTOBER 25, 2021)
  - WATER TABLE CONTOUR
  - APPROXIMATE GROUNDWATER FLOW DIRECTION

**NOTE:**

1. THE BACKGROUND MONITORING WELLS FOR THE SUTHERLAND GENERATING STATION ARE MW-301 AND MW-302.



PROJECT NO. 25222076.00	DRAWN BY: KP	<b>ENGINEER</b> <b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b> ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b> ALLIANT ENERGY SUTHERLAND GENERATING STATION MASHALLTOWN, IOWA	WATER TABLE MAP OCTOBER 2021	FIGURE
DRAWN: 02/17/2022	CHECKED BY: RM					4
REVISED: 02/28/2022	APPROVED BY: TK 3/20/2022					

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## Appendix A

### Summary of Regional Hydrogeologic Stratigraphy

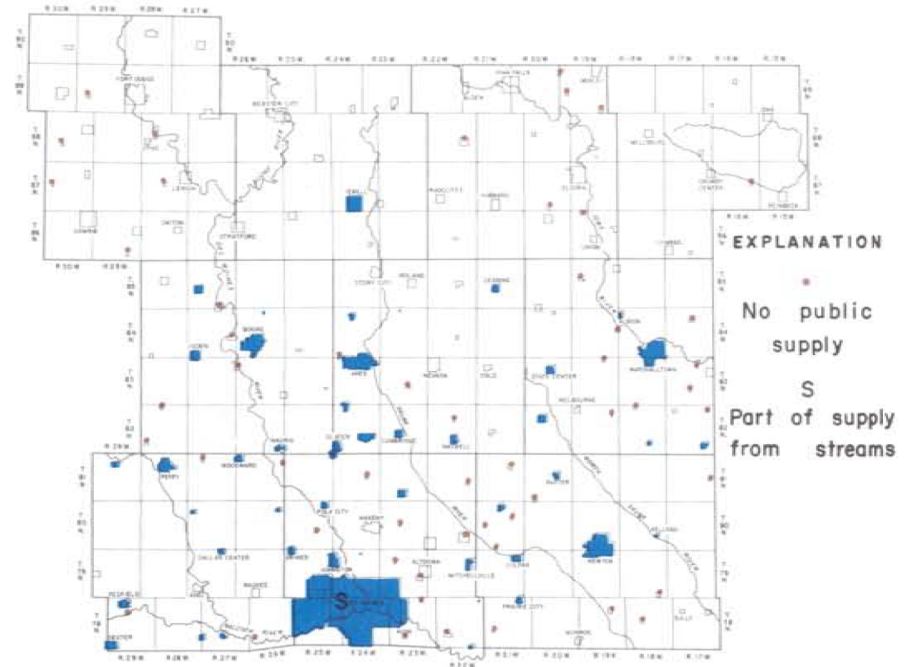
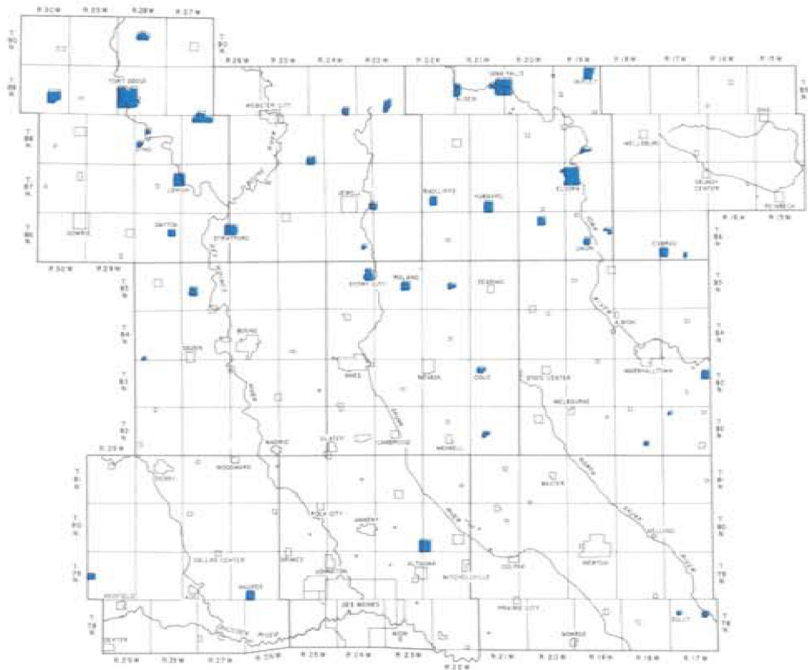
The aquifers and rocks in central Iowa

Aquifers	General thickness (feet)	Age of rocks	Name of rock units	General description of rock units
Surficial Alluvial Buried-channel Drift	0-380	Quaternary (0-1 million years old)	Undifferentiated	Primarily alluvium and drift composed of gravel, sand, silt, and clay
	0-900	Cretaceous (63-135 million years old)	Undifferentiated	Shale, limestone, and sandstone; in Webster County only
	0-550	Permian(?) (230-280 million years old)	Fort Dodge beds	Gypsum and shales; in Webster County only
		Pennsylvanian (280-310 million years old)	Undifferentiated	Shale, sandstone, thin limestones, and coal
Upper bedrock	0-475	Mississippian (310-345 million years old)	Ste. Genevieve	Shale and limestone
			St. Louis	Limestone, sandy
			Warsaw	Shale and dolomite
			Keokuk	Dolomite and limestone
			Burlington	Dolomite and limestone
			Gilmore City	Limestone
			Hampton	Limestone and dolomite
	5-200		McCraney	Limestone
			English River	Siltstone
			Maple Mill	Shale
			Aplington	Dolomite
			Sheffield	Shale
Middle bedrock	400-750	Devonian (345-405 million years old)	Lime Creek	Dolomite and shale
			Cedar Valley	Limestone and dolomite
			Wapsipinicon	Limestone, dolomite, and shale
	330-700	Silurian (405-425 million years old)	Undifferentiated	Dolomite and sandy dolomite
			Ordovician (425-500 million years old)	Maquoketa
			Galena	Dolomite and chert
			Decorah	Limestone and shale
			Platteville	Limestone, shale, and sandstone
Lower bedrock	375-560		St. Peter	Sandstone
			Prairie du Chien	Dolomite and sandstone
			Jordan	Sandstone
			St. Lawrence	Dolomite
	350-550		Franconia	Sandstone, siltstone, and shale
			Galesville	Sandstone
			Eau Claire	Sandstone, shale, and dolomite
			Mt. Simon	Sandstone
	-----	Precambrian (600 million to more than 2 billion years old)		Igneous and metamorphic rocks, locally overlain by sedimentary rocks that are chiefly sandstone

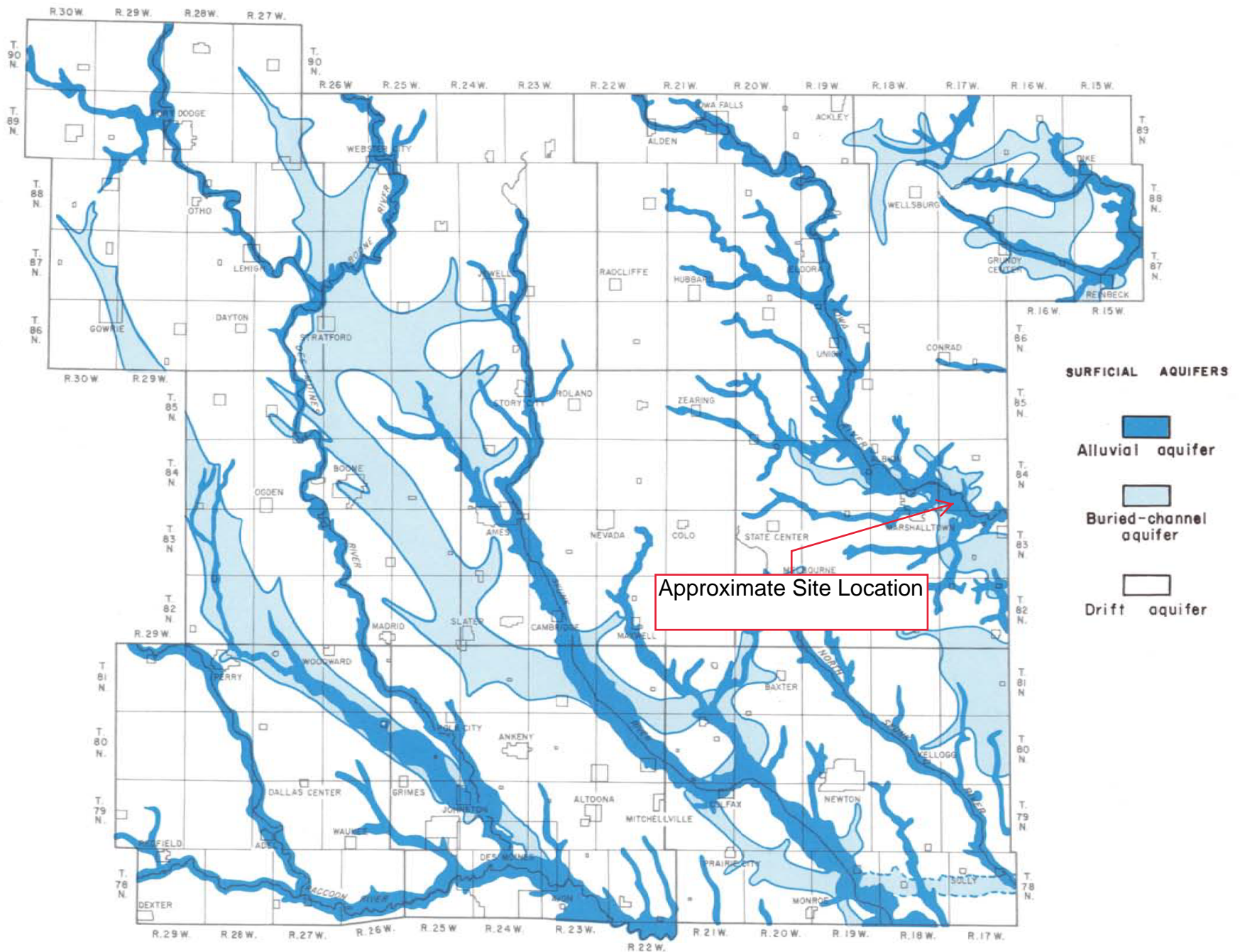
## The aquifers that supply water for cities and communities

Various reasons determine why a city or community will choose one aquifer over the other as a source of water for their municipal supply. In general, however, the aquifer selected will be one that will provide the largest quantity of good water at the lowest cost.

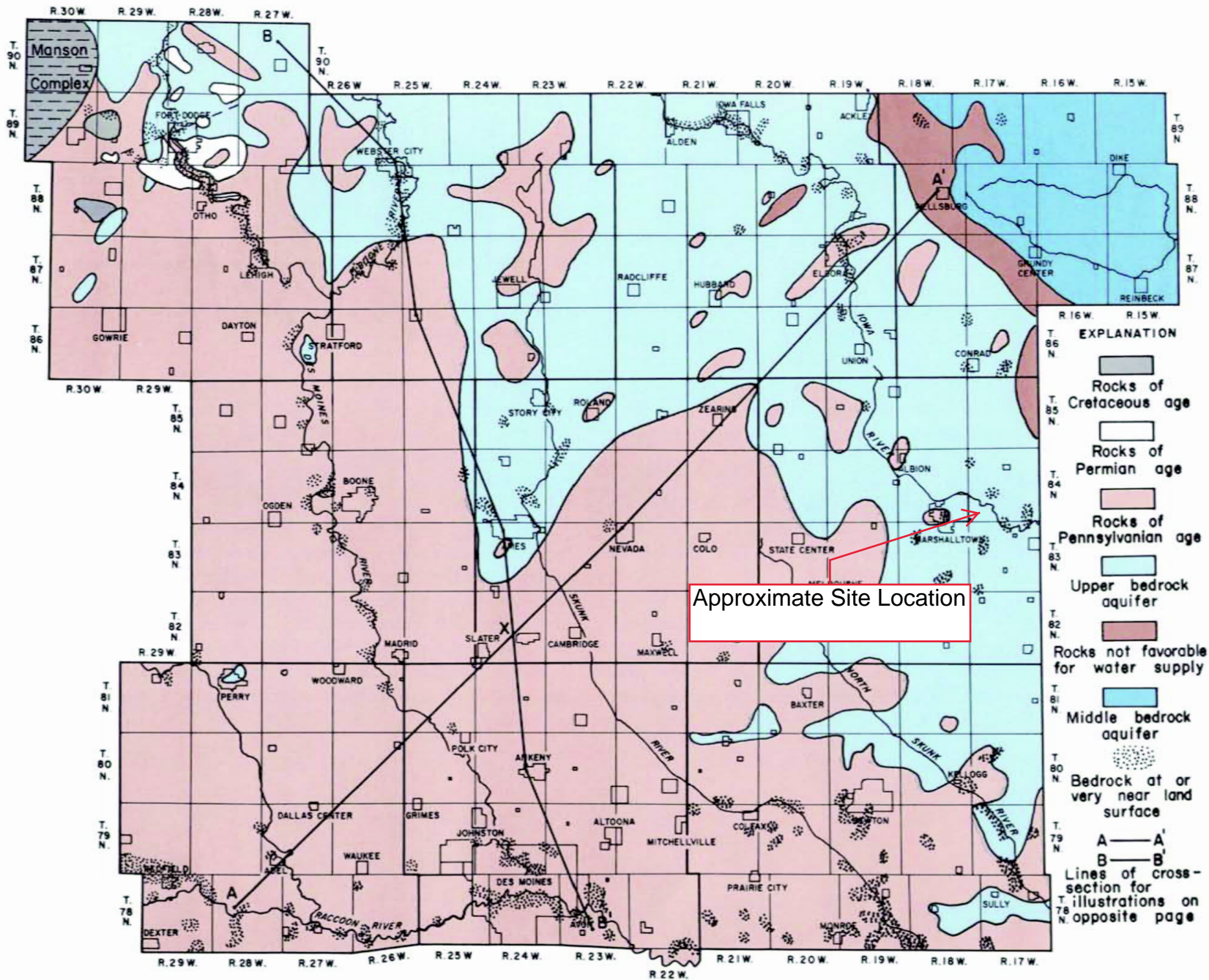
The surficial aquifers are the source of water for municipal supplies in nearly 100 cities and communities in central Iowa. Also, they are the source of water for individual supplies in many of the small communities that have no municipal supply.



More than 40 cities and communities take all or most of their water from the upper bedrock aquifer.







The areal distribution and spatial relations of the upper and middle bedrock aquifers.

## Appendix B

### Boring Logs and Well Construction Documentation

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

Facility/Project Name IPL-Sutherland Generating Station SCS#: 25216149.00		License/Permit/Monitoring Number		Boring Number MW-301	
Boring Drilled By: Name of crew chief (first, last) and Firm Patrick Goetz Direct Push Analytical		Date Drilling Started 11/20/2017		Date Drilling Completed 11/20/2017	
Drilling Method hollow stem auger		Unique Well No.		DNR Well ID No.	
Common Well Name MW-301		Final Static Water Level Feet		Surface Elevation 863.5 Feet	
Borehole Diameter 8.3 in		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 3,481,478 N, 5,094,231 E S/C/N		Lat _____"		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NW 1/4 of Section 32, T 84 N, R 17 W		Long _____"		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Marshall		Civil Town/City/ or Village Marshalltown	

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	POORLY GRADED SAND, fine to medium, tan, (10YR 4/6), (construction fill sand to fill in hydrovac hole cleared to 8 ft bgs).										
			2	Blind drilled to 8 feet.										
			3											
			4		SP									
			5											
			6											
			7											
			8											
			9	POORLY GRADED SAND, fine to coarse, dark brown, (7.5YR 3/3).										
S1	30		10							M+W				Depth to water at ~8 feet
			11											
			12		SP									
			13											
S2	30		14							W				
			15											
			16	End of boring at 16.19 feet.										

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

Signature <i>Patrick Goetz</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
-----------------------------------	---	-----------------------------

**SCS ENGINEERS**

Environmental Consultants and Contractors

**SOIL BORING LOG INFORMATION**

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

Facility/Project Name IPL-Sutherland Generating Station SCS#: 25216149.00		License/Permit/Monitoring Number		Boring Number MW-302	
Boring Drilled By: Name of crew chief (first, last) and Firm Patrick Goetz Direct Push Analytical		Date Drilling Started 11/20/2017		Date Drilling Completed 11/20/2017	
Drilling Method hollow stem auger		Unique Well No. MW-302		Final Static Water Level Feet	
DNR Well ID No.		Common Well Name		Surface Elevation 860.1 Feet	
Borehole Diameter 8.3 in		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Local Grid Location	
State Plane 3,480,768 N, 5,094,238 E S/C/N		Lat _____ ° _____ ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NW 1/4 of Section 32, T 84 N, R 17 W		Long _____ ° _____ ' _____ "		Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W	
Facility ID		County Marshall		Civil Town/City/ or Village Marshalltown	

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	36		1	POORLY GRADED SAND, fine to coarse, (10YR 4/6), (construction fill sand to fill in hydrovac hole cleared to 8 ft bgs).										
			2	Blind drilled to 8 feet.										
			3											
			4		SP									
			5											
			6											
			7											
			8	LEAN CLAY, gray (10YR 6/1), soft, plastic.	CL									
			9	SILTY SAND, fine to medium sand, brown, (10YR 4/3).	SM									
			10	POORLY GRADED SAND, fine to coarse, grayish/brown, (10YR 5/2).						M+/W				Depth to water at ~9 feet.
			11											
			12											
			13		SP									
S2	26		14	Same as above but very dark gray (10YR 3/1).						W				
			15											
				End of boring at 15.98 feet.										

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

Signature <i>Mike Mann for Nete Harris</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 <b>IPL-Sutherland Generating Station</b> SCS#: 25216149.00		License/Permit/Monitoring Number		Boring Number <b>MW-303</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Patrick Goetz Direct Push Analytical</b>		Date Drilling Started <b>11/20/2017</b>		Date Drilling Completed <b>11/20/2017</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-303</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>856.7 Feet</b>		Borehole Diameter <b>8.3 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,480,604 N, 5,096,509 E S/C/N</b>		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 <b>32</b> , T <b>84</b> N, R <b>17</b> W		Lat _____"		Long _____"	

Facility ID	County <b>Marshall</b>	Civil Town/City/ or Village <b>Marshalltown</b>
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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	POORLY GRADED SAND, fine to coarse, tan, (10YR 4/6), (construction fill sand to fill in hydrovac hole cleared to 8 ft bgs).  Blind drilled to 8 feet.	SP									
			2											
			3											
			4											
			5											
			6											
			7											
			8											
S1	24		9	POORLY GRADED SAND with few fine sub-rounded gravel, dark brown, (5YR 3/3).  End of boring at 16.31 feet.	SP									Depth to water at ~8 feet.
			10											
			11											
			12											
			13											
			14											
S2	30		15											
			16											

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

Signature <i>Mike Harms for Mike Harms</i>	Firm <b>SCS Engineers</b> 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 <b>IPL-Sutherland Generating Station SCS#: 25216149.00</b>		License/Permit/Monitoring Number		Boring Number <b>MW-304</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Patrick Goetz Direct Push Analytical</b>		Date Drilling Started <b>11/20/2017</b>		Date Drilling Completed <b>11/20/2017</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-304</b>	
Final Static Water Level <b>Feet</b>		Surface Elevation <b>857.8 Feet</b>		Borehole Diameter <b>8.3 in</b>	

Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Lat _____ " _____ "		Local Grid Location	
State Plane <b>3,480,549 N, 5,096,849 E S/C/N</b>		Long _____ " _____ "		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NE 1/4 of Section <b>32, T 84 N, R 17 W</b>		Feet <input type="checkbox"/> S		Feet <input type="checkbox"/> W	

Facility ID	County <b>Marshall</b>	Civil Town/City/ or Village <b>Marshalltown</b>
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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	30		1	POORLY GRADED SAND, fine to coarse, tan, (construction fill sand to fill in hydrovac hole).	SP											
			2	Blind drilled to 4 feet.												
S2	32		4	LEAN CLAY, brown, (7.5YR 4/3), soft, plastic, trace organic fibers.	CL											Depth to water at ~7 feet.
			5													
			6													
			7													
S3	42		12	POORLY GRADED SAND, fine to coarse, dark yellow brown, (10YR 3/6).	SM											
			13	SILTY SAND, very dark gray, (10YR 3/1), soft.												
			14													
			15													
			16	POORLY GRADED SAND with fine sub-rounded gravel, fine to coarse, dark yellow brown, (10YR 3/6).												
				End of boring at 16.30 feet.												

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

Signature <i>Mike Mann for Nade Harris</i>	Firm <b>SCS Engineers</b> 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 <b>IPL-Sutherland Generating Station</b> SCS#: 25216149.00		License/Permit/Monitoring Number		Boring Number <b>MW-305</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Patrick Goetz Direct Push Analytical</b>		Date Drilling Started <b>11/21/2017</b>		Date Drilling Completed <b>11/21/2017</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-305</b>	
		Final Static Water Level <b>Feet</b>		Surface Elevation <b>856.8 Feet</b>	
				Borehole Diameter <b>8.3 in</b>	

Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Lat _____ ° _____ ' _____ "		Local Grid Location	
State Plane <b>3,480,877 N, 5,096,835 E S/C/N</b>		Long _____ ° _____ ' _____ "		<input type="checkbox"/> N <input type="checkbox"/> E	
<b>NW 1/4 of NE 1/4 of Section 32, T 84 N, R 17 W</b>				<input type="checkbox"/> S <input type="checkbox"/> W	

Facility ID	County <b>Marshall</b>	Civil Town/City/ or Village <b>Marshalltown</b>
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Sample Number and Type	Length Alt. & 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	POORLY GRADED SAND, fine to coarse, tan, (construction fill sand to fill in hydrovac hole cleared to 7.5 ft bgs). Blind drilled to 4 feet.											
			2		SP										
			3												
			4												
S1	18		5	POORLY GRADED SAND, fine to coarse, dark yellowish brown, (10YR 4/4), (construction fill sand to fill in hydrovac hole cleared to 7.5 ft bgs).	SP					M+/W					Depth to water at ~7 feet.
			6												
			7												
			8	LEAN CLAY with trace medium to coarse sand, very dark gray, (2.5YR 3/1), medium stiffness.	CL										
S2	12		9	POORLY GRADED SAND with trace fine sub-rounded gravel, fine to coarse, light olive brown, (2.5YR 3/1 and 2.5YR 5/4).											
			10							W					
			11												
			12		SP										
			13												
S3	30		14							W					
			15												
			16												
				End of boring at 16.58 feet.											

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

Signature <i>Patrick Goetz for Node Terms</i>	Firm <b>SCS Engineers</b> 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-Sutherland Generating Station SCS#: 25216149.00		License/Permit/Monitoring Number		Boring Number MW-306	
Boring Drilled By: Name of crew chief (first, last) and Firm Patrick Goetz Direct Push Analytical		Date Drilling Started 11/21/2017		Date Drilling Completed 11/21/2017	
Unique Well No.		DNR Well ID No.		Common Well Name MW-306	
		Final Static Water Level Feet		Surface Elevation 858.2 Feet	
				Borehole Diameter 8.3 in	

Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		Lat _____ ° ' "		Local Grid Location	
State Plane 3,481,470 N, 5,096,817 E S/C/N		Long _____ ° ' "		<input type="checkbox"/> N <input type="checkbox"/> E	
NW 1/4 of NE 1/4 of Section 32, T 84 N, R 17 W		Feet <input type="checkbox"/> S		Feet <input type="checkbox"/> W	

Facility ID		County Marshall		Civil Town/City/ or Village Marshalltown	
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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	POORLY GRADED SAND, fine to coarse, tan, (construction fill sand to fill in hydrovac hole cleared to 8 ft bgs). Blind drilled to 4 feet.											
			2		SP										
			3												
			4	POORLY GRADED SAND, fine to coarse, strong brown, (7.5YR 4/6), (construction fill sand to fill in hydrovac hole cleared to 8 ft bgs).											
S1	12		5												
			6								M				
			7												
			8												
			9												
S2	12		10		SP										
			11												
			12												
			13												
S3	36		14	Same as above but dark yellowish brown color (10YR 3/4).											
			15												
			16	End of boring at 16.23 feet.											
															Depth to water at ~8 feet.


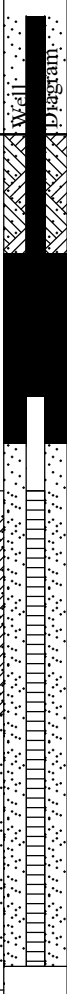
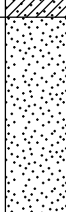
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature <i>For Nate Harris</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 <b>IPL-Sutherland Generating Station</b> SCS#: 25221243.00		License/Permit/Monitoring Number		Boring Number <b>MW-307</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Duncan List Terracon</b>			Date Drilling Started <b>11/30/2021</b>	Date Drilling Completed <b>11/30/2021</b>	Drilling Method <b>hollow stem auger</b>
Unique Well No.	DNR Well ID No.	Common Well Name <b>MW-307</b>	Final Static Water Level <b>13.3 Feet bgs</b>	Surface Elevation <b>862.3 Feet</b>	Borehole Diameter <b>8.25 in</b>
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/> State Plane <b>3,481,415 N, 5,096,028 E</b> S/C/N <b>NE 1/4 of NW 1/4 of Section 32, T 84 N, R 17 W</b>			Lat _____ ° _____ ' _____ "	Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County <b>Marshall</b>		Civil Town/City/ or Village <b>Marshalltown</b>	

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		
			1.5	Hydroexcavated to 7.5' bgs											
S1	20		9.0	SANDY CLAY, dark brown, medium stiff	CL					M					
S2	18		10.5							M					
S3	17		12.0	POORLY-GRADED SAND, fine to coarse, dense, trace gravel						W					
S4	17		15.0		SP					W					
S5	16		16.5	color change to reddish brown at 17' bgs						W					
			18.0	End of boring at 18' bgs.											

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

Signature 	Firm <b>SCS Engineers</b>	Tel: Fax:
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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name <b>IPL-Sutherland Generating Station</b> SCS#: 25221243.00		License/Permit/Monitoring Number		Boring Number <b>MW-308</b>	
Boring Drilled By: Name of crew chief (first, last) and Firm <b>Duncan List Terracon</b>		Date Drilling Started <b>11/30/2021</b>		Date Drilling Completed <b>11/30/2021</b>	
Unique Well No.		DNR Well ID No.		Common Well Name <b>MW-308</b>	
Final Static Water Level <b>11.2 Feet bgs</b>		Surface Elevation <b>860.8 Feet</b>		Borehole Diameter <b>8.25 in</b>	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane <b>3,481,182 N, 5,095,701 E S/C/N</b>		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NE 1/4 of NW 1/4 of Section 32, T 84 N, R 17 W		Lat _____ ° _____ ' _____ "		Long _____ ° _____ ' _____ "	

Facility ID	County <b>Marshall</b>	Civil Town/City/ or Village <b>Marshalltown</b>
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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						
			1.5	Hydroexcavated to 8.5'															
S1	9		9.0	POORLY GRADED SAND, medium to coarse, brown, dense															
S2	14		10.5	trace gravel	SP														
S3	15		12.0																
S4	9		15.0																
				End of boring at 16' bgs.															

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

Signature <i>James [unclear]</i>	Firm <b>SCS Engineers</b>	Tel: Fax:
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IOWA DEPARTMENT OF NATURAL RESOURCES  
**MONITORING WELL/PIEZOMETER CONSTRUCTION DOCUMENTATION FORM**

Disposal Site Name: IPL-Sutherland Generating Station Permit No.: \_\_\_\_\_

Well or Piezometer No: MW-301

Dates Started: 11/20/2017 Date Completed: 11/20/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): <u>3481477.68 N, 5094230.68 E</u>	Name & Address of Construction Company:
Specify corner of site: <u>NW of parcel 8417-32-126-002</u>	<u>Direct Push Analytical</u>
Distance & direction along boundary: <u>82' E</u>	<u>4N969 Old Lafox Rd Unit F</u>
Distance & direction from boundary to wall: <u>173' S</u>	<u>St. Charles, IL 60175</u>
Elevations ( $\pm 0.01$ ft MSL):	Name of Driller: <u>Patrick Goetz</u>
Ground Surface: <u>863.50</u>	Drilling Method: <u>4 1/4 Hollow Stem Auger</u>
Top of protective casing: <u>866.9</u>	Drilling Fluid: <u>N/A</u>
Top of well casing: _____ <u>866.61</u>	Bore Hole Diameter: <u>8.5"</u>
Benchmark elevation: <u>590.75</u>	Soil Sampling Method: <u>2" Split Spoon</u>
Benchmark description: <u>BM-001</u>	Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC</u>	Placement method: <u>Gravity</u>
Length of casing: <u>5'</u>	Volume: <u>0.66 cu ft</u>
Outside casing diameter: <u>2.38"</u>	Backfill (if different from seal): <u>N/A</u>
Inside casing diameter: <u>2"</u>	Material: <u>N/A</u>
Casing joint type: <u>Flush Threaded</u>	Placement method: <u>N/A</u>
Casing/screen joint type: <u>PVC</u>	Volume: <u>N/A</u>
Screen material: <u>PVC</u>	Surface seal design: <u>0'-0.5' bgs</u>
Screen opening size: <u>0.010"</u>	Material of protective casing: <u>Steel, 4" diameter</u>
Screen length: <u>10'</u>	Material of grout between protective casing and well casing: <u>Sand</u>
Depth of well: <u>15'</u>	Protective cap: <u>6" diameter</u>
Filter Pack: <u>3.5'-15.69' bgs</u>	Material: <u>Steel</u>
Material: <u>RW Sidley</u>	Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Grain size: <u>#5</u>	Well Cap: <u>2" diameter</u>
Volume: <u>2.1 cu ft</u>	Material: <u>Plastic with rubber gasket</u>
Seal (minimum 3 ft length above filter pack): <u>0.5'-3.5' bgs</u>	Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Material: <u>3/8" Benseal Bentonite Chips</u>	

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>12.80</u>	Stabilization Time: <u>&lt;5 min</u>
Well development method: <u>surged with bailer and pumped</u>	
Average depth of frostline: <u>4 feet</u>	

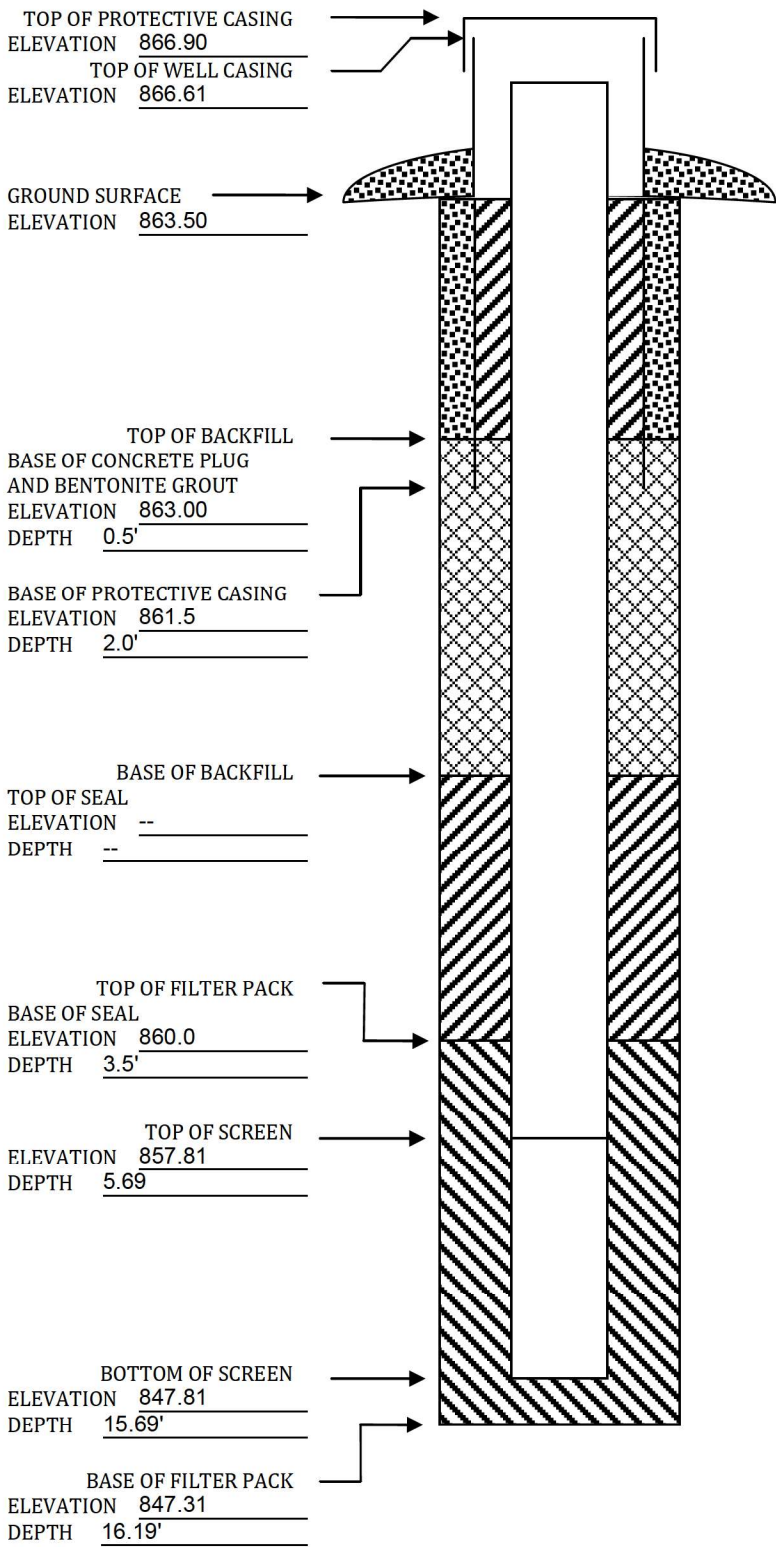
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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-Sutherland Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-302  
 Dates Started: 11/20/2017 Date Completed: 11/20/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): <u>3480767.91 N, 5094237.526 E</u> Specify corner of site: <u>SW of parcel 8417-32-126-002</u> Distance & direction along boundary: <u>324' N</u> Distance & direction from boundary to wall: <u>42' E</u> Elevations ( $\pm 0.01$ ft MSL): Ground Surface: <u>860.06</u> Top of protective casing: <u>863.32</u> Top of well casing: <u>863.08</u> Benchmark elevation: <u>590.75</u> Benchmark description: <u>BM-001</u>	Name & Address of Construction Company: <u>Direct Push Analytical</u> <u>4N969 Old Lafox Rd Unit F</u> <u>St. Charles, IL 60175</u> Name of Driller: <u>Patrick Goetz</u> Drilling Method: <u>4 1/4 Hollow Stem Auger</u> Drilling Fluid: <u>N/A</u> Bore Hole Diameter: <u>8.5"</u> Soil Sampling Method: <u>2" Split Spoon</u> Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC</u> Length of casing: <u>5'</u> Outside casing diameter: <u>2.38"</u> Inside casing diameter: <u>2"</u> Casing joint type: <u>Flush Threaded</u> Casing/screen joint type: <u>PVC</u> Screen material: <u>PVC</u> Screen opening size: <u>0.010"</u> Screen length: <u>10'</u> Depth of well: <u>15'</u> Filter Pack: <u>3.5'-15.48' bgs</u> Material: <u>RW Sidley</u> Grain size: <u>#5</u> Volume: <u>2.1 cu ft</u> Seal (minimum 3 ft length above filter pack): <u>0.5'-3.5' bgs</u> Material: <u>3/8" Benseal Bentonite Chips</u>	Placement method: <u>Gravity</u> Volume: <u>0.66 cu ft</u> Backfill (if different from seal): <u>N/A</u> Material: <u>N/A</u> Placement method: <u>N/A</u> Volume: <u>N/A</u> Surface seal design: <u>0'-0.5' bgs</u> Material of protective casing: <u>Steel, 4" diameter</u> Material of grout between protective casing and well casing: <u>Sand</u> Protective cap: <u>6" diameter</u> Material: <u>Steel</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: <u>2" diameter</u> Material: <u>Plastic with rubber gasket</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>9.10</u> Well development method: <u>surged with bailer and pumped</u> Average depth of frostline: <u>4 feet</u>	Stabilization Time: <u>&lt;5 min</u>

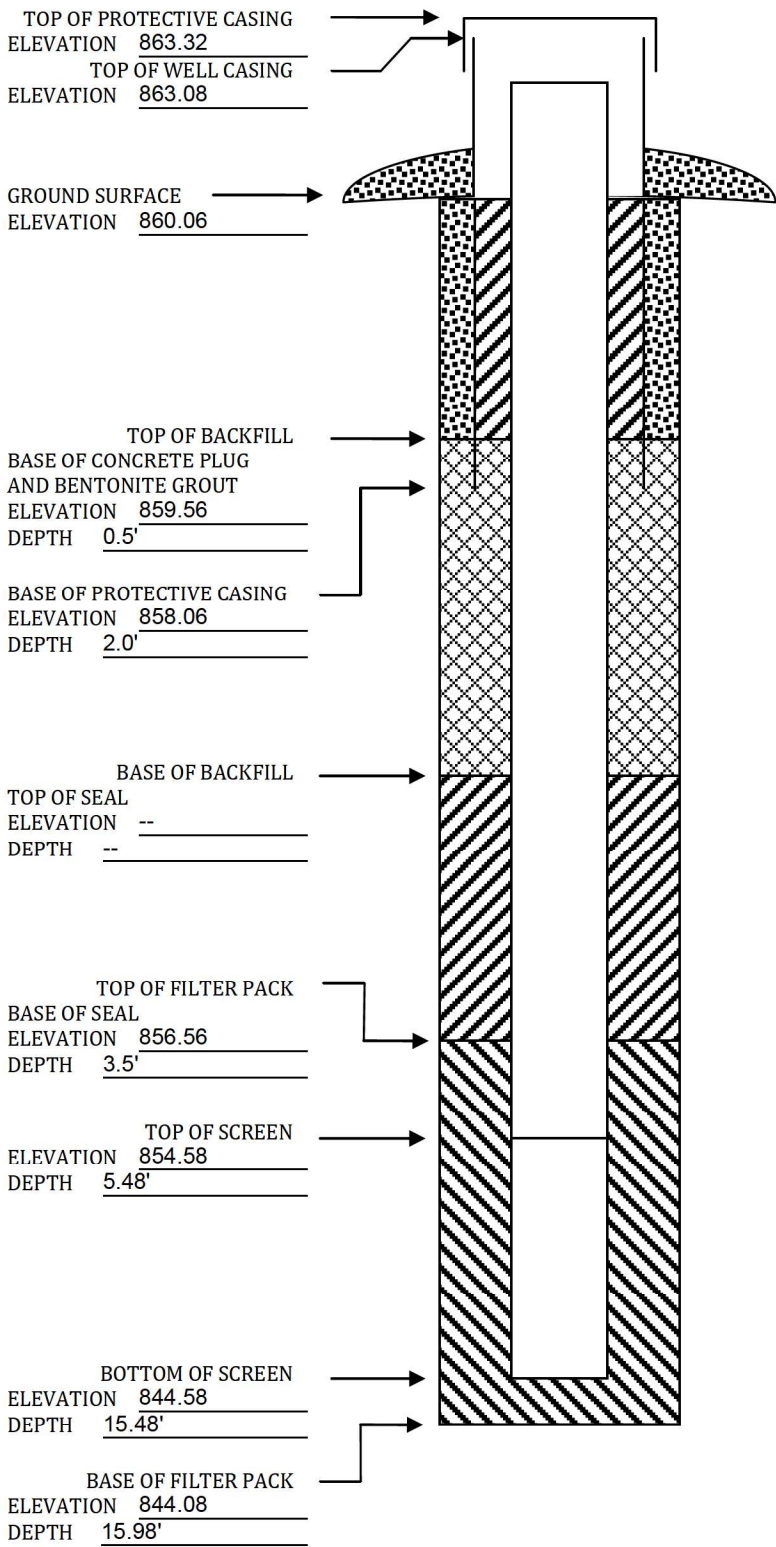
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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-Sutherland Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-303  
 Dates Started: 11/20/2017 Date Completed: 11/20/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): <u>3480604.15 N, 5096509.24 E</u> Specify corner of site: <u>SE of parcel 8417-32-126-002</u> Distance & direction along boundary: <u>326' W</u> Distance & direction from boundary to wall: <u>200' N</u> Elevations ( $\pm 0.01$ ft MSL): Ground Surface: <u>856.70</u> Top of protective casing: <u>859.74</u> Top of well casing: <u>859.54</u> Benchmark elevation: <u>590.75</u> Benchmark description: <u>BM-001</u>	Name & Address of Construction Company: <u>Direct Push Analytical</u> <u>4N969 Old Lafox Rd Unit F</u> <u>St. Charles, IL 60175</u> Name of Driller: <u>Patrick Goetz</u> Drilling Method: <u>4 1/4 Hollow Stem Auger</u> Drilling Fluid: <u>N/A</u> Bore Hole Diameter: <u>8.5"</u> Soil Sampling Method: <u>2" Split Spoon</u> Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC</u> Length of casing: <u>5'</u> Outside casing diameter: <u>2.38"</u> Inside casing diameter: <u>2"</u> Casing joint type: <u>Flush Threaded</u> Casing/screen joint type: <u>PVC</u> Screen material: <u>PVC</u> Screen opening size: <u>0.010"</u> Screen length: <u>10'</u> Depth of well: <u>15'</u> Filter Pack: <u>3.5'- 15.81' bgs</u> Material: <u>RW Sidley</u> Grain size: <u>#5</u> Volume: <u>2.1 cu ft</u> Seal (minimum 3 ft length above filter pack): <u>0.5'-3.5' bgs</u> Material: <u>3/8" Benseal Bentonite Chips</u>	Placement method: <u>Gravity</u> Volume: <u>0.66 cu ft</u> Backfill (if different from seal): <u>N/A</u> Material: <u>N/A</u> Placement method: <u>N/A</u> Volume: <u>N/A</u> Surface seal design: <u>0'-0.5' bgs</u> Material of protective casing: <u>Steel, 4" diameter</u> Material of grout between protective casing and well casing: <u>Sand</u> Protective cap: <u>6" diameter</u> Material: <u>Steel</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: <u>2" diameter</u> Material: <u>Plastic with rubber gasket</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>7.35</u> Well development method: <u>surged with bailer and pumped</u> Average depth of frostline: <u>4 feet</u>	Stabilization Time: <u>&lt;5 min</u>

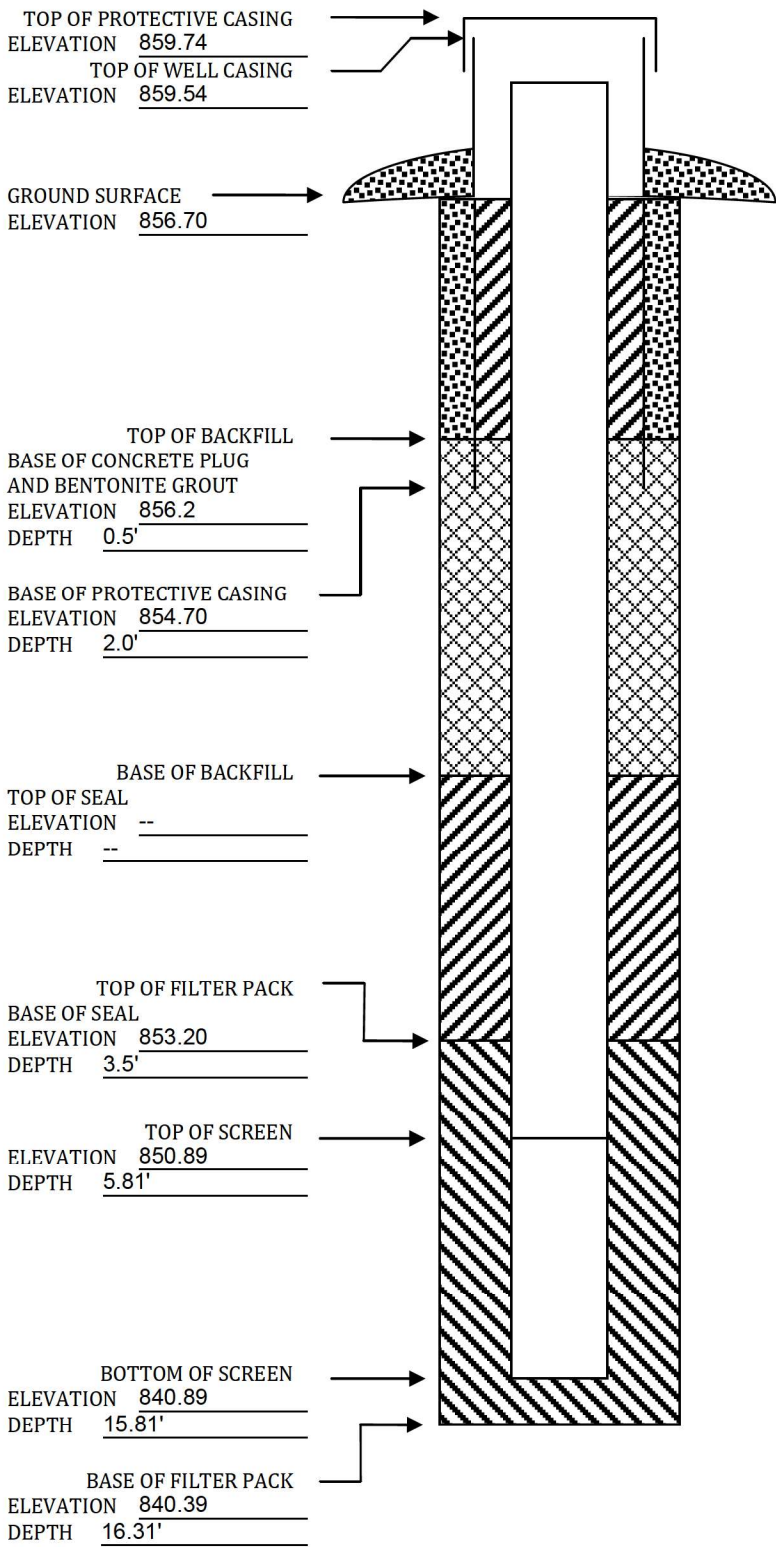
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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-Sutherland Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-304  
 Dates Started: 11/20/2017 Date Completed: 11/20/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): <u>3480548.65 N, 5096849.06 E</u> Specify corner of site: <u>SW of parcel 8417-32-200-002</u> Distance & direction along boundary: <u>156' N</u> Distance & direction from boundary to wall: <u>10' E</u> Elevations ( $\pm 0.01$ ft MSL): Ground Surface: <u>857.79</u> Top of protective casing: <u>861.06</u> Top of well casing: <u>860.79</u> Benchmark elevation: <u>590.75</u> Benchmark description: <u>BM-001</u>	Name & Address of Construction Company: <u>Direct Push Analytical</u> <u>4N969 Old Lafox Rd Unit F</u> <u>St. Charles, IL 60175</u> Name of Driller: <u>Patrick Goetz</u> Drilling Method: <u>4 1/4 Hollow Stem Auger</u> Drilling Fluid: <u>N/A</u> Bore Hole Diameter: <u>8.5"</u> Soil Sampling Method: <u>2" Split Spoon</u> Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC</u> Length of casing: <u>5'</u> Outside casing diameter: <u>2.38"</u> Inside casing diameter: <u>2"</u> Casing joint type: <u>Flush Threaded</u> Casing/screen joint type: <u>PVC</u> Screen material: <u>PVC</u> Screen opening size: <u>0.010"</u> Screen length: <u>10'</u> Depth of well: <u>15'</u> Filter Pack: <u>3.5'-15.80' bgs</u> Material: <u>RW Sidley</u> Grain size: <u>#5</u> Volume: <u>2.1 cu ft</u> Seal (minimum 3 ft length above filter pack): <u>0.5'- 3.5' bgs</u> Material: <u>3/8" Benseal Bentonite Chips</u>	Placement method: <u>Gravity</u> Volume: <u>0.66 cu ft</u> Backfill (if different from seal): <u>N/A</u> Material: <u>N/A</u> Placement method: <u>N/A</u> Volume: <u>N/A</u> Surface seal design: <u>0'-0.5' bgs</u> Material of protective casing: <u>Steel, 4" diameter</u> Material of grout between protective casing and well casing: <u>Sand</u> Protective cap: <u>6" diameter</u> Material: <u>Steel</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: <u>2" diameter</u> Material: <u>Plastic with rubber gasket</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>8.91</u> Well development method: <u>surged with bailer and pumped</u> Average depth of frostline: <u>4 feet</u>	Stabilization Time: <u>&lt;5 min</u>

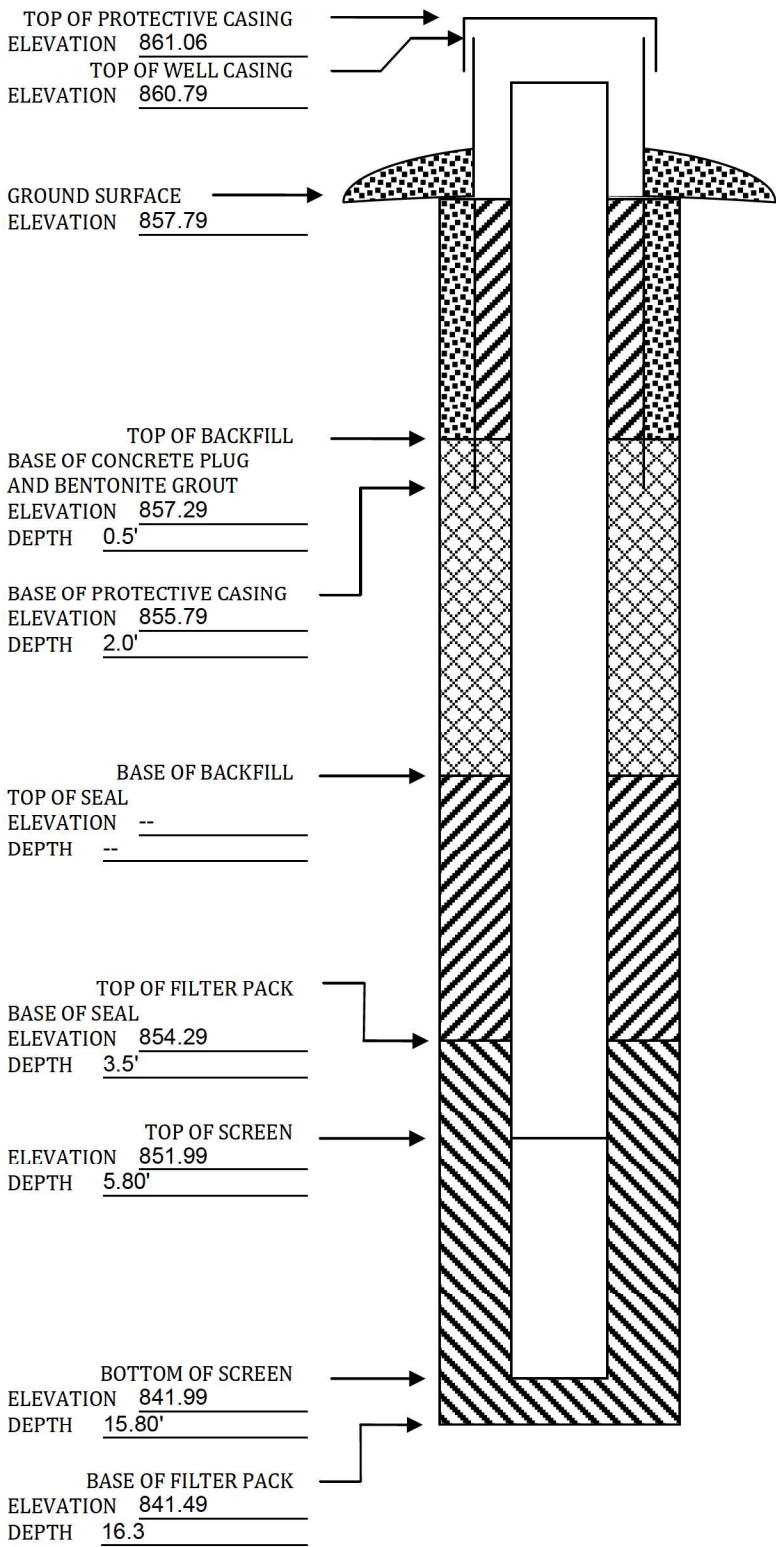
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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-Sutherland Generating Station Permit No.: \_\_\_\_\_

Well or Piezometer No: MW-305

Dates Started: 11/21/2017 Date Completed: 11/21/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): <u>3480877.26 N, 5096834.70 E</u> Specify corner of site: <u>SW of parcel 8417-32-200-002</u> Distance & direction along boundary: <u>545' N</u> Distance & direction from boundary to wall: <u>12' E</u> Elevations ( $\pm 0.01$ ft MSL): Ground Surface: <u>856.81</u> Top of protective casing: <u>860.12</u> Top of well casing: <u>859.81</u> Benchmark elevation: <u>590.75</u> Benchmark description: <u>BM-001</u>	Name & Address of Construction Company: <u>Direct Push Analytical</u> <u>4N969 Old Lafox Rd Unit F</u> <u>St. Charles, IL 60175</u> Name of Driller: <u>Patrick Goetz</u> Drilling Method: <u>4 1/4 Hollow Stem Auger</u> Drilling Fluid: <u>N/A</u> Bore Hole Diameter: <u>8.5"</u> Soil Sampling Method: <u>2" Split Spoon</u> Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: <u>PVC</u> Length of casing: <u>5'</u> Outside casing diameter: <u>2.38"</u> Inside casing diameter: <u>2"</u> Casing joint type: <u>Flush Threaded</u> Casing/screen joint type: <u>PVC</u> Screen material: <u>PVC</u> Screen opening size: <u>0.010"</u> Screen length: <u>10'</u> Depth of well: <u>15'</u> Filter Pack: <u>3.5'-16.08' bgs</u> Material: <u>RW Sidley</u> Grain size: <u>#5</u> Volume: <u>2.1 cu ft</u> Seal (minimum 3 ft length above filter pack): <u>0.5'-3.5' bgs</u> Material: <u>3/8" Benseal Bentonite Chips</u>	Placement method: <u>Gravity</u> Volume: <u>0.66 cu ft</u> Backfill (if different from seal): <u>N/A</u> Material: <u>N/A</u> Placement method: <u>N/A</u> Volume: <u>N/A</u> Surface seal design: <u>0'-0.5' bgs</u> Material of protective casing: <u>Steel, 4" diameter</u> Material of grout between protective casing and well casing: <u>Sand</u> Protective cap: <u>6" diameter</u> Material: <u>Steel</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: <u>2" diameter</u> Material: <u>Plastic with rubber gasket</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>8.24</u> Well development method: <u>surged with bailer and pumped</u> Average depth of frostline: <u>4 feet</u>	Stabilization Time: <u>&lt;5 min</u>

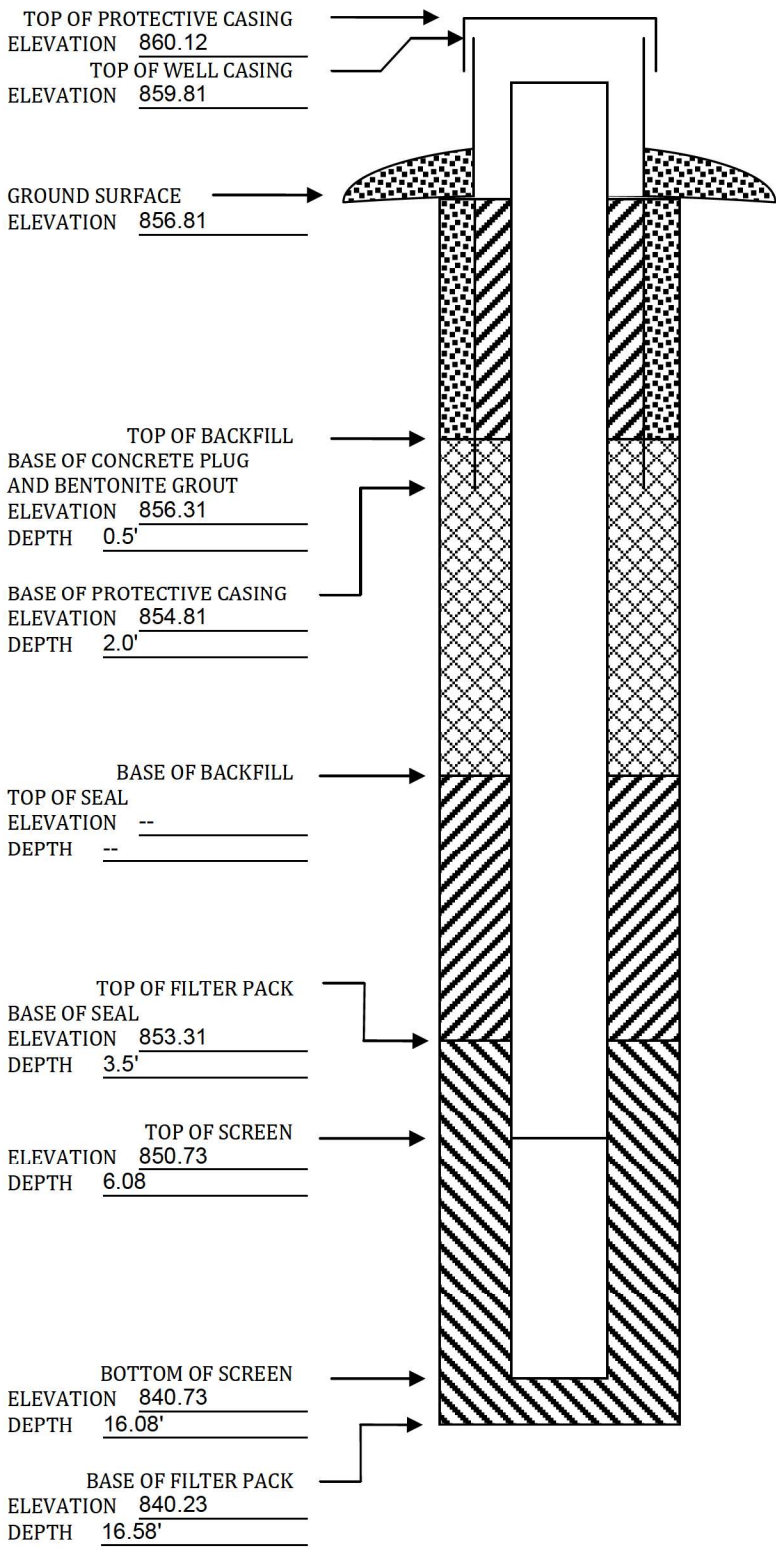
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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-Sutherland Generating Station Permit No.: \_\_\_\_\_  
 Well or Piezometer No: MW-306  
 Dates Started: 11/21/2017 Date Completed: 11/21/2017

A. SURVEYED LOCATIONS AND ELEVATIONS	B. SOIL BORING INFORMATION
Locations ( $\pm 0.5$ ft): _____ Specify corner of site: <u>NW of parcel 8417-32-200-001</u> Distance & direction along boundary: <u>222' S</u> Distance & direction from boundary to wall: <u>17' E</u> Elevations ( $\pm 0.01$ ft MSL): _____ Ground Surface: <u>858.15</u> Top of protective casing: <u>861.36</u> Top of well casing: _____ <u>861.13</u> Benchmark elevation: <u>590.75</u> Benchmark description: <u>BM-001</u>	Name & Address of Construction Company: _____ <u>Direct Push Analytical</u> <u>4N969 Old Lafox Rd Unit F</u> <u>St. Charles, IL 60175</u> Name of Driller: <u>Patrick Goetz</u> Drilling Method: <u>4 1/4 Hollow Stem Auger</u> Drilling Fluid: <u>N/A</u> Bore Hole Diameter: <u>8.5"</u> Soil Sampling Method: <u>2" Split Spoon</u> Depth of Boring: <u>16'</u>

C. MONITORING WELL INSTALLATION	
Casing material: _____ <u>PVC</u> Length of casing: _____ <u>5'</u> Outside casing diameter: _____ <u>2.38"</u> Inside casing diameter: _____ <u>2"</u> Casing joint type: _____ <u>Flush Threaded</u> Casing/screen joint type: _____ <u>PVC</u> Screen material: _____ <u>PVC</u> Screen opening size: _____ <u>0.010"</u> Screen length: _____ <u>10'</u> Depth of well: _____ <u>15'</u> Filter Pack: _____ <u>3.5'-15.73' bgs</u> Material: _____ <u>RW Sidley</u> Grain size: _____ <u>#5</u> Volume: _____ <u>2.1 cu ft</u> Seal (minimum 3 ft length above filter pack): <u>0.5'-3.5' bgs</u> Material: <u>3/8" Benseal Bentonite Chips</u>	Placement method: <u>Gravity</u> Volume: <u>0.66 cu ft</u> Backfill (if different from seal): <u>N/A</u> Material: <u>N/A</u> Placement method: <u>N/A</u> Volume: <u>N/A</u> Surface seal design: <u>0'-0.5' bgs</u> Material of protective casing: <u>Steel, 4" diameter</u> Material of grout between protective casing and well casing: <u>Sand</u> Protective cap: <u>6" diameter</u> Material: <u>Steel</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No      Locking: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Well Cap: <u>2" diameter</u> Material: <u>Plastic with rubber gasket</u> Vented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ ft below top of inner well casing)	
Water level: <u>9.77</u> Well development method: <u>surged with bailer and pumped</u> Average depth of frostline: <u>4 feet</u>	Stabilization Time: <u>&lt;5 min</u>

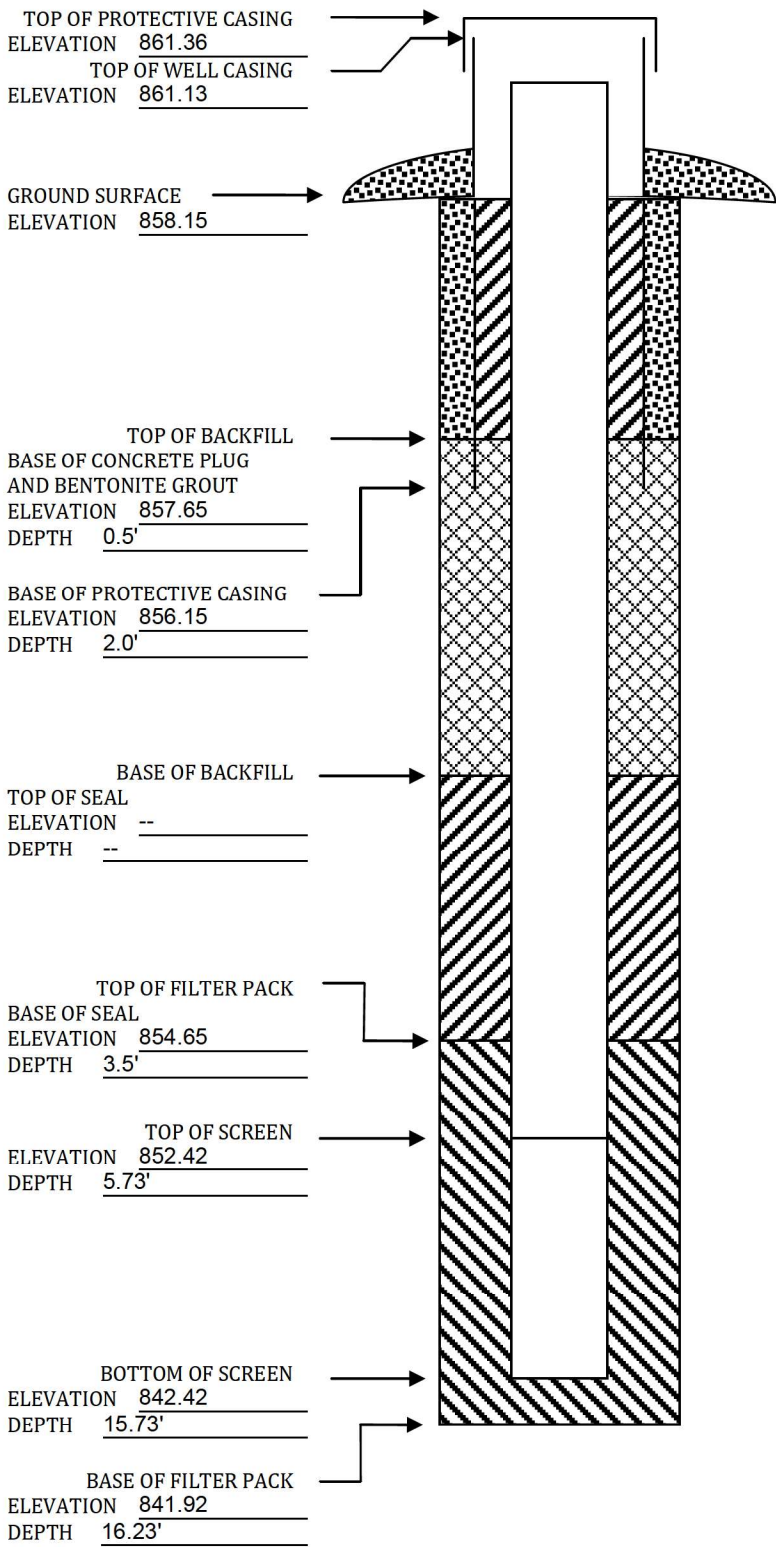
**Attachments: Driller's log, Pipe schedules and grouting schedules. 8 1/2x11 inch map showing locations of all monitoring wells and piezometers.**

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

**Questions? Call or Email:** Nina Koger, Environmental Engineer Sr., 515-281-8986, [Nina.Koger@dnr.iowa.gov](mailto: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 Sutherland Generating Station Permit No. \_\_\_\_\_ County: WP2021-1(a)  
Well or Piezometer No. MW-307 Dates Started 11/30/2021 Date Completed 11/30/2021

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

Specify corner of site NE Distance and direction along boundary 774 feet west  
Distance and direction from boundary to surface monitoring well 274 feet south  
Elevation (+0.01 ft. MSL) \_\_\_\_\_  
Ground Surface 862.27 Top of protective casing 865.1  
Top of well casing 864.87 Benchmark elevation \_\_\_\_\_  
Benchmark description \_\_\_\_\_

## B. SOIL BORING INFORMATION

Construction Company Name Terracon  
Address 2640 12th Street SW City, State, Zip Code Cedar Rapids, IA 52404  
Name of driller Duncan List  
Drilling method Hollow-stem auger Drilling fluid none Bore Hole diameter 8.25"  
Soil sampling method Split spoon Depth of boring 18'

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity - poured</u>
Length of casing <u>10'</u>	Volume <u>2.67 cu. ft.</u>
Outside casing diameter <u>2.38"</u>	Backfill (if different from seal): <u>Same as seal</u>
Inside casing diameter <u>2.01"</u>	Material _____
Casing joint type <u>Flush threaded</u>	Placement method _____
Casing/screen joint type <u>Flush threaded</u>	Volume _____
Screen material <u>PVC - factory slotted</u>	Surface seal design: _____
Screen opening size <u>0.010"</u>	Material of protective casing: <u>Steel</u>
Screen length <u>10'</u>	Material of grout between protective casing and well casing: <u>bentonite chips</u>
Depth of Well <u>17.5'</u>	Protective cap: _____
Filter Pack:	Material <u>Steel</u>
Material <u>Sand - Gillibrand Industrial</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Locking?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Grain Size _____	Well cap: _____
Volume <u>2 cu. ft.</u>	Material <u>Plastic</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 - Holeplug</u>	

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

Water level 13.24' Stabilization time <20 minutes  
Well development method Surged and purged with submersible pump. 10 well volumes removed during development.  
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.

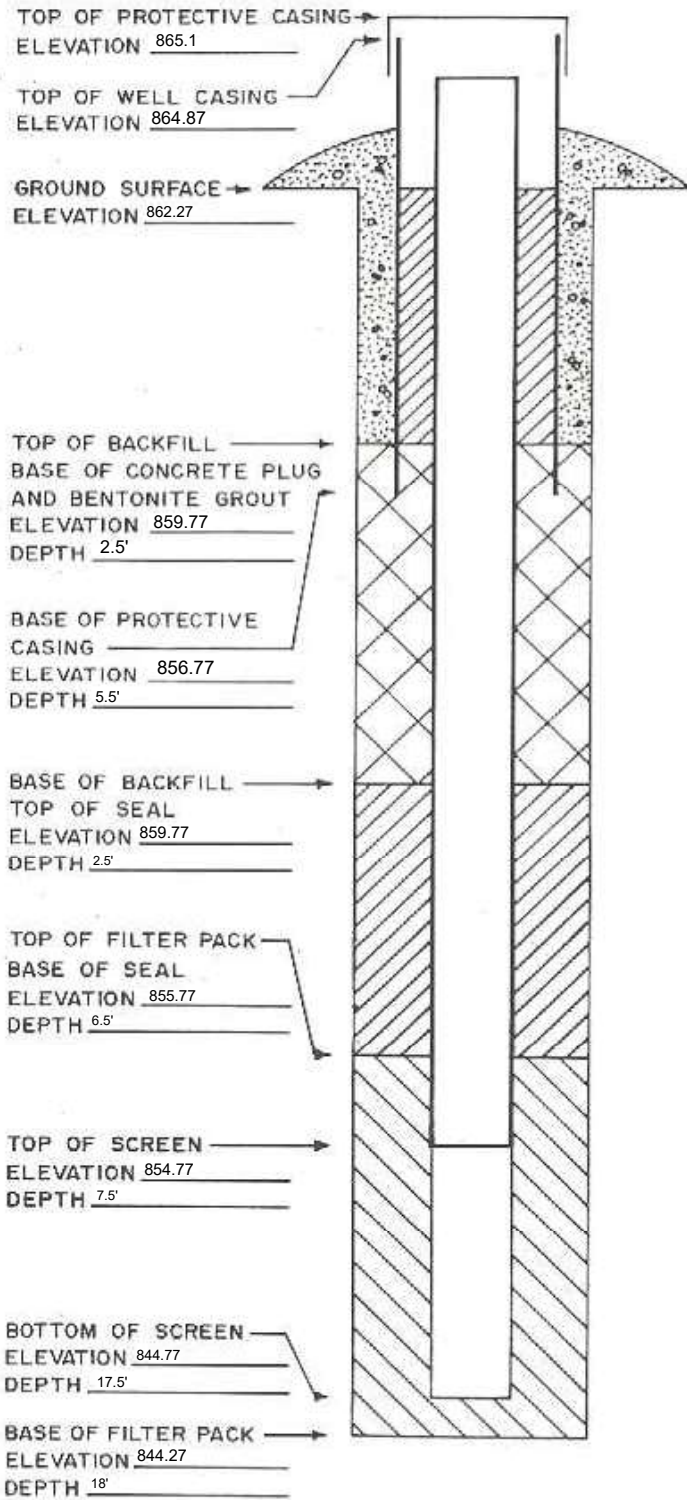
Signature  Certification # 1183 Date 12/23/21

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. 9<sup>th</sup> St, Des Moines, IA 50319.  
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, [nina.booker@dnr.iowa.gov](mailto:nina.booker@dnr.iowa.gov)

ELEVATIONS:  $\pm$  0.01 FT. MSL  
DEPTHS:  $\pm$  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 Sutherland Generating Station Permit No.                      County: WP2021-1(b)  
Well or Piezometer No. MW-308 Dates Started 11/30/2021 Date Completed 11/30/2021

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

Specify corner of site NE Distance and direction along boundary 1,101 feet west  
Distance and direction from boundary to surface monitoring well 508 feet south  
Elevation (+0.01 ft. MSL)                       
Ground Surface 860.83 Top of protective casing 863.37  
Top of well casing 863.07 Benchmark elevation                       
Benchmark description                     

## B. SOIL BORING INFORMATION

Construction Company Name Terracon  
Address 2640 12th Street SW City, State, Zip Code Cedar Rapids, IA 52404  
Name of driller Duncan List  
Drilling method Hollow-stem auger Drilling fluid none Bore Hole diameter 8.25"  
Soil sampling method Split spoon Depth of boring 16'

## C. MONITORING WELL INSTALLATION

Casing material <u>PVC</u>	Placement method <u>Gravity - poured</u>
Length of casing <u>10'</u>	Volume <u>2.67 cu. ft.</u>
Outside casing diameter <u>2.38"</u>	Backfill (if different from seal): <u>Same as seal</u>
Inside casing diameter <u>2.01"</u>	Material <u>                    </u>
Casing joint type <u>Flush threaded</u>	Placement method <u>                    </u>
Casing/screen joint type <u>Flush threaded</u>	Volume <u>                    </u>
Screen material <u>PVC - factory slotted</u>	Surface seal design: <u>                    </u>
Screen opening size <u>0.010"</u>	Material of protective casing: <u>Steel</u>
	Material of grout between protective casing and well casing: <u> bentonite chips</u>
Screen length <u>10'</u>	Protective cap: <u>                    </u>
Depth of Well <u>16'</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>Sand - Gillibrand Industrial</u>	Well cap: <u>                    </u>
Grain Size <u>                    </u>	Material <u>Plastic</u>
Volume <u>2 cu. ft.</u>	Vented?: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Seal (minimum 3 ft. length above filter pack):	
Material <u>3/8" Bentonite chips - Holeplug</u>	

## D. GROUNDWATER MEASUREMENT ( $\pm 0.01$ foot below top of inner well casing)

Water level 11.12' Stabilization time <20 minutes  
Well development method Surged and purged with submersible pump. 10 well volumes removed during development.  
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 # 11183 Date 12/23/21

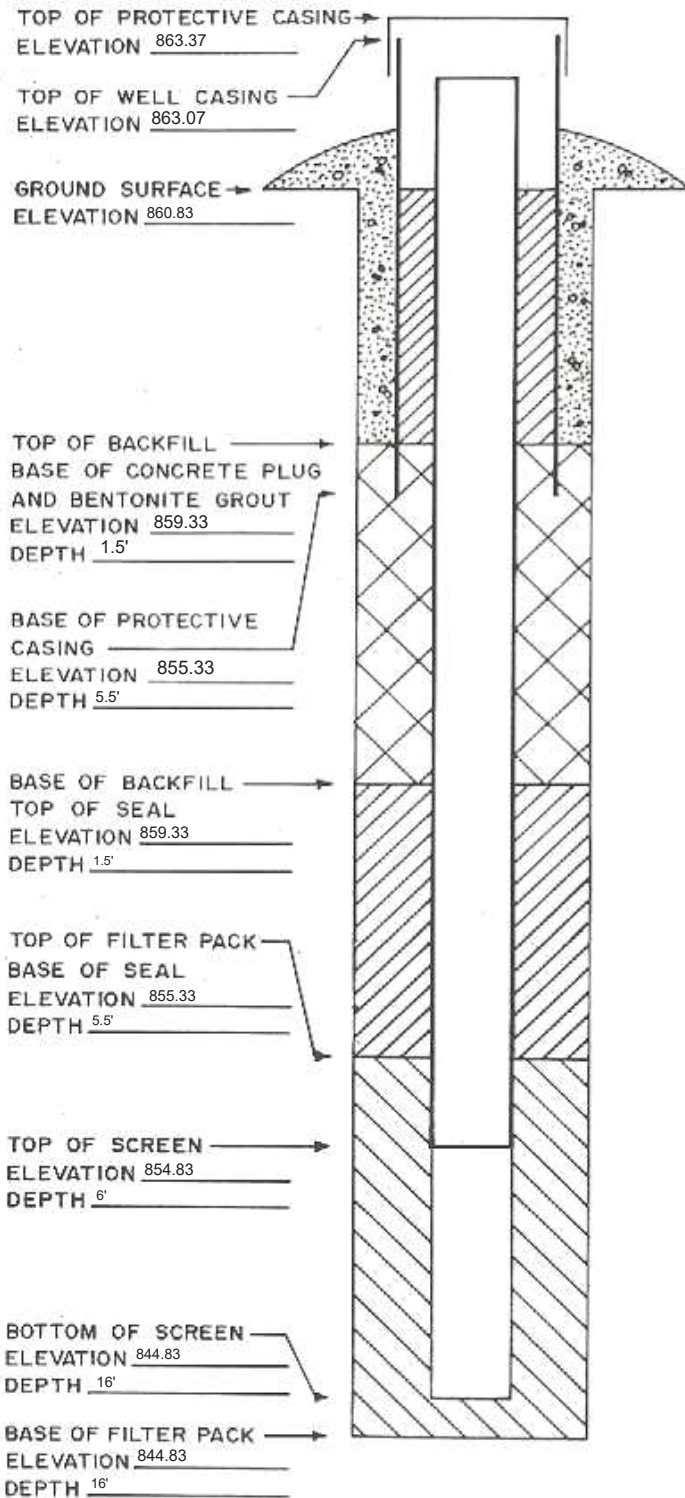
Attachments: Driller's log. Pipe schedules and grouting schedules. 8 1/2 inch x 11 inch map showing locations of all monitoring wells and piezometers.


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

ELEVATIONS: ± 0.01 FT. MSL

DEPTHS: ± 0.1 FT. FROM  
GROUND SURFACE

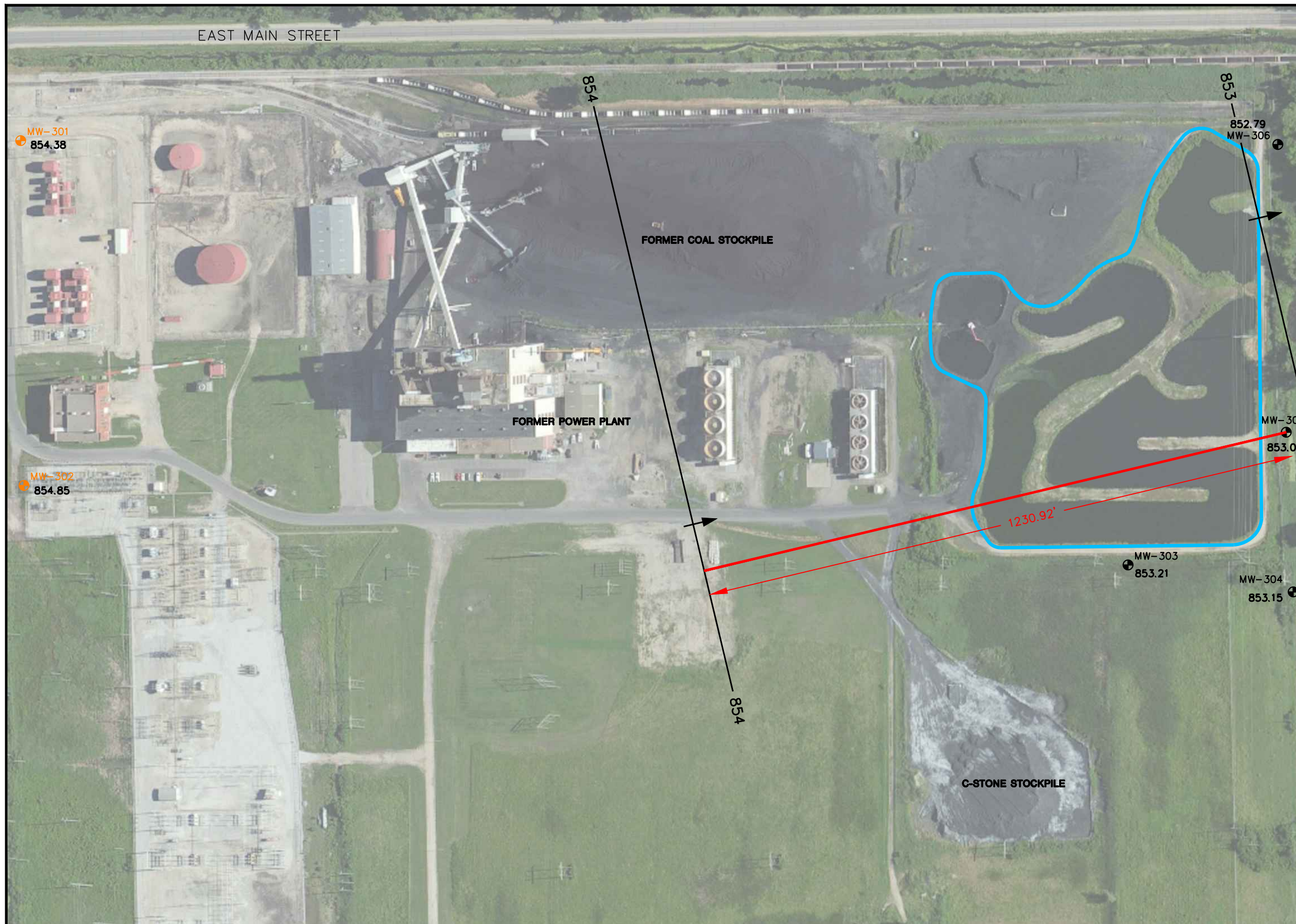
SPACE TO ATTACH ENTIRE SOIL BORING LOG  
( SHOW SCREENED INTERVAL AND FILTER PACK INTERVAL ).





## Appendix C

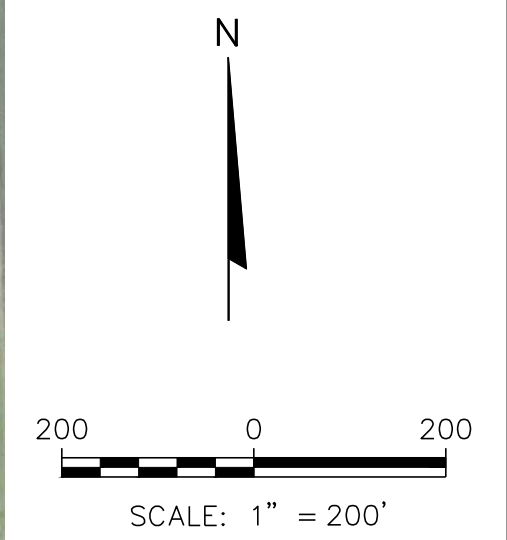
### Horizontal Gradient Measurement Locations



- LEGEND**
- CCR MONITORING WELL
  - CCR BACKGROUND MONITORING WELL
  - CCR UNITS
  - 854.38** WATER TABLE ELEVATION (APRIL 6, 2021)
  - WATER TABLE CONTOUR
  - APPROXIMATE GROUNDWATER FLOW DIRECTION

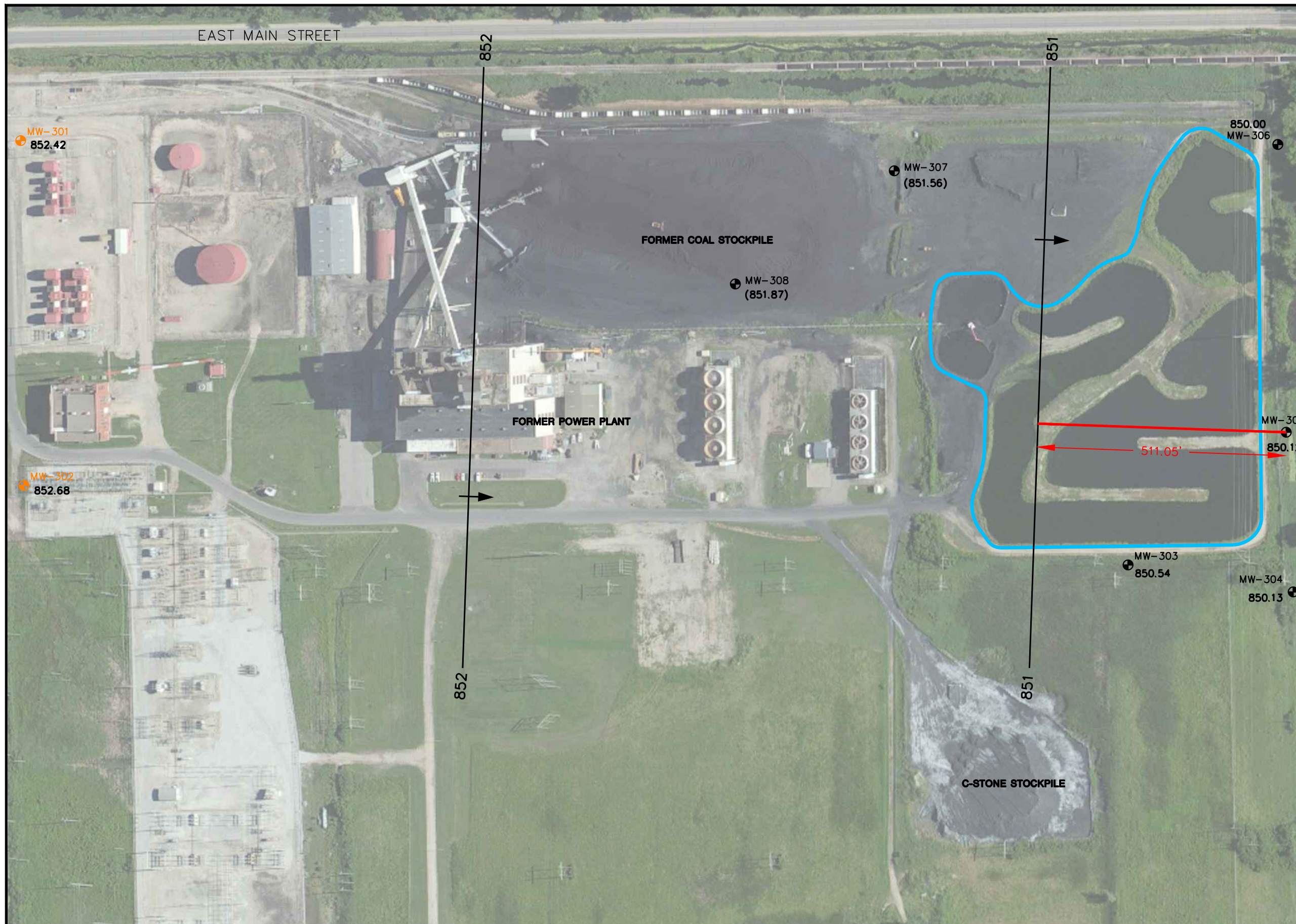
**NOTE:**

1. THE BACKGROUND MONITORING WELLS FOR THE SUTHERLAND GENERATING STATION ARE MW-301 AND MW-302.



PROJECT NO. 25222076.00	DRAWN BY: KP	<b>ENGINEER</b> <b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b> ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b> ALLIANT ENERGY SUTHERLAND GENERATING STATION MASHALLTOWN, IOWA	WATER TABLE MAP APRIL 2021	FIGURE
DRAWN: 05/12/2021	CHECKED BY: RM					3
REVISED: 06/29/2021	APPROVED BY:					

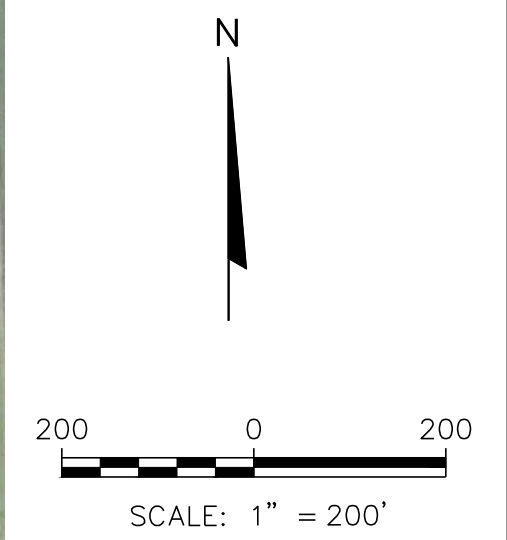
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- LEGEND**
- CCR MONITORING WELL
  - CCR BACKGROUND MONITORING WELL
  - CCR UNITS
  - 854.38** WATER TABLE ELEVATION (OCTOBER 25, 2021)
  - WATER TABLE CONTOUR
  - APPROXIMATE GROUNDWATER FLOW DIRECTION


**NOTE:**

1. THE BACKGROUND MONITORING WELLS FOR THE SUTHERLAND GENERATING STATION ARE MW-301 AND MW-302.



PROJECT NO. 25222076.00	DRAWN BY: KP	<b>ENGINEER</b>	<b>SCS ENGINEERS</b> 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	<b>CLIENT</b> ALLIANT ENERGY 4902 N. BILTMORE LANE, #1000 MADISON, WI 53718	<b>SITE</b> ALLIANT ENERGY SUTHERLAND GENERATING STATION MASHALLTOWN, IOWA	WATER TABLE MAP OCTOBER 2021	FIGURE
DRAWN: 02/17/2022	CHECKED BY: RM						4
REVISED: 02/17/2022	APPROVED BY:						

I:\25222076.00\Drawings\WTBL Maps.dwg, 2/17/2022 5:05:06 PM



Appendix D  
Analytical Laboratory Reports

## D1 February 2021 Supplemental Sampling Event

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-201015-1  
Client Project/Site: Alliant-Sutherland 25221076

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
3/5/2021 1:52:47 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

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The  
Expert**

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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: Alliant-Sutherland 25221076

Job ID: 310-201015-1

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**Job ID: 310-201015-1**

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**Laboratory: Eurofins TestAmerica, Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-201015-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 2/24/2021 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.8° C.

**Metals**

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: Alliant-Sutherland 25221076

Job ID: 310-201015-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-201015-1	MW-306	Water	02/24/21 09:36	02/24/21 18:00	
310-201015-2	Field Blank	Water	02/24/21 09:50	02/24/21 18:00	

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# Detection Summary

Client: SCS Engineers  
Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

## Client Sample ID: MW-306

## Lab Sample ID: 310-201015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Lithium	55		10	2.5	ug/L			1	6020A	Total/NA
Ground Water Elevation	850.56				ft			1	Field Sampling	Total/NA
Oxidation Reduction Potential	-38.8				millivolts			1	Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.09				mg/L			1	Field Sampling	Total/NA
pH, Field	7.61				SU			1	Field Sampling	Total/NA
Specific Conductance, Field	1479				umhos/cm			1	Field Sampling	Total/NA
Temperature, Field	11.50				Degrees C			1	Field Sampling	Total/NA
Turbidity, Field	0.02				NTU			1	Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-201015-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-201015-1**

Date Collected: 02/24/21 09:36

Matrix: Water

Date Received: 02/24/21 18:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	55		10	2.5	ug/L		03/01/21 09:00	03/02/21 14:54	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	850.56				ft			02/24/21 09:36	1
Oxidation Reduction Potential	-38.8				millivolts			02/24/21 09:36	1
Oxygen, Dissolved, Client Supplied	0.09				mg/L			02/24/21 09:36	1
pH, Field	7.61				SU			02/24/21 09:36	1
Specific Conductance, Field	1479				umhos/cm			02/24/21 09:36	1
Temperature, Field	11.50				Degrees C			02/24/21 09:36	1
Turbidity, Field	0.02				NTU			02/24/21 09:36	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-201015-2**

Date Collected: 02/24/21 09:50

Matrix: Water

Date Received: 02/24/21 18:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		03/01/21 09:00	03/02/21 14:56	1

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## Definitions/Glossary

Client: SCS Engineers  
Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

### 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: Alliant-Sutherland 25221076

Job ID: 310-201015-1

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

**Lab Sample ID: MB 310-308150/1-A**  
**Matrix: Water**  
**Analysis Batch: 308465**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 308150**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		03/01/21 09:00	03/02/21 14:14	1

**Lab Sample ID: LCS 310-308150/2-A**  
**Matrix: Water**  
**Analysis Batch: 308465**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 308150**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	400	394		ug/L		98	80 - 120



# QC Association Summary

Client: SCS Engineers  
Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

## Metals

### Prep Batch: 308150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-201015-1	MW-306	Total/NA	Water	3010A	
310-201015-2	Field Blank	Total/NA	Water	3010A	
MB 310-308150/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-308150/2-A	Lab Control Sample	Total/NA	Water	3010A	

### Analysis Batch: 308465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-201015-1	MW-306	Total/NA	Water	6020A	308150
310-201015-2	Field Blank	Total/NA	Water	6020A	308150
MB 310-308150/1-A	Method Blank	Total/NA	Water	6020A	308150
LCS 310-308150/2-A	Lab Control Sample	Total/NA	Water	6020A	308150

## Field Service / Mobile Lab

### Analysis Batch: 308123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-201015-1	MW-306	Total/NA	Water	Field Sampling	

# Lab Chronicle

Client: SCS Engineers  
 Project/Site: Alliant-Sutherland 25221076

Job ID: 310-201015-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-201015-1**

Date Collected: 02/24/21 09:36

Matrix: Water

Date Received: 02/24/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			308150	03/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	308465	03/02/21 14:54	SAD	TAL CF
Total/NA	Analysis	Field Sampling		1	308123	02/24/21 09:36	SLD	TAL CF

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-201015-2**

Date Collected: 02/24/21 09:50

Matrix: Water

Date Received: 02/24/21 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			308150	03/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	308465	03/02/21 14:56	SAD	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: Alliant-Sutherland 25221076

Job ID: 310-201015-1

## 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: Alliant-Sutherland 25221076

Job ID: 310-201015-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF

**Protocol References:**

EPA = US Environmental Protection Agency

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

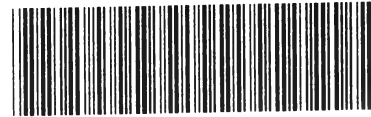
**Laboratory References:**

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





Environment Testing  
TestAmerica



310-201015 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>			
Client: <u>SCS engineers</u>			
City/State: <u>CLIVE</u>	STATE: <u>IA</u>	Project: <u>Alliant - Sutherland</u>	
<b>Receipt Information</b>			
Date/Time Received: DATE <u>2-24-21</u> TIME <u>1800</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 checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
<b>Condition of Cooler/Containers</b>			
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? ↓	
<b>Temperature Record</b>			
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</u>		
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>4.8</u>	Corrected Temp (°C): <u>4.8</u>		
• <b>Sample Container Temperature</b>			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
<b>Exceptions Noted</b>			
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			
<b>Additional Comments</b>			

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

<b>Client Information</b> Client Contact: Tanten Buszka Company: SCS Engineers Address: 8450 Hickman Road Suite 27 City: Clive State, Zip: IA, 50325 Phone: 269-943-0855 Email: tbuszka@scsengineers.com Project Name: Alliant-Sutherland 25221076 Site:		Lab PM: Fredrick, Sandie E-Mail: sandra.fredrick@eurolinset.com Carrier Tracking No(s): 310-58021-17084.1 State of Origin: Job #:	
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 25221076 WO #:		Analysis Requested Total Number of Containers:	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSC04 F - MeCH G - Amchlor H - Ascorbic Acid I - Ica J - DI Water K - EDTA L - EDA Other: 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: Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 6020A - Metals (1) <input checked="" type="checkbox"/> D	
<b>Sample Identification</b> MW-306 Field Blank		Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (w=water, s=solid, o=oil, a=air) Preservation Code: 2-24-21 9:36 G Water 2-24-21 9:50 G 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 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: Tanten Buszka Relinquished by: Tanten Buszka Relinquished by:		Method of Shipment: Date/Time: 2-24-21 12:30 Date/Time: Date/Time:	
Custody Seals Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>		Cooler Temperature(s) °C and Other Remarks:	

## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-201015-1

**Login Number: 201015**

**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.	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.	False	Logged per bottle as it was specific what metal
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	

## D2 April 2021 Assessment Monitoring



## ANALYTICAL REPORT

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

Laboratory Job ID: 310-203755-1

Client Project/Site: Sutherland Generating Station 25221076

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:  
4/16/2021 10:41:10 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

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## Job ID: 310-203755-1

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Laboratory: Eurofins TestAmerica, Cedar Falls

### Narrative

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Job Narrative  
310-203755-1

### Comments

No additional comments.

### Receipt

The samples were received on 4/7/2021 5:40 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 1.3° 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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-203755-1	MW-301	Water	04/06/21 18:10	04/07/21 17:40	
310-203755-2	MW-302	Water	04/06/21 17:17	04/07/21 17:40	
310-203755-3	MW-303	Water	04/06/21 10:28	04/07/21 17:40	
310-203755-4	MW-304	Water	04/06/21 12:30	04/07/21 17:40	
310-203755-5	MW-305	Water	04/06/21 13:55	04/07/21 17:40	
310-203755-6	MW-306	Water	04/06/21 11:25	04/07/21 17:40	
310-203755-7	Field Blank	Water	04/06/21 14:30	04/07/21 17:40	

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# Detection Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Client Sample ID: MW-301

## Lab Sample ID: 310-203755-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.5		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	160		5.0	2.5	mg/L	5		9056A	Total/NA
Barium	59		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	76	J	100	58	ug/L	1		6020A	Total/NA
Calcium	70		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.18	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	2.5	J	10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	260		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	854.38				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	180.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.16				mg/L	1		Field Sampling	Total/NA
pH, Field	6.69				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	502				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.90				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	25.1				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-203755-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.5		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	180		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	3.0		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	130		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	67	J	100	58	ug/L	1		6020A	Total/NA
Calcium	80		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	4.7		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	2.8	J	10	2.5	ug/L	1		6020A	Total/NA
Selenium	2.5	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	300		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	854.85				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	161.9				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.49				mg/L	1		Field Sampling	Total/NA
pH, Field	6.96				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	581				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	9.30				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	2.69				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-203755-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	81		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.7		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	250		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	0.96	J	2.0	0.75	ug/L	1		6020A	Total/NA
Barium	39		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	360		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.086	J	0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	80		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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Client Sample ID: MW-303 (Continued)

## Lab Sample ID: 310-203755-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.31	J	0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	17		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	11		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	340		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	853.21				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	68.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.15				mg/L	1		Field Sampling	Total/NA
pH, Field	7.04				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	601				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.00				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.55				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-203755-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	80		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.5		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	430		5.0	2.5	mg/L	5		9056A	Total/NA
Barium	16		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	570		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.15		0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	130		0.50	0.19	mg/L	1		6020A	Total/NA
Selenium	1.1	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	600		30	26	mg/L	1		SM 2540C	Total/NA
pH	6.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	853.15				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	182.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	5.83				mg/L	1		Field Sampling	Total/NA
pH, Field	6.61				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	957				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	8.40				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.79				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-203755-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	91		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.7		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	470		20	9.8	mg/L	20		9056A	Total/NA
Arsenic	6.4		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	32		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	1400		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.052	J	0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.7		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	29		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	41		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	800		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	853.02				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	69.8				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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Client Sample ID: MW-305 (Continued)

## Lab Sample ID: 310-203755-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oxygen, Dissolved, Client Supplied	0.15				mg/L	1		Field Sampling	Total/NA
pH, Field	6.68				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1171				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	10.90				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	3.44				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-306

## Lab Sample ID: 310-203755-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	95		5.0	2.2	mg/L	5		9056A	Total/NA
Fluoride	2.5		0.50	0.28	mg/L	5		9056A	Total/NA
Sulfate	710		20	9.8	mg/L	20		9056A	Total/NA
Arsenic	4.0		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	110		2.0	0.30	ug/L	1		6020A	Total/NA
Boron	3400		100	58	ug/L	1		6020A	Total/NA
Calcium	210		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.71		0.50	0.091	ug/L	1		6020A	Total/NA
Lithium	48		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	59		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	1200		30	26	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	852.79				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	-29.2				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.11				mg/L	1		Field Sampling	Total/NA
pH, Field	7.64				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1464				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	12.00				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.02				NTU	1		Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-203755-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	76	J	100	58	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.

Eurofins TestAmerica, Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-301**

**Lab Sample ID: 310-203755-1**

Date Collected: 04/06/21 18:10

Matrix: Water

Date Received: 04/07/21 17:40

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85		5.0	2.2	mg/L			04/12/21 19:47	5
Fluoride	2.5		0.50	0.28	mg/L			04/12/21 19:47	5
Sulfate	160		5.0	2.5	mg/L			04/12/21 19:47	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:22	1
Arsenic	<0.75		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:22	1
Barium	59		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:22	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:22	1
Boron	76	J	100	58	ug/L		04/09/21 09:00	04/12/21 22:22	1
Cadmium	<0.051		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:22	1
Calcium	70		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:22	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:22	1
Cobalt	0.18	J	0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:22	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:22	1
Lithium	2.5	J	10	2.5	ug/L		04/09/21 09:00	04/12/21 22:22	1
Molybdenum	<1.3		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:22	1
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:22	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:22	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:40	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		30	26	mg/L			04/13/21 10:45	1
pH	7.0	HF	0.1	0.1	SU			04/07/21 22:45	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	854.38				ft			04/06/21 18:10	1
Oxidation Reduction Potential	180.2				millivolts			04/06/21 18:10	1
Oxygen, Dissolved, Client Supplied	0.16				mg/L			04/06/21 18:10	1
pH, Field	6.69				SU			04/06/21 18:10	1
Specific Conductance, Field	502				umhos/cm			04/06/21 18:10	1
Temperature, Field	9.90				Degrees C			04/06/21 18:10	1
Turbidity, Field	25.1				NTU			04/06/21 18:10	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-302**

**Lab Sample ID: 310-203755-2**

Date Collected: 04/06/21 17:17

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85		5.0	2.2	mg/L			04/12/21 21:05	5
Fluoride	2.5		0.50	0.28	mg/L			04/12/21 21:05	5
Sulfate	180		5.0	2.5	mg/L			04/12/21 21:05	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:25	1
Arsenic	3.0		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:25	1
Barium	130		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:25	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:25	1
Boron	67	J	100	58	ug/L		04/09/21 09:00	04/12/21 22:25	1
Cadmium	<0.051		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:25	1
Calcium	80		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:25	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:25	1
Cobalt	4.7		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:25	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:25	1
Lithium	2.8	J	10	2.5	ug/L		04/09/21 09:00	04/12/21 22:25	1
Molybdenum	<1.3		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:25	1
Selenium	2.5	J	5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:25	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:25	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:42	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	300		30	26	mg/L			04/13/21 10:45	1
pH	7.2	HF	0.1	0.1	SU			04/07/21 22:46	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	854.85				ft			04/06/21 17:17	1
Oxidation Reduction Potential	161.9				millivolts			04/06/21 17:17	1
Oxygen, Dissolved, Client Supplied	0.49				mg/L			04/06/21 17:17	1
pH, Field	6.96				SU			04/06/21 17:17	1
Specific Conductance, Field	581				umhos/cm			04/06/21 17:17	1
Temperature, Field	9.30				Degrees C			04/06/21 17:17	1
Turbidity, Field	2.69				NTU			04/06/21 17:17	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-303**

**Lab Sample ID: 310-203755-3**

Date Collected: 04/06/21 10:28

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	81		5.0	2.2	mg/L			04/12/21 21:21	5
Fluoride	2.7		0.50	0.28	mg/L			04/12/21 21:21	5
Sulfate	250		5.0	2.5	mg/L			04/12/21 21:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:27	1
Arsenic	0.96	J	2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:27	1
Barium	39		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:27	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:27	1
Boron	360		100	58	ug/L		04/09/21 09:00	04/12/21 22:27	1
Cadmium	0.086	J	0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:27	1
Calcium	80		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:27	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:27	1
Cobalt	0.31	J	0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:27	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:27	1
Lithium	17		10	2.5	ug/L		04/09/21 09:00	04/12/21 22:27	1
Molybdenum	11		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:27	1
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:27	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:27	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:45	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		30	26	mg/L			04/13/21 10:45	1
pH	7.3	HF	0.1	0.1	SU			04/07/21 22:47	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	853.21				ft			04/06/21 10:28	1
Oxidation Reduction Potential	68.5				millivolts			04/06/21 10:28	1
Oxygen, Dissolved, Client Supplied	0.15				mg/L			04/06/21 10:28	1
pH, Field	7.04				SU			04/06/21 10:28	1
Specific Conductance, Field	601				umhos/cm			04/06/21 10:28	1
Temperature, Field	8.00				Degrees C			04/06/21 10:28	1
Turbidity, Field	3.55				NTU			04/06/21 10:28	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-304**

**Lab Sample ID: 310-203755-4**

Date Collected: 04/06/21 12:30

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	80		5.0	2.2	mg/L			04/12/21 21:37	5
Fluoride	2.5		0.50	0.28	mg/L			04/12/21 21:37	5
Sulfate	430		5.0	2.5	mg/L			04/12/21 21:37	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:30	1
Arsenic	<0.75		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:30	1
Barium	16		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:30	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:30	1
Boron	570		100	58	ug/L		04/09/21 09:00	04/12/21 22:30	1
Cadmium	0.15		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:30	1
Calcium	130		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:30	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:30	1
Cobalt	<0.091		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:30	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:30	1
Lithium	<2.5		10	2.5	ug/L		04/09/21 09:00	04/12/21 22:30	1
Molybdenum	<1.3		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:30	1
Selenium	1.1	J	5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:30	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:30	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:47	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	600		30	26	mg/L			04/13/21 10:45	1
pH	6.8	HF	0.1	0.1	SU			04/07/21 22:48	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	853.15				ft			04/06/21 12:30	1
Oxidation Reduction Potential	182.1				millivolts			04/06/21 12:30	1
Oxygen, Dissolved, Client Supplied	5.83				mg/L			04/06/21 12:30	1
pH, Field	6.61				SU			04/06/21 12:30	1
Specific Conductance, Field	957				umhos/cm			04/06/21 12:30	1
Temperature, Field	8.40				Degrees C			04/06/21 12:30	1
Turbidity, Field	0.79				NTU			04/06/21 12:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-305**

**Lab Sample ID: 310-203755-5**

Date Collected: 04/06/21 13:55

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	91		5.0	2.2	mg/L			04/12/21 21:52	5
Fluoride	2.7		0.50	0.28	mg/L			04/12/21 21:52	5
Sulfate	470		20	9.8	mg/L			04/13/21 08:16	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:35	1
Arsenic	6.4		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:35	1
Barium	32		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:35	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:35	1
Boron	1400		100	58	ug/L		04/09/21 09:00	04/12/21 22:35	1
Cadmium	0.052	J	0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:35	1
Calcium	150		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:35	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:35	1
Cobalt	1.7		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:35	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:35	1
Lithium	29		10	2.5	ug/L		04/09/21 09:00	04/12/21 22:35	1
Molybdenum	41		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:35	1
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:35	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:35	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:49	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	800		30	26	mg/L			04/13/21 10:45	1
pH	7.0	HF	0.1	0.1	SU			04/07/21 22:50	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	853.02				ft			04/06/21 13:55	1
Oxidation Reduction Potential	69.8				millivolts			04/06/21 13:55	1
Oxygen, Dissolved, Client Supplied	0.15				mg/L			04/06/21 13:55	1
pH, Field	6.68				SU			04/06/21 13:55	1
Specific Conductance, Field	1171				umhos/cm			04/06/21 13:55	1
Temperature, Field	10.90				Degrees C			04/06/21 13:55	1
Turbidity, Field	3.44				NTU			04/06/21 13:55	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-203755-6**

Date Collected: 04/06/21 11:25

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95		5.0	2.2	mg/L			04/12/21 22:08	5
Fluoride	2.5		0.50	0.28	mg/L			04/12/21 22:08	5
Sulfate	710		20	9.8	mg/L			04/13/21 08:31	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:38	1
Arsenic	4.0		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:38	1
Barium	110		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:38	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:38	1
Boron	3400		100	58	ug/L		04/09/21 09:00	04/12/21 22:38	1
Cadmium	<0.051		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:38	1
Calcium	210		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:38	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:38	1
Cobalt	0.71		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:38	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:38	1
Lithium	48		10	2.5	ug/L		04/09/21 09:00	04/12/21 22:38	1
Molybdenum	59		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:38	1
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:38	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:38	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 15:51	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1200		30	26	mg/L			04/13/21 10:45	1
pH	7.8	HF	0.1	0.1	SU			04/07/21 22:51	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	852.79				ft			04/06/21 11:25	1
Oxidation Reduction Potential	-29.2				millivolts			04/06/21 11:25	1
Oxygen, Dissolved, Client Supplied	0.11				mg/L			04/06/21 11:25	1
pH, Field	7.64				SU			04/06/21 11:25	1
Specific Conductance, Field	1464				umhos/cm			04/06/21 11:25	1
Temperature, Field	12.00				Degrees C			04/06/21 11:25	1
Turbidity, Field	0.02				NTU			04/06/21 11:25	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-203755-7**

Date Collected: 04/06/21 14:30

Matrix: Water

Date Received: 04/07/21 17:40

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			04/12/21 22:24	1
Fluoride	<0.055		0.10	0.055	mg/L			04/12/21 22:24	1
Sulfate	<0.49		1.0	0.49	mg/L			04/12/21 22:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:41	1
Arsenic	<0.75		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 22:41	1
Barium	<0.30		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 22:41	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 22:41	1
<b>Boron</b>	<b>76 J</b>		100	58	ug/L		04/09/21 09:00	04/12/21 22:41	1
Cadmium	<0.051		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 22:41	1
Calcium	<0.19		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 22:41	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 22:41	1
Cobalt	<0.091		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 22:41	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 22:41	1
Lithium	<2.5		10	2.5	ug/L		04/09/21 09:00	04/12/21 22:41	1
Molybdenum	<1.3		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 22:41	1
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 22:41	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 22:41	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 16:00	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		30	26	mg/L			04/13/21 10:45	1
<b>pH</b>	<b>6.4</b>	<b>HF</b>	0.1	0.1	SU			04/07/21 22:57	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Qualifiers

### HPLC/IC

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.

### 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
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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-312915/3**  
**Matrix: Water**  
**Analysis Batch: 312915**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			04/12/21 19:16	1
Fluoride	<0.055		0.10	0.055	mg/L			04/12/21 19:16	1
Sulfate	<0.49		1.0	0.49	mg/L			04/12/21 19:16	1

**Lab Sample ID: LCS 310-312915/4**  
**Matrix: Water**  
**Analysis Batch: 312915**

**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	9.30		mg/L		93	90 - 110
Fluoride	2.00	2.03		mg/L		101	90 - 110
Sulfate	10.0	9.94		mg/L		99	90 - 110

**Lab Sample ID: 310-203755-1 MS**  
**Matrix: Water**  
**Analysis Batch: 312915**

**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
Chloride	85		25.0	109		mg/L		96	80 - 120
Fluoride	2.5		5.00	7.28		mg/L		96	80 - 120
Sulfate	160		25.0	181	4	mg/L		98	80 - 120

**Lab Sample ID: 310-203755-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 312915**

**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
Chloride	85		25.0	109		mg/L		95	80 - 120	0	15
Fluoride	2.5		5.00	7.31		mg/L		97	80 - 120	0	15
Sulfate	160		25.0	181	4	mg/L		96	80 - 120	0	15

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

**Lab Sample ID: MB 310-312038/1-A**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		04/09/21 09:00	04/12/21 21:39	1
Arsenic	<0.75		2.0	0.75	ug/L		04/09/21 09:00	04/12/21 21:39	1
Barium	<0.30		2.0	0.30	ug/L		04/09/21 09:00	04/12/21 21:39	1
Beryllium	<0.27		1.0	0.27	ug/L		04/09/21 09:00	04/12/21 21:39	1
Boron	<58		100	58	ug/L		04/09/21 09:00	04/12/21 21:39	1
Cadmium	<0.051		0.10	0.051	ug/L		04/09/21 09:00	04/12/21 21:39	1
Calcium	<0.19		0.50	0.19	mg/L		04/09/21 09:00	04/12/21 21:39	1
Chromium	<1.1		5.0	1.1	ug/L		04/09/21 09:00	04/12/21 21:39	1
Cobalt	<0.091		0.50	0.091	ug/L		04/09/21 09:00	04/12/21 21:39	1
Lead	<0.21		0.50	0.21	ug/L		04/09/21 09:00	04/12/21 21:39	1
Lithium	<2.5		10	2.5	ug/L		04/09/21 09:00	04/12/21 21:39	1
Molybdenum	<1.3		2.0	1.3	ug/L		04/09/21 09:00	04/12/21 21:39	1

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

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

**Lab Sample ID: MB 310-312038/1-A**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.96		5.0	0.96	ug/L		04/09/21 09:00	04/12/21 21:39	1
Thallium	<0.26		1.0	0.26	ug/L		04/09/21 09:00	04/12/21 21:39	1

**Lab Sample ID: LCS 310-312038/2-A**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	200	197		ug/L		99	80 - 120
Arsenic	200	196		ug/L		98	80 - 120
Barium	100	105		ug/L		105	80 - 120
Beryllium	100	106		ug/L		106	80 - 120
Boron	200	216		ug/L		108	80 - 120
Cadmium	100	101		ug/L		101	80 - 120
Calcium	2.00	1.80		mg/L		90	80 - 120
Chromium	100	104		ug/L		104	80 - 120
Cobalt	100	107		ug/L		107	80 - 120
Lead	200	215		ug/L		107	80 - 120
Lithium	200	200		ug/L		100	80 - 120
Molybdenum	200	210		ug/L		105	80 - 120
Selenium	400	383		ug/L		96	80 - 120
Thallium	200	200		ug/L		100	80 - 120

**Lab Sample ID: 310-203755-4 DU**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<1.1		<1.1		ug/L		NC	20
Arsenic	<0.75		<0.75		ug/L		NC	20
Barium	16		16.8		ug/L		3	20
Beryllium	<0.27		<0.27		ug/L		NC	20
Boron	570		600		ug/L		5	20
Cadmium	0.15		0.160		ug/L		8	20
Calcium	130		130		mg/L		2	20
Chromium	<1.1		<1.1		ug/L		NC	20
Cobalt	<0.091		<0.091		ug/L		NC	20
Lead	<0.21		<0.21		ug/L		NC	20
Lithium	<2.5		<2.5		ug/L		NC	20
Molybdenum	<1.3		<1.3		ug/L		NC	20
Selenium	1.1 J		1.15 J		ug/L		8	20
Thallium	<0.26		<0.26		ug/L		NC	20

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-312722/1-A  
 Matrix: Water  
 Analysis Batch: 312918

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 312722

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		04/14/21 15:10	04/15/21 14:56	1

Lab Sample ID: LCS 310-312722/2-A  
 Matrix: Water  
 Analysis Batch: 312918

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 312722

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.67	1.59		ug/L		95	80 - 120

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

Lab Sample ID: MB 310-312519/1  
 Matrix: Water  
 Analysis Batch: 312519

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			04/13/21 10:45	1

Lab Sample ID: LCS 310-312519/2  
 Matrix: Water  
 Analysis Batch: 312519

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	952		mg/L		95	90 - 110

Lab Sample ID: 310-203755-3 DU  
 Matrix: Water  
 Analysis Batch: 312519

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	340		360		mg/L		6	20

## Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-311952/1  
 Matrix: Water  
 Analysis Batch: 311952

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

# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## HPLC/IC

### Analysis Batch: 312915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	9056A	
310-203755-2	MW-302	Total/NA	Water	9056A	
310-203755-3	MW-303	Total/NA	Water	9056A	
310-203755-4	MW-304	Total/NA	Water	9056A	
310-203755-5	MW-305	Total/NA	Water	9056A	
310-203755-5	MW-305	Total/NA	Water	9056A	
310-203755-6	MW-306	Total/NA	Water	9056A	
310-203755-6	MW-306	Total/NA	Water	9056A	
310-203755-7	Field Blank	Total/NA	Water	9056A	
MB 310-312915/3	Method Blank	Total/NA	Water	9056A	
LCS 310-312915/4	Lab Control Sample	Total/NA	Water	9056A	
310-203755-1 MS	MW-301	Total/NA	Water	9056A	
310-203755-1 MSD	MW-301	Total/NA	Water	9056A	

## Metals

### Prep Batch: 312038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	3010A	
310-203755-2	MW-302	Total/NA	Water	3010A	
310-203755-3	MW-303	Total/NA	Water	3010A	
310-203755-4	MW-304	Total/NA	Water	3010A	
310-203755-5	MW-305	Total/NA	Water	3010A	
310-203755-6	MW-306	Total/NA	Water	3010A	
310-203755-7	Field Blank	Total/NA	Water	3010A	
MB 310-312038/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-312038/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-203755-4 DU	MW-304	Total/NA	Water	3010A	

### Analysis Batch: 312483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	6020A	312038
310-203755-2	MW-302	Total/NA	Water	6020A	312038
310-203755-3	MW-303	Total/NA	Water	6020A	312038
310-203755-4	MW-304	Total/NA	Water	6020A	312038
310-203755-5	MW-305	Total/NA	Water	6020A	312038
310-203755-6	MW-306	Total/NA	Water	6020A	312038
310-203755-7	Field Blank	Total/NA	Water	6020A	312038
MB 310-312038/1-A	Method Blank	Total/NA	Water	6020A	312038
LCS 310-312038/2-A	Lab Control Sample	Total/NA	Water	6020A	312038
310-203755-4 DU	MW-304	Total/NA	Water	6020A	312038

### Prep Batch: 312722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	7470A	
310-203755-2	MW-302	Total/NA	Water	7470A	
310-203755-3	MW-303	Total/NA	Water	7470A	
310-203755-4	MW-304	Total/NA	Water	7470A	
310-203755-5	MW-305	Total/NA	Water	7470A	
310-203755-6	MW-306	Total/NA	Water	7470A	
310-203755-7	Field Blank	Total/NA	Water	7470A	

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Metals (Continued)

### Prep Batch: 312722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-312722/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-312722/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 312918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	7470A	312722
310-203755-2	MW-302	Total/NA	Water	7470A	312722
310-203755-3	MW-303	Total/NA	Water	7470A	312722
310-203755-4	MW-304	Total/NA	Water	7470A	312722
310-203755-5	MW-305	Total/NA	Water	7470A	312722
310-203755-6	MW-306	Total/NA	Water	7470A	312722
310-203755-7	Field Blank	Total/NA	Water	7470A	312722
MB 310-312722/1-A	Method Blank	Total/NA	Water	7470A	312722
LCS 310-312722/2-A	Lab Control Sample	Total/NA	Water	7470A	312722

## General Chemistry

### Analysis Batch: 311952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-203755-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-203755-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-203755-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-203755-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-203755-6	MW-306	Total/NA	Water	SM 4500 H+ B	
310-203755-7	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-311952/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 312519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	SM 2540C	
310-203755-2	MW-302	Total/NA	Water	SM 2540C	
310-203755-3	MW-303	Total/NA	Water	SM 2540C	
310-203755-4	MW-304	Total/NA	Water	SM 2540C	
310-203755-5	MW-305	Total/NA	Water	SM 2540C	
310-203755-6	MW-306	Total/NA	Water	SM 2540C	
310-203755-7	Field Blank	Total/NA	Water	SM 2540C	
MB 310-312519/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-312519/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-203755-3 DU	MW-303	Total/NA	Water	SM 2540C	

## Field Service / Mobile Lab

### Analysis Batch: 312651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	Field Sampling	
310-203755-2	MW-302	Total/NA	Water	Field Sampling	
310-203755-3	MW-303	Total/NA	Water	Field Sampling	
310-203755-4	MW-304	Total/NA	Water	Field Sampling	
310-203755-5	MW-305	Total/NA	Water	Field Sampling	
310-203755-6	MW-306	Total/NA	Water	Field Sampling	

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# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Client Sample ID: MW-301

Date Collected: 04/06/21 18:10

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 19:47	SAD	TAL CF
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:22	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:40	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:45	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 18:10	SLD	TAL CF

## Client Sample ID: MW-302

Date Collected: 04/06/21 17:17

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 21:05	SAD	TAL CF
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:25	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:42	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:46	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 17:17	SLD	TAL CF

## Client Sample ID: MW-303

Date Collected: 04/06/21 10:28

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 21:21	SAD	TAL CF
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:27	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:45	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:47	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 10:28	SLD	TAL CF

## Client Sample ID: MW-304

Date Collected: 04/06/21 12:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 21:37	SAD	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## Client Sample ID: MW-304

Date Collected: 04/06/21 12:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:30	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:47	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:48	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 12:30	SLD	TAL CF

## Client Sample ID: MW-305

Date Collected: 04/06/21 13:55

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 21:52	SAD	TAL CF
Total/NA	Analysis	9056A		20	312915	04/13/21 08:16	SAD	TAL CF
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:35	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:49	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:50	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 13:55	SLD	TAL CF

## Client Sample ID: MW-306

Date Collected: 04/06/21 11:25

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	312915	04/12/21 22:08	SAD	TAL CF
Total/NA	Analysis	9056A		20	312915	04/13/21 08:31	SAD	TAL CF
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:38	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 15:51	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:51	JMH	TAL CF
Total/NA	Analysis	Field Sampling		1	312651	04/06/21 11:25	SLD	TAL CF

## Client Sample ID: Field Blank

Date Collected: 04/06/21 14:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	312915	04/12/21 22:24	SAD	TAL CF

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# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-203755-7**

**Date Collected: 04/06/21 14:30**

**Matrix: Water**

**Date Received: 04/07/21 17:40**

<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	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:41	SAD	TAL CF
Total/NA	Prep	7470A			312722	04/14/21 15:10	HED	TAL CF
Total/NA	Analysis	7470A		1	312918	04/15/21 16:00	HED	TAL CF
Total/NA	Analysis	SM 2540C		1	312519	04/13/21 10:45	SAS	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	311952	04/07/21 22:57	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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

## 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: Sutherland Generating Station 25221076

Job ID: 310-203755-1

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



Environment Testing  
TestAmerica



310-203755 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generation</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
Temp Blank Temperature - If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>1.3</b>	Corrected Temp (°C):	<b>1.3</b>
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			



Environment Testing  
TestAmerica

Place COC scanning label here

### Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generating</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>0.7</b>	Corrected Temp (°C):	<b>0.7</b>
• 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			

<b>Client Information</b>		Lab PIV: <b>Frederick Sandie</b>		COC No: <b>310-59474-15058-1</b>	
Client Contact: <b>Tanthen Buszka</b>		E-Mail: <b>sandra.fredrick@eurofins.com</b>		Page: <b>Page 1 of 1</b>	
Company: <b>SCS Engineers</b>		Phone: <b>764-443-0855</b>		Job #: _____	
Address: <b>8450 Hickman Road, Suite 27</b>		City: _____		State of Origin: _____	
City: _____		State: _____		Carrier Tracking Num: _____	
Country: _____		Zip: _____		Analysis Requested: _____	
Phone: <b>764-443-0855</b>		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		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: _____ M - Hexane N - N/A O - AsHClO2 P - Na2OHS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4.5 X - other (specify)	
Email: <b>louiszka@scsengineers.com</b>		Project #:		Total Number of Containers: _____	
Project Name: <b>Sutherland</b>		31011020		Special Instructions/Note: _____	
Site: <b>Sutherland</b>		350W4		_____	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	503 0 504 0	502A Metals (1)	500C Calc, 985A ORGFM, 38D SM4500 H+
MW-301	4-6-21	18:10	G	Water	X	X	X	X	X
MW-302	4-6-21	17:17	G	Water	X	X	X	X	X
MW-303	4-6-21	16:28	G	Water	X	X	X	X	X
MW-304	4-6-21	12:30	G	Water	X	X	X	X	X
MW-305	4-6-21	13:55	G	Water	X	X	X	X	X
MW-306	4-6-21	11:25	G	Water	X	X	X	X	X
Field Blank	4-6-21	14:30	G	Water	X	X	X	X	X

**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

**Deliverable Requested: I, II, III, IV, Other (specify)**

**Empty Kit Relinquished by** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Relinquished by** **Tanthen Buszka** **Date/Time** \_\_\_\_\_ **Company** **SCS**

**Relinquished by** \_\_\_\_\_ **Date/Time** \_\_\_\_\_ **Company** \_\_\_\_\_

**Relinquished by** \_\_\_\_\_ **Date/Time** \_\_\_\_\_ **Company** \_\_\_\_\_

**Custody Seals Intact:**  Yes  No **Custody Seal No.:** \_\_\_\_\_

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

**Special Instructions/QC Requirements**

**Method of Shipment** \_\_\_\_\_ **Date/Time** \_\_\_\_\_ **Company** \_\_\_\_\_

**Received by** \_\_\_\_\_ **Date/Time** \_\_\_\_\_ **Company** \_\_\_\_\_

**Received by** \_\_\_\_\_ **Date/Time** \_\_\_\_\_ **Company** \_\_\_\_\_

**Cooler Temperature(s) °C and Other Remarks:** \_\_\_\_\_



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL
Appendix III Parameters	Boron	x	x	x	x	x	x	x	7
	Calcium	x	x	x	x	x	x	x	7
	Chloride	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	pH	x	x	x	x	x	x	x	7
	Sulfate	x	x	x	x	x	x	x	7
	TDS	x	x	x	x	x	x	x	7
Appendix IV Parameters	Antimony	x	x	x	x	x	x	x	7
	Arsenic	x	x	x	x	x	x	x	7
	Barium	x	x	x	x	x	x	x	7
	Beryllium	x	x	x	x	x	x	x	7
	Cadmium	x	x	x	x	x	x	x	7
	Chromium	x	x	x	x	x	x	x	7
	Cobalt	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	Lead	x	x	x	x	x	x	x	7
	Lithium	x	x	x	x	x	x	x	7
	Mercury	x	x	x	x	x	x	x	7
	Molybdenum	x	x	x	x	x	x	x	7
	Selenium	x	x	x	x	x	x	x	7
	Thallium	x	x	x	x	x	x	x	7
Radium	x	x	x	x	x	x	x	7	
Field Parameters	Groundwater Elevation	x	x	x	x	x	x		6
	Well Depth	x	x	x	x	x	x		6
	pH (field)	x	x	x	x	x	x		6
	Specific Conductance	x	x	x	x	x	x		6
	Dissolved Oxygen	x	x	x	x	x	x		6
	ORP	x	x	x	x	x	x		6
	Temperature	x	x	x	x	x	x		6
	Turbidity	x	x	x	x	x	x		6
	Color	x	x	x	x	x	x		6
	Odor	x	x	x	x	x	x		6

Notes:

I:\25221076.00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2104.xls]Sheet1

## Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-203755-1

**Login Number: 203755**

**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.	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**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**  
**April 2021**

Sample	Sample Date/Time	GW Elevation (feet amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µs/cm)	ORP (mV)	Turbidity
MW-301	4.6.2021/1810	854.38	9.90	6.69	0.16	502	180.2	25.1
MW-302	4.6.2021/1717	854.85	9.30	6.96	0.49	581	161.9	2.69
MW-303	4.6.2021/1628	853.21	8.00	7.04	0.15	601	68.5	3.55
MW-304	4.6.2021/1230	853.15	8.40	6.61	5.83	957	182.1	0.79
MW-305	4.6.2021/1355	853.02	10.90	6.68	0.15	1171	69.8	3.44
MW-306	4.6.2021/1125	852.79	12.00	7.64	0.11	1464	-29.8	0.02

Abbreviations:

mg/L = milligrams per liter

mV = millivolts

amsl = above mean sea level

Notes:

None

Created by: NDK Date: 2/23/2021  
 Last revision by: NDK Date: 4/6/2021  
 Checked by: LMH Date: 4/13/2021

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\379G15CT\[2104\_Sutherland\_CCR\_Field.xlsx]GW Field Parameters

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-203755-2

Client Project/Site: Sutherland Generating Station 25221076

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
5/5/2021 5:45:48 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## Job ID: 310-203755-2

### Laboratory: Eurofins TestAmerica, Cedar Falls

#### Narrative

#### Job Narrative 310-203755-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 4/7/2021 5:40 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 1.3° C.

#### RAD

Methods 903.0, 9315, RA-06-RC: Radium-226 prep batch 160-505472: 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 (310-203755-1), MW-302 (310-203755-2), MW-303 (310-203755-3), MW-304 (310-203755-4), MW-305 (310-203755-5), MW-306 (310-203755-6), Field Blank (310-203755-7), (LCS 160-505472/1-A), (MB 160-505472/22-A), (410-35002-A-2-A), (410-35002-A-2-B MS) and (410-35002-B-2-A MSD)

Methods 904.0, 9320, RA-06-RC: 9320/904 Prep batch 160-505476 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 (310-203755-1), MW-302 (310-203755-2), MW-303 (310-203755-3), MW-304 (310-203755-4), MW-305 (310-203755-5), MW-306 (310-203755-6), Field Blank (310-203755-7), (LCS 160-505476/1-A), (MB 160-505476/22-A), (410-35002-A-2-C), (410-35002-A-2-D MS) and (410-35002-B-2-B MSD)

Method PrecSep\_0: Radium 228 Prep Batch 505476: The following samples were prepared at a reduced aliquot due to matrix: MW-301 (310-203755-1). 280-147134-1 was yellow and cloudy. 310-203755-1 was cloudy. 160-41664-1 was orange. 160-41664-2 was dark brown and cloudy.

Method PrecSep-21: Radium 226 Prep Batch 505472: The following samples were prepared at a reduced aliquot due to matrix: MW-301 (310-203755-1). 280-147134-1 was yellow and cloudy. 310-203755-1 was cloudy. 160-41664-1 was orange. 160-41664-2 was dark brown and cloudy.

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: Sutherland Generating Station 25221076

Job ID: 310-203755-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-203755-1	MW-301	Water	04/06/21 18:10	04/07/21 17:40	
310-203755-2	MW-302	Water	04/06/21 17:17	04/07/21 17:40	
310-203755-3	MW-303	Water	04/06/21 10:28	04/07/21 17:40	
310-203755-4	MW-304	Water	04/06/21 12:30	04/07/21 17:40	
310-203755-5	MW-305	Water	04/06/21 13:55	04/07/21 17:40	
310-203755-6	MW-306	Water	04/06/21 11:25	04/07/21 17:40	
310-203755-7	Field Blank	Water	04/06/21 14:30	04/07/21 17:40	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-301**

**Lab Sample ID: 310-203755-1**

Date Collected: 04/06/21 18:10

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.168		0.0989	0.100	1.00	0.126	pCi/L	04/13/21 16:46	05/05/21 08:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.2		40 - 110					04/13/21 16:46	05/05/21 08:15	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	0.0882	U	0.343	0.343	1.00	0.600	pCi/L	04/13/21 17:19	04/21/21 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.2		40 - 110					04/13/21 17:19	04/21/21 12:31	1
Y Carrier	83.4		40 - 110					04/13/21 17:19	04/21/21 12:31	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	0.256	U	0.357	0.357	5.00	0.600	pCi/L		05/05/21 17:12	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-302**

**Lab Sample ID: 310-203755-2**

Date Collected: 04/06/21 17:17

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.294		0.103	0.106	1.00	0.104	pCi/L	04/13/21 16:46	05/05/21 08:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		40 - 110					04/13/21 16:46	05/05/21 08:15	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	0.306	U	0.276	0.278	1.00	0.445	pCi/L	04/13/21 17:19	04/21/21 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		40 - 110					04/13/21 17:19	04/21/21 12:31	1
Y Carrier	84.1		40 - 110					04/13/21 17:19	04/21/21 12:31	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	0.600		0.295	0.298	5.00	0.445	pCi/L		05/05/21 17:12	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-303**

**Lab Sample ID: 310-203755-3**

Date Collected: 04/06/21 10:28

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0940	U	0.0840	0.0844	1.00	0.130	pCi/L	04/13/21 16:46	05/05/21 08:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.8		40 - 110					04/13/21 16:46	05/05/21 08:15	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	0.174	U	0.269	0.270	1.00	0.453	pCi/L	04/13/21 17:19	04/21/21 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.8		40 - 110					04/13/21 17:19	04/21/21 12:31	1
Y Carrier	84.1		40 - 110					04/13/21 17:19	04/21/21 12:31	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	0.268	U	0.282	0.283	5.00	0.453	pCi/L		05/05/21 17:12	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-304**

**Lab Sample ID: 310-203755-4**

Date Collected: 04/06/21 12:30

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0369	U	0.0610	0.0610	1.00	0.106	pCi/L	04/13/21 16:46	05/05/21 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					04/13/21 16:46	05/05/21 10:28	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	-0.0801	U	0.251	0.251	1.00	0.469	pCi/L	04/13/21 17:19	04/21/21 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					04/13/21 17:19	04/21/21 12:32	1
Y Carrier	82.2		40 - 110					04/13/21 17:19	04/21/21 12:32	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	0.0369	U	0.258	0.258	5.00	0.469	pCi/L		05/05/21 17:12	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-305**  
 Date Collected: 04/06/21 13:55  
 Date Received: 04/07/21 17:40

**Lab Sample ID: 310-203755-5**  
 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	0.102	U	0.0778	0.0783	1.00	0.112	pCi/L	04/13/21 16:46	05/05/21 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110					04/13/21 16:46	05/05/21 10:28	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	0.238	U	0.313	0.314	1.00	0.521	pCi/L	04/13/21 17:19	04/21/21 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	76.1		40 - 110					04/13/21 17:19	04/21/21 12:32	1
Y Carrier	80.7		40 - 110					04/13/21 17:19	04/21/21 12:32	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	0.340	U	0.323	0.324	5.00	0.521	pCi/L		05/05/21 17:12	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: MW-306**

**Lab Sample ID: 310-203755-6**

Date Collected: 04/06/21 11:25

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0888	U	0.0699	0.0704	1.00	0.102	pCi/L	04/13/21 16:46	05/05/21 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		40 - 110					04/13/21 16:46	05/05/21 10:28	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	0.172	U	0.267	0.267	1.00	0.449	pCi/L	04/13/21 17:19	04/21/21 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.9		40 - 110					04/13/21 17:19	04/21/21 12:32	1
Y Carrier	83.7		40 - 110					04/13/21 17:19	04/21/21 12:32	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	0.261	U	0.276	0.276	5.00	0.449	pCi/L		05/05/21 17:12	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-203755-7**

Date Collected: 04/06/21 14:30

Matrix: Water

Date Received: 04/07/21 17:40

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00769	U	0.0506	0.0506	1.00	0.101	pCi/L	04/13/21 16:46	05/05/21 10:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					04/13/21 16:46	05/05/21 10:29	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	-0.0204	U	0.203	0.203	1.00	0.377	pCi/L	04/13/21 17:19	04/21/21 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					04/13/21 17:19	04/21/21 12:32	1
Y Carrier	84.1		40 - 110					04/13/21 17:19	04/21/21 12:32	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	0.00769	U	0.209	0.209	5.00	0.377	pCi/L		05/05/21 17:12	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## 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.
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: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-505472/22-A**  
**Matrix: Water**  
**Analysis Batch: 508473**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 505472**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01328	U	0.0575	0.0576	1.00	0.109	pCi/L	04/13/21 16:46	05/05/21 10:33	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	90.0		40 - 110		04/13/21 16:46	05/05/21 10:33	1			

**Lab Sample ID: LCS 160-505472/1-A**  
**Matrix: Water**  
**Analysis Batch: 508446**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 505472**

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-226	11.3	11.00		1.13	1.00	0.0870	pCi/L	97	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	86.1		40 - 110						

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

**Lab Sample ID: MB 160-505476/22-A**  
**Matrix: Water**  
**Analysis Batch: 506443**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 505476**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.004564	U	0.225	0.225	1.00	0.403	pCi/L	04/13/21 17:19	04/21/21 12:36	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	90.0		40 - 110		04/13/21 17:19	04/21/21 12:36	1			
Y Carrier	88.2		40 - 110		04/13/21 17:19	04/21/21 12:36	1			

**Lab Sample ID: LCS 160-505476/1-A**  
**Matrix: Water**  
**Analysis Batch: 506458**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 505476**

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec. Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-228	7.27	8.497		1.05	1.00	0.484	pCi/L	117	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	86.1		40 - 110						
Y Carrier	83.0		40 - 110						

# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## Rad

### Prep Batch: 505472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	PrecSep-21	
310-203755-2	MW-302	Total/NA	Water	PrecSep-21	
310-203755-3	MW-303	Total/NA	Water	PrecSep-21	
310-203755-4	MW-304	Total/NA	Water	PrecSep-21	
310-203755-5	MW-305	Total/NA	Water	PrecSep-21	
310-203755-6	MW-306	Total/NA	Water	PrecSep-21	
310-203755-7	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-505472/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-505472/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 505476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	PrecSep_0	
310-203755-2	MW-302	Total/NA	Water	PrecSep_0	
310-203755-3	MW-303	Total/NA	Water	PrecSep_0	
310-203755-4	MW-304	Total/NA	Water	PrecSep_0	
310-203755-5	MW-305	Total/NA	Water	PrecSep_0	
310-203755-6	MW-306	Total/NA	Water	PrecSep_0	
310-203755-7	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-505476/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-505476/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## Client Sample ID: MW-301

Date Collected: 04/06/21 18:10

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 08:15	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:31	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

## Client Sample ID: MW-302

Date Collected: 04/06/21 17:17

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 08:15	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:31	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

## Client Sample ID: MW-303

Date Collected: 04/06/21 10:28

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 08:15	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:31	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

## Client Sample ID: MW-304

Date Collected: 04/06/21 12:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 10:28	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:32	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## Client Sample ID: MW-305

Date Collected: 04/06/21 13:55

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 10:28	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:32	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

## Client Sample ID: MW-306

Date Collected: 04/06/21 11:25

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 10:28	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:32	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	TAL SL

## Client Sample ID: Field Blank

Date Collected: 04/06/21 14:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			505472	04/13/21 16:46	JEC	TAL SL
Total/NA	Analysis	903.0		1	508446	05/05/21 10:29	SCB	TAL SL
Total/NA	Prep	PrecSep_0			505476	04/13/21 17:19	JEC	TAL SL
Total/NA	Analysis	904.0		1	506458	04/21/21 12:32	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	508509	05/05/21 17:12	FLC	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: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## 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	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-21
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	04-01-22
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	03-01-22
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193	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

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



# Method Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-2

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



310-203755 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generation</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
Temp Blank Temperature - If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>1.3</b>	Corrected Temp (°C):	<b>1.3</b>
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			

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



Environment Testing  
TestAmerica

Place COC scanning label  
here

### Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generating</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>0.7</b>	Corrected Temp (°C):	<b>0.7</b>
• 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			

**Chain of Custody Record**

<b>Client Information</b>		Lab P/N: <b>Frederick Sandie</b>		COC No: <b>310-59474-15058-1</b>	
Client Contact: <b>Tantzen Buszka</b>		E-Mail: <b>sandra.fredrick@eurofins.com</b>		Page: <b>Page 1 of 1</b>	
Company: <b>SCS Engineers</b>		Address: <b>8450 Hickman Road, Suite 27</b>		Job #:	
City: <b>Cedar Falls</b>		State: <b>IA</b>		Carrier Tracking Num:	
Phone: <b>764-943-0855</b>		City: <b>Cedar Falls</b>		State of Origin:	
Fax: <b>764-943-0855</b>		City: <b>Cedar Falls</b>		State of Origin:	
Email: <b>tbuszka@scsengineers.com</b>		City: <b>Cedar Falls</b>		State of Origin:	
Project Name: <b>Sutherland</b>		City: <b>Cedar Falls</b>		State of Origin:	
Site: <b>Sutherland</b>		City: <b>Cedar Falls</b>		State of Origin:	
Project #:		City: <b>Cedar Falls</b>		State of Origin:	
Sutherland Generating Station 25220076		City: <b>Cedar Falls</b>		State of Origin:	
Site: <b>Sutherland</b>		City: <b>Cedar Falls</b>		State of Origin:	

Due Date Requested:		Analysis Requested	
TAT Requested (days):		Analysis Requested	
Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Analysis Requested	
Project #:		Analysis Requested	
25220076		Analysis Requested	
W/C #:		Analysis Requested	
31011020		Analysis Requested	
Site: <b>Sutherland</b>		Analysis Requested	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, D=dust/particulate, B=fluid in air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	503 0 504 0	502A Metals (1)	550C Cad, 955A ORGFW, 35D SW4500 H+	Total Number of Containers	Special Instructions/Note:
MW-301	4-6-21	18:10	G	W	Water	X	X	X	X			
MW-302	4-6-21	17:17	G	W	Water	X	X	X	X			
MW-303	4-6-21	16:28	G	W	Water	X	X	X	X			
MW-304	4-6-21	12:30	G	W	Water	X	X	X	X			
MW-305	4-6-21	13:55	G	W	Water	X	X	X	X			
MW-306	4-6-21	11:25	G	W	Water	X	X	X	X			
Field Blank	4-6-21	14:30	G	W	Water	X	X	X	X			

<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) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Dispose By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/CC Requirements	
Empty Kit Relinquished by		Method of Shipment	
Relinquished by: <b>Tantzen Buszka</b>		Relinquished by: <b>SCS</b>	
Relinquished by: <b>Tantzen Buszka</b>		Relinquished by: <b>SCS</b>	
Relinquished by: <b>Tantzen Buszka</b>		Relinquished by: <b>SCS</b>	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks:	
Custody Seal No.:		Date/Time: <b>4-7-21 1740</b>	
Company: <b>SCS</b>		Company: <b>SCS</b>	
Company: <b>SCS</b>		Company: <b>SCS</b>	
Company: <b>SCS</b>		Company: <b>SCS</b>	



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-203755-2

**Login Number: 203755**

**List Source: Eurofins TestAmerica, Cedar Falls**

**List Number: 1**

**Creator: Homolar, Dana J**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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: 310-203755-2

**Login Number: 203755**

**List Number: 2**

**Creator: O'Gara, Mallory L**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 04/09/21 11:54 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.	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: Sutherland Generating Station 25221076

Job ID: 310-203755-2

## 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)
310-203755-1	MW-301	84.2
310-203755-2	MW-302	87.9
310-203755-3	MW-303	84.8
310-203755-4	MW-304	79.1
310-203755-5	MW-305	76.1
310-203755-6	MW-306	87.9
310-203755-7	Field Blank	85.2
LCS 160-505472/1-A	Lab Control Sample	86.1
MB 160-505472/22-A	Method Blank	90.0

#### 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)
310-203755-1	MW-301	84.2	83.4
310-203755-2	MW-302	87.9	84.1
310-203755-3	MW-303	84.8	84.1
310-203755-4	MW-304	79.1	82.2
310-203755-5	MW-305	76.1	80.7
310-203755-6	MW-306	87.9	83.7
310-203755-7	Field Blank	85.2	84.1
LCS 160-505476/1-A	Lab Control Sample	86.1	83.0
MB 160-505476/22-A	Method Blank	90.0	88.2

#### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-203755-3

Client Project/Site: Sutherland Generating Station 25221076

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:  
4/20/2021 7:37:25 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto: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: Sutherland Generating Station 25221076

Job ID: 310-203755-3

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**Job ID: 310-203755-3**

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**Laboratory: Eurofins TestAmerica, Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-203755-3**

**Comments**

No additional comments.

**Receipt**

The samples were received on 4/7/2021 5:40 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 1.3° 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: Sutherland Generating Station 25221076

Job ID: 310-203755-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
310-203755-1	MW-301	Water	04/06/21 18:10	04/07/21 17:40	
310-203755-2	MW-302	Water	04/06/21 17:17	04/07/21 17:40	
310-203755-3	MW-303	Water	04/06/21 10:28	04/07/21 17:40	
310-203755-4	MW-304	Water	04/06/21 12:30	04/07/21 17:40	
310-203755-5	MW-305	Water	04/06/21 13:55	04/07/21 17:40	
310-203755-6	MW-306	Water	04/06/21 11:25	04/07/21 17:40	
310-203755-7	Field Blank	Water	04/06/21 14:30	04/07/21 17:40	

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# Detection Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Client Sample ID: MW-301

## Lab Sample ID: 310-203755-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	120		100	36	ug/L	1		6020A	Total/NA
Magnesium	21000		500	100	ug/L	1		6020A	Total/NA
Manganese	2000		10	4.4	ug/L	1		6020A	Total/NA
Potassium	1700		500	150	ug/L	1		6020A	Total/NA
Sodium	7900		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	250		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	250		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-203755-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	210		100	36	ug/L	1		6020A	Total/NA
Magnesium	25000		500	100	ug/L	1		6020A	Total/NA
Manganese	590		10	4.4	ug/L	1		6020A	Total/NA
Potassium	320	J	500	150	ug/L	1		6020A	Total/NA
Sodium	12000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	280		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	280		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-203755-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	420		100	36	ug/L	1		6020A	Total/NA
Magnesium	23000		500	100	ug/L	1		6020A	Total/NA
Manganese	930		10	4.4	ug/L	1		6020A	Total/NA
Potassium	3300		500	150	ug/L	1		6020A	Total/NA
Sodium	19000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	240		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	240		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-203755-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	34000		500	100	ug/L	1		6020A	Total/NA
Manganese	180		10	4.4	ug/L	1		6020A	Total/NA
Sodium	38000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-203755-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	250		100	36	ug/L	1		6020A	Total/NA
Magnesium	40000		500	100	ug/L	1		6020A	Total/NA
Manganese	1400		10	4.4	ug/L	1		6020A	Total/NA
Potassium	3900		500	150	ug/L	1		6020A	Total/NA
Sodium	48000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	200		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	200		10	4.6	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: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Client Sample ID: MW-306

## Lab Sample ID: 310-203755-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	61	J	100	36	ug/L	1		6020A	Total/NA
Magnesium	55000		500	100	ug/L	1		6020A	Total/NA
Manganese	3400		10	4.4	ug/L	1		6020A	Total/NA
Potassium	7000		500	150	ug/L	1		6020A	Total/NA
Sodium	46000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	170		9.1	4.2	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	170		9.1	4.2	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-203755-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-301**

**Lab Sample ID: 310-203755-1**

Date Collected: 04/06/21 18:10

Matrix: Water

Date Received: 04/07/21 17:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	120		100	36	ug/L		04/09/21 09:00	04/12/21 22:22	1
Magnesium	21000		500	100	ug/L		04/09/21 09:00	04/12/21 22:22	1
Manganese	2000		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:22	1
Potassium	1700		500	150	ug/L		04/09/21 09:00	04/12/21 22:22	1
Sodium	7900		1000	610	ug/L		04/09/21 09:00	04/12/21 22:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	250		10	4.6	mg/L			04/13/21 09:12	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/13/21 09:12	1
Total Alkalinity as CaCO3	250		10	4.6	mg/L			04/13/21 09:12	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-302**

**Lab Sample ID: 310-203755-2**

Date Collected: 04/06/21 17:17

Matrix: Water

Date Received: 04/07/21 17:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	210		100	36	ug/L		04/09/21 09:00	04/12/21 22:25	1
Magnesium	25000		500	100	ug/L		04/09/21 09:00	04/12/21 22:25	1
Manganese	590		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:25	1
Potassium	320	J	500	150	ug/L		04/09/21 09:00	04/12/21 22:25	1
Sodium	12000		1000	610	ug/L		04/09/21 09:00	04/12/21 22:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	280		10	4.6	mg/L			04/13/21 09:12	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/13/21 09:12	1
Total Alkalinity as CaCO3	280		10	4.6	mg/L			04/13/21 09:12	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-303**

**Lab Sample ID: 310-203755-3**

Date Collected: 04/06/21 10:28

Matrix: Water

Date Received: 04/07/21 17:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	420		100	36	ug/L		04/09/21 09:00	04/12/21 22:27	1
Magnesium	23000		500	100	ug/L		04/09/21 09:00	04/12/21 22:27	1
Manganese	930		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:27	1
Potassium	3300		500	150	ug/L		04/09/21 09:00	04/12/21 22:27	1
Sodium	19000		1000	610	ug/L		04/09/21 09:00	04/12/21 22:27	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	240		10	4.6	mg/L			04/13/21 12:14	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/13/21 12:14	1
Total Alkalinity as CaCO3	240		10	4.6	mg/L			04/13/21 12:14	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-304**  
 Date Collected: 04/06/21 12:30  
 Date Received: 04/07/21 17:40

**Lab Sample ID: 310-203755-4**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/09/21 09:00	04/12/21 22:30	1
<b>Magnesium</b>	<b>34000</b>		500	100	ug/L		04/09/21 09:00	04/12/21 22:30	1
<b>Manganese</b>	<b>180</b>		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:30	1
Potassium	<150		500	150	ug/L		04/09/21 09:00	04/12/21 22:30	1
<b>Sodium</b>	<b>38000</b>		1000	610	ug/L		04/09/21 09:00	04/12/21 22:30	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>230</b>		10	4.6	mg/L			04/16/21 10:24	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/16/21 10:24	1
<b>Total Alkalinity as CaCO3</b>	<b>230</b>		10	4.6	mg/L			04/16/21 10:24	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-305**  
 Date Collected: 04/06/21 13:55  
 Date Received: 04/07/21 17:40

**Lab Sample ID: 310-203755-5**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	250		100	36	ug/L		04/09/21 09:00	04/12/21 22:35	1
Magnesium	40000		500	100	ug/L		04/09/21 09:00	04/12/21 22:35	1
Manganese	1400		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:35	1
Potassium	3900		500	150	ug/L		04/09/21 09:00	04/12/21 22:35	1
Sodium	48000		1000	610	ug/L		04/09/21 09:00	04/12/21 22:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	200		10	4.6	mg/L			04/16/21 10:24	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			04/16/21 10:24	1
Total Alkalinity as CaCO3	200		10	4.6	mg/L			04/16/21 10:24	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: MW-306**

**Lab Sample ID: 310-203755-6**

Date Collected: 04/06/21 11:25

Matrix: Water

Date Received: 04/07/21 17:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	61	J	100	36	ug/L		04/09/21 09:00	04/12/21 22:38	1
Magnesium	55000		500	100	ug/L		04/09/21 09:00	04/12/21 22:38	1
Manganese	3400		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:38	1
Potassium	7000		500	150	ug/L		04/09/21 09:00	04/12/21 22:38	1
Sodium	46000		1000	610	ug/L		04/09/21 09:00	04/12/21 22:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	170		9.1	4.2	mg/L			04/16/21 10:24	1
Carbonate Alkalinity as CaCO3	<4.2		9.1	4.2	mg/L			04/16/21 10:24	1
Total Alkalinity as CaCO3	170		9.1	4.2	mg/L			04/16/21 10:24	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-203755-7**

Date Collected: 04/06/21 14:30

Matrix: Water

Date Received: 04/07/21 17:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/09/21 09:00	04/12/21 22:41	1
Magnesium	<100		500	100	ug/L		04/09/21 09:00	04/12/21 22:41	1
Manganese	<4.4		10	4.4	ug/L		04/09/21 09:00	04/12/21 22:41	1
Potassium	<150		500	150	ug/L		04/09/21 09:00	04/12/21 22:41	1
Sodium	<610		1000	610	ug/L		04/09/21 09:00	04/12/21 22:41	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Qualifiers

### 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.

## 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: Sutherland Generating Station 25221076

Job ID: 310-203755-3

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

**Lab Sample ID: MB 310-312038/1-A**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		04/09/21 09:00	04/12/21 21:39	1
Magnesium	<100		500	100	ug/L		04/09/21 09:00	04/12/21 21:39	1
Manganese	<4.4		10	4.4	ug/L		04/09/21 09:00	04/12/21 21:39	1
Potassium	<150		500	150	ug/L		04/09/21 09:00	04/12/21 21:39	1
Sodium	<610		1000	610	ug/L		04/09/21 09:00	04/12/21 21:39	1

**Lab Sample ID: LCS 310-312038/2-A**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	200	195		ug/L		98	80 - 120
Magnesium	2000	1910		ug/L		96	80 - 120
Manganese	100	94.7		ug/L		95	80 - 120
Potassium	2000	2090		ug/L		105	80 - 120
Sodium	2000	1990		ug/L		100	80 - 120

**Lab Sample ID: 310-203755-4 DU**  
**Matrix: Water**  
**Analysis Batch: 312483**

**Client Sample ID: MW-304**  
**Prep Type: Total/NA**  
**Prep Batch: 312038**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Iron	<36		<36		ug/L		NC	20
Magnesium	34000		34800		ug/L		3	20
Manganese	180		188		ug/L		4	20
Potassium	<150		<150		ug/L		NC	20
Sodium	38000		39400		ug/L		3	20

## Method: 2320B - Alkalinity (Low Level)

**Lab Sample ID: MB 310-313244/1**  
**Matrix: Water**  
**Analysis Batch: 313244**

**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	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/19/21 15:26	1

**Lab Sample ID: LCS 310-313244/2**  
**Matrix: Water**  
**Analysis Batch: 313244**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Alkalinity as CaCO3	1000	992		mg/L		99	90 - 110

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 310-312502/1**  
**Matrix: Water**  
**Analysis Batch: 312502**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/13/21 09:12	1

**Lab Sample ID: LCS 310-312502/2**  
**Matrix: Water**  
**Analysis Batch: 312502**

**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	1000	1030		mg/L		103	90 - 110

**Lab Sample ID: MB 310-313005/1**  
**Matrix: Water**  
**Analysis Batch: 313005**

**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	<2.3		5.0	2.3	mg/L			04/16/21 10:24	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/16/21 10:24	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			04/16/21 10:24	1

**Lab Sample ID: LCS 310-313005/2**  
**Matrix: Water**  
**Analysis Batch: 313005**

**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	1000	926		mg/L		93	90 - 110

# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Metals

### Prep Batch: 312038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	3010A	
310-203755-2	MW-302	Total/NA	Water	3010A	
310-203755-3	MW-303	Total/NA	Water	3010A	
310-203755-4	MW-304	Total/NA	Water	3010A	
310-203755-5	MW-305	Total/NA	Water	3010A	
310-203755-6	MW-306	Total/NA	Water	3010A	
310-203755-7	Field Blank	Total/NA	Water	3010A	
MB 310-312038/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-312038/2-A	Lab Control Sample	Total/NA	Water	3010A	
310-203755-4 DU	MW-304	Total/NA	Water	3010A	

### Analysis Batch: 312483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	6020A	312038
310-203755-2	MW-302	Total/NA	Water	6020A	312038
310-203755-3	MW-303	Total/NA	Water	6020A	312038
310-203755-4	MW-304	Total/NA	Water	6020A	312038
310-203755-5	MW-305	Total/NA	Water	6020A	312038
310-203755-6	MW-306	Total/NA	Water	6020A	312038
310-203755-7	Field Blank	Total/NA	Water	6020A	312038
MB 310-312038/1-A	Method Blank	Total/NA	Water	6020A	312038
LCS 310-312038/2-A	Lab Control Sample	Total/NA	Water	6020A	312038
310-203755-4 DU	MW-304	Total/NA	Water	6020A	312038

## General Chemistry

### Analysis Batch: 312502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-1	MW-301	Total/NA	Water	SM 2320B	
310-203755-2	MW-302	Total/NA	Water	SM 2320B	
310-203755-3	MW-303	Total/NA	Water	SM 2320B	
MB 310-312502/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-312502/2	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 313005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-4	MW-304	Total/NA	Water	SM 2320B	
310-203755-5	MW-305	Total/NA	Water	SM 2320B	
310-203755-6	MW-306	Total/NA	Water	SM 2320B	
MB 310-313005/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-313005/2	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 313244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-203755-7	Field Blank	Total/NA	Water	2320B	
MB 310-313244/1	Method Blank	Total/NA	Water	2320B	
LCS 310-313244/2	Lab Control Sample	Total/NA	Water	2320B	



# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Client Sample ID: MW-301

Date Collected: 04/06/21 18:10

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:22	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	312502	04/13/21 09:12	WJF	TAL CF

## Client Sample ID: MW-302

Date Collected: 04/06/21 17:17

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:25	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	312502	04/13/21 09:12	WJF	TAL CF

## Client Sample ID: MW-303

Date Collected: 04/06/21 10:28

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:27	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	312502	04/13/21 12:14	WJF	TAL CF

## Client Sample ID: MW-304

Date Collected: 04/06/21 12:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:30	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	313005	04/16/21 10:24	DFS	TAL CF

## Client Sample ID: MW-305

Date Collected: 04/06/21 13:55

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:35	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	313005	04/16/21 10:24	DFS	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## Client Sample ID: MW-306

Date Collected: 04/06/21 11:25

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:38	SAD	TAL CF
Total/NA	Analysis	SM 2320B		1	313005	04/16/21 10:24	DFS	TAL CF

## Client Sample ID: Field Blank

Date Collected: 04/06/21 14:30

Date Received: 04/07/21 17:40

## Lab Sample ID: 310-203755-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			312038	04/09/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	312483	04/12/21 22:41	SAD	TAL CF
Total/NA	Analysis	2320B		1	313244	04/19/21 15:26	DFS	TAL CF

### Laboratory References:

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 14

# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

## 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
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- 7
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- 10
- 11
- 12
- 13
- 14

# Method Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-203755-3

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

#### Protocol References:

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



310-203755 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generation</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
Temp Blank Temperature - If no temp blank or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>1.3</b>	Corrected Temp (°C):	<b>1.3</b>
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			



Environment Testing  
TestAmerica

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <b>SCS Engineers</b>			
City/State:	CITY <b>Clive</b>	STATE <b>IA</b>	Project: <b>Sutherland Generating</b>
Receipt Information			
Date/Time Received:	DATE <b>4-7-21</b>	TIME <b>1740</b>	Received By: <b>ER</b>
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # _____ of <b>2</b>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input 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:	<b>0</b>	Correction Factor (°C):	<b>0</b>
• Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	<b>0.7</b>	Corrected Temp (°C):	<b>0.7</b>
• 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			

<b>Client Information</b>		Sampler: <u>Tantzen Buszka</u>		Lab P/N:	Frederick Sandie
Client Contact: <u>Tantzen Buszka</u>		Phone:	<u>764-443-0855</u>	E-Mail:	sandra.fredrick@eurofinstest.com
Company: <u>SCS Engineers</u>		Company:	<u>PWSID</u>	Carrier Tracking Num:	COC No: 310-59474-15058-1
Address: <u>8450 Hickman Road, Suite 27</u>		City:		State of Origin:	
City:		State:		Page:	Page 1 of 1
State Zip:		Country:		Job #:	
Phone:		Compliance Project:	<u>Yes</u> <input type="checkbox"/> No <input type="checkbox"/>	Preservation Codes:	
E-mail: <u>764-443-0855</u>		Project #:	<u>25220076</u>	A - HCL	M - Hexane
Project Name: <u>Sutherland</u>		Site: <u>350W4</u>	WC #:	B - NaOH	N - Nucle
Sutherland Generating Station 25220076				C - Zn Acetate	O - AsHClO <sub>4</sub>
Date Requested:				D - Nitric Acid	P - Na <sub>2</sub> SO <sub>4</sub>
TAT Requested (days):				E - NaHSO <sub>4</sub>	Q - Na <sub>2</sub> SO <sub>3</sub>
				F - MeOH	R - Na <sub>2</sub> SO <sub>3</sub>
				G - Amchlor	S - H <sub>2</sub> SO <sub>4</sub>
				H - Ascorbic Acid	T - TSP Dodecylhydrate
				I - Ice	U - Acetone
				J - DI Water	V - MCAA
				K - EDTA	W - pH 4.5
				L - EDA	Z - other (specify)
				Other:	
<b>Sample Identification</b>		Due Date Requested:			Total Number of Containers: <u>7</u>
	MW-301	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, D=dissolved, B=filter)
	MW-302	4-6-21	18:10	G	Water
	MW-303	4-6-21	17:17	G	Water
	MW-304	4-6-21	16:28	G	Water
	MW-305	4-6-21	12:30	G	Water
	MW-306	4-6-21	13:55	G	Water
	Field Blank	4-6-21	11:25	G	Water
		4-6-21	14:30	G	Water
			<b>Possible Hazard Identification</b>		
			<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
			<b>Deliverable Requested:</b> I, II, III, IV, Other (specify)		
			<b>Empty Kit Relinquished by</b>		
	Relinquished by:	Tantzen Buszka	Date:		
	Relinquished by:	Tantzen Buszka	Date:		
	Relinquished by:	Tantzen Buszka	Date:		
Custody Seals Intact: <u>A</u> Yes <u>Y</u> No <u>N</u>			Custody Seal No.:		

Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

		Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL	
COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters	Appendix III Parameters	Boron	X	X	X	X	X	X	X	7	
		Calcium	X	X	X	X	X	X	X	7	
		Chloride	X	X	X	X	X	X	X	7	
		Fluoride	X	X	X	X	X	X	X	7	
		pH	X	X	X	X	X	X	X	7	
		Sulfate	X	X	X	X	X	X	X	7	
		TDS	X	X	X	X	X	X	X	7	
	Appendix IV Parameters	Antimony	X	X	X	X	X	X	X	X	7
		Arsenic	X	X	X	X	X	X	X	X	7
		Barium	X	X	X	X	X	X	X	X	7
		Beryllium	X	X	X	X	X	X	X	X	7
		Cadmium	X	X	X	X	X	X	X	X	7
		Chromium	X	X	X	X	X	X	X	X	7
		Cobalt	X	X	X	X	X	X	X	X	7
		Fluoride	X	X	X	X	X	X	X	X	7
		Lead	X	X	X	X	X	X	X	X	7
		Lithium	X	X	X	X	X	X	X	X	7
		Mercury	X	X	X	X	X	X	X	X	7
		Molybdenum	X	X	X	X	X	X	X	X	7
		Selenium	X	X	X	X	X	X	X	X	7
		Thallium	X	X	X	X	X	X	X	X	7
	Radium	X	X	X	X	X	X	X	X	7	
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X			6
		Well Depth	X	X	X	X	X	X			6
		pH (field)	X	X	X	X	X	X			6
		Specific Conductance	X	X	X	X	X	X			6
		Dissolved Oxygen	X	X	X	X	X	X			6
		ORP	X	X	X	X	X	X			6
Temperature		X	X	X	X	X	X			6	
Turbidity		X	X	X	X	X	X			6	
Color		X	X	X	X	X	X			6	
Odor		X	X	X	X	X	X			6	
Job #3 - MNA Parameters	Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	7	
		Alkalinity - Bicarbonate	X	X	X	X	X	X	X	7	
		Iron	X	X	X	X	X	X	X	7	
		Magnesium	X	X	X	X	X	X	X	7	
		Manganese	X	X	X	X	X	X	X	7	
		Potassium	X	X	X	X	X	X	X	7	
		Sodium	X	X	X	X	X	X	X	7	

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\3LHITP7V\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2104 - M



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-203755-3

**Login Number: 203755**

**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.	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	

## D3 July 2021 Supplemental Sampling Event

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-211101-1

Client Project/Site: Sutherland Generating Station 25221076

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:  
7/27/2021 10:03:11 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station 25221076

Job ID: 310-211101-1

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**Job ID: 310-211101-1**

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**Laboratory: Eurofins TestAmerica, Cedar Falls**

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**Narrative**

**Job Narrative**  
**310-211101-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 7/16/2021 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.3° C.

**Metals**

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: Sutherland Generating Station 25221076

Job ID: 310-211101-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-211101-1	MW-306	Water	07/14/21 11:20	07/16/21 09:50
310-211101-2	Field Blank	Water	07/14/21 11:20	07/16/21 09:50

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# Detection Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

## Client Sample ID: MW-306

## Lab Sample ID: 310-211101-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lithium	59		10	2.5	ug/L	1		6020A	Total/NA
Ground Water Elevation	850.67				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	57.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	0.13				mg/L	1		Field Sampling	Total/NA
pH, Field	8.11				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1178				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.10				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	0.78				NTU	1		Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-211101-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-211101-1**

Date Collected: 07/14/21 11:20

Matrix: Water

Date Received: 07/16/21 09:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	59		10	2.5	ug/L		07/20/21 09:00	07/21/21 20:46	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	850.67				ft			07/14/21 11:20	1
Oxidation Reduction Potential	57.7				millivolts			07/14/21 11:20	1
Oxygen, Dissolved, Client Supplied	0.13				mg/L			07/14/21 11:20	1
pH, Field	8.11				SU			07/14/21 11:20	1
Specific Conductance, Field	1178				umhos/cm			07/14/21 11:20	1
Temperature, Field	14.10				Degrees C			07/14/21 11:20	1
Turbidity, Field	0.78				NTU			07/14/21 11:20	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-211101-2**

**Date Collected: 07/14/21 11:20**

**Matrix: Water**

**Date Received: 07/16/21 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		07/20/21 09:00	07/21/21 20:49	1

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# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

## 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: Sutherland Generating Station 25221076

Job ID: 310-211101-1

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

**Lab Sample ID: MB 310-322840/1-A**  
**Matrix: Water**  
**Analysis Batch: 323184**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 322840**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<2.5		10	2.5	ug/L		07/20/21 09:00	07/21/21 20:09	1

**Lab Sample ID: LCS 310-322840/2-A**  
**Matrix: Water**  
**Analysis Batch: 323184**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 322840**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	200	191		ug/L		95	80 - 120



# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

## Metals

### Prep Batch: 322840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-211101-1	MW-306	Total/NA	Water	3010A	
310-211101-2	Field Blank	Total/NA	Water	3010A	
MB 310-322840/1-A	Method Blank	Total/NA	Water	3010A	
LCS 310-322840/2-A	Lab Control Sample	Total/NA	Water	3010A	

### Analysis Batch: 323184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-211101-1	MW-306	Total/NA	Water	6020A	322840
310-211101-2	Field Blank	Total/NA	Water	6020A	322840
MB 310-322840/1-A	Method Blank	Total/NA	Water	6020A	322840
LCS 310-322840/2-A	Lab Control Sample	Total/NA	Water	6020A	322840

## Field Service / Mobile Lab

### Analysis Batch: 323591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-211101-1	MW-306	Total/NA	Water	Field Sampling	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-211101-1

## Client Sample ID: MW-306

Date Collected: 07/14/21 11:20

Date Received: 07/16/21 09:50

## Lab Sample ID: 310-211101-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			322840	07/20/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	323184	07/21/21 20:46	SAP	TAL CF
Total/NA	Analysis	Field Sampling		1	323591	07/14/21 11:20	SJF	TAL CF

## Client Sample ID: Field Blank

Date Collected: 07/14/21 11:20

Date Received: 07/16/21 09:50

## Lab Sample ID: 310-211101-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			322840	07/20/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	323184	07/21/21 20:49	SAP	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: Sutherland Generating Station 25221076

Job ID: 310-211101-1

## 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: Sutherland Generating Station 25221076

Job ID: 310-211101-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CF
Field Sampling	Field Sampling	EPA	TAL CF
3010A	Preparation, Total Metals	SW846	TAL CF

**Protocol References:**

EPA = US Environmental Protection Agency

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



310-211101 Chain of Custody

### Cooler/Sample Receipt and Temperature Log Form

Client Information		
Client: <u>SCS Engineers</u>		
City/State: <u>Madison</u> <small>CITY</small> <u>WI</u> <small>STATE</small>	Project:	
Receipt Information		
Date/Time Received: <u>7/16/21</u> <small>DATE</small> <u>9:50</u> <small>TIME</small>	Received By: <u>ER</u>	
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: <u>0</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>4.3</u>	Corrected Temp (°C): <u>4.3</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		





<p><b>Client Information</b>          Client Contact: Mr. Tom Karwoski          Address: 2830 Dairy Drive, Madison, WI, 53718          Phone: 608-224-2830          Email: tkarwoski@scsengineers.com          Project Name: Sutherland Generating Station 25221076          Site: S50W#</p>			<p>Sampler: Adam Watkon          Lab PVI: Fredrick, Sandie          Phone: 608-250-9985          E-Mail: sandra.fredrick@eurofinsnet.com</p>			<p>Carrier Tracking No(s):          State of Origin:          COC No: 310-62234-18124.1          Page: Page 1 of 1          Job #:</p>																				
<p>Company: SCS Engineers          PWSID:</p>			<p><b>Analysis Requested</b></p>			<p>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:</p>																				
<p>Due Date Requested:          TAT Requested (days):          Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          PO #: 25221076          WO #:          Project #: 31011020          S50W#:</p>		<p><b>Sample Identification</b></p>		<p>Total Number of Containers</p>		<p>Special Instructions/Note:</p>																				
<p>608-224-2830</p>		<table border="1"> <thead> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, D=wastabil)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>6020A - Metals (Lithium)</th> </tr> </thead> <tbody> <tr> <td>7/14/21</td> <td>1120</td> <td></td> <td>Water</td> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>7/14/21</td> <td>1120</td> <td></td> <td>Water</td> <td></td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, D=wastabil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Metals (Lithium)	7/14/21	1120		Water			<input checked="" type="checkbox"/>	7/14/21	1120		Water			<input checked="" type="checkbox"/>	<p>Special Instructions/Note:</p>	
Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, D=wastabil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Metals (Lithium)																				
7/14/21	1120		Water			<input checked="" type="checkbox"/>																				
7/14/21	1120		Water			<input checked="" type="checkbox"/>																				
<p>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</p>		<p>Deliverable Requested: I, II, III, IV, Other (specify)  <input type="checkbox"/> Empty Kit Relinquished by</p>		<p>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</p>		<p>Special Instructions/COC Requirements:</p>																				
<p>Relinquished by: Adam Watkon</p>		<p>Date/Time: 7/15/21</p>		<p>Time: Date/Time: 7/14/21 950</p>		<p>Company: SCS Eng</p>																				
<p>Relinquished by:</p>		<p>Date/Time:</p>		<p>Time: Date/Time:</p>		<p>Company:</p>																				
<p>Relinquished by:</p>		<p>Date/Time:</p>		<p>Time: Date/Time:</p>		<p>Company:</p>																				
<p>Custody Seals Intact:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>		<p>Custody Seal No.:</p>		<p>Method of Shipment:</p>		<p>Cooler Temperature(s) °C and Other Remarks:</p>																				



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL
Appendix III Parameters	Boron								0
	Calcium								0
	Chloride								0
	Fluoride								0
	pH								0
	Sulfate								0
	TDS								0
Appendix IV Parameters	Antimony								0
	Arsenic								0
	Barium								0
	Beryllium								0
	Cadmium								0
	Chromium								0
	Cobalt								0
	Fluoride								0
	Lead								0
	Lithium						x	x	2
	Mercury								0
	Molybdenum								0
	Selenium								0
	Thallium								0
Radium								0	
Field Parameters	Groundwater Elevation								0
	Well Depth								0
	pH (field)								0
	Specific Conductance								0
	Dissolved Oxygen								0
	ORP								0
	Temperature								0
	Turbidity								0
	Color								0
	Odor								0

Notes:

I:\25221076.00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2107.xls]Sheet1

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-211101-1

**Login Number: 211101**

**List Source: Eurofins TestAmerica, Cedar Falls**

**List Number: 1**

**Creator: Watkins, Allison R**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	



**Groundwater Monitoring Results - Field Parameters**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**  
**July 2021**

Sample	Sample Date/Time	GW Elevation (feet amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µs/cm)	ORP (mV)	Turbidity
MW-306	7.14.2021/1120	850.67	14.10	8.11	0.13	1178	57.7	0.78

Abbreviations:

mg/L = milligrams per liter

mV = millivolts

amsl = above mean sea level

Notes:

None

Created by:           NDK                                Date:           2/23/2021            
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## D4 October 2021 Assessment Monitoring



Environment Testing  
America

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-218372-1

Client Project/Site: Sutherland Generating Station 25221076  
Revision: 1

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett

Authorized for release by:  
3/1/2022 4:06:16 PM

Sandie Fredrick, Project Manager II  
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### 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: Sutherland Generating Station 25221076

Job ID: 310-218372-1

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## Job ID: 310-218372-1

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### Laboratory: Eurofins Cedar Falls

#### Narrative

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#### Job Narrative 310-218372-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 10/27/2021 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 2.8° C.

#### HPLC/IC

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3), MW-304 (310-218372-4), MW-305 (310-218372-5) and MW-306 (310-218372-6). 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.

#### Job Narrative 310-218372-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 11/10/2021. The report (revision 1) is being revised due to: Deifinitions page missing from report.

#### Receipt

The samples were received on 10/27/2021 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 2.8° C.

#### HPLC/IC

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-301 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3), MW-304 (310-218372-4), MW-305 (310-218372-5) and MW-306 (310-218372-6). 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: Sutherland Generating Station 25221076

Job ID: 310-218372-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-218372-1	MW-301	Water	10/26/21 11:10	10/27/21 16:50
310-218372-2	MW-302	Water	10/26/21 10:20	10/27/21 16:50
310-218372-3	MW-303	Water	10/26/21 12:30	10/27/21 16:50
310-218372-4	MW-304	Water	10/26/21 16:15	10/27/21 16:50
310-218372-5	MW-305	Water	10/26/21 15:16	10/27/21 16:50
310-218372-6	MW-306	Water	10/26/21 13:15	10/27/21 16:50
310-218372-7	Field Blank	Water	10/26/21 17:05	10/27/21 16:50

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# Detection Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Client Sample ID: MW-301

## Lab Sample ID: 310-218372-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.0		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	83		5.0	2.5	mg/L	5		9056A	Total/NA
Barium	130		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	62	J	100	58	ug/L	1		6020A	Total/NA
Cadmium	0.080	J	0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	81		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.24	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.52	B	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	2.8	J	10	2.5	ug/L	1		6020A	Total/NA
Selenium	2.8	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	200		50	26	mg/L	1		SM 2540C	Total/NA
pH	6.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	852.42				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	148.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.44				mg/L	1		Field Sampling	Total/NA
pH, Field	6.21				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	485.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	110				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-218372-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.2		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	43		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	7.4		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	140		2.0	0.37	ug/L	1		6020A	Total/NA
Calcium	95		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	1.6		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.31	J B	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	2.9	J	10	2.5	ug/L	1		6020A	Total/NA
Selenium	1.3	J	5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	270		50	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	852.68				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	146.4				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.34				mg/L	1		Field Sampling	Total/NA
pH, Field	7.30				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	624.0				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.2				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	23.2				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-218372-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8	J	5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	160		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	4.8		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	91		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	400		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.16		0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	87		0.50	0.19	mg/L	1		6020A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Client Sample ID: MW-303 (Continued)

## Lab Sample ID: 310-218372-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.66		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.50	B	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	20		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	5.9		2.0	1.3	ug/L	1		6020A	Total/NA
Selenium	26		5.0	0.96	ug/L	1		6020A	Total/NA
Total Dissolved Solids	300		50	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	850.54				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	167.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	2.57				mg/L	1		Field Sampling	Total/NA
pH, Field	6.84				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	576.6				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.5				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	110				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-218372-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	170		5.0	2.5	mg/L	5		9056A	Total/NA
Barium	23		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	480		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.24		0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.30	J	0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.75	B	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	6.8	J	10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	450		50	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	850.13				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	152.1				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.58				mg/L	1		Field Sampling	Total/NA
pH, Field	7.04				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	831				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	19.8				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-218372-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	24		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	240		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	7.4		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	47		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	1800		100	58	ug/L	1		6020A	Total/NA
Calcium	110		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.63		0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	35		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	55		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	500		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	850.12				ft	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Detection Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Client Sample ID: MW-305 (Continued)

## Lab Sample ID: 310-218372-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Oxidation Reduction Potential	134.7				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.15				mg/L	1		Field Sampling	Total/NA
pH, Field	7.58				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	807				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.8				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	19.9				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-306

## Lab Sample ID: 310-218372-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	440		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	4.1		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	74		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	4400		100	58	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	0.59		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.58	B	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	55		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	66		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	690		50	26	mg/L	1		SM 2540C	Total/NA
pH	7.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Ground Water Elevation	850.00				ft	1		Field Sampling	Total/NA
Oxidation Reduction Potential	161.0				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	1.22				mg/L	1		Field Sampling	Total/NA
pH, Field	7.44				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1038				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	15.7				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	19.8				NTU	1		Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-218372-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.3		1.0	0.49	mg/L	1		9056A	Total/NA
Boron	93	J	100	58	ug/L	1		6020A	Total/NA
Lead	0.33	J B	0.50	0.21	ug/L	1		6020A	Total/NA
pH	4.2	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-301**

**Lab Sample ID: 310-218372-1**

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 16:50

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.0		5.0	2.2	mg/L			11/03/21 13:20	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 13:20	5
Sulfate	83		5.0	2.5	mg/L			11/03/21 13:20	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:11	1
Arsenic	<0.75		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:11	1
Barium	130		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:11	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:11	1
Boron	62	J	100	58	ug/L		11/01/21 09:00	11/10/21 16:11	1
Cadmium	0.080	J	0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:11	1
Calcium	81		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:11	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:11	1
Cobalt	0.24	J	0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:11	1
Lead	0.52	B	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:11	1
Lithium	2.8	J	10	2.5	ug/L		11/01/21 09:00	11/10/21 16:11	1
Molybdenum	<1.3		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:11	1
Selenium	2.8	J	5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:11	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:11	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:20	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	200		50	26	mg/L			10/29/21 16:58	1
pH	6.2	HF	0.1	0.1	SU			10/27/21 20:48	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	852.42				ft			10/26/21 11:10	1
Oxidation Reduction Potential	148.3				millivolts			10/26/21 11:10	1
Oxygen, Dissolved, Client Supplied	1.44				mg/L			10/26/21 11:10	1
pH, Field	6.21				SU			10/26/21 11:10	1
Specific Conductance, Field	485.0				umhos/cm			10/26/21 11:10	1
Temperature, Field	14.3				Degrees C			10/26/21 11:10	1
Turbidity, Field	110				NTU			10/26/21 11:10	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-302**

**Lab Sample ID: 310-218372-2**

Date Collected: 10/26/21 10:20

Matrix: Water

Date Received: 10/27/21 16:50

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>7.2</b>		5.0	2.2	mg/L			11/03/21 13:35	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 13:35	5
<b>Sulfate</b>	<b>43</b>		5.0	2.5	mg/L			11/03/21 13:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Arsenic</b>	<b>7.4</b>		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Barium</b>	<b>140</b>		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:14	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:14	1
Boron	<58		100	58	ug/L		11/01/21 09:00	11/10/21 16:14	1
Cadmium	<0.051		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Calcium</b>	<b>95</b>		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:14	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Cobalt</b>	<b>1.6</b>		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Lead</b>	<b>0.31</b>	<b>J B</b>	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Lithium</b>	<b>2.9</b>	<b>J</b>	10	2.5	ug/L		11/01/21 09:00	11/10/21 16:14	1
Molybdenum	<1.3		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:14	1
<b>Selenium</b>	<b>1.3</b>	<b>J</b>	5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:14	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:14	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:22	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>270</b>		50	26	mg/L			10/29/21 16:58	1
<b>pH</b>	<b>7.2</b>	<b>HF</b>	0.1	0.1	SU			10/27/21 20:50	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>852.68</b>				ft			10/26/21 10:20	1
<b>Oxidation Reduction Potential</b>	<b>146.4</b>				millivolts			10/26/21 10:20	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>1.34</b>				mg/L			10/26/21 10:20	1
<b>pH, Field</b>	<b>7.30</b>				SU			10/26/21 10:20	1
<b>Specific Conductance, Field</b>	<b>624.0</b>				umhos/cm			10/26/21 10:20	1
<b>Temperature, Field</b>	<b>13.2</b>				Degrees C			10/26/21 10:20	1
<b>Turbidity, Field</b>	<b>23.2</b>				NTU			10/26/21 10:20	1

# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-303**

**Lab Sample ID: 310-218372-3**

Date Collected: 10/26/21 12:30

Matrix: Water

Date Received: 10/27/21 16:50

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8	J	5.0	2.2	mg/L			11/03/21 14:56	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 14:56	5
Sulfate	160		5.0	2.5	mg/L			11/03/21 14:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:16	1
Arsenic	4.8		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:16	1
Barium	91		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:16	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:16	1
Boron	400		100	58	ug/L		11/01/21 09:00	11/10/21 16:16	1
Cadmium	0.16		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:16	1
Calcium	87		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:16	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:16	1
Cobalt	0.66		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:16	1
Lead	0.50	B	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:16	1
Lithium	20		10	2.5	ug/L		11/01/21 09:00	11/10/21 16:16	1
Molybdenum	5.9		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:16	1
Selenium	26		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:16	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:16	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:25	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	300		50	26	mg/L			10/29/21 16:58	1
pH	7.2	HF	0.1	0.1	SU			10/27/21 20:52	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	850.54				ft			10/26/21 12:30	1
Oxidation Reduction Potential	167.1				millivolts			10/26/21 12:30	1
Oxygen, Dissolved, Client Supplied	2.57				mg/L			10/26/21 12:30	1
pH, Field	6.84				SU			10/26/21 12:30	1
Specific Conductance, Field	576.6				umhos/cm			10/26/21 12:30	1
Temperature, Field	13.5				Degrees C			10/26/21 12:30	1
Turbidity, Field	110				NTU			10/26/21 12:30	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-304**

**Lab Sample ID: 310-218372-4**

Date Collected: 10/26/21 16:15

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 9056A - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		5.0	2.2	mg/L			11/03/21 15:11	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 15:11	5
Sulfate	170		5.0	2.5	mg/L			11/03/21 15:11	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:19	1
Arsenic	<0.75		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:19	1
Barium	23		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:19	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:19	1
Boron	480		100	58	ug/L		11/01/21 09:00	11/10/21 16:19	1
Cadmium	0.24		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:19	1
Calcium	110		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:19	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:19	1
Cobalt	0.30	J	0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:19	1
Lead	0.75	B	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:19	1
Lithium	6.8	J	10	2.5	ug/L		11/01/21 09:00	11/10/21 16:19	1
Molybdenum	<1.3		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:19	1
Selenium	<0.96		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:19	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:19	1

**Method: 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:27	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	450		50	26	mg/L			10/29/21 16:58	1
pH	7.1	HF	0.1	0.1	SU			10/27/21 20:54	1

**Method: Field Sampling - Field Sampling**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ground Water Elevation	850.13				ft			10/26/21 16:15	1
Oxidation Reduction Potential	152.1				millivolts			10/26/21 16:15	1
Oxygen, Dissolved, Client Supplied	1.58				mg/L			10/26/21 16:15	1
pH, Field	7.04				SU			10/26/21 16:15	1
Specific Conductance, Field	831				umhos/cm			10/26/21 16:15	1
Temperature, Field	13.8				Degrees C			10/26/21 16:15	1
Turbidity, Field	19.8				NTU			10/26/21 16:15	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-305**

**Lab Sample ID: 310-218372-5**

Date Collected: 10/26/21 15:16

Matrix: Water

Date Received: 10/27/21 16:50

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>24</b>		5.0	2.2	mg/L			11/03/21 15:27	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 15:27	5
<b>Sulfate</b>	<b>240</b>		5.0	2.5	mg/L			11/03/21 15:27	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Arsenic</b>	<b>7.4</b>		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Barium</b>	<b>47</b>		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:22	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Boron</b>	<b>1800</b>		100	58	ug/L		11/01/21 09:00	11/10/21 16:22	1
Cadmium	<0.051		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Calcium</b>	<b>110</b>		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:22	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Cobalt</b>	<b>0.63</b>		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:22	1
Lead	<0.21		0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Lithium</b>	<b>35</b>		10	2.5	ug/L		11/01/21 09:00	11/10/21 16:22	1
<b>Molybdenum</b>	<b>55</b>		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:22	1
Selenium	<0.96		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:22	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:22	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:29	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>500</b>		50	26	mg/L			10/29/21 16:58	1
<b>pH</b>	<b>7.8</b>	HF	0.1	0.1	SU			10/27/21 20:55	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>850.12</b>				ft			10/26/21 15:16	1
<b>Oxidation Reduction Potential</b>	<b>134.7</b>				millivolts			10/26/21 15:16	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>1.15</b>				mg/L			10/26/21 15:16	1
<b>pH, Field</b>	<b>7.58</b>				SU			10/26/21 15:16	1
<b>Specific Conductance, Field</b>	<b>807</b>				umhos/cm			10/26/21 15:16	1
<b>Temperature, Field</b>	<b>14.8</b>				Degrees C			10/26/21 15:16	1
<b>Turbidity, Field</b>	<b>19.9</b>				NTU			10/26/21 15:16	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: MW-306**

**Lab Sample ID: 310-218372-6**

Date Collected: 10/26/21 13:15

Matrix: Water

Date Received: 10/27/21 16:50

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>20</b>		5.0	2.2	mg/L			11/03/21 15:42	5
Fluoride	<0.28		0.50	0.28	mg/L			11/03/21 15:42	5
<b>Sulfate</b>	<b>440</b>		5.0	2.5	mg/L			11/03/21 15:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Arsenic</b>	<b>4.1</b>		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Barium</b>	<b>74</b>		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:24	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Boron</b>	<b>4400</b>		100	58	ug/L		11/01/21 09:00	11/10/21 16:24	1
Cadmium	<0.051		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Calcium</b>	<b>150</b>		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:24	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Cobalt</b>	<b>0.59</b>		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Lead</b>	<b>0.58</b>	<b>B</b>	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Lithium</b>	<b>55</b>		10	2.5	ug/L		11/01/21 09:00	11/10/21 16:24	1
<b>Molybdenum</b>	<b>66</b>		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:24	1
Selenium	<0.96		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:24	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:24	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:31	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>690</b>		50	26	mg/L			10/29/21 16:58	1
<b>pH</b>	<b>7.8</b>	<b>HF</b>	0.1	0.1	SU			10/27/21 20:57	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Ground Water Elevation</b>	<b>850.00</b>				ft			10/26/21 13:15	1
<b>Oxidation Reduction Potential</b>	<b>161.0</b>				millivolts			10/26/21 13:15	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>1.22</b>				mg/L			10/26/21 13:15	1
<b>pH, Field</b>	<b>7.44</b>				SU			10/26/21 13:15	1
<b>Specific Conductance, Field</b>	<b>1038</b>				umhos/cm			10/26/21 13:15	1
<b>Temperature, Field</b>	<b>15.7</b>				Degrees C			10/26/21 13:15	1
<b>Turbidity, Field</b>	<b>19.8</b>				NTU			10/26/21 13:15	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-218372-7**

Date Collected: 10/26/21 17:05

Matrix: Water

Date Received: 10/27/21 16:50

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			11/03/21 15:58	1
Fluoride	<0.055		0.10	0.055	mg/L			11/03/21 15:58	1
<b>Sulfate</b>	<b>1.3</b>		1.0	0.49	mg/L			11/03/21 15:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:27	1
Arsenic	<0.75		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 16:27	1
Barium	<0.37		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 16:27	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 16:27	1
<b>Boron</b>	<b>93</b>	<b>J</b>	100	58	ug/L		11/01/21 09:00	11/10/21 16:27	1
Cadmium	<0.051		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 16:27	1
Calcium	<0.19		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 16:27	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 16:27	1
Cobalt	<0.19		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 16:27	1
<b>Lead</b>	<b>0.33</b>	<b>J B</b>	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 16:27	1
Lithium	<2.5		10	2.5	ug/L		11/01/21 09:00	11/10/21 16:27	1
Molybdenum	<1.3		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 16:27	1
Selenium	<0.96		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 16:27	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 16:27	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:27	11/10/21 09:33	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			10/29/21 16:58	1
<b>pH</b>	<b>4.2</b>	<b>HF</b>	0.1	0.1	SU			10/29/21 15:01	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## 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
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.

### 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: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-334460/3**  
**Matrix: Water**  
**Analysis Batch: 334460**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			11/03/21 12:02	1
Fluoride	<0.055		0.10	0.055	mg/L			11/03/21 12:02	1
Sulfate	<0.49		1.0	0.49	mg/L			11/03/21 12:02	1

**Lab Sample ID: LCS 310-334460/4**  
**Matrix: Water**  
**Analysis Batch: 334460**

**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	9.96		mg/L		100	90 - 110
Fluoride	2.00	1.90		mg/L		95	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

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

**Lab Sample ID: MB 310-333482/1-A**  
**Matrix: Water**  
**Analysis Batch: 335051**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 333482**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		11/01/21 09:00	11/10/21 15:34	1
Arsenic	<0.75		2.0	0.75	ug/L		11/01/21 09:00	11/10/21 15:34	1
Barium	<0.37		2.0	0.37	ug/L		11/01/21 09:00	11/10/21 15:34	1
Beryllium	<0.27		1.0	0.27	ug/L		11/01/21 09:00	11/10/21 15:34	1
Boron	<58		100	58	ug/L		11/01/21 09:00	11/10/21 15:34	1
Cadmium	<0.051		0.10	0.051	ug/L		11/01/21 09:00	11/10/21 15:34	1
Calcium	<0.19		0.50	0.19	mg/L		11/01/21 09:00	11/10/21 15:34	1
Chromium	<1.1		5.0	1.1	ug/L		11/01/21 09:00	11/10/21 15:34	1
Cobalt	<0.19		0.50	0.19	ug/L		11/01/21 09:00	11/10/21 15:34	1
Lead	0.392	J	0.50	0.21	ug/L		11/01/21 09:00	11/10/21 15:34	1
Lithium	<2.5		10	2.5	ug/L		11/01/21 09:00	11/10/21 15:34	1
Molybdenum	<1.3		2.0	1.3	ug/L		11/01/21 09:00	11/10/21 15:34	1
Selenium	<0.96		5.0	0.96	ug/L		11/01/21 09:00	11/10/21 15:34	1
Thallium	<0.26		1.0	0.26	ug/L		11/01/21 09:00	11/10/21 15:34	1

**Lab Sample ID: LCS 310-333482/2-A**  
**Matrix: Water**  
**Analysis Batch: 335051**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 333482**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	200	192		ug/L		96	80 - 120
Arsenic	200	192		ug/L		96	80 - 120
Barium	100	104		ug/L		104	80 - 120
Beryllium	100	99.6		ug/L		100	80 - 120
Boron	200	200		ug/L		100	80 - 120
Cadmium	100	96.4		ug/L		96	80 - 120
Calcium	2.00	1.71		mg/L		86	80 - 120
Chromium	100	97.8		ug/L		98	80 - 120
Cobalt	100	103		ug/L		103	80 - 120

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

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

Lab Sample ID: LCS 310-333482/2-A  
 Matrix: Water  
 Analysis Batch: 335051

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 333482

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	200	196		ug/L		98	80 - 120
Lithium	200	197		ug/L		99	80 - 120
Molybdenum	200	192		ug/L		96	80 - 120
Selenium	400	389		ug/L		97	80 - 120
Thallium	200	202		ug/L		101	80 - 120

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-334729/1-A  
 Matrix: Water  
 Analysis Batch: 335048

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 334729

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		11/08/21 15:26	11/10/21 08:59	1

Lab Sample ID: LCS 310-334729/2-A  
 Matrix: Water  
 Analysis Batch: 335048

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 334729

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.67	1.76		ug/L		106	80 - 120

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

Lab Sample ID: MB 310-333582/1  
 Matrix: Water  
 Analysis Batch: 333582

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		50	26	mg/L			10/29/21 16:58	1

Lab Sample ID: LCS 310-333582/2  
 Matrix: Water  
 Analysis Batch: 333582

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	906		mg/L		91	90 - 110

Lab Sample ID: 310-218372-5 DU  
 Matrix: Water  
 Analysis Batch: 333582

Client Sample ID: MW-305  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	500		458		mg/L		9	20

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Method: SM 4500 H+ B - pH

**Lab Sample ID: LCS 310-333213/1**  
**Matrix: Water**  
**Analysis Batch: 333213**

**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 310-333522/29**  
**Matrix: Water**  
**Analysis Batch: 333522**

**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		101	98 - 102

**Lab Sample ID: LCS 310-333522/56**  
**Matrix: Water**  
**Analysis Batch: 333522**

**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		101	98 - 102

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## HPLC/IC

### Analysis Batch: 334460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	9056A	
310-218372-2	MW-302	Total/NA	Water	9056A	
310-218372-3	MW-303	Total/NA	Water	9056A	
310-218372-4	MW-304	Total/NA	Water	9056A	
310-218372-5	MW-305	Total/NA	Water	9056A	
310-218372-6	MW-306	Total/NA	Water	9056A	
310-218372-7	Field Blank	Total/NA	Water	9056A	
MB 310-334460/3	Method Blank	Total/NA	Water	9056A	
LCS 310-334460/4	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 333482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	3005A	
310-218372-2	MW-302	Total/NA	Water	3005A	
310-218372-3	MW-303	Total/NA	Water	3005A	
310-218372-4	MW-304	Total/NA	Water	3005A	
310-218372-5	MW-305	Total/NA	Water	3005A	
310-218372-6	MW-306	Total/NA	Water	3005A	
310-218372-7	Field Blank	Total/NA	Water	3005A	
MB 310-333482/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-333482/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Prep Batch: 334729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	7470A	
310-218372-2	MW-302	Total/NA	Water	7470A	
310-218372-3	MW-303	Total/NA	Water	7470A	
310-218372-4	MW-304	Total/NA	Water	7470A	
310-218372-5	MW-305	Total/NA	Water	7470A	
310-218372-6	MW-306	Total/NA	Water	7470A	
310-218372-7	Field Blank	Total/NA	Water	7470A	
MB 310-334729/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-334729/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 335048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	7470A	334729
310-218372-2	MW-302	Total/NA	Water	7470A	334729
310-218372-3	MW-303	Total/NA	Water	7470A	334729
310-218372-4	MW-304	Total/NA	Water	7470A	334729
310-218372-5	MW-305	Total/NA	Water	7470A	334729
310-218372-6	MW-306	Total/NA	Water	7470A	334729
310-218372-7	Field Blank	Total/NA	Water	7470A	334729
MB 310-334729/1-A	Method Blank	Total/NA	Water	7470A	334729
LCS 310-334729/2-A	Lab Control Sample	Total/NA	Water	7470A	334729

### Analysis Batch: 335051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	6020A	333482

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Metals (Continued)

### Analysis Batch: 335051 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-2	MW-302	Total/NA	Water	6020A	333482
310-218372-3	MW-303	Total/NA	Water	6020A	333482
310-218372-4	MW-304	Total/NA	Water	6020A	333482
310-218372-5	MW-305	Total/NA	Water	6020A	333482
310-218372-6	MW-306	Total/NA	Water	6020A	333482
310-218372-7	Field Blank	Total/NA	Water	6020A	333482
MB 310-333482/1-A	Method Blank	Total/NA	Water	6020A	333482
LCS 310-333482/2-A	Lab Control Sample	Total/NA	Water	6020A	333482

## General Chemistry

### Analysis Batch: 333213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	SM 4500 H+ B	
310-218372-2	MW-302	Total/NA	Water	SM 4500 H+ B	
310-218372-3	MW-303	Total/NA	Water	SM 4500 H+ B	
310-218372-4	MW-304	Total/NA	Water	SM 4500 H+ B	
310-218372-5	MW-305	Total/NA	Water	SM 4500 H+ B	
310-218372-6	MW-306	Total/NA	Water	SM 4500 H+ B	
LCS 310-333213/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 333522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-7	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-333522/29	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCS 310-333522/56	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

### Analysis Batch: 333582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	SM 2540C	
310-218372-2	MW-302	Total/NA	Water	SM 2540C	
310-218372-3	MW-303	Total/NA	Water	SM 2540C	
310-218372-4	MW-304	Total/NA	Water	SM 2540C	
310-218372-5	MW-305	Total/NA	Water	SM 2540C	
310-218372-6	MW-306	Total/NA	Water	SM 2540C	
310-218372-7	Field Blank	Total/NA	Water	SM 2540C	
MB 310-333582/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-333582/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-218372-5 DU	MW-305	Total/NA	Water	SM 2540C	

## Field Service / Mobile Lab

### Analysis Batch: 334867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	Field Sampling	
310-218372-2	MW-302	Total/NA	Water	Field Sampling	
310-218372-3	MW-303	Total/NA	Water	Field Sampling	
310-218372-4	MW-304	Total/NA	Water	Field Sampling	
310-218372-5	MW-305	Total/NA	Water	Field Sampling	
310-218372-6	MW-306	Total/NA	Water	Field Sampling	

Eurofins Cedar Falls

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Client Sample ID: MW-301

Lab Sample ID: 310-218372-1

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 13:20	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:11	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:20	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:48	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 11:10	SLD	TAL CF

## Client Sample ID: MW-302

Lab Sample ID: 310-218372-2

Date Collected: 10/26/21 10:20

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 13:35	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:14	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:22	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:50	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 10:20	SLD	TAL CF

## Client Sample ID: MW-303

Lab Sample ID: 310-218372-3

Date Collected: 10/26/21 12:30

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 14:56	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:16	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:25	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:52	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 12:30	SLD	TAL CF

## Client Sample ID: MW-304

Lab Sample ID: 310-218372-4

Date Collected: 10/26/21 16:15

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 15:11	CJT	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Client Sample ID: MW-304

Date Collected: 10/26/21 16:15

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:19	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:27	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:54	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 16:15	SLD	TAL CF

## Client Sample ID: MW-305

Date Collected: 10/26/21 15:16

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 15:27	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:22	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:29	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:55	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 15:16	SLD	TAL CF

## Client Sample ID: MW-306

Date Collected: 10/26/21 13:15

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	334460	11/03/21 15:42	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:24	SAP	TAL CF
Total/NA	Prep	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:31	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333213	10/27/21 20:57	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	334867	10/26/21 13:15	SLD	TAL CF

## Client Sample ID: Field Blank

Date Collected: 10/26/21 17:05

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	334460	11/03/21 15:58	CJT	TAL CF
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:27	SAP	TAL CF

Eurofins Cedar Falls

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-218372-7**

**Date Collected: 10/26/21 17:05**

**Matrix: Water**

**Date Received: 10/27/21 16:50**

<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	7470A			334729	11/08/21 15:27	EAM	TAL CF
Total/NA	Analysis	7470A		1	335048	11/10/21 09:33	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	333582	10/29/21 16:58	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	333522	10/29/21 15:01	JAJ	TAL CF

**Laboratory References:**

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



# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-1

## Laboratory: Eurofins 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: Sutherland Generating Station 25221076

Job ID: 310-218372-1

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
3005A	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 Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing  
TestAmerica



### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>	
Client: <u>SCS engineers</u>	
City/State: <u>Clive IA</u>	Project:
<b>Receipt Information</b>	
Date/Time Received: <u>10/17/2021</u> <u>1650</u>	Received By: <u>TJB</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: _____	
<b>Condition of Cooler/Containers</b>	
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers? <u>TJB</u> <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? ↓
<b>Temperature Record</b>	
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>
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature	
Uncorrected Temp (°C): <u>1.7</u>	Corrected Temp (°C): <u>1.7</u>
• <b>Sample Container Temperature</b>	
Container(s) used:	<u>CONTAINER 1</u> <u>CONTAINER 2</u>
Uncorrected Temp (°C):	
Corrected Temp (°C):	
<b>Exceptions Noted</b>	
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	
<b>Additional Comments</b>	



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>	Project:
Receipt Information	
Date/Time Received: <u>10/17/2021 1650</u>	Received By: <u>TB</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? <u>TB</u> <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</u>
• Temp/Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature	
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 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	



Company: SCS engineers Your PO #: 25221076  
Send Report To: Meghan Blodgett MBlodgett@scsengineers.com Invoice To:


Address: 8450 Hickman Road Suite 27  
City/State/Zip Code: Clive, IA 50325  
Telephone Number: 608-509-8245 Fax:

Project Name: Sutherland generating station 25221076  
Project Number:

Sampled by: (Print Name) Rosa Cruz Email Address: rcruz@scsengineers.com  
(Signature)  CC:

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Ice	Preservative							Matrix							Analyze For:	RUSH TAT (Must call ahead)	Standard TAT	E-mail results	Fax Results	Send QC with report						
								HNO <sub>3</sub> (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H <sub>2</sub> SO <sub>4</sub> Plastic (Yellow & White Label)	H <sub>2</sub> SO <sub>4</sub> Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify: Stormwater	903.01, 904.0							6020A-mutals (11)	2540c - calcd	9056A, 0RGCM, 28D	SMHS 00 - H+		
MW-301	10-26-21	11:10		X			X										X																
MW-302	10-26-21	10:26		X			X										X																
MW-303	10-26-21	17:30		X			X										X																
MW-304	10-26-21	16:15		X			X										X																
MW-305	10-26-21	15:16		X			X										X																
MW-306	10-26-21	13:15		X			X										X																
Field Blank	10-26-21	17:05		X			X										X																

NOTE: All turn around times are calculated from the time of receipt at TestAmerica  
NOTE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.  
NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.

Relinquished by: Rosa Cruz Date: 10-26-21 Time: 8:30  
Relinquished by:  Date: 10/29/13 Time: 13:30

Shipped Via: 1650 Comments: Temperature Upon Receipt:

Received for TestAmerica by: JC Date: 10-28-21 Laboratory Comments:



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL
Appendix III Parameters	Boron	x	x	x	x	x	x	x	7
	Calcium	x	x	x	x	x	x	x	7
	Chloride	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	pH	x	x	x	x	x	x	x	7
	Sulfate	x	x	x	x	x	x	x	7
	TDS	x	x	x	x	x	x	x	7
Appendix IV Parameters	Antimony	x	x	x	x	x	x	x	7
	Arsenic	x	x	x	x	x	x	x	7
	Barium	x	x	x	x	x	x	x	7
	Beryllium	x	x	x	x	x	x	x	7
	Cadmium	x	x	x	x	x	x	x	7
	Chromium	x	x	x	x	x	x	x	7
	Cobalt	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	Lead	x	x	x	x	x	x	x	7
	Lithium	x	x	x	x	x	x	x	7
	Mercury	x	x	x	x	x	x	x	7
	Molybdenum	x	x	x	x	x	x	x	7
	Selenium	x	x	x	x	x	x	x	7
Thallium	x	x	x	x	x	x	x	7	
Radium	x	x	x	x	x	x	x	7	
Field Parameters	Groundwater Elevation	x	x	x	x	x	x		6
	Well Depth	x	x	x	x	x	x		6
	pH (field)	x	x	x	x	x	x		6
	Specific Conductance	x	x	x	x	x	x		6
	Dissolved Oxygen	x	x	x	x	x	x		6
	ORP	x	x	x	x	x	x		6
	Temperature	x	x	x	x	x	x		6
	Turbidity	x	x	x	x	x	x		6
	Color	x	x	x	x	x	x		6
	Odor	x	x	x	x	x	x		6

Notes:

I:\25221076.00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2104.xls]Sheet1

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-218372-1

**Login Number: 218372**

**List Number: 1**

**Creator: Homolar, Dana J**

**List Source: Eurofins Cedar Falls**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <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	



**Groundwater Monitoring Results - Field Parameters**  
**Sutherland Generating Station / SCS Engineers Project #25221076.00**  
**October 2021**

Sample	Sample Date/Time	GW Elevation (feet amsl)	Temperature (Deg. C)	pH (Std. Units)	Dissolved Oxygen (mg/L)	Specific Conductivity (µs/cm)	ORP (mV)	Turbidity
MW-301	10.26.2021/1110	852.42	14.3	6.21	1.44	485.0	148.3	110
MW-302	10.26.2021/1020	852.68	13.2	7.30	1.34	624.0	146.4	23.2
MW-303	10.26.2021/1230	850.54	13.5	6.84	2.57	576.6	167.1	110
MW-304	10.26.2021/1615	850.13	13.8	7.04	1.58	831	152.1	19.8
MW-305	10.26.2021/1516	850.12	14.8	7.58	1.15	807	134.7	19.9
MW-306	10.26.2021/1355	850.00	15.7	7.44	1.22	1038	161.0	19.8

Abbreviations:

mg/L = milligrams per liter

mV = millivolts

amsl = above mean sea level

Notes:

None

Created by:           NDK                                Date:           2/23/2021            
Last revision by:           RM                                Date:           11/3/2021            
Checked by:           MDB                                Date:           11/8/2021          

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\MCTW818W\[2110\_Sutherland\_CCR\_Field.xlsx]GW Field Parameters

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-218372-2

Client Project/Site: Sutherland Generating Station 25221076

**For:**

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



*Authorized for release by:  
11/26/2021 8:55:31 AM*

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## Job ID: 310-218372-2

### Laboratory: Eurofins TestAmerica, Cedar Falls

#### Narrative

#### Job Narrative 310-218372-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 10/27/2021 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 2.8° C.

#### RAD

Method 903.0: Radium-226 prep batch 160-534508: 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 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3), MW-304 (310-218372-4), MW-305 (310-218372-5), MW-306 (310-218372-6), Field Blank (310-218372-7), (LCS 160-534508/1-A), (LCSD 160-534508/2-A) and (MB 160-534508/23-A)

Method 904.0: Radium-228 prep batch 160-534515: The following sample did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative. MW-301 (310-218372-1)

Method 904.0: Radium-228 prep batch 160-534515: 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 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3), MW-304 (310-218372-4), MW-305 (310-218372-5), MW-306 (310-218372-6), Field Blank (310-218372-7), (LCS 160-534515/1-A), (LCSD 160-534515/2-A) and (MB 160-534515/23-A)

Method PrecSep\_0: Radium-228 Prep Batch 160-534515 The following samples were prepared at a reduced aliquot due to Matrix: MW-301 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3) and MW-304 (310-218372-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep\_0: Radium-228 Prep Batch 160-534515 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-305 (310-218372-5), MW-306 (310-218372-6) and Field Blank (310-218372-7). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-534508 The following samples were prepared at a reduced aliquot due to Matrix: MW-301 (310-218372-1), MW-302 (310-218372-2), MW-303 (310-218372-3) and MW-304 (310-218372-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-534508 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-305 (310-218372-5), MW-306 (310-218372-6) and Field Blank (310-218372-7). 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: Sutherland Generating Station 25221076

Job ID: 310-218372-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-218372-1	MW-301	Water	10/26/21 11:10	10/27/21 16:50
310-218372-2	MW-302	Water	10/26/21 10:20	10/27/21 16:50
310-218372-3	MW-303	Water	10/26/21 12:30	10/27/21 16:50
310-218372-4	MW-304	Water	10/26/21 16:15	10/27/21 16:50
310-218372-5	MW-305	Water	10/26/21 15:16	10/27/21 16:50
310-218372-6	MW-306	Water	10/26/21 13:15	10/27/21 16:50
310-218372-7	Field Blank	Water	10/26/21 17:05	10/27/21 16:50

1

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15



# Detection Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

<b>Client Sample ID: MW-301</b>	<b>Lab Sample ID: 310-218372-1</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-302</b>	<b>Lab Sample ID: 310-218372-2</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-303</b>	<b>Lab Sample ID: 310-218372-3</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-304</b>	<b>Lab Sample ID: 310-218372-4</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-305</b>	<b>Lab Sample ID: 310-218372-5</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: MW-306</b>	<b>Lab Sample ID: 310-218372-6</b>
<input type="checkbox"/> No Detections.	
<b>Client Sample ID: Field Blank</b>	<b>Lab Sample ID: 310-218372-7</b>
<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: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-301**  
 Date Collected: 10/26/21 11:10  
 Date Received: 10/27/21 16:50

**Lab Sample ID: 310-218372-1**  
 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	0.427		0.283	0.285	1.00	0.392	pCi/L	11/01/21 14:42	11/23/21 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	72.0		40 - 110					11/01/21 14:42	11/23/21 08:09	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	0.642	U G	0.630	0.633	1.00	1.02	pCi/L	11/01/21 15:30	11/19/21 13:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	72.0		40 - 110					11/01/21 15:30	11/19/21 13:02	1
Y Carrier	86.0		40 - 110					11/01/21 15:30	11/19/21 13:02	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	1.07		0.691	0.694	5.00	1.02	pCi/L		11/24/21 17:27	1

- 1
- 2
- 3
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- 5
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- 7
- 8
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- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-302**

**Lab Sample ID: 310-218372-2**

Date Collected: 10/26/21 10:20

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.331		0.173	0.175	1.00	0.222	pCi/L	11/01/21 14:42	11/23/21 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	94.5		40 - 110					11/01/21 14:42	11/23/21 08:09	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	0.283	U	0.332	0.333	1.00	0.546	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	94.5		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	85.2		40 - 110					11/01/21 15:30	11/19/21 13:03	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	0.614		0.374	0.376	5.00	0.546	pCi/L		11/24/21 17:27	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-303**

**Lab Sample ID: 310-218372-3**

Date Collected: 10/26/21 12:30

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.194	U	0.158	0.159	1.00	0.238	pCi/L	11/01/21 14:42	11/23/21 08:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	88.5		40 - 110					11/01/21 14:42	11/23/21 08:10	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	0.472	U	0.416	0.419	1.00	0.670	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	88.5		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	86.0		40 - 110					11/01/21 15:30	11/19/21 13:03	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	0.666	U	0.445	0.448	5.00	0.670	pCi/L		11/24/21 17:27	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-304**  
 Date Collected: 10/26/21 16:15  
 Date Received: 10/27/21 16:50

**Lab Sample ID: 310-218372-4**  
 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	0.281		0.187	0.188	1.00	0.268	pCi/L	11/01/21 14:42	11/23/21 08:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	94.5		40 - 110					11/01/21 14:42	11/23/21 08:10	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	0.440	U	0.341	0.343	1.00	0.538	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	94.5		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	85.6		40 - 110					11/01/21 15:30	11/19/21 13:03	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	0.721		0.389	0.391	5.00	0.538	pCi/L		11/24/21 17:27	1

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- 14
- 15

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-305**

**Lab Sample ID: 310-218372-5**

Date Collected: 10/26/21 15:16

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.268		0.143	0.145	1.00	0.187	pCi/L	11/01/21 14:42	11/23/21 08:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	93.5		40 - 110					11/01/21 14:42	11/23/21 08:10	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	0.752		0.291	0.299	1.00	0.405	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	93.5		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	86.4		40 - 110					11/01/21 15:30	11/19/21 13:03	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	1.02		0.324	0.332	5.00	0.405	pCi/L		11/24/21 17:27	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: MW-306**

**Lab Sample ID: 310-218372-6**

Date Collected: 10/26/21 13:15

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.145	U	0.109	0.110	1.00	0.160	pCi/L	11/01/21 14:42	11/23/21 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	94.8		40 - 110					11/01/21 14:42	11/23/21 08:11	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	0.162	U	0.223	0.223	1.00	0.372	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	94.8		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	87.5		40 - 110					11/01/21 15:30	11/19/21 13:03	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	0.307	U	0.248	0.249	5.00	0.372	pCi/L		11/24/21 17:27	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-218372-7**

Date Collected: 10/26/21 17:05

Matrix: Water

Date Received: 10/27/21 16:50

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	-0.0206	U	0.0739	0.0739	1.00	0.158	pCi/L	11/01/21 14:42	11/23/21 08:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Barium	102		40 - 110					11/01/21 14:42	11/23/21 08:11	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	-0.102	U	0.205	0.205	1.00	0.383	pCi/L	11/01/21 15:30	11/19/21 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba	102		40 - 110					11/01/21 15:30	11/19/21 13:03	1
Y Carrier	88.2		40 - 110					11/01/21 15:30	11/19/21 13:03	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	-0.123	U	0.218	0.218	5.00	0.383	pCi/L		11/24/21 17:27	1



# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## 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: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-534508/23-A**  
**Matrix: Water**  
**Analysis Batch: 538193**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534508**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 226	0.2467		0.126	0.128	1.00	0.155	pCi/L	11/01/21 14:42	11/23/21 08:15	1
Carrier	MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Barium	91.5		40 - 110			11/01/21 14:42	11/23/21 08:15	1		

**Lab Sample ID: LCS 160-534508/1-A**  
**Matrix: Water**  
**Analysis Batch: 538216**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534508**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium 226	11.3	10.81		1.18	1.00	0.177	pCi/L	95	75 - 125
Carrier	LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Barium	93.3		40 - 110						

**Lab Sample ID: LCSD 160-534508/2-A**  
**Matrix: Water**  
**Analysis Batch: 538216**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 534508**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium 226	11.3	10.30		1.13	1.00	0.187	pCi/L	91	75 - 125	0.22	1
Carrier	LCSD		Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Barium	94.5		40 - 110								

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

**Lab Sample ID: MB 160-534515/23-A**  
**Matrix: Water**  
**Analysis Batch: 537522**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 534515**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 228	-0.03004	U	0.246	0.246	1.00	0.444	pCi/L	11/01/21 15:30	11/19/21 13:02	1
Carrier	MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba	91.5		40 - 110			11/01/21 15:30	11/19/21 13:02	1		
Y Carrier	85.6		40 - 110			11/01/21 15:30	11/19/21 13:02	1		

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

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

**Lab Sample ID: LCS 160-534515/1-A**  
**Matrix: Water**  
**Analysis Batch: 537519**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 534515**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits												
Radium 228	9.13	9.238		1.09	1.00	0.414	pCi/L	101	75 - 125												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Carrier</th> <th>LCS %Yield</th> <th>LCS Qualifier</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td>Ba</td> <td>93.3</td> <td></td> <td>40 - 110</td> </tr> <tr> <td>Y Carrier</td> <td>86.0</td> <td></td> <td>40 - 110</td> </tr> </tbody> </table>										Carrier	LCS %Yield	LCS Qualifier	Limits	Ba	93.3		40 - 110	Y Carrier	86.0		40 - 110
Carrier	LCS %Yield	LCS Qualifier	Limits																		
Ba	93.3		40 - 110																		
Y Carrier	86.0		40 - 110																		

**Lab Sample ID: LCSD 160-534515/2-A**  
**Matrix: Water**  
**Analysis Batch: 537519**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 534515**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit												
Radium 228	9.13	8.339		1.00	1.00	0.380	pCi/L	91	75 - 125	0.43	1												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Carrier</th> <th>LCSD %Yield</th> <th>LCSD Qualifier</th> <th>Limits</th> </tr> </thead> <tbody> <tr> <td>Ba</td> <td>94.5</td> <td></td> <td>40 - 110</td> </tr> <tr> <td>Y Carrier</td> <td>86.0</td> <td></td> <td>40 - 110</td> </tr> </tbody> </table>												Carrier	LCSD %Yield	LCSD Qualifier	Limits	Ba	94.5		40 - 110	Y Carrier	86.0		40 - 110
Carrier	LCSD %Yield	LCSD Qualifier	Limits																				
Ba	94.5		40 - 110																				
Y Carrier	86.0		40 - 110																				

# QC Association Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## Rad

### Prep Batch: 534508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	PrecSep-21	
310-218372-2	MW-302	Total/NA	Water	PrecSep-21	
310-218372-3	MW-303	Total/NA	Water	PrecSep-21	
310-218372-4	MW-304	Total/NA	Water	PrecSep-21	
310-218372-5	MW-305	Total/NA	Water	PrecSep-21	
310-218372-6	MW-306	Total/NA	Water	PrecSep-21	
310-218372-7	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-534508/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-534508/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-534508/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 534515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	PrecSep_0	
310-218372-2	MW-302	Total/NA	Water	PrecSep_0	
310-218372-3	MW-303	Total/NA	Water	PrecSep_0	
310-218372-4	MW-304	Total/NA	Water	PrecSep_0	
310-218372-5	MW-305	Total/NA	Water	PrecSep_0	
310-218372-6	MW-306	Total/NA	Water	PrecSep_0	
310-218372-7	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-534515/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-534515/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-534515/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## Client Sample ID: MW-301

Lab Sample ID: 310-218372-1

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:09	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:02	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

## Client Sample ID: MW-302

Lab Sample ID: 310-218372-2

Date Collected: 10/26/21 10:20

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:09	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

## Client Sample ID: MW-303

Lab Sample ID: 310-218372-3

Date Collected: 10/26/21 12:30

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:10	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

## Client Sample ID: MW-304

Lab Sample ID: 310-218372-4

Date Collected: 10/26/21 16:15

Matrix: Water

Date Received: 10/27/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:10	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## Client Sample ID: MW-305

Date Collected: 10/26/21 15:16

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:10	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

## Client Sample ID: MW-306

Date Collected: 10/26/21 13:15

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:11	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	TAL SL

## Client Sample ID: Field Blank

Date Collected: 10/26/21 17:05

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			534508	11/01/21 14:42	BMP	TAL SL
Total/NA	Analysis	903.0		1	538216	11/23/21 08:11	ANW	TAL SL
Total/NA	Prep	PrecSep_0			534515	11/01/21 15:30	BMP	TAL SL
Total/NA	Analysis	904.0		1	537522	11/19/21 13:03	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	538644	11/24/21 17:27	EMH	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: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## 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	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	01-01-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-21
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-21
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

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

# Method Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

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

<b>Client Information</b>		
Client: <u>SCS engineers</u>		
City/State: <u>Clive IA</u>	CITY	STATE
Project:		
<b>Receipt Information</b>		
Date/Time Received: <u>10/17/2021 16:50</u>	DATE	TIME
Received By: <u>TJB</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: _____		
<b>Condition of Cooler/Containers</b>		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?	<u>TJB</u> <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? ↓
<b>Temperature Record</b>		
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>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>1.7</u>	Corrected Temp (°C): <u>1.7</u>	
• <b>Sample Container Temperature</b>		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		
<b>Exceptions Noted</b>		
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		
<b>Additional Comments</b>		





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>	Project:
Receipt Information	
Date/Time Received: <u>10/17/2021</u> <u>1650</u>	Received By: <u>TB</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?	<u>TB</u> <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</u>
• Temp/Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature	
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 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

Cedar Falls Division  
3019 Venture Way  
Cedar Falls, IA 50613

TestAmerica  
214

Phone: 319-277-2401 or 1-800-750-2401  
Fax: 319-277-2425

Company: SCS engineers

Send Report To: Meghan Blodgett mblodgett@scsengineers.com

Address: 8450 Hickman Road Suite 27

City/State/Zip Code: Clive, IA 50325

Telephone Number: 608-509-8245

Sampled by: (Print Name) Rosa Cruz

(Signature) *Rosa Cruz*

Your PO #: 25221076

Invoice To:

Project Name: Sutherland generating station 25221076

Project Number:

Email Address: rcruz@scsengineers.com

CC:

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative							Matrix							Analyze For:	RUSH TAT (Must call ahead)	Standard TAT	E-mail results	Fax Results	Send QC with report									
							Ice	HNO <sub>3</sub> (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H <sub>2</sub> SO <sub>4</sub> Plastic (Yellow & White Label)	H <sub>2</sub> SO <sub>4</sub> Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify: Stormwater							90.50, 90.10	6020A-mutals (11)	2540c-calcid	9056A-ORCFM-28D	SMH500-H+				
MW-301	10-26-21	11:10		X			X																												
MW-302	10-26-21	10:20		X			X																												
MW-303	10-26-21	17:30		X			X																												
MW-304	10-26-21	16:15		X			X																												
MW-305	10-26-21	15:10		X			X																												
MW-306	10-26-21	13:15		X			X																												
Field blank	10-26-21	17:05		X			X																												

NOTE: All turn around times are calculated from the time of receipt at TestAmerica  
 NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.  
 NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.

Relinquished by: Rosa Cruz  
 Date: 10-26-21  
 Time: 8:30

Relinquished by: *[Signature]*  
 Date: 10/26/21  
 Time: 13:30

Shipped Via: 1650  
 Received for TestAmerica by: *[Signature]*  
 Date: 10-28-21  
 Time: 16:50

Comments: Temperature Upon Receipt:  
 Laboratory Comments:



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL
Appendix III Parameters	Boron	x	x	x	x	x	x	x	7
	Calcium	x	x	x	x	x	x	x	7
	Chloride	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	pH	x	x	x	x	x	x	x	7
	Sulfate	x	x	x	x	x	x	x	7
	TDS	x	x	x	x	x	x	x	7
Appendix IV Parameters	Antimony	x	x	x	x	x	x	x	7
	Arsenic	x	x	x	x	x	x	x	7
	Barium	x	x	x	x	x	x	x	7
	Beryllium	x	x	x	x	x	x	x	7
	Cadmium	x	x	x	x	x	x	x	7
	Chromium	x	x	x	x	x	x	x	7
	Cobalt	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	Lead	x	x	x	x	x	x	x	7
	Lithium	x	x	x	x	x	x	x	7
	Mercury	x	x	x	x	x	x	x	7
	Molybdenum	x	x	x	x	x	x	x	7
	Selenium	x	x	x	x	x	x	x	7
Thallium	x	x	x	x	x	x	x	7	
Radium	x	x	x	x	x	x	x	7	
Field Parameters	Groundwater Elevation	x	x	x	x	x	x		6
	Well Depth	x	x	x	x	x	x		6
	pH (field)	x	x	x	x	x	x		6
	Specific Conductance	x	x	x	x	x	x		6
	Dissolved Oxygen	x	x	x	x	x	x		6
	ORP	x	x	x	x	x	x		6
	Temperature	x	x	x	x	x	x		6
	Turbidity	x	x	x	x	x	x		6
	Color	x	x	x	x	x	x		6
	Odor	x	x	x	x	x	x		6

Notes:

I:\25221076.00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2104.xls]Sheet1

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-218372-2

**Login Number: 218372**

**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: 310-218372-2

**Login Number: 218372**

**List Number: 2**

**Creator: Johnson, Autumn R**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 10/29/21 05:34 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <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	



# Tracer/Carrier Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076

Job ID: 310-218372-2

## 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)
310-218372-1	MW-301	72.0
310-218372-2	MW-302	94.5
310-218372-3	MW-303	88.5
310-218372-4	MW-304	94.5
310-218372-5	MW-305	93.5
310-218372-6	MW-306	94.8
310-218372-7	Field Blank	102
LCS 160-534508/1-A	Lab Control Sample	93.3
LCSD 160-534508/2-A	Lab Control Sample Dup	94.5
MB 160-534508/23-A	Method Blank	91.5

#### Tracer/Carrier Legend

Ba = Barium

## 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)
310-218372-1	MW-301	72.0	86.0
310-218372-2	MW-302	94.5	85.2
310-218372-3	MW-303	88.5	86.0
310-218372-4	MW-304	94.5	85.6
310-218372-5	MW-305	93.5	86.4
310-218372-6	MW-306	94.8	87.5
310-218372-7	Field Blank	102	88.2
LCS 160-534515/1-A	Lab Control Sample	93.3	86.0
LCSD 160-534515/2-A	Lab Control Sample Dup	94.5	86.0
MB 160-534515/23-A	Method Blank	91.5	85.6

#### Tracer/Carrier Legend

Ba = Ba

Y = Y Carrier

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-218372-3

Client Project/Site: Sutherland Generating Station 25221076  
MNA

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
11/10/2021 5:50:29 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

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## Job ID: 310-218372-3

---

### Laboratory: Eurofins TestAmerica, Cedar Falls

#### Narrative

---

#### Job Narrative 310-218372-3

#### Comments

No additional comments.

#### Receipt

The samples were received on 10/27/2021 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 2.8° 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.

- 1
- 2
- 3
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- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Sample Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-218372-1	MW-301	Water	10/26/21 11:10	10/27/21 16:50
310-218372-2	MW-302	Water	10/26/21 10:20	10/27/21 16:50
310-218372-3	MW-303	Water	10/26/21 12:30	10/27/21 16:50
310-218372-4	MW-304	Water	10/26/21 16:15	10/27/21 16:50
310-218372-5	MW-305	Water	10/26/21 15:16	10/27/21 16:50
310-218372-6	MW-306	Water	10/26/21 13:15	10/27/21 16:50
310-218372-7	Field Blank	Water	10/26/21 17:05	10/27/21 16:50

- 1
- 2
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- 7
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- 9
- 10
- 11
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# Detection Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Client Sample ID: MW-301

## Lab Sample ID: 310-218372-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	170		100	36	ug/L	1		6020A	Total/NA
Magnesium	16000		500	100	ug/L	1		6020A	Total/NA
Manganese	1000		10	4.4	ug/L	1		6020A	Total/NA
Potassium	1600		500	150	ug/L	1		6020A	Total/NA
Sodium	13000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	220		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	220		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-302

## Lab Sample ID: 310-218372-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1000		100	36	ug/L	1		6020A	Total/NA
Magnesium	26000		500	100	ug/L	1		6020A	Total/NA
Manganese	1000		10	4.4	ug/L	1		6020A	Total/NA
Potassium	440	J	500	150	ug/L	1		6020A	Total/NA
Sodium	9200		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	400		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	400		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-303

## Lab Sample ID: 310-218372-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2900		100	36	ug/L	1		6020A	Total/NA
Magnesium	21000		500	100	ug/L	1		6020A	Total/NA
Manganese	700		10	4.4	ug/L	1		6020A	Total/NA
Potassium	3900		500	150	ug/L	1		6020A	Total/NA
Sodium	18000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-304

## Lab Sample ID: 310-218372-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	71	J	100	36	ug/L	1		6020A	Total/NA
Magnesium	29000		500	100	ug/L	1		6020A	Total/NA
Manganese	270		10	4.4	ug/L	1		6020A	Total/NA
Potassium	600		500	150	ug/L	1		6020A	Total/NA
Sodium	33000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	350		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: MW-305

## Lab Sample ID: 310-218372-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	230		100	36	ug/L	1		6020A	Total/NA
Magnesium	25000		500	100	ug/L	1		6020A	Total/NA
Manganese	520		10	4.4	ug/L	1		6020A	Total/NA
Potassium	5900		500	150	ug/L	1		6020A	Total/NA
Sodium	38000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	230		10	4.6	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: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Client Sample ID: MW-306

## Lab Sample ID: 310-218372-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	220		100	36	ug/L	1		6020A	Total/NA
Magnesium	26000		500	100	ug/L	1		6020A	Total/NA
Manganese	1900		10	4.4	ug/L	1		6020A	Total/NA
Potassium	7400		500	150	ug/L	1		6020A	Total/NA
Sodium	41000		1000	610	ug/L	1		6020A	Total/NA
Bicarbonate Alkalinity as CaCO3	100		10	4.6	mg/L	1		SM 2320B	Total/NA
Total Alkalinity as CaCO3	100		10	4.6	mg/L	1		SM 2320B	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-218372-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Cedar Falls



# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-301**

**Lab Sample ID: 310-218372-1**

Date Collected: 10/26/21 11:10

Matrix: Water

Date Received: 10/27/21 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	170		100	36	ug/L		11/01/21 09:00	11/10/21 16:11	1
Magnesium	16000		500	100	ug/L		11/01/21 09:00	11/10/21 16:11	1
Manganese	1000		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:11	1
Potassium	1600		500	150	ug/L		11/01/21 09:00	11/10/21 16:11	1
Sodium	13000		1000	610	ug/L		11/01/21 09:00	11/10/21 16:11	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	220		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	220		10	4.6	mg/L			11/08/21 11:57	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-302**

**Lab Sample ID: 310-218372-2**

Date Collected: 10/26/21 10:20

Matrix: Water

Date Received: 10/27/21 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1000		100	36	ug/L		11/01/21 09:00	11/10/21 16:14	1
Magnesium	26000		500	100	ug/L		11/01/21 09:00	11/10/21 16:14	1
Manganese	1000		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:14	1
Potassium	440	J	500	150	ug/L		11/01/21 09:00	11/10/21 16:14	1
Sodium	9200		1000	610	ug/L		11/01/21 09:00	11/10/21 16:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	400		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	400		10	4.6	mg/L			11/08/21 11:57	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-303**

**Lab Sample ID: 310-218372-3**

Date Collected: 10/26/21 12:30

Matrix: Water

Date Received: 10/27/21 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2900		100	36	ug/L		11/01/21 09:00	11/10/21 16:16	1
Magnesium	21000		500	100	ug/L		11/01/21 09:00	11/10/21 16:16	1
Manganese	700		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:16	1
Potassium	3900		500	150	ug/L		11/01/21 09:00	11/10/21 16:16	1
Sodium	18000		1000	610	ug/L		11/01/21 09:00	11/10/21 16:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	230		10	4.6	mg/L			11/08/21 11:57	1

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# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-304**

**Lab Sample ID: 310-218372-4**

Date Collected: 10/26/21 16:15

Matrix: Water

Date Received: 10/27/21 16:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	71	J	100	36	ug/L		11/01/21 09:00	11/10/21 16:19	1
Magnesium	29000		500	100	ug/L		11/01/21 09:00	11/10/21 16:19	1
Manganese	270		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:19	1
Potassium	600		500	150	ug/L		11/01/21 09:00	11/10/21 16:19	1
Sodium	33000		1000	610	ug/L		11/01/21 09:00	11/10/21 16:19	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	350		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	350		10	4.6	mg/L			11/08/21 11:57	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-305**  
 Date Collected: 10/26/21 15:16  
 Date Received: 10/27/21 16:50

**Lab Sample ID: 310-218372-5**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	230		100	36	ug/L		11/01/21 09:00	11/10/21 16:22	1
Magnesium	25000		500	100	ug/L		11/01/21 09:00	11/10/21 16:22	1
Manganese	520		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:22	1
Potassium	5900		500	150	ug/L		11/01/21 09:00	11/10/21 16:22	1
Sodium	38000		1000	610	ug/L		11/01/21 09:00	11/10/21 16:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	230		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	230		10	4.6	mg/L			11/08/21 11:57	1



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: MW-306**  
 Date Collected: 10/26/21 13:15  
 Date Received: 10/27/21 16:50

**Lab Sample ID: 310-218372-6**  
 Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	220		100	36	ug/L		11/01/21 09:00	11/10/21 16:24	1
Magnesium	26000		500	100	ug/L		11/01/21 09:00	11/10/21 16:24	1
Manganese	1900		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:24	1
Potassium	7400		500	150	ug/L		11/01/21 09:00	11/10/21 16:24	1
Sodium	41000		1000	610	ug/L		11/01/21 09:00	11/10/21 16:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	100		10	4.6	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<4.6		10	4.6	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	100		10	4.6	mg/L			11/08/21 11:57	1

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# Client Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-218372-7**

**Date Collected: 10/26/21 17:05**

**Matrix: Water**

**Date Received: 10/27/21 16:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		11/01/21 09:00	11/10/21 16:27	1
Magnesium	<100		500	100	ug/L		11/01/21 09:00	11/10/21 16:27	1
Manganese	<4.4		10	4.4	ug/L		11/01/21 09:00	11/10/21 16:27	1
Potassium	<150		500	150	ug/L		11/01/21 09:00	11/10/21 16:27	1
Sodium	<610		1000	610	ug/L		11/01/21 09:00	11/10/21 16:27	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Qualifiers

### 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.

## 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: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

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

**Lab Sample ID: MB 310-333482/1-A**  
**Matrix: Water**  
**Analysis Batch: 335051**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 333482**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<36		100	36	ug/L		11/01/21 09:00	11/10/21 15:34	1
Magnesium	<100		500	100	ug/L		11/01/21 09:00	11/10/21 15:34	1
Manganese	<4.4		10	4.4	ug/L		11/01/21 09:00	11/10/21 15:34	1
Potassium	<150		500	150	ug/L		11/01/21 09:00	11/10/21 15:34	1
Sodium	<610		1000	610	ug/L		11/01/21 09:00	11/10/21 15:34	1

**Lab Sample ID: LCS 310-333482/2-A**  
**Matrix: Water**  
**Analysis Batch: 335051**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 333482**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	200	211		ug/L		105	80 - 120
Magnesium	2000	2090		ug/L		104	80 - 120
Manganese	100	97.7		ug/L		98	80 - 120
Potassium	2000	1990		ug/L		99	80 - 120
Sodium	2000	2070		ug/L		104	80 - 120

## Method: 2320B - Alkalinity (Low Level)

**Lab Sample ID: MB 310-334827/1**  
**Matrix: Water**  
**Analysis Batch: 334827**

**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	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/09/21 10:50	1

**Lab Sample ID: LCS 310-334827/2**  
**Matrix: Water**  
**Analysis Batch: 334827**

**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	1000	1010		mg/L		101	90 - 110

## Method: SM 2320B - Alkalinity

**Lab Sample ID: MB 310-334691/1**  
**Matrix: Water**  
**Analysis Batch: 334691**

**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	<2.3		5.0	2.3	mg/L			11/08/21 11:57	1
Carbonate Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/08/21 11:57	1
Total Alkalinity as CaCO3	<2.3		5.0	2.3	mg/L			11/08/21 11:57	1

# QC Sample Results

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 310-334691/2  
Matrix: Water  
Analysis Batch: 334691

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	1000	1060		mg/L		106	90 - 110

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Metals

### Prep Batch: 333482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	3005A	
310-218372-2	MW-302	Total/NA	Water	3005A	
310-218372-3	MW-303	Total/NA	Water	3005A	
310-218372-4	MW-304	Total/NA	Water	3005A	
310-218372-5	MW-305	Total/NA	Water	3005A	
310-218372-6	MW-306	Total/NA	Water	3005A	
310-218372-7	Field Blank	Total/NA	Water	3005A	
MB 310-333482/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-333482/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 335051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	6020A	333482
310-218372-2	MW-302	Total/NA	Water	6020A	333482
310-218372-3	MW-303	Total/NA	Water	6020A	333482
310-218372-4	MW-304	Total/NA	Water	6020A	333482
310-218372-5	MW-305	Total/NA	Water	6020A	333482
310-218372-6	MW-306	Total/NA	Water	6020A	333482
310-218372-7	Field Blank	Total/NA	Water	6020A	333482
MB 310-333482/1-A	Method Blank	Total/NA	Water	6020A	333482
LCS 310-333482/2-A	Lab Control Sample	Total/NA	Water	6020A	333482

## General Chemistry

### Analysis Batch: 334691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-1	MW-301	Total/NA	Water	SM 2320B	
310-218372-2	MW-302	Total/NA	Water	SM 2320B	
310-218372-3	MW-303	Total/NA	Water	SM 2320B	
310-218372-4	MW-304	Total/NA	Water	SM 2320B	
310-218372-5	MW-305	Total/NA	Water	SM 2320B	
310-218372-6	MW-306	Total/NA	Water	SM 2320B	
MB 310-334691/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 310-334691/2	Lab Control Sample	Total/NA	Water	SM 2320B	

### Analysis Batch: 334827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-218372-7	Field Blank	Total/NA	Water	2320B	
MB 310-334827/1	Method Blank	Total/NA	Water	2320B	
LCS 310-334827/2	Lab Control Sample	Total/NA	Water	2320B	



# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Client Sample ID: MW-301

Date Collected: 10/26/21 11:10

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:11	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

## Client Sample ID: MW-302

Date Collected: 10/26/21 10:20

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:14	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

## Client Sample ID: MW-303

Date Collected: 10/26/21 12:30

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:16	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

## Client Sample ID: MW-304

Date Collected: 10/26/21 16:15

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:19	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

## Client Sample ID: MW-305

Date Collected: 10/26/21 15:16

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:22	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## Client Sample ID: MW-306

Date Collected: 10/26/21 13:15

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:24	SAP	TAL CF
Total/NA	Analysis	SM 2320B		1	334691	11/08/21 11:57	JMH2	TAL CF

## Client Sample ID: Field Blank

Date Collected: 10/26/21 17:05

Date Received: 10/27/21 16:50

## Lab Sample ID: 310-218372-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			333482	11/01/21 09:00	JNR	TAL CF
Total/NA	Analysis	6020A		1	335051	11/10/21 16:27	SAP	TAL CF
Total/NA	Analysis	2320B		1	334827	11/09/21 10:50	WJF	TAL CF

### Laboratory References:

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

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# Accreditation/Certification Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

## 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: Sutherland Generating Station 25221076 MNA

Job ID: 310-218372-3

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
3005A	Preparation, Total Metals	SW846	TAL CF

#### Protocol References:

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

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Environment Testing  
TestAmerica



### Cooler/Sample Receipt and Temperature Log Form

<b>Client Information</b>		
Client: <u>SCS engineers</u>		
City/State: <u>Clive IA</u>	CITY	STATE
Project:		
<b>Receipt Information</b>		
Date/Time Received: <u>10/17/2021 1650</u>	DATE	TIME
Received By: <u>TJB</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: _____		
<b>Condition of Cooler/Containers</b>		
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?	<u>TJB</u> <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? ↓
<b>Temperature Record</b>		
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>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>1.7</u>	Corrected Temp (°C): <u>1.7</u>	
• <b>Sample Container Temperature</b>		
Container(s) used:	CONTAINER 1	CONTAINER 2
Uncorrected Temp (°C):		
Corrected Temp (°C):		
<b>Exceptions Noted</b>		
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		
<b>Additional Comments</b>		





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>	Project:
Receipt Information	
Date/Time Received: <u>10/17/2021 1650</u>	Received By: <u>TB</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? <u>TB</u> <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</u>
• Temp/Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature	
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 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	

Company: SCS engineers

Your PO #: 25221076

Send Report To: Meghan Blodgett mblodgett@scsengineers.com

Invoice To:

Address: 8450 Hickman Road Suite 27

City/State/Zip Code: Clive, IA 50325

Project Name: Sutherland generating station 25221076

Telephone Number: 608-509-8245

Project Number:

Sampled by: (Print Name) Rosa Cruz

Email Address: rcruz@scsengineers.com

(Signature) *Rosa Cruz*

CC:

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative							Matrix							Analyze For:	RUSH TAT (Must call ahead)	Standard TAT	E-mail results	Fax Results	Send QC with report									
							Ice	HNO3 (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H2SO4 Plastic (Yellow & White Label)	H2SO4 Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify: Stormwater							903.0, 904.0	6020A-mutals (11)	2540c-calcid	9056A.ORGCM-28D	SMH500.H+				
MW-301	10-26-21	11:10		X			X												X	X	X	X													
MW-302	10-26-21	10:26		X			X												X	X	X	X													
MW-303	10-26-21	17:30		X			X												X	X	X	X													
MW-304	10-26-21	16:15		X			X												X	X	X	X													
MW-305	10-26-21	15:16		X			X												X	X	X	X													
MW-306	10-26-21	13:15		X			X												X	X	X	X													
Field blank	10-26-21	17:05		X			X												X	X	X	X													

NOTE: All turn around times are calculated from the time of receipt at TestAmerica

NOTE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainders.

Relinquished by: Rosa Cruz

Relinquished by: *Rosa Cruz*

Relinquished by: *Rosa Cruz*

Received by: *[Signature]*

Received by: *[Signature]*

Received by: *[Signature]*

Date: 10-26-21

Date: 10-26-21

Date: 10-26-21

Time: 8:30

Time: 13:30

Time: 13:30

Shipped Via: \_\_\_\_\_

Received for TestAmerica by: *[Signature]*

Temperature Upon Receipt: \_\_\_\_\_

Laboratory Comments: \_\_\_\_\_

Shipped Via: \_\_\_\_\_



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

	Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL
Appendix III Parameters	Boron	x	x	x	x	x	x	x	7
	Calcium	x	x	x	x	x	x	x	7
	Chloride	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	pH	x	x	x	x	x	x	x	7
	Sulfate	x	x	x	x	x	x	x	7
	TDS	x	x	x	x	x	x	x	7
Appendix IV Parameters	Antimony	x	x	x	x	x	x	x	7
	Arsenic	x	x	x	x	x	x	x	7
	Barium	x	x	x	x	x	x	x	7
	Beryllium	x	x	x	x	x	x	x	7
	Cadmium	x	x	x	x	x	x	x	7
	Chromium	x	x	x	x	x	x	x	7
	Cobalt	x	x	x	x	x	x	x	7
	Fluoride	x	x	x	x	x	x	x	7
	Lead	x	x	x	x	x	x	x	7
	Lithium	x	x	x	x	x	x	x	7
	Mercury	x	x	x	x	x	x	x	7
	Molybdenum	x	x	x	x	x	x	x	7
	Selenium	x	x	x	x	x	x	x	7
Thallium	x	x	x	x	x	x	x	7	
Radium	x	x	x	x	x	x	x	7	
Field Parameters	Groundwater Elevation	x	x	x	x	x	x		6
	Well Depth	x	x	x	x	x	x		6
	pH (field)	x	x	x	x	x	x		6
	Specific Conductance	x	x	x	x	x	x		6
	Dissolved Oxygen	x	x	x	x	x	x		6
	ORP	x	x	x	x	x	x		6
	Temperature	x	x	x	x	x	x		6
	Turbidity	x	x	x	x	x	x		6
	Color	x	x	x	x	x	x		6
Odor	x	x	x	x	x	x		6	

Notes:

I:\25221076.00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2104.xls]Sheet1



Table 1. Sampling Points and Parameters - CCR Rule Sampling Program  
Groundwater Monitoring - Sutherland Generating Station/ SCS Engineers Project #25221076

		Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	Field Blank	TOTAL	
COCs #1 (non-radium) & #2 (radium) - CCR Rule Parameters	Appendix III Parameters	Boron	X	X	X	X	X	X	X	7	
		Calcium	X	X	X	X	X	X	X	7	
		Chloride	X	X	X	X	X	X	X	7	
		Fluoride	X	X	X	X	X	X	X	7	
		pH	X	X	X	X	X	X	X	7	
		Sulfate	X	X	X	X	X	X	X	7	
		TDS	X	X	X	X	X	X	X	7	
	Appendix IV Parameters	Antimony	X	X	X	X	X	X	X	X	7
		Arsenic	X	X	X	X	X	X	X	X	7
		Barium	X	X	X	X	X	X	X	X	7
		Beryllium	X	X	X	X	X	X	X	X	7
		Cadmium	X	X	X	X	X	X	X	X	7
		Chromium	X	X	X	X	X	X	X	X	7
		Cobalt	X	X	X	X	X	X	X	X	7
		Fluoride	X	X	X	X	X	X	X	X	7
		Lead	X	X	X	X	X	X	X	X	7
		Lithium	X	X	X	X	X	X	X	X	7
		Mercury	X	X	X	X	X	X	X	X	7
		Molybdenum	X	X	X	X	X	X	X	X	7
		Selenium	X	X	X	X	X	X	X	X	7
		Thallium	X	X	X	X	X	X	X	X	7
	Radium	X	X	X	X	X	X	X	X	7	
	Field Parameters	Groundwater Elevation	X	X	X	X	X	X			6
		Well Depth	X	X	X	X	X	X			6
		pH (field)	X	X	X	X	X	X			6
		Specific Conductance	X	X	X	X	X	X			6
		Dissolved Oxygen	X	X	X	X	X	X			6
		ORP	X	X	X	X	X	X			6
		Temperature	X	X	X	X	X	X			6
		Turbidity	X	X	X	X	X	X			6
		Color	X	X	X	X	X	X			6
		Odor	X	X	X	X	X	X			6
	Job #3 - MNA Parameters	Total (Unfiltered)	Alkalinity - Carbonate	X	X	X	X	X	X	X	7
Alkalinity - Bicarbonate			X	X	X	X	X	X	X	7	
Iron			X	X	X	X	X	X	X	7	
Magnesium			X	X	X	X	X	X	X	7	
Manganese			X	X	X	X	X	X	X	7	
Potassium			X	X	X	X	X	X	X	7	
Sodium			X	X	X	X	X	X	X	7	

C:\Users\FredrickS\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\MS4X960I\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling -MNA.xl

# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-218372-3

**Login Number: 218372**

**List Source: Eurofins TestAmerica, Cedar Falls**

**List Number: 1**

**Creator: Homolar, Dana J**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <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	

## D5 December 2021 Assessment Monitoring

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-221562-1

Client Project/Site: Sutherland Generating Station - 25221076  
Revision: 1

For:  
SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
12/22/2021 8:11:03 AM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

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## Job ID: 310-221562-1

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Laboratory: Eurofins TestAmerica, Cedar Falls

### Narrative

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#### Job Narrative 310-221562-1

#### Comments

No additional comments.

#### Revision

The report being provided is a revision of the original report sent on 12/20/2021. The report (revision 1) is being revised due to: Updated field data per client..

#### Receipt

The samples were received on 12/10/2021 4:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.9° C.

#### Receipt Exceptions

Mercury analysis added to both samples per client email.

#### HPLC/IC

Method 9056A: The following samples were diluted due to the nature of the sample matrix: MW-307 (310-221562-1) and MW-308 (310-221562-2). 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: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-221562-1	MW-307	Water	12/09/21 11:50	12/10/21 16:35
310-221562-2	MW-308	Water	12/09/21 12:50	12/10/21 16:35
310-221562-3	Field Blank	Water	12/09/21 13:00	12/10/21 16:35

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# Detection Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## Client Sample ID: MW-307

## Lab Sample ID: 310-221562-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	320		5.0	2.5	mg/L	5		9056A	Total/NA
Arsenic	2.6		2.0	0.75	ug/L	1		6020A	Total/NA
Barium	47		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	460		100	58	ug/L	1		6020A	Total/NA
Cadmium	0.18		0.10	0.051	ug/L	1		6020A	Total/NA
Calcium	150		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	6.8		0.50	0.19	ug/L	1		6020A	Total/NA
Lithium	22		10	2.5	ug/L	1		6020A	Total/NA
Molybdenum	6.5		2.0	1.3	ug/L	1		6020A	Total/NA
Total Dissolved Solids	700		50	26	mg/L	1		SM 2540C	Total/NA
pH	6.8	HF	0.1	0.1	SU	1		SM 4500 H+ B	Total/NA
Oxidation Reduction Potential	52.5				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	2.37				mg/L	1		Field Sampling	Total/NA
pH, Field	6.53				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	1137				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	14.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	13				NTU	1		Field Sampling	Total/NA

## Client Sample ID: MW-308

## Lab Sample ID: 310-221562-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		5.0	2.2	mg/L	5		9056A	Total/NA
Sulfate	89		5.0	2.5	mg/L	5		9056A	Total/NA
Barium	69		2.0	0.37	ug/L	1		6020A	Total/NA
Boron	330		100	58	ug/L	1		6020A	Total/NA
Calcium	96		0.50	0.19	mg/L	1		6020A	Total/NA
Cobalt	2.0		0.50	0.19	ug/L	1		6020A	Total/NA
Lead	0.21	J	0.50	0.21	ug/L	1		6020A	Total/NA
Lithium	11		10	2.5	ug/L	1		6020A	Total/NA
Total Dissolved Solids	390		50	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	-37.3				millivolts	1		Field Sampling	Total/NA
Oxygen, Dissolved, Client Supplied	6.33				mg/L	1		Field Sampling	Total/NA
pH, Field	6.96				SU	1		Field Sampling	Total/NA
Specific Conductance, Field	739				umhos/cm	1		Field Sampling	Total/NA
Temperature, Field	13.3				Degrees C	1		Field Sampling	Total/NA
Turbidity, Field	14				NTU	1		Field Sampling	Total/NA

## Client Sample ID: Field Blank

## Lab Sample ID: 310-221562-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	5.8	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: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

**Client Sample ID: MW-307**

**Lab Sample ID: 310-221562-1**

Date Collected: 12/09/21 11:50

Matrix: Water

Date Received: 12/10/21 16:35

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>19</b>		5.0	2.2	mg/L			12/20/21 13:42	5
Fluoride	<0.28		0.50	0.28	mg/L			12/20/21 13:42	5
<b>Sulfate</b>	<b>320</b>		5.0	2.5	mg/L			12/20/21 13:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Arsenic</b>	<b>2.6</b>		2.0	0.75	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Barium</b>	<b>47</b>		2.0	0.37	ug/L		12/14/21 09:00	12/15/21 17:25	1
Beryllium	<0.27		1.0	0.27	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Boron</b>	<b>460</b>		100	58	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Cadmium</b>	<b>0.18</b>		0.10	0.051	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Calcium</b>	<b>150</b>		0.50	0.19	mg/L		12/14/21 09:00	12/15/21 17:25	1
Chromium	<1.1		5.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Cobalt</b>	<b>6.8</b>		0.50	0.19	ug/L		12/14/21 09:00	12/15/21 17:25	1
Lead	<0.21		0.50	0.21	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Lithium</b>	<b>22</b>		10	2.5	ug/L		12/14/21 09:00	12/15/21 17:25	1
<b>Molybdenum</b>	<b>6.5</b>		2.0	1.3	ug/L		12/14/21 09:00	12/15/21 17:25	1
Selenium	<0.96		5.0	0.96	ug/L		12/14/21 09:00	12/15/21 17:25	1
Thallium	<0.26		1.0	0.26	ug/L		12/14/21 09:00	12/15/21 17:25	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		12/16/21 14:09	12/20/21 12:18	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>700</b>		50	26	mg/L			12/15/21 09:36	1
<b>pH</b>	<b>6.8</b>	HF	0.1	0.1	SU			12/10/21 20:42	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Oxidation Reduction Potential</b>	<b>52.5</b>				millivolts			12/09/21 11:50	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>2.37</b>				mg/L			12/09/21 11:50	1
<b>pH, Field</b>	<b>6.53</b>				SU			12/09/21 11:50	1
<b>Specific Conductance, Field</b>	<b>1137</b>				umhos/cm			12/09/21 11:50	1
<b>Temperature, Field</b>	<b>14.3</b>				Degrees C			12/09/21 11:50	1
<b>Turbidity, Field</b>	<b>13</b>				NTU			12/09/21 11:50	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

**Client Sample ID: MW-308**

**Lab Sample ID: 310-221562-2**

Date Collected: 12/09/21 12:50

Matrix: Water

Date Received: 12/10/21 16:35

### Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>17</b>		5.0	2.2	mg/L			12/20/21 13:57	5
Fluoride	<0.28		0.50	0.28	mg/L			12/20/21 13:57	5
<b>Sulfate</b>	<b>89</b>		5.0	2.5	mg/L			12/20/21 13:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:28	1
Arsenic	<0.75		2.0	0.75	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Barium</b>	<b>69</b>		2.0	0.37	ug/L		12/14/21 09:00	12/15/21 17:28	1
Beryllium	<0.27		1.0	0.27	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Boron</b>	<b>330</b>		100	58	ug/L		12/14/21 09:00	12/15/21 17:28	1
Cadmium	<0.051		0.10	0.051	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Calcium</b>	<b>96</b>		0.50	0.19	mg/L		12/14/21 09:00	12/15/21 17:28	1
Chromium	<1.1		5.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Cobalt</b>	<b>2.0</b>		0.50	0.19	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Lead</b>	<b>0.21</b>	<b>J</b>	0.50	0.21	ug/L		12/14/21 09:00	12/15/21 17:28	1
<b>Lithium</b>	<b>11</b>		10	2.5	ug/L		12/14/21 09:00	12/15/21 17:28	1
Molybdenum	<1.3		2.0	1.3	ug/L		12/14/21 09:00	12/15/21 17:28	1
Selenium	<0.96		5.0	0.96	ug/L		12/14/21 09:00	12/15/21 17:28	1
Thallium	<0.26		1.0	0.26	ug/L		12/14/21 09:00	12/15/21 17:28	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		12/16/21 14:09	12/20/21 12:24	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>390</b>		50	26	mg/L			12/15/21 09:36	1
<b>pH</b>	<b>7.2</b>	<b>HF</b>	0.1	0.1	SU			12/10/21 20:40	1

### Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Oxidation Reduction Potential</b>	<b>-37.3</b>				millivolts			12/09/21 12:50	1
<b>Oxygen, Dissolved, Client Supplied</b>	<b>6.33</b>				mg/L			12/09/21 12:50	1
<b>pH, Field</b>	<b>6.96</b>				SU			12/09/21 12:50	1
<b>Specific Conductance, Field</b>	<b>739</b>				umhos/cm			12/09/21 12:50	1
<b>Temperature, Field</b>	<b>13.3</b>				Degrees C			12/09/21 12:50	1
<b>Turbidity, Field</b>	<b>14</b>				NTU			12/09/21 12:50	1

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-221562-3**

Date Collected: 12/09/21 13:00

Matrix: Water

Date Received: 12/10/21 16:35

## Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			12/20/21 14:13	1
Fluoride	<0.055		0.10	0.055	mg/L			12/20/21 14:13	1
Sulfate	<0.49		1.0	0.49	mg/L			12/20/21 14:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:30	1
Arsenic	<0.75		2.0	0.75	ug/L		12/14/21 09:00	12/15/21 17:30	1
Barium	<0.37		2.0	0.37	ug/L		12/14/21 09:00	12/15/21 17:30	1
Beryllium	<0.27		1.0	0.27	ug/L		12/14/21 09:00	12/15/21 17:30	1
Boron	<58		100	58	ug/L		12/14/21 09:00	12/15/21 17:30	1
Cadmium	<0.051		0.10	0.051	ug/L		12/14/21 09:00	12/15/21 17:30	1
Calcium	<0.19		0.50	0.19	mg/L		12/14/21 09:00	12/15/21 17:30	1
Chromium	<1.1		5.0	1.1	ug/L		12/14/21 09:00	12/15/21 17:30	1
Cobalt	<0.19		0.50	0.19	ug/L		12/14/21 09:00	12/15/21 17:30	1
Lead	<0.21		0.50	0.21	ug/L		12/14/21 09:00	12/15/21 17:30	1
Lithium	<2.5		10	2.5	ug/L		12/14/21 09:00	12/15/21 17:30	1
Molybdenum	<1.3		2.0	1.3	ug/L		12/14/21 09:00	12/15/21 17:30	1
Selenium	<0.96		5.0	0.96	ug/L		12/14/21 09:00	12/15/21 17:30	1
Thallium	<0.26		1.0	0.26	ug/L		12/14/21 09:00	12/15/21 17:30	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		12/16/21 14:09	12/20/21 12:27	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<26		50	26	mg/L			12/15/21 09:36	1
pH	5.8	HF	0.1	0.1	SU			12/10/21 20:37	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## Qualifiers

### 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: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## Method: 9056A - Anions, Ion Chromatography

**Lab Sample ID: MB 310-339380/3**  
**Matrix: Water**  
**Analysis Batch: 339380**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.43		1.0	0.43	mg/L			12/20/21 12:08	1
Fluoride	<0.055		0.10	0.055	mg/L			12/20/21 12:08	1
Sulfate	<0.49		1.0	0.49	mg/L			12/20/21 12:08	1

**Lab Sample ID: LCS 310-339380/4**  
**Matrix: Water**  
**Analysis Batch: 339380**

**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	2.10		mg/L		105	90 - 110
Sulfate	10.0	10.7		mg/L		107	90 - 110

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

**Lab Sample ID: MB 310-338558/1-A**  
**Matrix: Water**  
**Analysis Batch: 338938**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 338558**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<1.1		2.0	1.1	ug/L		12/14/21 09:00	12/15/21 16:56	1
Arsenic	<0.75		2.0	0.75	ug/L		12/14/21 09:00	12/15/21 16:56	1
Barium	<0.37		2.0	0.37	ug/L		12/14/21 09:00	12/15/21 16:56	1
Beryllium	<0.27		1.0	0.27	ug/L		12/14/21 09:00	12/15/21 16:56	1
Boron	<58		100	58	ug/L		12/14/21 09:00	12/15/21 16:56	1
Cadmium	<0.051		0.10	0.051	ug/L		12/14/21 09:00	12/15/21 16:56	1
Calcium	<0.19		0.50	0.19	mg/L		12/14/21 09:00	12/15/21 16:56	1
Chromium	<1.1		5.0	1.1	ug/L		12/14/21 09:00	12/15/21 16:56	1
Cobalt	<0.19		0.50	0.19	ug/L		12/14/21 09:00	12/15/21 16:56	1
Lead	<0.21		0.50	0.21	ug/L		12/14/21 09:00	12/15/21 16:56	1
Lithium	<2.5		10	2.5	ug/L		12/14/21 09:00	12/15/21 16:56	1
Molybdenum	<1.3		2.0	1.3	ug/L		12/14/21 09:00	12/15/21 16:56	1
Selenium	<0.96		5.0	0.96	ug/L		12/14/21 09:00	12/15/21 16:56	1
Thallium	<0.26		1.0	0.26	ug/L		12/14/21 09:00	12/15/21 16:56	1

**Lab Sample ID: LCS 310-338558/2-A**  
**Matrix: Water**  
**Analysis Batch: 338938**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 338558**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	200	191		ug/L		96	80 - 120
Arsenic	200	199		ug/L		99	80 - 120
Barium	100	104		ug/L		104	80 - 120
Beryllium	100	94.3		ug/L		94	80 - 120
Boron	200	187		ug/L		93	80 - 120
Cadmium	100	98.8		ug/L		99	80 - 120
Calcium	2.00	1.62		mg/L		81	80 - 120
Chromium	100	98.2		ug/L		98	80 - 120
Cobalt	100	93.1		ug/L		93	80 - 120

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

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

Lab Sample ID: LCS 310-338558/2-A  
 Matrix: Water  
 Analysis Batch: 338938

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 338558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	200	214		ug/L		107	80 - 120
Lithium	200	183		ug/L		91	80 - 120
Molybdenum	200	195		ug/L		98	80 - 120
Selenium	400	352		ug/L		88	80 - 120
Thallium	200	200		ug/L		100	80 - 120

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-338997/1-A  
 Matrix: Water  
 Analysis Batch: 339383

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 338997

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.15		0.20	0.15	ug/L		12/16/21 14:08	12/20/21 12:14	1

Lab Sample ID: LCS 310-338997/2-A  
 Matrix: Water  
 Analysis Batch: 339383

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 338997

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.67	1.64		ug/L		98	80 - 120

Lab Sample ID: 310-221562-1 MS  
 Matrix: Water  
 Analysis Batch: 339383

Client Sample ID: MW-307  
 Prep Type: Total/NA  
 Prep Batch: 338997

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.15		1.67	1.46		ug/L		87	80 - 120

Lab Sample ID: 310-221562-1 MSD  
 Matrix: Water  
 Analysis Batch: 339383

Client Sample ID: MW-307  
 Prep Type: Total/NA  
 Prep Batch: 338997

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	<0.15		1.67	1.49		ug/L		89	80 - 120	2	20

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

Lab Sample ID: MB 310-338816/1  
 Matrix: Water  
 Analysis Batch: 338816

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		50	26	mg/L			12/15/21 09:36	1

Lab Sample ID: LCS 310-338816/2  
 Matrix: Water  
 Analysis Batch: 338816

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	998		mg/L		100	90 - 110

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# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

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

Lab Sample ID: 310-221562-2 DU  
 Matrix: Water  
 Analysis Batch: 338816

Client Sample ID: MW-308  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	390		392		mg/L		1	20

## Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-338428/1  
 Matrix: Water  
 Analysis Batch: 338428

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## HPLC/IC

### Analysis Batch: 339380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	9056A	
310-221562-2	MW-308	Total/NA	Water	9056A	
310-221562-3	Field Blank	Total/NA	Water	9056A	
MB 310-339380/3	Method Blank	Total/NA	Water	9056A	
LCS 310-339380/4	Lab Control Sample	Total/NA	Water	9056A	

## Metals

### Prep Batch: 338558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	3005A	
310-221562-2	MW-308	Total/NA	Water	3005A	
310-221562-3	Field Blank	Total/NA	Water	3005A	
MB 310-338558/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-338558/2-A	Lab Control Sample	Total/NA	Water	3005A	

### Analysis Batch: 338938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	6020A	338558
310-221562-2	MW-308	Total/NA	Water	6020A	338558
310-221562-3	Field Blank	Total/NA	Water	6020A	338558
MB 310-338558/1-A	Method Blank	Total/NA	Water	6020A	338558
LCS 310-338558/2-A	Lab Control Sample	Total/NA	Water	6020A	338558

### Prep Batch: 338997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	7470A	
310-221562-2	MW-308	Total/NA	Water	7470A	
310-221562-3	Field Blank	Total/NA	Water	7470A	
MB 310-338997/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-338997/2-A	Lab Control Sample	Total/NA	Water	7470A	
310-221562-1 MS	MW-307	Total/NA	Water	7470A	
310-221562-1 MSD	MW-307	Total/NA	Water	7470A	

### Analysis Batch: 339383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	7470A	338997
310-221562-2	MW-308	Total/NA	Water	7470A	338997
310-221562-3	Field Blank	Total/NA	Water	7470A	338997
MB 310-338997/1-A	Method Blank	Total/NA	Water	7470A	338997
LCS 310-338997/2-A	Lab Control Sample	Total/NA	Water	7470A	338997
310-221562-1 MS	MW-307	Total/NA	Water	7470A	338997
310-221562-1 MSD	MW-307	Total/NA	Water	7470A	338997

## General Chemistry

### Analysis Batch: 338428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	SM 4500 H+ B	
310-221562-2	MW-308	Total/NA	Water	SM 4500 H+ B	
310-221562-3	Field Blank	Total/NA	Water	SM 4500 H+ B	
LCS 310-338428/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

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# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## General Chemistry

### Analysis Batch: 338816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	SM 2540C	
310-221562-2	MW-308	Total/NA	Water	SM 2540C	
310-221562-3	Field Blank	Total/NA	Water	SM 2540C	
MB 310-338816/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-338816/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-221562-2 DU	MW-308	Total/NA	Water	SM 2540C	

## Field Service / Mobile Lab

### Analysis Batch: 339009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	Field Sampling	
310-221562-2	MW-308	Total/NA	Water	Field Sampling	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## Client Sample ID: MW-307

Date Collected: 12/09/21 11:50

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	339380	12/20/21 13:42	JNR	TAL CF
Total/NA	Prep	3005A			338558	12/14/21 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	338938	12/15/21 17:25	SAP	TAL CF
Total/NA	Prep	7470A			338997	12/16/21 14:09	EAM	TAL CF
Total/NA	Analysis	7470A		1	339383	12/20/21 12:18	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	338816	12/15/21 09:36	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	338428	12/10/21 20:42	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	339009	12/09/21 11:50	SLD	TAL CF

## Client Sample ID: MW-308

Date Collected: 12/09/21 12:50

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	339380	12/20/21 13:57	JNR	TAL CF
Total/NA	Prep	3005A			338558	12/14/21 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	338938	12/15/21 17:28	SAP	TAL CF
Total/NA	Prep	7470A			338997	12/16/21 14:09	EAM	TAL CF
Total/NA	Analysis	7470A		1	339383	12/20/21 12:24	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	338816	12/15/21 09:36	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	338428	12/10/21 20:40	JWH	TAL CF
Total/NA	Analysis	Field Sampling		1	339009	12/09/21 12:50	SLD	TAL CF

## Client Sample ID: Field Blank

Date Collected: 12/09/21 13:00

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	339380	12/20/21 14:13	JNR	TAL CF
Total/NA	Prep	3005A			338558	12/14/21 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	338938	12/15/21 17:30	SAP	TAL CF
Total/NA	Prep	7470A			338997	12/16/21 14:09	EAM	TAL CF
Total/NA	Analysis	7470A		1	339383	12/20/21 12:27	EAM	TAL CF
Total/NA	Analysis	SM 2540C		1	338816	12/15/21 09:36	ARG	TAL CF
Total/NA	Analysis	SM 4500 H+ B		1	338428	12/10/21 20:37	JWH	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: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

## 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
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- 11
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- 15

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

# Method Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-1

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
3005A	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



Environment Testing  
TestAmerica



310-221562 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>		
Client: <u>SLS Engineers</u>		
City/State: <u>Chive</u> <small>CITY</small> <u>FL</u> <small>STATE</small>	Project:	
<b>Receipt Information</b>		
Date/Time Received: <u>12/16/2021</u> <small>DATE</small> <u>1635</u> <small>TIME</small>	Received By: <u>IB</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: _____		
<b>Condition of Cooler/Containers</b>		
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? ↓
<b>Temperature Record</b>		
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>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>0.9</u>	Corrected Temp (°C): <u>0.9</u>	
• <b>Sample Container Temperature</b>		
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>
Uncorrected Temp (°C):		
Corrected Temp (°C):		
<b>Exceptions Noted</b>		
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		
<b>Additional Comments</b>		

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

<b>Client Information</b>		Lab P/N: Fredrick, Sandie	Carrier Tracking No(s): 310-66187-19293.1								
Client Contact: Rosa Cruz		E-Mail: sandra.fredrick@eurofinset.com	Page: Page 1 of 1								
Company: SCS Engineers		PWSID:	Job #:								
Address: 8450 Hickman Road, Suite 27		Analysis Requested									
City: Clive	State: IA	Total Number of Containers									
Zip: 50325	Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - D. Water V - MCAA K - EDTA L - EDA Other:									
Phone: 25221076	PO #: 25221076	Special Instructions/Note:									
Email: rcruz@scsengineers.com	WC #: 31011020										
Project Name: Sutherland Generating Station 25221076	SSOW#:										
Site:											
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020A - Metals (14)	7540C - Catcd, 9056A_ORGF#, 28D, S#4500_H+	D	N	Special Instructions/Note:
MW-307	12-9-21	11:56	G	Water	X	X	X		X	X	
MW-308	12-9-21	12:50	G	Water	X	X	X		X	X	
Field Blank	12-9-21	13:00	G	Water	X	X	X		X	X	
<b>Possible Hazard Identification</b> <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)											
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months											
<b>Special Instructions/QC Requirements:</b> Empty Kit Relinquished by: Date: _____ Relinquished by: <i>Rae Cruz</i> Date: 12-9-21 14:20 Relinquished by: <i>Rae Cruz</i> Date: 12-9-21 14:20 Relinquished by: Date: _____ Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Custody Seal No.: _____											
<b>Method of Shipment:</b> Relinquished by: <i>Rae Cruz</i> Date/Time: 12-9-21 14:25 Relinquished by: <i>Rae Cruz</i> Date/Time: 12-10-21 1635 Cooler Temperature(s) °C and Other Remarks:											



Table 1 Sampling Points and Parameters - CCR Rule Sampling Program  
 Groundwater Monitoring - Suther and Generating Station/ SCS Engineers Project #25221076

Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	Field Blank	TOTAL	
Appendix III Parameters	Boron						X	X	X	3	
	Calcium						X	X	X	3	
	Chloride						X	X	X	3	
	Fluoride						X	X	X	3	
	pH						X	X	X	3	
	Sulfate						X	X	X	3	
	TDS						X	X	X	3	
	Antimony						X	X	X	3	
	Arsenic						X	X	X	3	
	Barium						X	X	X	3	
Appendix IV Parameters	Beryllium						X	X	X	3	
	Cadmium						X	X	X	3	
	Chromium						X	X	X	3	
	Cobalt						X	X	X	3	
	Fluoride						X	X	X	3	
	Lead						X	X	X	3	
	Lithium						X	X	X	3	
	Mercury						X	X	X	3	
	Molybdenum						X	X	X	3	
	Selenium						X	X	X	3	
	Thallium						X	X	X	3	
	Radium						X	X	X	3	
	Groundwater Elevation							X	X		2
	Well Depth							X	X		2
	Field Parameters	pH (field)						X	X		2
Specific Conductance							X	X		2	
Dissolved Oxygen							X	X		2	
ORP							X	X		2	
Temperature							X	X		2	
Turbidity							X	X		2	
Color							X	X		2	
Odor							X	X		2	

Notes:

V:\Mad-501\data\Projects\25221076-00\Data and Calculations\Field Work Requests\IPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2112.xls[Sheet1]

## Fredrick, Sandie

---

**From:** Matzuk, Ryan <RMatzuk@scsengineers.com>  
**Sent:** Tuesday, December 21, 2021 3:32 PM  
**To:** Fredrick, Sandie  
**Cc:** Blodgett, Meghan  
**Subject:** Re: Eurofins TestAmerica report and EDD files from 310-221562-1 Sutherland Generating Station - 25221076

EXTERNAL EMAIL\*

Hi Sandie,

We noticed our field data was swapped when we sent you the info, sorry about that. Can you revise and resend this report? Correct field data is below. Note, the negative sign on the ORP value for MW-308 (-37.3) is missing in this report also.

MW-307

Temperature: 14.3 deg C

pH: 6.53

Dissolved Oxygen: 2.37 mg/L

Specific conductance: 1137 us/cm

ORP : 52.5 mV

Turbidity: 13 NTU

MW-308

Temperature: 13.3 deg C

pH: 6.96

Dissolved Oxygen: 6.33 mg/L

Specific conductance: 739 us/cm

ORP : -37.3 mV

Turbidity: 14 NTU

Thank You,

Ryan Matzuk  
Hydrogeologist  
2830 Dairy Drive  
Madison, WI 53718-6751 USA  
608-216-7326 (W)  
608-400-9597 (C)  
[rmatzuk@scsengineers.com](mailto:rmatzuk@scsengineers.com)

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# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-221562-1

**Login Number: 221562**

**List Source: Eurofins TestAmerica, Cedar Falls**

**List Number: 1**

**Creator: Kizer, Preston V**

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	

## Fredrick, Sandie

---

**From:** Blodgett, Meghan <mbloodgett@scsengineers.com>  
**Sent:** Thursday, December 16, 2021 11:11 AM  
**To:** Fredrick, Sandie  
**Subject:** RE: Eurofins TestAmerica Sample Login Confirmation files from 310-221562 Sutherland Generating Station - 25221076

EXTERNAL EMAIL\*

Field data:

**MW-307:**

Temperature: 13.3 deg C  
pH: 6.96  
Dissolved Oxygen: 6.33 mg/L  
Specific conductance: 739 us/cm  
ORP : -37.3 mV  
Turbidity: 14 NTU

**MW-308:**

Temperature: 14.3 deg C  
pH: 6.53  
Dissolved Oxygen: 2.37 mg/L  
Specific conductance: 1137 us/cm  
ORP : 52.5 mV  
Turbidity: 13 NTU

Meghan Blodgett  
SCS Engineers  
Madison, WI  
608-345-9221 (C)  
[mbloodgett@scsengineers.com](mailto:mbloodgett@scsengineers.com)  
[www.scsengineers.com](http://www.scsengineers.com)

---

**From:** Fredrick, Sandie <Sandra.Fredrick@Eurofinset.com>  
**Sent:** Thursday, December 16, 2021 11:01 AM  
**To:** Blodgett, Meghan <mbloodgett@scsengineers.com>  
**Subject:** RE: Eurofins TestAmerica Sample Login Confirmation files from 310-221562 Sutherland Generating Station - 25221076

This email originated from outside of SCS Engineers. Do not click links or open attachments unless you recognize the sender and know the content is safe.

## ANALYTICAL REPORT

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

Laboratory Job ID: 310-221562-2

Client Project/Site: Sutherland Generating Station - 25221076

For:

SCS Engineers  
2830 Dairy Drive  
Madison, Wisconsin 53718

Attn: Meghan Blodgett



Authorized for release by:  
1/18/2022 3:08:41 PM

Sandie Fredrick, Project Manager II  
(920)261-1660  
[sandra.fredrick@eurofinset.com](mailto:sandra.fredrick@eurofinset.com)

### LINKS

Review your project  
results through  
**Total Access**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*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: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

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## Job ID: 310-221562-2

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### Laboratory: Eurofins Cedar Falls

#### Narrative

#### Job Narrative 310-221562-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/10/2021 4:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.9° C.

#### RAD

Methods 903.0, 9315: Radium 226 batch 543537 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 (310-221562-1), MW-308 (310-221562-2), Field Blank (310-221562-3), (LCS 160-543537/1-A), (LCSD 160-543537/2-A) and (MB 160-543537/23-A)

Methods 904.0, 9320: Radium 228 batch 543544 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. Field Blank (310-221562-3)

Methods 904.0, 9320: Radium 228 batch 543544 The LCS recovered at (137%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (61-138%) per method requirements. The LCS passes, no further action is required (LCS 160-543544/1-A)

Methods 904.0, 9320: Radium 228 batch 543544 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 (310-221562-1), MW-308 (310-221562-2), (LCS 160-543544/1-A), (LCSD 160-543544/2-A) and (MB 160-543544/23-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: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-221562-1	MW-307	Water	12/09/21 11:50	12/10/21 16:35
310-221562-2	MW-308	Water	12/09/21 12:50	12/10/21 16:35
310-221562-3	Field Blank	Water	12/09/21 13:00	12/10/21 16:35

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# Detection Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

**Client Sample ID: MW-307**

**Lab Sample ID: 310-221562-1**

No Detections.

**Client Sample ID: MW-308**

**Lab Sample ID: 310-221562-2**

No Detections.

**Client Sample ID: Field Blank**

**Lab Sample ID: 310-221562-3**

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

**Client Sample ID: MW-307**

**Lab Sample ID: 310-221562-1**

Date Collected: 12/09/21 11:50

Matrix: Water

Date Received: 12/10/21 16:35

**Method: 903.0 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.138	U	0.132	0.133	1.00	0.208	pCi/L	12/23/21 12:55	01/17/22 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	73.2		40 - 110					12/23/21 12:55	01/17/22 13:39	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	1.69		0.370	0.402	1.00	0.393	pCi/L	12/23/21 13:53	01/13/22 09:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	73.2		40 - 110					12/23/21 13:53	01/13/22 09:13	1
Y Carrier	84.5		40 - 110					12/23/21 13:53	01/13/22 09:13	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	1.83		0.393	0.423	5.00	0.393	pCi/L		01/18/22 14:37	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

**Client Sample ID: MW-308**  
 Date Collected: 12/09/21 12:50  
 Date Received: 12/10/21 16:35

**Lab Sample ID: 310-221562-2**  
 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	0.0914	U	0.108	0.108	1.00	0.177	pCi/L	12/23/21 12:55	01/17/22 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		40 - 110					12/23/21 12:55	01/17/22 13:39	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	1.58		0.331	0.362	1.00	0.351	pCi/L	12/23/21 13:53	01/13/22 09:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.6		40 - 110					12/23/21 13:53	01/13/22 09:13	1
Y Carrier	82.2		40 - 110					12/23/21 13:53	01/13/22 09:13	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	1.67		0.348	0.378	5.00	0.351	pCi/L		01/18/22 14:37	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Client Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## Client Sample ID: Field Blank

## Lab Sample ID: 310-221562-3

Date Collected: 12/09/21 13:00

Matrix: Water

Date Received: 12/10/21 16:35

### Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226	0.0538	U	0.0766	0.0767	1.00	0.130	pCi/L	12/23/21 12:55	01/17/22 13:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.5		40 - 110					12/23/21 12:55	01/17/22 13:40	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	0.599		0.256	0.262	1.00	0.364	pCi/L	12/23/21 13:53	01/13/22 09:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.5		40 - 110					12/23/21 13:53	01/13/22 09:15	1
Y Carrier	82.2		40 - 110					12/23/21 13:53	01/13/22 09:15	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	0.653		0.267	0.273	5.00	0.364	pCi/L		01/18/22 14:37	1

# Definitions/Glossary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## 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.
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: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## Method: 903.0 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-543537/23-A**  
**Matrix: Water**  
**Analysis Batch: 546760**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 543537**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 226	0.1262	U	0.162	0.163	1.00	0.270	pCi/L	12/23/21 12:55	01/17/22 13:41	1
Carrier	MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	96.7		40 - 110			12/23/21 12:55	01/17/22 13:41	1		

**Lab Sample ID: LCS 160-543537/1-A**  
**Matrix: Water**  
**Analysis Batch: 546760**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 543537**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium 226	22.7	21.38		2.32	1.00	0.256	pCi/L	94	75 - 125
Carrier	LCS		Limits			Prepared	Analyzed	Dil Fac	
	%Yield	Qualifier							
Ba Carrier	93.7		40 - 110						

**Lab Sample ID: LCSD 160-543537/2-A**  
**Matrix: Water**  
**Analysis Batch: 546760**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 543537**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
				Uncert. (2σ+/-)							
Radium 226	22.7	21.49		2.38	1.00	0.323	pCi/L	95	75 - 125	0.02	1
Carrier	LCSD		Limits			Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier									
Ba Carrier	79.0		40 - 110								

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

**Lab Sample ID: MB 160-543544/23-A**  
**Matrix: Water**  
**Analysis Batch: 546234**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 543544**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium 228	0.7190		0.269	0.277	1.00	0.366	pCi/L	12/23/21 13:53	01/13/22 09:15	1
Carrier	MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	96.7		40 - 110			12/23/21 13:53	01/13/22 09:15	1		
Y Carrier	76.6		40 - 110			12/23/21 13:53	01/13/22 09:15	1		

# QC Sample Results

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

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

**Lab Sample ID: LCS 160-543544/1-A**  
**Matrix: Water**  
**Analysis Batch: 546233**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 543544**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium 228	8.97	12.27		1.36	1.00	0.355	pCi/L	137	75 - 125
<b>LCS LCS</b>									
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>						
Ba Carrier	93.7		40 - 110						
Y Carrier	81.1		40 - 110						

**Lab Sample ID: LCSD 160-543544/2-A**  
**Matrix: Water**  
**Analysis Batch: 546233**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 543544**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium 228	8.97	11.25		1.30	1.00	0.399	pCi/L	125	75 - 125	0.38	1
<b>LCSD LCSD</b>											
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>								
Ba Carrier	79.0		40 - 110								
Y Carrier	81.9		40 - 110								

# QC Association Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## Rad

### Prep Batch: 543537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	PrecSep-21	
310-221562-2	MW-308	Total/NA	Water	PrecSep-21	
310-221562-3	Field Blank	Total/NA	Water	PrecSep-21	
MB 160-543537/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-543537/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-543537/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 543544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-221562-1	MW-307	Total/NA	Water	PrecSep_0	
310-221562-2	MW-308	Total/NA	Water	PrecSep_0	
310-221562-3	Field Blank	Total/NA	Water	PrecSep_0	
MB 160-543544/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-543544/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-543544/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

# Lab Chronicle

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## Client Sample ID: MW-307

Date Collected: 12/09/21 11:50

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			543537	12/23/21 12:55	BMP	TAL SL
Total/NA	Analysis	903.0		1	546760	01/17/22 13:39	FLC	TAL SL
Total/NA	Prep	PrecSep_0			543544	12/23/21 13:53	BMP	TAL SL
Total/NA	Analysis	904.0		1	546233	01/13/22 09:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	546959	01/18/22 14:37	EMH	TAL SL

## Client Sample ID: MW-308

Date Collected: 12/09/21 12:50

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			543537	12/23/21 12:55	BMP	TAL SL
Total/NA	Analysis	903.0		1	546760	01/17/22 13:39	FLC	TAL SL
Total/NA	Prep	PrecSep_0			543544	12/23/21 13:53	BMP	TAL SL
Total/NA	Analysis	904.0		1	546233	01/13/22 09:13	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	546959	01/18/22 14:37	EMH	TAL SL

## Client Sample ID: Field Blank

Date Collected: 12/09/21 13:00

Date Received: 12/10/21 16:35

## Lab Sample ID: 310-221562-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			543537	12/23/21 12:55	BMP	TAL SL
Total/NA	Analysis	903.0		1	546760	01/17/22 13:40	FLC	TAL SL
Total/NA	Prep	PrecSep_0			543544	12/23/21 13:53	BMP	TAL SL
Total/NA	Analysis	904.0		1	546234	01/13/22 09:15	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228 Pos		1	546959	01/18/22 14:37	EMH	TAL SL

### Laboratory References:

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

# Accreditation/Certification Summary

Client: SCS Engineers  
 Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## Laboratory: Eurofins 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	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	06-30-21 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	01-01-22 *
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-22
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	03-01-22
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

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



# Method Summary

Client: SCS Engineers  
Project/Site: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

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 St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566





Environment Testing  
TestAmerica



310-221562 Chain of Custody

**Cooler/Sample Receipt and Temperature Log Form**

<b>Client Information</b>		
Client: <u>SLS Engineers</u>		
City/State: <u>Chive</u> <small>CITY</small> <u>FL</u> <small>STATE</small>	Project:	
<b>Receipt Information</b>		
Date/Time Received: <u>12/16/2021</u> <small>DATE</small> <u>1635</u> <small>TIME</small>	Received By: <u>IB</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: _____		
<b>Condition of Cooler/Containers</b>		
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? ↓
<b>Temperature Record</b>		
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>	
• <b>Temp Blank Temperature</b> – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature		
Uncorrected Temp (°C): <u>0.9</u>	Corrected Temp (°C): <u>0.9</u>	
• <b>Sample Container Temperature</b>		
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>
Uncorrected Temp (°C):		
Corrected Temp (°C):		
<b>Exceptions Noted</b>		
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		
<b>Additional Comments</b>		

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

<b>Client Information</b> Client Contact: Rosa Cruz Phone: 608-509-8245 Lab P#: 2050 CRVZ E-Mail: sandra.fredrick@eurofinset.com State of Origin:		Carrier Tracking No(s): 310-66187-19293.1 Page: Page 1 of 1 Job #:	
Company: SCS Engineers Address: 8450 Hickman Road, Suite 27 City: Clive State/Zip: IA, 50325 Phone: 25221076 Email: rcruz@scsengineers.com Project Name: Sutherland Generating Station 25221076 Site:		<b>Analysis Requested</b> Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 25221076 WC #: 31011020 Project #: 31011020 SOW#:	
<b>Sample Identification</b> MW-307 MW-308 Field Blank	Sample Date: 12-9-21 Sample Time: 11:56 12:50 13:00	Sample Type (C=Comp, G=grab): G G G	Matrix (W=water, S=solid, OM=soil, BT=tissue, A=air): Water Water Water
Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): 503.0, 904.0 6020A - Metals (14) 2540C - Cated. 9056A_ORGF#_28D_S#4500_H+		Total Number of containers:	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - D. Water V - MCAA K - EDTA L - EDA Other: 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)			
Special Instructions/Note: 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			
Special Instructions/QC Requirements: Deliverable Requested: <input type="checkbox"/> I, <input type="checkbox"/> II, <input type="checkbox"/> III, <input type="checkbox"/> IV, Other (specify) Empty Kit Relinquished by: _____ Date: _____ Relinquished by: <i>Rae Cruz</i> Date/time: 12-9-21 14:20 Relinquished by: <i>Rosa Cruz</i> Date/time: 12-9-21 14:20 Relinquished by: _____ Date/time: _____ Relinquished by: _____ Date/time: _____ Custody Seal No.: _____ Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks:			



Table 1 Sampling Points and Parameters - CCR Hule Sampling Program  
 Groundwater Monitoring - Suther and Generating Station/ SCS Engineers Project #25221076

Parameter	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306	MW-307	MW-308	Field Blank	TOTAL	
Appendix III Parameters	Boron						X	X	X	3	
	Calcium						X	X	X	3	
	Chloride						X	X	X	3	
	Fluoride						X	X	X	3	
	pH						X	X	X	3	
	Sulfate						X	X	X	3	
	TDS						X	X	X	3	
	Antimony						X	X	X	3	
	Arsenic						X	X	X	3	
	Barium						X	X	X	3	
Appendix IV Parameters	Beryllium						X	X	X	3	
	Cadmium						X	X	X	3	
	Chromium						X	X	X	3	
	Cobalt						X	X	X	3	
	Fluoride						X	X	X	3	
	Lead						X	X	X	3	
	Lithium						X	X	X	3	
	Mercury						X	X	X	3	
	Molybdenum						X	X	X	3	
	Selenium						X	X	X	3	
	Thallium						X	X	X	3	
	Radium						X	X	X	3	
	Field Parameters	Groundwater Elevation						X	X		2
		Well Depth						X	X		2
		pH (field)						X	X		2
Specific Conductance							X	X		2	
Dissolved Oxygen							X	X		2	
ORP							X	X		2	
Temperature							X	X		2	
Turbidity							X	X		2	
Color							X	X		2	
Odor							X	X		2	

Notes:

V:\Mad-501\data\Projects\25221076\00\Data and Calculations\Field Work Requests\JPL\_Sutherland Generating Station\_CCR\_Rule\_Sampling\_2112.xls[Sheet]

# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: Fredrick, Sandie	Carrier Tracking No(s): 310-44508.1								
Company: TestAmerica Laboratories, Inc.		E-Mail: sandra.fredrick@eurofinset.com	Page: Page 1 of 1								
Address: 13715 Rider Trail North, Earth City MO, 63045		State of Origin: Iowa	Job #: 310-221562-2								
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Accreditations Required (See note): State Program - Iowa	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: 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)								
Due Date Requested: 1/12/2022		<b>Analysis Requested</b>									
TAT Requested (days):		Total Number of containers									
PO #:	903.0/PreSep_21 Radium-226 (GFPC)	Perform MS/MSD (Yes or No)	Special Instructions/Note: DO NOT SHIP ON ICE TO ST. LOUIS DO NOT SHIP ON ICE TO ST. LOUIS DO NOT SHIP ON ICE TO ST. LOUIS								
WO #:	904.0/PreSep_0 Radium-226 (GFPC)	Radium-226									
Project #:	Radium-226, P/ Combined Radium-226 and										
SSOW#:											
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=soil, B=biological)	Preservation Code:	Field Filtered Sample (Yes or No)	Field Filtered Sample (Yes or No)	903.0/PreSep_21 Radium-226 (GFPC)	904.0/PreSep_0 Radium-226 (GFPC)	Radium-226	
MW-307 (310-221562-1)	12/9/21	11:50 Central		Water		X	X	X	X	X	
MW-308 (310-221562-2)	12/9/21	12:50 Central		Water		X	X	X	X	X	
Field Blank (310-221562-3)	12/9/21	13:00 Central		Water		X	X	X	X	X	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte &amp; accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica</p>											
<b>Possible Hazard Identification</b>											
Unconfirmed											
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2											
Empty Kit Relinquished by: _____ Date: _____											
Relinquished by: _____ Date/Time: 12/21/21 11:50											
Relinquished by: _____ Date/Time: _____											
Relinquished by: _____ Date/Time: _____											
Custody Seals Intact: _____ Custody Seal No.: _____											
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 Special Instructions/QC Requirements:											
Received by: _____ Date/Time: _____ Company: _____ Received by: <i>Austin Johnson</i> Date/Time: _____ Company: _____ Received by: <i>Arthur R. Johnson</i> Date/Time: _____ Company: _____ Cooler Temperature(s) °C and Other Remarks:											



# Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-221562-2

**Login Number: 221562**

**List Source: Eurofins Cedar Falls**

**List Number: 1**

**Creator: Kizer, Preston V**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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 <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: 310-221562-2

**Login Number: 221562**

**List Number: 2**

**Creator: Johnson, Autumn R**

**List Source: Eurofins St. Louis**

**List Creation: 12/14/21 11:41 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.	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: Sutherland Generating Station - 25221076

Job ID: 310-221562-2

## 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)
310-221562-1	MW-307	73.2
310-221562-2	MW-308	86.6
310-221562-3	Field Blank	95.5
LCS 160-543537/1-A	Lab Control Sample	93.7
LCSD 160-543537/2-A	Lab Control Sample Dup	79.0
MB 160-543537/23-A	Method Blank	96.7

#### 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)
310-221562-1	MW-307	73.2	84.5
310-221562-2	MW-308	86.6	82.2
310-221562-3	Field Blank	95.5	82.2
LCS 160-543544/1-A	Lab Control Sample	93.7	81.1
LCSD 160-543544/2-A	Lab Control Sample Dup	79.0	81.9
MB 160-543544/23-A	Method Blank	96.7	76.6

#### Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier





Appendix E  
Historical Monitoring Results

**Single Location**

**Name: IPL - Sutherland Generating Station**

Location ID: MW-301		Number of Sampling Dates: 16																
Parameter Name	Units	3/27/2018	5/23/2018	6/26/2018	7/26/2018	9/11/2018	11/28/2018	1/9/2019	2/12/2019	4/2/2019	10/16/2019	12/11/2019	2/3/2020	4/7/2020	10/13/2020	4/6/2021	10/26/2021	
Boron	ug/L	246	189	274	212	234	188	82.7	97.3	<110	170	<110	120	<100	370	76	62	
Calcium	mg/L	71.2	85.9	59.5	83.1	89.8	78.8	88.7	84.2	82	82	75	82	78	100	70	81	
Chloride	mg/L	15.5	46.2	6	58.6	38.2	37.5	51.4	42.1	39	37	16	28	21	71	85	9	
Field pH	Std. Units	6.84	7.62	7.5	6.46	6.82	6.6	6.83	6.85	7.16	6.97	6.69	6.79	6.87	6.66	6.69	6.21	
Fluoride	mg/L	0.15	0.22	0.26	0.27	0.2	0.2	<0.19	<0.19	0.5	0.27	<0.23	--	0.41	<0.23	2.5	<0.28	
Sulfate	mg/L	79	78.1	46.9	73.4	71.9	61.9	60.9	63	46	28	29	32	17	98	160	83	
Total Dissolved Solids	mg/L	399	489	326	433	439	426	418	420	400	340	360	380	330	540	260	200	
Antimony	ug/L	0.13	0.18	0.27	<0.15	0.78	<0.078	0.33	0.2	--	--	<0.53	--	<0.58	--	<1.1	<1.1	
Arsenic	ug/L	0.45	2.4	1.6	1.4	16.2	0.84	0.95	1.6	--	--	<0.75	<0.88	<0.88	<0.88	<0.75	<0.75	
Barium	ug/L	98	254	137	324	1110	140	135	132	--	--	130	120	240	110	59	130	
Beryllium	ug/L	0.014	0.3	<0.12	0.48	1.3	<0.089	0.17	0.16	--	--	<0.27	--	0.33	<0.27	<0.27	<0.27	
Cadmium	ug/L	0.037	0.11	<0.07	0.28	0.6	0.053	0.11	0.11	--	--	0.086	0.047	0.17	0.077	<0.051	0.08	
Chromium	ug/L	2.2	3.5	2.6	1.7	20.8	0.5	0.9	2	--	--	<0.98	--	1.1	<1.1	<1.1	<1.1	
Cobalt	ug/L	0.43	3.8	1.6	3.5	21.7	1.1	0.93	2.6	--	--	0.99	0.75	1.6	0.28	0.18	0.24	
Lead	ug/L	0.33	2.5	1.5	1.6	19.1	0.58	0.73	2	--	--	0.46	0.34	0.5	<0.11	<0.21	0.52	
Lithium	ug/L	6.5	<4.6	6.2	11.4	12.6	<4.6	<4.6	7.7	--	--	3.5	2.7	3.4	3.2	2.5	2.8	
Mercury	ug/L	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.037	--	--	<0.1	--	<0.1	--	<0.15	<0.15	
Molybdenum	ug/L	4.4	1.4	8.5	0.44	13.6	<0.57	0.99	3.6	--	--	<1.1	<1.1	2.5	<1.3	<1.3		
Selenium	ug/L	2.7	3.3	2.3	5.8	8.3	1.8	1.2	0.81	--	--	<1	--	<1	--	<0.96	2.8	
Thallium	ug/L	<0.036	<0.14	<0.14	<0.14	0.43	<0.099	<0.099	0.11	--	--	<0.27	--	<0.26	--	<0.26	<0.26	
Total Radium	pCi/L	0.18	0.429	0.637	3.32	2.53	0.875	1.79	1.1	--	--	1.06	0.388	0.291	0.463	0.256	1.07	
Radium-226	pCi/L	-0.171	0	0.342	0.713	1.58	0.51	0.915	0.462	--	--	0.083	0.0951	0.291	0.0851	0.168	0.427	
Radium-228	pCi/L	0.18	0.429	0.295	2.61	0.949	0.365	0.876	0.638	--	--	0.973	0.293	-0.02	0.378	0.0882	0.642	
pH at 25 Degrees C	Std. Units	7	6.8	7.4	6.8	6.7	7	6.9	7.2	7.1	7.2	7	7.3	6.8	6.8	7	6.2	
Field Specific Conductance	umhos/cm	645.7	738	518	673	688	459	417	601	618	642	550	651	583.7	906	502	485	
Field Temperature	deg C	7.1	10.8	14.6	14.9	19.2	13.61	8.88	5.8	4.89	17.84	12.4	9.54	11	17.8	9.9	14.3	
Oxygen, Dissolved	mg/L	0.32	0.57	3.07	0.29	0.24	0.37	0.48	0.37	1.48	0.16	0.34	3.24	0.13	0.11	0.16	1.44	
Collected By		--	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	
Collected Date		--	--	--	--	9	--	--	--	--	--	--	--	--	--	--	--	
Collected Time		--	--	--	--	9	--	--	--	--	--	--	--	--	--	--	--	
Field Oxidation Potential	millivolts	62.7	185	227	159	117.4	-76.2	74.1	75.8	58.7	34.7	84.1	61.7	143.1	30	180.2	148.3	
Groundwater Elevation	ft	855.23	855.45	856.24	855.96	857.41	856.99	856.85	856.59	857.33	856.15	857.05	856.24	856.16	854.44	854.38	852.42	
Turbidity	NTU	11.6	73.98	35.03	240.2	410.3	112	172	56.09	65	11.4	51.94	19.1	68.5	19.1	25.1	110	
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	220	
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4.6	<4.6	
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	170	
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21000	16000	
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1700	1600	
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7900	13000	
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	220	
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2000	1000	

**Single Location**

**Name: IPL - Sutherland Generating Station**

Location ID: MW-302		Number of Sampling Dates: 16																
Parameter Name	Units	3/27/2018	5/23/2018	6/26/2018	7/26/2018	9/11/2018	11/28/2018	1/9/2019	2/12/2019	4/2/2019	10/16/2019	12/12/2019	2/3/2020	4/7/2020	10/13/2020	4/6/2021	10/26/2021	
Boron	ug/L	58.4	53.7	65.3	53.8	22.4	36.6	36.7	31.5	<110	<110	<110	<100	<100	<80	67	<58	
Calcium	mg/L	67.4	67.3	69.9	80.3	77.9	65	65.4	61.7	63	57	58	56	71	71	80	95	
Chloride	mg/L	14	9.4	12.4	10.7	10.1	5.5	4.5	5.3	5.6	5.5	4.7	3.8	5.2	5.6	85	7.2	
Field pH	Std. Units	7.2	7.31	7.3	6.99	7.3	7.2	7.34	7.21	7.5	7.22	6.98	7.31	7.36	7.43	6.96	7.3	
Fluoride	mg/L	0.24	0.24	0.21	0.24	0.24	0.22	0.2	0.21	0.6	0.28	<0.23	--	0.55	0.3	2.5	<0.28	
Sulfate	mg/L	68.5	41.3	56	58.7	52.5	25.5	21.9	21.2	20	19	14	17	14	12	180	43	
Total Dissolved Solids	mg/L	309	322	352	360	356	272	255	256	270	200	240	250	250	260	300	270	
Antimony	ug/L	0.41	2.8	0.68	0.29	0.31	0.26	0.59	0.22	--	--	<0.53	--	<0.58	--	<1.1	<1.1	
Arsenic	ug/L	1.4	5.8	8.5	10.2	8.5	5.9	10.8	2.8	--	--	6.1	19	5.3	4.6	3	7.4	
Barium	ug/L	93.6	105	124	132	117	112	108	83.7	--	--	81	100	97	100	130	140	
Beryllium	ug/L	<0.012	<0.12	0.19	<0.12	<0.12	<0.089	<0.089	<0.089	--	--	<0.27	--	<0.27	<0.27	<0.27	<0.27	
Cadmium	ug/L	0.028	<0.07	<0.07	<0.07	<0.07	<0.033	0.054	<0.033	--	--	<0.039	<0.039	<0.039	<0.049	<0.051	<0.051	
Chromium	ug/L	0.35	<0.19	0.26	0.25	0.26	0.22	0.45	0.14	--	--	<0.98	--	<1.1	<1.1	<1.1	<1.1	
Cobalt	ug/L	1.8	3.5	5.7	3.4	4.2	8.4	5	6.2	--	--	1.3	3.7	1.7	0.77	4.7	1.6	
Lead	ug/L	0.19	<0.12	<0.12	0.15	<0.12	0.34	0.17	<0.13	--	--	<0.27	<0.27	<0.27	<0.11	<0.21	0.31	
Lithium	ug/L	5.2	<4.6	<4.6	7.8	<4.6	<4.6	<4.6	7.5	--	--	2.8	<2.3	<2.3	2.8	2.8	2.9	
Mercury	ug/L	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.037	--	--	<0.1	--	<0.1	--	<0.15	<0.15	
Molybdenum	ug/L	1.2	1.2	0.68	1	1.2	<0.57	1.3	0.76	--	--	<1.1	<1.1	<1.1	<1.1	<1.3	<1.3	
Selenium	ug/L	8	1	3.9	0.56	0.58	0.73	0.88	0.67	--	--	<1	--	<1	--	2.5	1.3	
Thallium	ug/L	<0.036	<0.14	<0.14	<0.14	<0.14	<0.099	<0.099	<0.099	--	--	<0.27	--	<0.26	--	<0.26	<0.26	
Total Radium	pCi/L	0.304	0.926	0.68	0.856	1.59	1.47	1.96	0.943	--	--	0.828	0.808	0.547	0.58	0.6	0.614	
Radium-226	pCi/L	0	0.392	-0.084	0.341	0.758	1.03	0.926	0.196	--	--	0.294	0.299	0.171	0.214	0.294	0.331	
Radium-228	pCi/L	0.304	0.534	0.68	0.515	0.829	0.436	1.03	0.747	--	--	0.534	0.509	0.376	0.365	0.306	0.283	
pH at 25 Degrees C	Std. Units	7.4	7.5	7.5	7.1	6.9	7.6	7.3	7.4	7.5	7.6	7.5	7.5	7.3	7.4	7.2	7.2	
Field Specific Conductance	umhos/cm	546.5	527	603	623	593	319	302	393.6	437	431	394	464	456.2	463.6	581	624	
Field Temperature	deg C	7.4	9.9	11.8	12.4	13.9	11.96	10.73	9.7	9.53	12.8	11	9.42	11.3	13.2	9.3	13.2	
Oxygen, Dissolved	mg/L	2.39	0.1	0.3	0.16	0.26	0.21	0.17	0.13	0.79	0.24	0.46	0.95	0.14	0.11	0.49	1.34	
Collected By		--	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	
Collected Date		--	--	--	--	9	--	--	--	--	--	--	--	--	--	--	--	
Collected Time		--	--	--	--	8	--	--	--	--	--	--	--	--	--	--	--	
Field Oxidation Potential	millivolts	79.3	-89	-51	-102	-58.3	-98	5.8	-42.7	10	-32.9	-45.9	5.6	-80.4	-103.6	161.9	146.4	
Groundwater Elevation	ft	855.97	855.32	856.55	855.75	857.06	856.74	856.82	856.43	857.12	855.3	856.11	856.59	856.23	854.38	854.85	852.68	
Turbidity	NTU	5.9	17.12	2.85	10.83	3.03	31.7	22.5	4.7	12.9	4.9	5.12	2.87	6.32	3.7	2.69	23.2	
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	280	400	
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4.6	<4.6	
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	210	1000	
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25000	26000	
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	320	440	
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12000	9200	
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	280	400	
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	590	1000	





**Single Location**


**Name: IPL - Sutherland Generating Station**

Location ID: MW-305		Number of Sampling Dates: 17																
Parameter Name	Units	3/26/2018	5/23/2018	6/26/2018	7/26/2018	9/11/2018	11/28/2018	1/9/2019	2/12/2019	4/2/2019	10/16/2019	12/12/2019	2/3/2020	4/7/2020	5/11/2020	10/13/2020	4/6/2021	10/26/2021
Boron	ug/L	815	741	1110	1200	992	920	847	809	660	1100	760	930	850	--	1400	1400	1800
Calcium	mg/L	173	124	96.4	108	124	152	166	139	160	140	160	140	170	--	140	150	110
Chloride	mg/L	21.9	31.5	29.5	26.9	25.3	17.4	17.5	19.9	15	23	15	17	12	--	17	91	24
Field pH	Std. Units	6.99	7.93	7.61	7.22	7.1	6.63	6.71	6.82	6.9	6.94	6.52	6.61	6.7	5.97	7.33	6.68	7.58
Fluoride	mg/L	0.54	0.63	0.64	0.74	0.72	0.53	0.44	0.6	1.4	0.77	<0.23	--	0.69	--	0.46	2.7	<0.28
Sulfate	mg/L	495	365	317	315	407	445	482	387	490	410	450	440	450	--	410	470	240
Total Dissolved Solids	mg/L	893	742	667	647	734	935	965	777	990	790	960	850	900	--	790	800	500
Antimony	ug/L	0.075	<0.15	<0.15	<0.15	<0.15	0.27	0.13	0.092	--	--	<0.53	--	<0.58	--	--	<1.1	<1.1
Arsenic	ug/L	5.9	8.6	6.9	8.6	9.1	65.9	12.9	6.9	--	--	7.6	6.3	8.8	--	11	6.4	7.4
Barium	ug/L	34.8	32.2	36.1	35.7	42.2	167	49	27.9	--	--	45	32	41	--	52	32	47
Beryllium	ug/L	0.012	<0.12	0.78	<0.12	<0.12	0.1	<0.089	<0.089	--	--	<0.27	--	<0.27	--	<0.27	<0.27	<0.27
Cadmium	ug/L	0.071	<0.07	<0.07	<0.07	<0.07	0.1	0.07	0.043	--	--	<0.039	<0.039	<0.039	--	<0.049	0.052	<0.051
Chromium	ug/L	0.69	0.62	0.45	<0.19	1.3	0.25	0.32	0.52	--	--	<0.98	--	<1.1	--	<1.1	<1.1	<1.1
Cobalt	ug/L	2.7	1.4	0.74	0.83	1.6	2.8	2.2	2	--	--	1.5	1.6	2.1	--	0.6	1.7	0.63
Lead	ug/L	0.39	0.43	0.19	0.16	0.76	0.58	0.17	0.35	--	--	0.38	<0.27	0.48	--	<0.11	<0.21	<0.21
Lithium	ug/L	21.3	14.2	21.8	17.8	16.2	16.9	8.3	18.6	--	--	16	10	12	--	22	29	35
Mercury	ug/L	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.037	--	--	<0.1	--	<0.1	--	--	<0.15	<0.15
Molybdenum	ug/L	25.8	32.5	29.3	38	35.3	21.5	23.8	27.3	--	--	24	18	20	--	36	41	55
Selenium	ug/L	0.34	0.3	0.59	<0.16	1.1	0.44	0.24	0.31	--	--	<1	--	<1	--	--	<0.96	<0.96
Thallium	ug/L	<0.036	<0.14	<0.14	<0.14	<0.14	<0.099	<0.099	<0.099	--	--	<0.27	--	<0.26	--	--	<0.26	<0.26
Total Radium	pCi/L	0.0087	1.05	0	1.27	1.15	2.23	1.33	0.852	--	--	1.54	0.51	3.1	0.557	0.986	0.34	1.02
Radium-226	pCi/L	-0.344	0.59	0	0.942	0.638	1.08	0.564	0.459	--	--	0.167	0.119	0.84	0.226	0.42	0.102	0.268
Radium-228	pCi/L	0.0087	0.458	-0.116	0.33	0.516	1.15	0.764	0.393	--	--	1.37	0.39	2.26	0.332	0.567	0.238	0.752
pH at 25 Degrees C	Std. Units	7	7.4	7.7	7.3	6.9	7	6.9	7	6.9	7.2	6.9	6.9	6.7	--	7.4	7	7.8
Field Specific Conductance	umhos/cm	1262	1012	939	935	1029	773	817	939	1168	1061	1178	1200	1198	1215	1029	1171	807
Field Temperature	deg C	9.7	11	12.1	13.3	17.9	12.24	10.3	9.4	8.49	13.81	11.4	9.9	10.2	9.1	14.8	10.9	14.8
Oxygen, Dissolved	mg/L	0.1	0.08	0.21	0.12	0.08	0.23	0.17	0.08	0.96	0.4	0.27	1.09	0.2	0.12	0.12	0.15	1.15
Collected By		--	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
Collected Date		--	--	--	--	9	--	--	--	--	--	--	--	--	--	--	--	--
Collected Time		--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--
Field Oxidation Potential	millivolts	11.9	-134	-102	-116	-77.2	-117.7	60.9	23.6	47	24.7	50.5	57.8	-6.6	20.2	-79.3	69.8	134.7
Groundwater Elevation	ft	853.64	853.99	854.55	854	855.94	854.87	854.94	854.56	855.67	854.99	854.33	854.28	854.64	853.78	851.32	853.02	850.12
Turbidity	NTU	11.12	14.96	4.69	8.39	15.83	119	3.64	12.33	6.46	2.17	78.41	4.9	8.14	2.98	3.75	3.44	19.9
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	230
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4.6	<4.6
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	230
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	40000	25000
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3900	5900
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	48000	38000
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	200	230
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1400	520

**Single Location**

**Name: IPL - Sutherland Generating Station**

Location ID: MW-306		Number of Sampling Dates: 19																		
Parameter Name	Units	3/27/2018	5/23/2018	6/26/2018	7/26/2018	9/11/2018	11/28/2018	1/9/2019	2/12/2019	4/2/2019	10/16/2019	12/12/2019	2/3/2020	4/7/2020	5/11/2020	10/13/2020	2/24/2021	4/6/2021	7/14/2021	10/26/2021
Boron	ug/L	1100	1790	2090	2120	2160	2990	3260	3350	3200	2500	2400	2500	2500	--	3800	--	3400	--	4400
Calcium	mg/L	213	201	172	199	201	166	194	183	130	200	210	220	220	--	230	--	210	--	150
Chloride	mg/L	30.8	35.1	30.2	32	29.7	14.1	18.9	18	16	13	11	12	14	--	21	--	95	--	20
Field pH	Std. Units	7.94	9.46	7.74	7.38	7.68	7.41	7.44	7.61	7.81	7.38	7.5	7.61	7.72	7.08	7.62	7.61	7.64	8.11	7.44
Fluoride	mg/L	0.46	0.5	0.5	0.56	0.63	0.53	0.44	0.48	0.93	0.38	<0.23	--	0.75	--	0.65	--	2.5	--	<0.28
Sulfate	mg/L	622	709	639	824	736	87.4	533	597	220	460	480	550	560	--	400	--	710	--	440
Total Dissolved Solids	mg/L	1160	1160	1110	1160	1170	955	1090	1020	750	1000	1100	1100	1100	--	1200	--	1200	--	690
Antimony	ug/L	0.056	<0.15	<0.15	<0.15	<0.15	<0.078	0.11	0.09	--	--	<0.53	--	<0.58	--	--	--	<1.1	--	<1.1
Arsenic	ug/L	3.6	3.1	3.3	3.4	3.8	5.2	4.7	3.9	--	--	4.3	4.6	3.6	--	4.4	--	4	--	4.1
Barium	ug/L	91.7	93.4	88.6	95.9	87.4	78.3	88	75	--	--	98	100	99	--	110	--	110	--	74
Beryllium	ug/L	<0.012	<0.12	0.49	<0.12	<0.12	<0.089	<0.089	<0.089	--	--	<0.27	--	<0.27	--	<0.27	--	<0.27	--	<0.27
Cadmium	ug/L	0.027	<0.07	<0.07	<0.07	<0.07	0.041	0.056	0.036	--	--	<0.039	<0.039	0.045	--	<0.049	--	<0.051	--	<0.051
Chromium	ug/L	0.1	<0.19	<0.19	<0.19	<0.19	<0.078	0.26	0.23	--	--	<0.98	--	<1.1	--	<1.1	--	<1.1	--	<1.1
Cobalt	ug/L	0.66	0.81	0.6	0.64	0.57	0.57	0.68	0.72	--	--	0.75	0.85	0.66	--	0.68	--	0.71	--	0.59
Lead	ug/L	0.063	<0.12	<0.12	<0.12	<0.12	<0.13	<0.13	<0.13	--	--	<0.27	<0.27	<0.27	--	<0.11	--	<0.21	--	0.58
Lithium	ug/L	37.1	28.6	29.9	32.2	31.5	36.8	35.6	43.7	--	--	40	39	40	42	52	55	48	59	55
Mercury	ug/L	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.037	--	--	<0.1	--	<0.1	--	--	--	<0.15	--	<0.15
Molybdenum	ug/L	35.8	36.4	36.1	44.5	38.2	45.6	39.6	40.6	--	--	40	38	36	--	42	--	59	--	66
Selenium	ug/L	<0.086	<0.16	0.38	<0.16	<0.16	<0.085	0.13	<0.085	--	--	<1	--	<1	--	--	--	<0.96	--	<0.96
Thallium	ug/L	<0.036	<0.14	<0.14	<0.14	<0.14	<0.099	<0.099	<0.099	--	--	<0.27	--	<0.26	--	--	--	<0.26	--	<0.26
Total Radium	pCi/L	0.996	0.0586	0.86	0	0.982	1.12	1.4	0.966	--	--	1.58	0.214	0.36	--	0.51	--	0.261	--	0.307
Radium-226	pCi/L	-0.074	0.0586	0.351	0	0.361	0.515	0.324	0.376	--	--	0.0272	0.0568	-0.0459	--	0.224	--	0.0888	--	0.145
Radium-228	pCi/L	0.996	-0.195	0.509	-0.435	0.621	0.605	1.08	0.59	--	--	1.56	0.157	0.36	--	0.286	--	0.172	--	0.162
pH at 25 Degrees C	Std. Units	7.7	7.8	7.8	7.6	7.4	6.7	7.7	7.7	7.9	7.9	7.8	7.8	7.6	--	7.8	--	7.8	--	7.8
Field Specific Conductance	umhos/cm	1509	1432	1395	1468	1469	814	871	1140	907	1294	1329	1446	1428	1557	1445	1479	1464	1178	1038
Field Temperature	deg C	10.3	11.9	12.9	14	15.7	12.53	10.73	10.7	10.79	13.09	11.6	10.86	11.1	10.7	15	11.5	12	14.1	15.7
Oxygen, Dissolved	mg/L	0.1	0.06	0.08	0.05	0.03	0.32	0.29	0.08	1.37	0.28	0.32	1.46	0.12	0.1	0.09	0.09	0.11	0.13	1.22
Collected By		--	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Collected Date		--	--	--	--	9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Collected Time		--	--	--	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Field Oxidation Potential	millivolts	0.3	-17	5	12	-172.7	2.1	39.8	-113.1	25.7	43.4	30.8	72.7	209.2	123.2	-97.4	-38.8	-29.2	57.7	161
Groundwater Elevation	ft	853.49	854.11	854.57	853.94	856.48	854.91	854.94	854.75	855.96	852.16	854.39	854.14	854.7	853.71	851.13	850.56	852.79	850.67	850
Turbidity	NTU	1.09	1.82	0.72	3.29	1	1.75	0.64	4.78	0.78	1.81	0.78	0.74	0.58	1.43	0.02	0.02	0.02	0.78	19.8
Bicarbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	170	--	100
Carbonate Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<4.2	--	<4.6
Iron, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	61	--	220
Magnesium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55000	--	26000
Potassium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7000	--	7400
Sodium, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	46000	--	41000
Total Alkalinity as CaCO3	mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	170	--	100
Manganese, total	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3400	--	1900



# Appendix F

## Statistical Evaluation



## F1 February 2021 Monitoring Event Evaluation

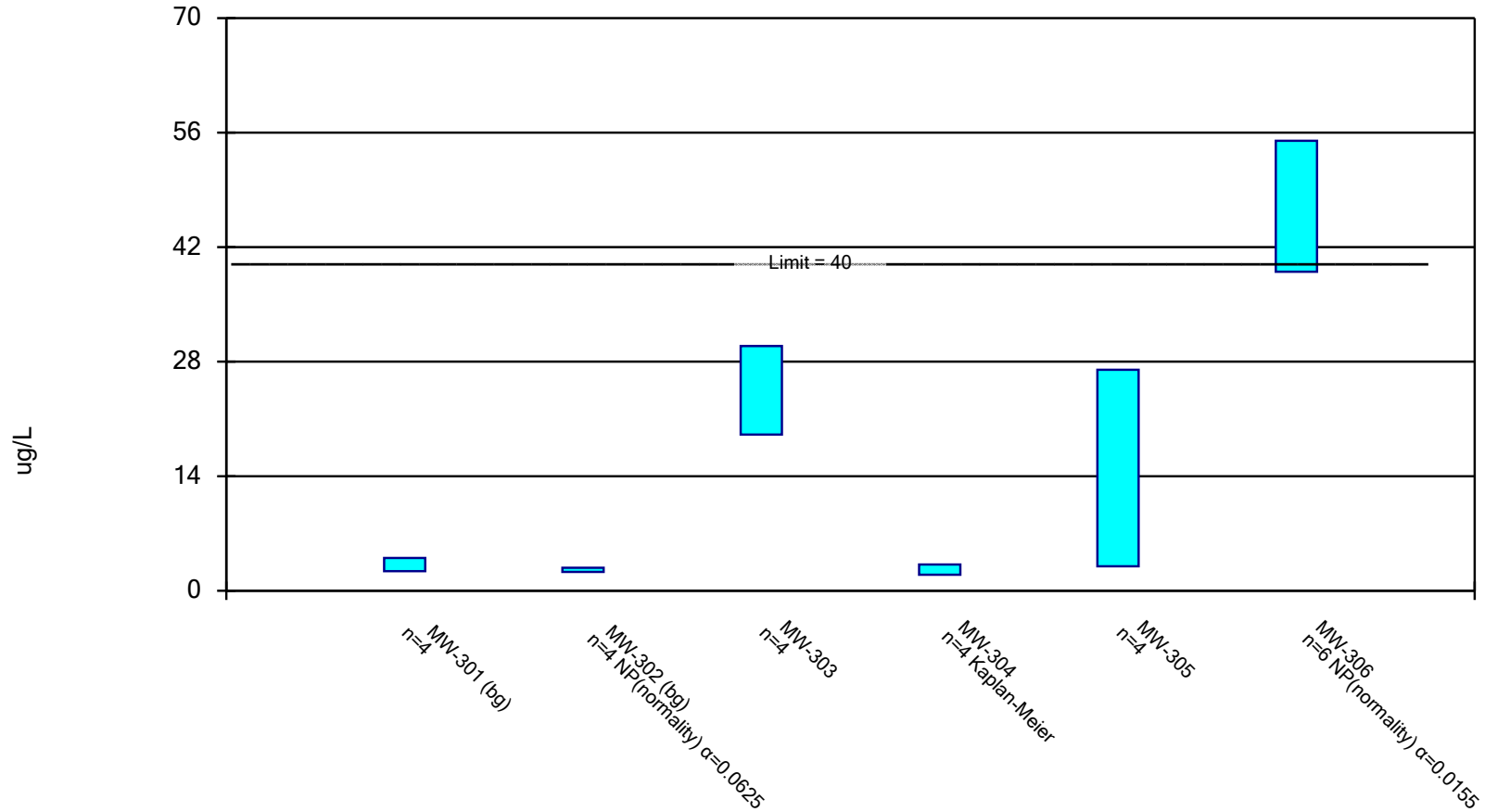
# Confidence Interval

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 5/25/2021, 3:41 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>
Lithium (ug/L)	MW-301 (bg)	4.008	2.392	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-302 (bg)	2.8	2.3	40	No	4	50	None	No	0.0625	NP (normality)
Lithium (ug/L)	MW-303	29.9	19.1	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	3.204	1.946	40	No	4	50	Kapla...	No	0.01	Param.
Lithium (ug/L)	MW-305	27.01	2.986	40	No	4	0	None	No	0.01	Param.
Lithium (ug/L)	MW-306	55	39	40	No	6	0	None	No	0.0155	NP (normality)

## 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 5/25/2021 3:38 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

# Confidence Interval

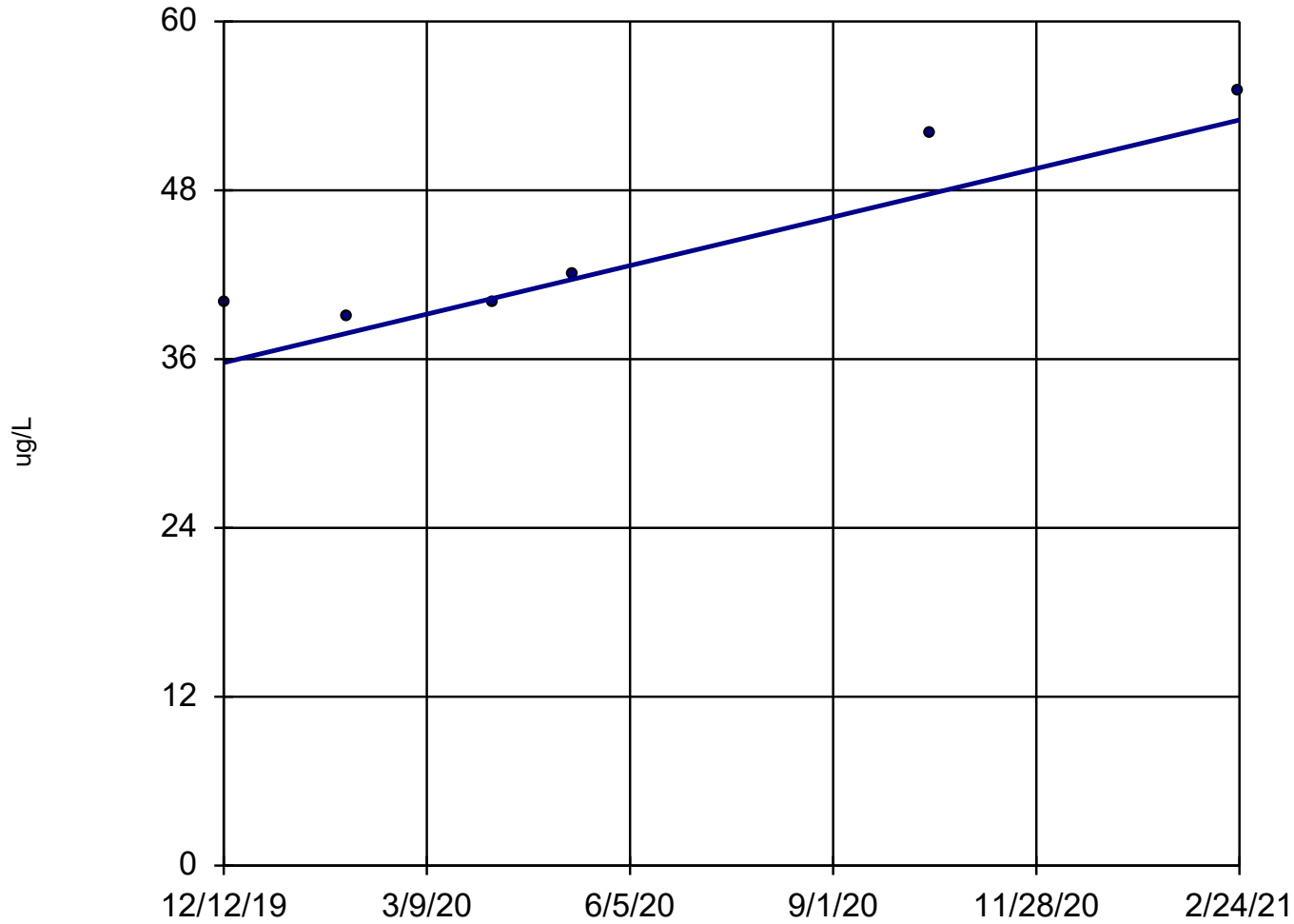
Constituent: Lithium (ug/L) Analysis Run 5/25/2021 3:41 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
12/11/2019	3.5 (J)					
12/12/2019		2.8 (J)	27	2.9 (J)	16	40
2/3/2020	2.7 (J)	<2.3 (U)	22	<2.3 (U)	10	39
4/7/2020	3.4 (J)	<2.3 (U)	23	<2.3 (U)	12	40
5/11/2020						42
10/13/2020	3.2 (J)	2.8 (J)	26	2.8 (J)	22	52
2/24/2021						55
Mean	3.2	2.55	24.5	2.575	15	44.67
Std. Dev.	0.3559	0.2887	2.38	0.3202	5.292	6.976
Upper Lim.	4.008	2.8	29.9	3.204	27.01	55
Lower Lim.	2.392	2.3	19.1	1.946	2.986	39

# Lithium

## MW-306



n = 6  
Slope = 14.31  
units per year.  
Mann-Kendall  
statistic = 12  
critical = 13  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Sen's Slope Estimator Analysis Run 5/21/2021 9:26 AM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

# Sen's Slope Estimator

Constituent: Lithium (ug/L) Analysis Run 5/21/2021 9:26 AM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

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	MW-306
12/12/2019	40
2/3/2020	39
4/7/2020	40
5/11/2020	42
10/13/2020	52
2/24/2021	55

# Trend Test

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 5/21/2021, 9:26 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Lithium (ug/L)	MW-306	14.31	12	13	No	6	0	n/a	n/a	0.02	NP

## F2 April 2021 Monitoring Event Evaluation



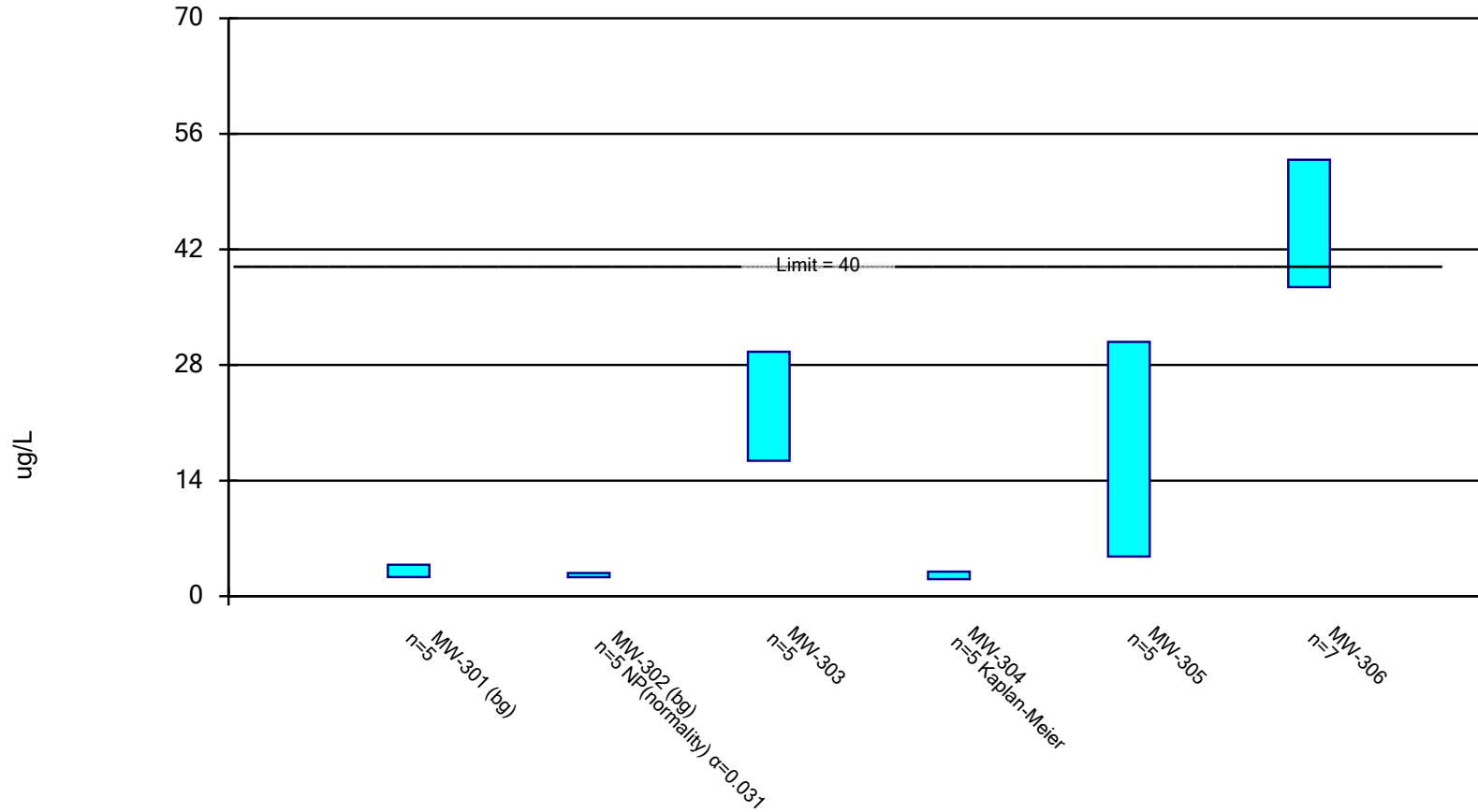
# Confidence Interval

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 7/5/2021, 11:28 AM

<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>
Lithium (ug/L)	MW-301 (bg)	3.796	2.324	40	No	5	0	None	No	0.01	Param.
Lithium (ug/L)	MW-302 (bg)	2.8	2.3	40	No	5	40	None	No	0.031	NP (normality)
Lithium (ug/L)	MW-303	29.6	16.4	40	No	5	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	2.975	2.065	40	No	5	60	Kapla...	No	0.01	Param.
Lithium (ug/L)	MW-305	30.8	4.799	40	No	5	0	None	No	0.01	Param.
Lithium (ug/L)	MW-306	52.85	37.43	40	No	7	0	None	No	0.01	Param.

## 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 7/5/2021 11:27 AM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 7/5/2021 11:28 AM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
12/11/2019	3.5 (J)					
12/12/2019		2.8 (J)	27	2.9 (J)	16	40
2/3/2020	2.7 (J)	<2.3 (U)	22	<2.3 (U)	10	39
4/7/2020	3.4 (J)	<2.3 (U)	23	<2.3 (U)	12	40
5/11/2020						42
10/13/2020	3.2 (J)	2.8 (J)	26	2.8 (J)	22	52
2/24/2021						55
4/6/2021	2.5 (J)	2.8 (J)	17	<2.5 (U)	29	48
Mean	3.06	2.6	23	2.56	17.8	45.14
Std. Dev.	0.4393	0.2739	3.937	0.2793	7.759	6.492
Upper Lim.	3.796	2.8	29.6	2.975	30.8	52.85
Lower Lim.	2.324	2.3	16.4	2.065	4.799	37.43

## F3 July 2021 Monitoring Event Evaluation

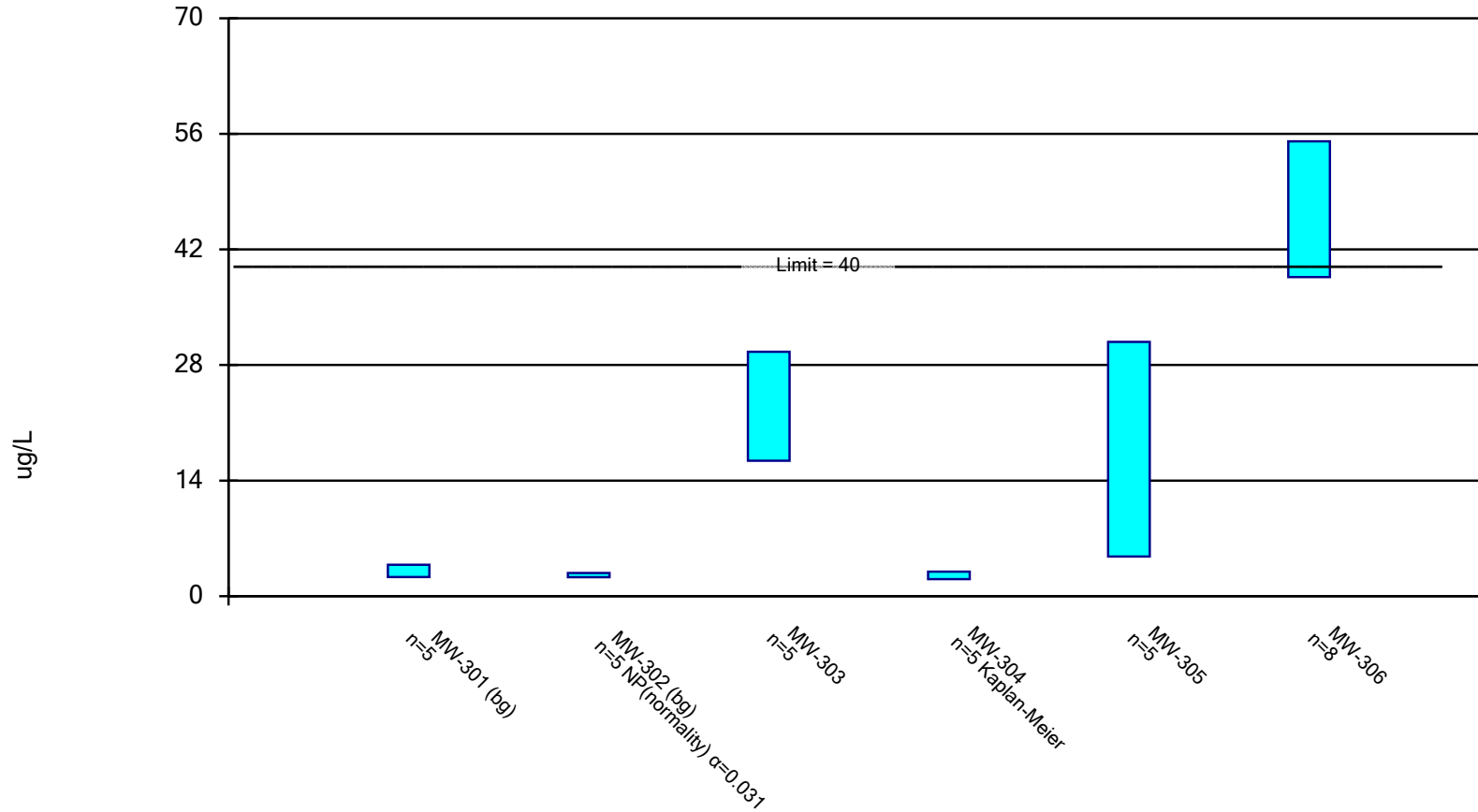
# Confidence Interval

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 8/30/2021, 3:39 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>Transform</u>	<u>Alpha</u>	<u>Method</u>
Lithium (ug/L)	MW-301 (bg)	3.796	2.324	40	No	5	0	No	0.01	Param.
Lithium (ug/L)	MW-302 (bg)	2.8	2.3	40	No	5	40	No	0.031	NP (normality)
Lithium (ug/L)	MW-303	29.6	16.4	40	No	5	0	No	0.01	Param.
Lithium (ug/L)	MW-304	2.975	2.065	40	No	5	60	No	0.01	Param.
Lithium (ug/L)	MW-305	30.8	4.799	40	No	5	0	No	0.01	Param.
Lithium (ug/L)	MW-306	55.09	38.66	40	No	8	0	No	0.01	Param.

## 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 8/30/2021 3:28 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

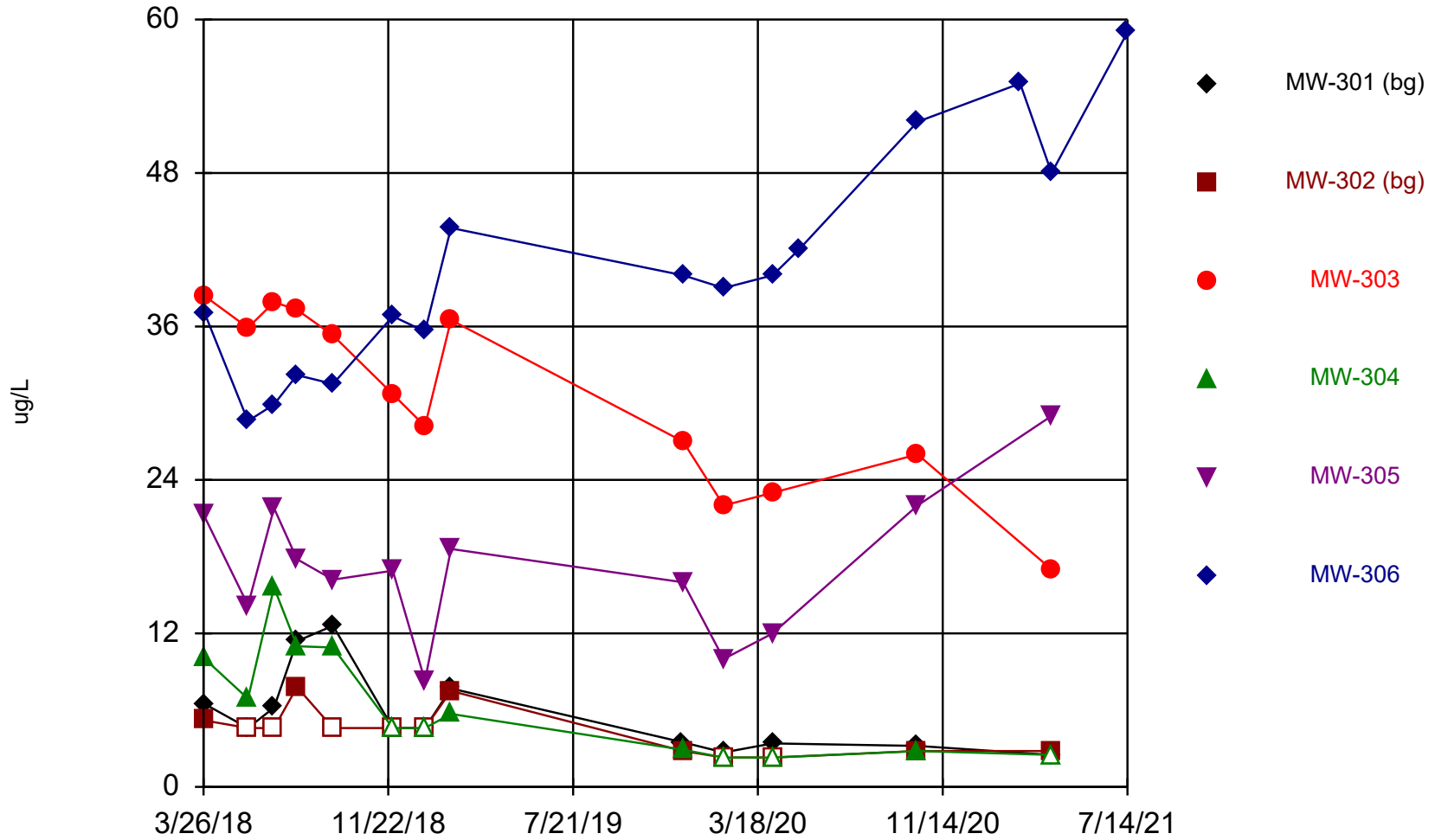
# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 8/30/2021 3:39 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
12/11/2019	3.5 (J)					
12/12/2019		2.8 (J)	27	2.9 (J)	16	40
2/3/2020	2.7 (J)	<2.3 (U)	22	<2.3 (U)	10	39
4/7/2020	3.4 (J)	<2.3 (U)	23	<2.3 (U)	12	40
5/11/2020						42
10/13/2020	3.2 (J)	2.8 (J)	26	2.8 (J)	22	52
2/24/2021						55
4/6/2021	2.5 (J)	2.8 (J)	17	<2.5 (U)	29	48
7/14/2021						59
<b>Mean</b>	3.06	2.6	23	2.56	17.8	46.88
<b>Std. Dev.</b>	0.4393	0.2739	3.937	0.2793	7.759	7.754
<b>Upper Lim.</b>	3.796	2.8	29.6	2.975	30.8	55.09
<b>Lower Lim.</b>	2.324	2.3	16.4	2.065	4.799	38.66

### Time Series



Constituent: Lithium Analysis Run 7/28/2021 2:16 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020



# Time Series

Constituent: Lithium (ug/L) Analysis Run 7/28/2021 2:27 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
3/26/2018				10.1	21.3	
3/27/2018	6.5 (J)	5.2 (J)	38.4			37.1
5/23/2018	<4.6 (U)	<4.6 (U)	35.9	6.9 (J)	14.2	28.6
6/26/2018	6.2 (J)	<4.6 (U)	37.9	15.6	21.8	29.9
7/26/2018	11.4	7.8 (J)	37.3	11	17.8	32.2
9/11/2018	12.6	<4.6 (U)	35.3	10.9	16.2	31.5
11/28/2018	<4.6 (U)	<4.6 (U)	30.7	<4.6 (U)	16.9	36.8
1/9/2019	<4.6 (U)	<4.6 (U)	28.2	<4.6 (U)	8.3 (J)	35.6
2/12/2019	7.7 (J)	7.5 (J)	36.5	5.7 (J)	18.6	43.7
12/11/2019	3.5 (J)					
12/12/2019		2.8 (J)	27	2.9 (J)	16	40
2/3/2020	2.7 (J)	<2.3 (U)	22	<2.3 (U)	10	39
4/7/2020	3.4 (J)	<2.3 (U)	23	<2.3 (U)	12	40
5/11/2020						42
10/13/2020	3.2 (J)	2.8 (J)	26	2.8 (J)	22	52
2/24/2021						55
4/6/2021	2.5 (J)	2.8 (J)	17	<2.5 (U)	29	48
7/14/2021						59

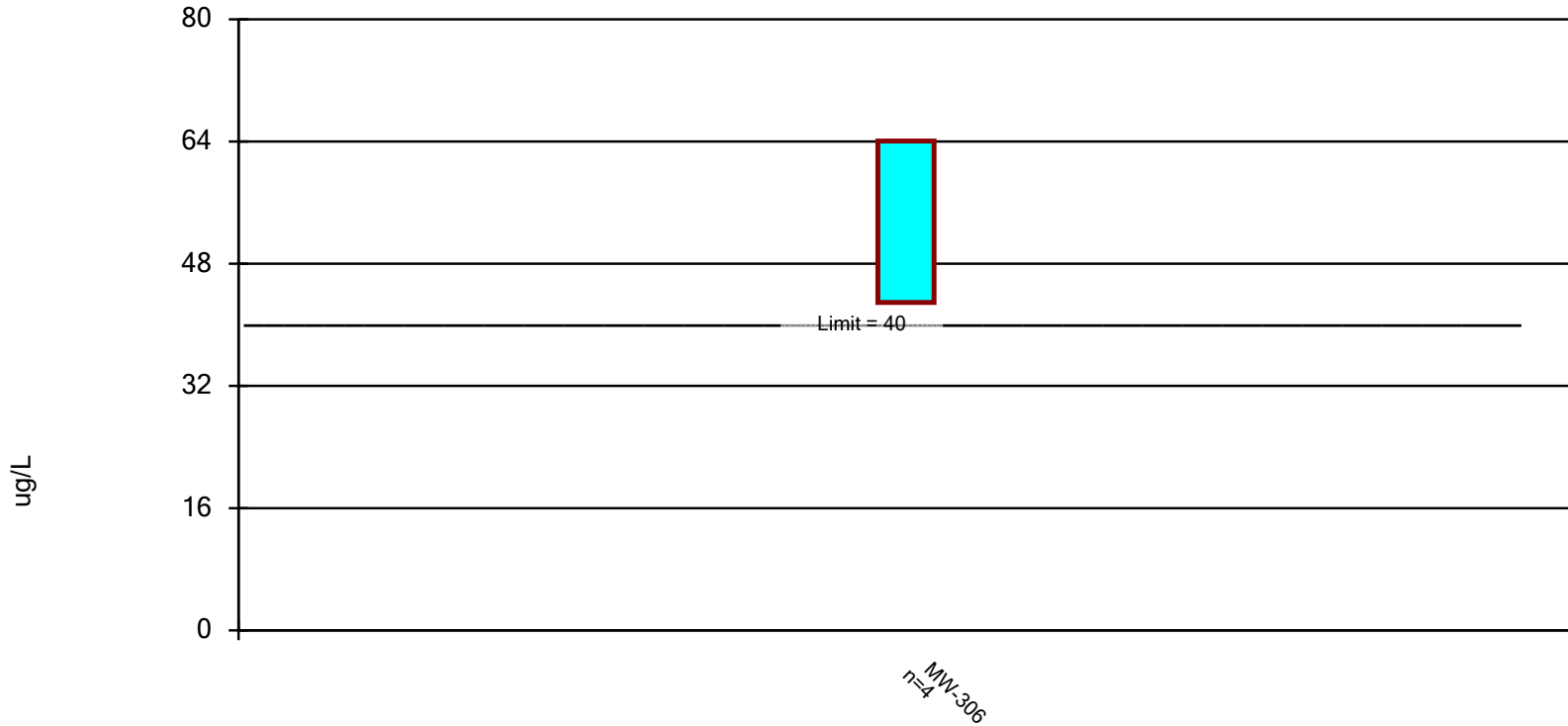
# Confidence Interval

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 9/27/2021, 1:49 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>Transform</u>	<u>Alpha</u>	<u>Method</u>
<b>Lithium (ug/L)</b>	<b>MW-306</b>	<b>64.07</b>	<b>42.93</b>	<b>40</b>	<b>Yes</b>	<b>4</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>

### Parametric Confidence Interval

Compliance limit is exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 9/27/2021 1:48 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 9/27/2021 1:49 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

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	MW-306
10/13/2020	52
2/24/2021	55
4/6/2021	48
7/14/2021	59
Mean	53.5
Std. Dev.	4.655
Upper Lim.	64.07
Lower Lim.	42.93

## F4 October 2021 Monitoring Event Evaluation

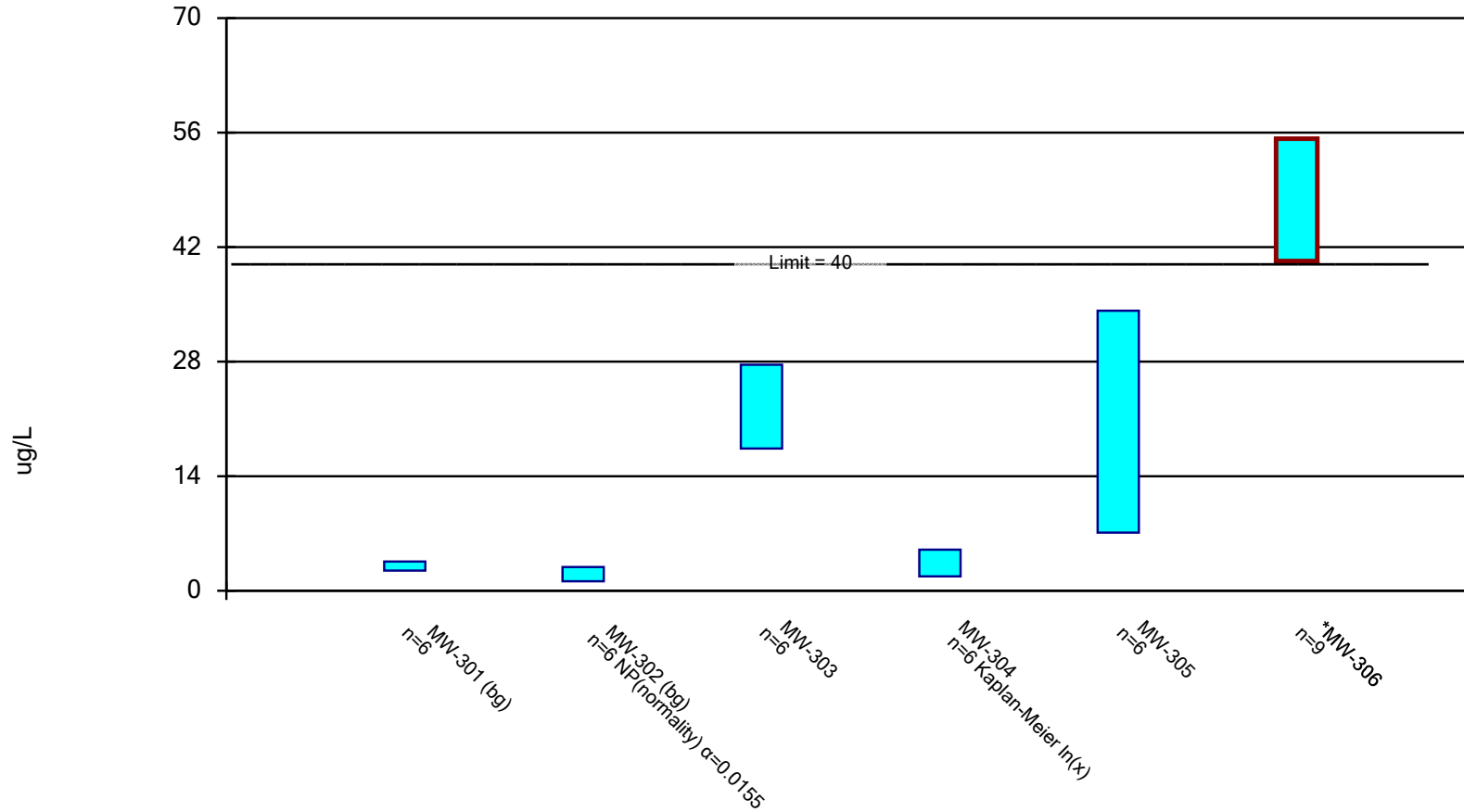
# Confidence Interval

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020 Printed 12/13/2021, 10:42 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>
Lithium (ug/L)	MW-301 (bg)	3.576	2.458	40	No	6	0	None	No	0.01	Param.
Lithium (ug/L)	MW-302 (bg)	2.9	1.15	40	No	6	33.33	None	No	0.0155	NP (normality)
Lithium (ug/L)	MW-303	27.62	17.38	40	No	6	0	None	No	0.01	Param.
Lithium (ug/L)	MW-304	5.018	1.746	40	No	6	50	Kapla...	ln(x)	0.01	Param.
Lithium (ug/L)	MW-305	34.23	7.105	40	No	6	0	None	No	0.01	Param.
<b>Lithium (ug/L)</b>	<b>MW-306</b>	<b>55.25</b>	<b>40.3</b>	<b>40</b>	<b>Yes</b>	<b>9</b>	<b>0</b>	<b>None</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>

## 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: Lithium Analysis Run 12/13/2021 10:41 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

# Confidence Interval

Constituent: Lithium (ug/L) Analysis Run 12/13/2021 10:42 PM

Sutherland Generating Station Client: SCS Engineers Data: SUT- Chempoint- export-Dec2020

	MW-301 (bg)	MW-302 (bg)	MW-303	MW-304	MW-305	MW-306
12/11/2019	3.5 (J)					
12/12/2019		2.8 (J)	27	2.9 (J)	16	40
2/3/2020	2.7 (J)	<2.3 (U)	22	<2.3 (U)	10	39
4/7/2020	3.4 (J)	<2.3 (U)	23	<2.3 (U)	12	40
5/11/2020						42
10/13/2020	3.2 (J)	2.8 (J)	26	2.8 (J)	22	52
2/24/2021						55
4/6/2021	2.5 (J)	2.8 (J)	17	<2.5 (U)	29	48
7/14/2021						59
10/26/2021	2.8 (J)	2.9 (J)	20	6.8 (J)	35	55
<b>Mean</b>	3.017	2.267	22.5	2.675	20.67	47.78
<b>Std. Dev.</b>	0.407	0.8658	3.728	2.18	9.873	7.742
<b>Upper Lim.</b>	3.576	2.9	27.62	5.018	34.23	55.25
<b>Lower Lim.</b>	2.458	1.15	17.38	1.746	7.105	40.3