# 2020 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR Annual Monitoring Report Hoot Lake Plant Ash Landfill

Hoot Lake Plant Otter Tail Power Company

Carlson McCain Project No. 6345-01

Prepared for:



Otter Tail Power Company 1012 Water Plant Rd Fergus Falls, MN 56537

January 18, 2021



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Carlson McCain, Inc.

2020 Groundwater Monitoring and Corrective Action Report Hoot Lake Plant Ash Landfill Otter Tail Power Company

#### **1.0 EXECUTIVE SUMMARY**

Groundwater monitoring at the Hoot Lake Plant Ash Landfill occurred in accordance with the detection monitoring requirements as described in §257.94 of the CCR Rule for the year 2020. Detection monitoring activities and statistical analysis were initially conducted in 2018, and have subsequently continued through 2020. Statistical analysis was performed on the 2020 groundwater data and no statistically significant increases in concentration over background concentration were observed. Detection monitoring will continue at the Facility for 2021.

#### 2.0 INTRODUCTION

Otter Tail Power Company (OTP) operates the Hoot Lake Generating Plant (Plant), a coal-fired electrical generating facility located in Fergus Falls, Minnesota. The burning of coal produces coal combustion residuals (CCR) which are placed in an on-site ash landfill (Landfill) for disposal. The Landfill is subject to regulation as a CCR unit under U.S. Code of Federal Regulations, Title 40, Parts 257 and 261 (CFR, 2015), regarding the disposal of CCR in landfills and surface impoundments.

Ongoing monitoring of groundwater is required to evaluate the Landfill's performance and compliance with 40 CFR §257.94 to §257.95. Carlson McCain, Inc. (Carlson McCain) has prepared this 2020 Groundwater Monitoring and Corrective Action Report (Report) on behalf of OTP to describe the monitoring activities and present results for the 2020 Landfill monitoring.

The Landfill is currently operating in detection monitoring as described in §257.94 of the CCR Rule.

#### 2.1 Purpose and Scope

This Report (Report) is intended to meet the annual reporting requirements of §257.90(e). In particular, this report includes a discussion on:

- Current status of the groundwater monitoring and corrective action program for the Landfill;
- Key actions completed;
- Problems encountered and actions completed to resolve the problems, and;
- Key activities for the upcoming year.

The specific paragraph requirements as listed in §257.90(e), and their locations in the Report are summarized in the table below:

Paragraph	Requirement	Report Location
§257.90(e)(1)	A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells,	Figure 1
	to include the well identification numbers, that are part of the groundwater monitoring program for the Landfill.	
§257.90(e)(2)	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.	Section 3.1
§257.90(e)(3)	In addition to all the monitoring data obtained under §§257.90 through 257.98, A summary including the number of groundwater samples collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection or assessment monitoring programs.	Section 3.2 and 3.3
§257.90(e)(4)	A discussion of any transition between monitoring programs.	Section 3.2
§257.90(e)(5)	Other information to be included in the annual report as specified in §§257.90 through 257.98.	No other information is required in this report for 2020.
§257.90(e)(6)	A brief overview of the current status of groundwater monitoring and corrective action programs for the CCR Unit.	Section 1.0

#### 3.0 GROUNDWATER MONITORING AND CORRECTIVE ACTION PROGRAM

This section documents and describes the status of the CCR groundwater monitoring and corrective action program for the Landfill for 2020. Baseline sampling for the Landfill has been previously documented in the 2017 Annual Groundwater Monitoring and Corrective Action Report (Barr, 2018). The initial detection monitoring activities and statistical analysis were conducted in 2018, and have subsequently continued through 2020. Statistical analysis includes determining whether parameter concentrations exhibit a statistically significant increase over background values, as required by §257.93 (h).

#### 3.1 Groundwater Monitoring System

An aerial map showing the Landfill and the monitoring wells that comprise the groundwater monitoring system is included in the attached Figure 1. Wells S-3A-R and S-10R were redeveloped after the spring 2020 sampling event as high turbidity readings were observed during sampling event and prior to sampling the wells. No other modifications were made to the monitoring system in 2020. Further details and background information on the monitoring wells and groundwater monitoring system can be found in the *Groundwater Monitoring System Report* (Barr, 2016), which is posted on the Plant's CCR website.

#### 3.2 2020 Monitoring and Analytical Results

Groundwater sampling for the CCR groundwater monitoring system wells consisted of the following events:

- Two routine detection monitoring events, one in April and one in October, in accordance with
  the semi-annual detection monitoring frequency listed in §257.94 (b). Per the CCR
  Groundwater Sampling and Analysis Plan (Carlson McCain, 2017), all upgradient (i.e.
  background) and downgradient wells were sampled during each sampling event, and were
  analyzed for the detection monitoring parameters listed in Appendix III of §257.
- Two supplemental sampling events, one in June and one in December, for the purpose of resampling select wells, as described in Section 2.3 of this Report.

Field sampling data sheets, which include dates of sampling, and laboratory analytical reports for each sampling event are included in the attached Appendix A.

There were no transitions between monitoring programs in 2020. The Landfill remained in detection monitoring during each sampling event.

#### 3.3 2020 Key Actions and Problems Summary

No problems were encountered during the 2020 detection monitoring activities. Key actions completed for the groundwater monitoring program in 2020 include the following:

2020 Groundwater Monitoring and Corrective Action Report Hoot Lake Plant Ash Landfill Otter Tail Power Company

- The first semi-annual detection monitoring event (i.e. the spring event) was conducted on April 14, 2020. Statistical analysis on the spring event groundwater monitoring dataset was completed in accordance with the site-specific sampling and analysis plan. Results of the statistical analysis indicated potential statistically significant increases for calcium in monitoring wells S-3A-R and S-10R. Verification resampling was conducted on June 11, 2020, and results exhibited no statistically significant increases. After confirming no statistically significant increases were present, the background data set was updated to include the observations from the spring 2018 sampling event through the spring 2020 sampling event.
- The second semi-annual detection monitoring event (i.e. the fall event) took place on October 6, 2020. Statistical analysis was performed on the fall event dataset in accordance with the site-specific sampling and analysis plan. Results of the statistical analyses indicated potential statistically significant increases for chloride in monitoring well S-2A. Verification resampling was completed on November 18, 2020, and results exhibited no statistically significant increases.

#### 3.4 Projected Actions for 2021

No modifications to the groundwater monitoring program are scheduled for 2021. The following activities are planned for the upcoming year:

- Continue the groundwater monitoring program in accordance with CCR Rule requirements, and collect spring and fall detection monitoring event samples.
- Perform statistical analysis on the 2021 semi-annual detection monitoring results to determine statistically significant increases, in accordance with the statistical monitoring plan (Carlson McCain, 2017).

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#### **4.0 REFERENCES**

**Barr Engineering Co., 2018.** 2017 Annual Groundwater Monitoring and Corrective Action Report; Prepared for Otter Tail Power Company, January 2018.

**Barr Engineering Co., 2016.** Groundwater Monitoring System Report, Ash Landfill, Hoot Lake Plant; Prepared for Otter Tail Power Company, November 2016.

**Carlson McCain., 2017.** CCR Groundwater Sampling and Analysis Plan, Ash Landfill – Hoot Lake Plant; Prepared for Otter Tail Power Company, October 2017.

# **Tables**

# Table 1 2020 Groundwater Analytical Data Summary

Hoot Lake - Ash Disposal Facility Otter Tail Power Company

	Spring Samping Event														
		S-2A	S-3AR	S-3AR*	S-51	S-52	S-10R	S-10R*	S-13	S-14R					
Parameter	Units	4/14/2020	4/14/2020	6/11/2020	4/14/2020	4/14/2020	4/14/2020	6/11/2020	4/14/2020	4/14/2020					
Boron, total	mg/L	0.178	< 0.5	< 0.1	< 0.1	< 0.1	< 0.5	< 0.1	< 0.1	< 0.1					
Calcium, total	mg/L	145	138	109	113	107	271	126	111	124					
Chloride	mg/L	< 3	13	13.3	19.5	16.4	8.8	11.4	8	4.1					
Field pH	SU	6.75	7.32	7.08	6.93	6.95	7.23	7.09	7.25	7.06					
Fluoride	mg/L	0.24	0.2	0.21	0.28	0.24	0.21	0.2	0.28	0.25					
pH, Lab	SU	7	7.4	7	7.1	7	7.5	7.1	7.2	7.1					
Total Dissolved Solids	mg/L	644	430	502	482	464	504	544	468	546					
Sulfate	mg/L	154	84.7	57	57.4	60.7	99.8	83.7	73.2	90.6					

	Fall Samping Event														
		S-2A	S-2A*	S-3AR	S-51	S-52	S-10R	S-13	S-14R						
Parameter	Units	10/5/2020	11/18/2020	10/5/2020	10/5/2020	10/5/2020	10/5/2020	10/5/2020	10/5/2020						
Boron, total	mg/L	0.258	NS	<0.1	0.151	<0.1	<0.1	<0.1	<0.1						
Calcium, total	mg/L	157	NS	113	243	110	120	112	132						
Chloride	mg/L	3.3	3	12.8	12.7	13.4	10.9	8.6	3.5						
Field pH	SU	6.94	NS	7.08	6.77	6.95	7.11	7.2	7.03						
Fluoride	mg/L	0.22	NS	0.21	0.2	0.22	0.2	0.25	0.25						
pH, Lab	SU	7	NS	7.2	6.9	7.1	7.1	7.2	7.1						
Total Dissolved Solids	mg/L	741	NS	484	1190	496	526	516	534						
Sulfate	mg/L	201	NS	90.5	459	74.3	113	93.2	102						

<sup>\* =</sup> Denotes a resample event

SU = Standard Units

NS Not sampled

# **Figures**





# 2020 CCR Annual Monitoring Report

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# FIGURE 1 CCR Unit Cell Area and Monitoring Wells

# Appendix A Laboratory Data



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FINAL REPORT COMPLETION DATE:

28 Ap12007

Date Reported: 24 Apr 2020

Work Order #: 31-0138 Account #: 006106

PO #: 48679

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Field Service Manager/Date Reviewed

Chemistry Lab Manager/Date Reviewed

Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN
OTTER TAIL POWER CO
PO BOX 496
FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S2A

Page: 2 of 9

Report Date: 24 Apr 2020 Lab Number: 20-A16249 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 13:19
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	6.75	units	1.00	SM4500-H+-2011	14 Apr 20 13:19	BMW
Н	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:28	DK
Sulfate	154 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	< 3	mg/L	3	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	644	mq/L	10	SM 2540 C-97	16 Apr 20 13:48	RLY
Calcium	145.0	mq/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	0.178	ma/L	0.100	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.240 @	mg/L	0.020	EPA 300.0	18 Apr 20 20:12	RMV

<sup>\*</sup> Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

## Due to sample matrix
## Due to concentration of other analytes

## Due to sample quantity

## Due to concentration of other analytes

## Due to sample quantity

## Due to internal standard response

\*\*CERTIFICATION: MN LAB # 027-015-125\*\*

\*\*WI LAB # 999447680\*\*

\*\*ND MICRO # 1013-M\*\*

\*\*ND WW/DW # R-040\*\*



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S3AR

Report Date: 24 Apr 2020 Lab Number: 20-A16250 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 13:55
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	7.32	units	1.00	SM4500-H+-2011	14 Apr 20 13:55	DS
pH	* 7.4	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	84.7 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	13.0	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	430	mg/L	10	SM 2540 C-97	16 Apr 20 13:48	RLY
Calcium	138.0 #	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.5 #	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.200 @	mg/L	0.020	EPA 300.0	18 Apr 20 20:12	RMV

<sup>\*</sup> Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S51

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Report Date: 24 Apr 2020 Lab Number: 20-A16251 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 13:47
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	6.93	units	1.00	SM4500-H+-2011	14 Apr 20 13:47	BMW
рН	* 7.1	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	57.4 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	19.5	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	482	mg/L	10	SM 2540 C-97	16 Apr 20 14:44	RLY
Calcium	113.0	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.280 @	mg/L	0.020	EPA 300.0	18 Apr 20 20:12	RMV

<sup>\*</sup> Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN
OTTER TAIL POWER CO
PO BOX 496
FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S52

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Report Date: 24 Apr 2020 Lab Number: 20-A16252 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 14:28
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	6.95	units	1.00	SM4500-H+-2011	14 Apr 20 14:28	BMW
pH pH	* 7.0	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	60.7 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	16.4	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	464	mg/L	10	SM 2540 C-97	16 Apr 20 14:44	RLY
Calcium	107.0	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.240 @	mg/L	0.020	EPA 300.0	18 Apr 20 20:12	RMV

<sup>\*</sup> Holding Time Exceeded



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Project Name: HOOT LAKE PLANT

Sample Description: S10R

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Report Date: 24 Apr 2020 Lab Number: 20-A16253 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 12:30
Sampled By: MVTL FIELD PERSONNEL
Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	7.23	units	1.00	SM4500-H+-2011	14 Apr 20 12:30	DS
pH	* 7.5	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	99.8 @	mq/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	8.8	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	504	mg/L	10	SM 2540 C-97	16 Apr 20 14:44	RLY
Calcium	271.0 #	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.5 #	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.210 @	mg/L	0.020	EPA 300.0	18 Apr 20 20:12	RMV

<sup>\*</sup> Holding Time Exceeded



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Project Name: HOOT LAKE PLANT

Sample Description: S13

Report Date: 24 Apr 2020 Lab Number: 20-A16254 Work Order #: 31-0138 Account #: 006106

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Sample Matrix: GROUNDWATER
Date Sampled: 14 Apr 2020 12:51
Sampled By: MVTL FIELD PERSONNEL

Date Received: 14 Apr 2020 19:50 PO #: 48679

Temp at Receipt: 2.0C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	7.25	units	1.00	SM4500-H+-2011	14 Apr 20 12:51	DS
Hq	* 7.2	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	73.2 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	8.0	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	468	mg/L	10	SM 2540 C-97	16 Apr 20 14:44	RLY
Calcium	111.0	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.280 @	mg/L	0.020	EPA 300.0	19 Apr 20 1:26	RMV

<sup>\*</sup> Holding Time Exceeded

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

## Due to sample matrix
## Due to concentration of other analytes

## Due to sample quantity

## Due to oncentration of other analytes

## Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 WI LAB # 999447680 ND MICRO # 1013-M ND WW/DW # R-040



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Project Name: HOOT LAKE PLANT

Sample Description: S14R

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Report Date: 24 Apr 2020 Lab Number: 20-A16255 Work Order #: 31-0138 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 14 Apr 2020 15:37 Sampled By: MVTL FIELD PERSONNEL Date Received: 14 Apr 2020 19:50

PO #: 48679

Temp at Receipt: 2.0C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					16 Apr 20	JMS
pH, Field	7.06	units	1.00	SM4500-H+-2011	14 Apr 20 15:37	DS
рН	* 7.1	units	1.0	SM 4500 H+ B-2000	15 Apr 20 13:56	DK
Sulfate	90.6 @	mg/L	5.0	ASTM D516-07	16 Apr 20 10:50	AKF
Chloride	4.1	mg/L	3.0	SM 4500 Cl E	16 Apr 20 10:46	SS
Solids, Total Dissolved	546	mg/L	10	SM 2540 C-97	16 Apr 20 14:44	RLY
Calcium	124.0	mg/L	0.500	SW6010C	17 Apr 20 13:26	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	17 Apr 20 13:26	KAM
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	19 Apr 20 1:26	RMV

<sup>\*</sup> Holding Time Exceeded

RL = Reporting Limit Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

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INORGANIC & METALS ANALYSES: No problems were encountered with these analyses.



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**Quality Control Report** 

Analyte	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec (%)	Known % Rec Limits	Method Blank
Boron mg/L	1.000	101	85-115	1.00	20A16243q	< 0.1	1.010	101	75-125	1.010	1.030	103	2.0	10	104	90-110	< 0.1
Calcium mg/L	50.00	104	85-115	50.0	20A16243q	37.20	87.30	100	75-125	87.30	87.70	101	0.5	10	104	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	20-A16255	4.1	68.2	107	86-117	68.2	67.2	105	1.5	5	102	90-110	< 3
Fluoride mg/L				1.00 1.00	20-A16240 20-A16254	0.270 0.280	1.37 1.34	110 106	75-125 75-125	1.37 1.34	1.34 1.33	107 7 105	2.2 0.7	10 10	104 104	90-110 90-110	< 0.02
pH units	-	-	-	-	-	-	-	-	-	7.0 8.0	7.0 8.0	-	0.0	2.5 2.5	101 101	90-110 90-110	-
Solids, Total Dissolved mg/L	-	-	-	-	-	- - -	-		-	528 430 862 778	516 412 862 812	- ,	2.3 4.3 0.0 4.3	7 10 7 7	101 101	85-115 85-115	< 10 < 10
Sulfate mg/L	-	-	-	500	20-A16249	154	659	101	68-132	659	658	101	0.2	5	99	80-120	< 5

Approved by:

1126 North Front Street Phone: 800 782 3557 New Ulm, MN 56003 Fax: 507 359 2890

#### Field Service Chain of Custody Record

This is an exact copy of the original document

By Date 15 Apra 030

Pages 1-11

Project Nan	ne: Otter Tail Power Co.	<b>Project Type:</b>	CCR	Name of Samplers:
	Hoot Lake Plant			05 BW
Report To:	Otter Tail Power Company	Carbon Copy:	Carlson McCain	
Attn:	Paul Vukonich	Attn:		Quote Number:
Address:	P.O. Box 496	Address:		Work Order Number: 31-0138
	Fergus Falls, MN 56038-0496			<u>Lab Numbers:</u>
Phone:	218-739-8349			

	S	Sample Informa	ition								I	3ott	le 1	Гуре	е					Analysis	
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	VOCSA	1000 none	1000 HNO3	500 HNO3	- /	500 HNO3	- /	500H2SOA		500 NaOH	Other: 150	Other 150 2	Analysis Required		
A16249			14 Aprico	1319	GŴ			1		1	N								See Attatch	ned	
50	S3AR		1	1355	GW			1		1	N										
51	S51			1347	GW			1		1	N										
	S52			1428	GW			1		1	N										_
53	S10R			1230	GW			1		1	N.										_
54				1251	GW			1		1	N										_
SS	S14R			1537	GW			1		1	N										_
																					4
																					_

Comments: CCR wells

1 1/		0 1 0 1 10 /	1 8 1	
n/1		Samples Received By: /	· //lean	
Time: 1950	Temp: 20 TM784	Date: 15 Apr 2020	Time: 830	Temp: 3.0[_
Fridge Log in C	Cart Other:			
		Samples Received By:		
Time;	Temp:	Date:	Time:	Temp:
lers Other:		Seal Number(s) - If Used		
ent Ice	Other:	Seals Intact? Yes	s No	
֡֡֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	Time: Other:	Time: 1450 Temp: 2.0 TM 784  kridge Log in Cart Other:  Time: Temp:  Other:	Time: 1950 Temp: 20 TM784 Date: 15 Apr 2020  Fridge) Log in Cart Other:  Samples Received By:  Time: Temp: Date:  Other: Seal Number(s) - If Used	Time: 1450   Temp: 2-0 TM784 Date: 15 Apr 2020   Time: 830     Fridge   Log in Cart   Other:   Samples Received By:     Time:   Temp:   Date:   Time:     Items   Other:   Seal Number(s) - If Used

# Hoot Lake Site CCR Sampling - 2020

Site	Parameter List	Well Depth	Diameter (Inches)	Well Elevation	Sample Equipment	Dedicated?	Pump Rate (gal/minute)	Goes Dry?
S2A	CCR 3	79.63	2	1273.776	Bladder	Yes	< 0.25	No
S3AR	CCR 3	78.42	2	1271.562	Bladder	Yes	< 0.25	No
S51	CCR 3	55.6	2	1286.904	Bladder	Yes	< 0.25	No
S52	CCR 3	88.3	2	1286.623	Bladder	Yes	< 0.25	No
S10R	CCR 3	57.00	2	1281.47	Bladder	Yes	< 0.25	No
S13	CCR 3	90.19	2	1296.423	Bladder	Yes	< 0.25	No
S14R	CCR 3	70.86	2	1280.61	Bladder	Yes	< 0.25	Yes

Note: CCR samples must be on their own COC.

Total Recoverable Metals! Groundwater samples shall not be field filtered prior to analysis.

Spring sampling March 27 - April 28 Fall sampling October 14 - November 14

# CCR3

CCR - Appendix III Detection Monitoring

#### Field Parameters

pH\*

\* Field and Laboratory Measurements

motals are total notificing Total Concentration Parameters Method 6010 Boron 6010 Calcium SM4500 CL E Chloride **EPA 300** Fluoride SM 4500 H+B-96 рΗ ASTM D516 Sulfate SM 2540 C-97 Dissolved Solids, Total

#### CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
Antimony	SW6020A
Arsenic	SW602A
Barium	SW6010C
Beryllium	SW6020A
Cadmium	SW6020A
Chromium, Total	SW6020A
Cobalt	SW6010C
Fluoride	EPA 300
Lead	SW6020A
Lithium	SW6010C
Mercury	EPA 245.7
Molybdenum	SW6020A
Selenium	SW6020A
Thallium	SW6020A
Radium 226 + 228	

New Ulm, MN 56073

507 354 8517

<b>Groundwater Ass</b>	•	Site:	Ottert	Ottertail Power Co./Hoot Lake					
Sampling Personnel:				Facility ID:	SW-2	11			
Bon	1014			Date: 14	40-20				
	<i>I</i> / <i>V</i> • · · · · · · · · · · · · · · · · · ·	_		Unique Stat	ion ID: 44435	50			
		-		Sample ID:	S-2A				
Well Condition		A				<del></del>			
Well Locked?	(res. No	_		Protective F			No	_	
Well Labeled?	Yes No			State ID Tag			No No	•	
Casing Straight?	Yes No			Grout Sear	macer (1es		140	-	
Repairs Necessary:									
Well Information	3C /								
Well Depth:	79.67	<u>.</u>		Well Casing	Elevation:		1273.	776	
Constructed Depth:	79.63			Static Wate	r Elevation:	197.	66		
Casing Diameter:	2"			Previous St	atic: /////	77			
Water Level Before Po		Water Level After Sample: 76-12							
Well Volume:	urge: 76.	Gallons		Measureme	nt Method:	Elec.	WLJ	Steel Tape	
Sampling Informati	on								
Weather Conditions:		28	Wind: /	LP10	Sky:	010	ull		
Sampling Method:	Grundfos	Bladder SS/	Disp. Bailer	Whale	Grab Other:	<u> </u>			
Dedicated Equipment:	Yes No			Pumping Ra	ate:25		gpm		
Well Purged Dry?	Yes No	_		Time Pump	Began: 131	Ġ.	<u>.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	am / pm	
Time Purged Dry?		***		Time of Sampling: 13/9 am /					
Duplicate Sample?	Yes (No)	ID:	'	Sample EH: 10-2					
Sample Appearance:	General:	Ckar	Color:	Phas			Odor:	4/01	
						7/31-73			
	Specific	o C	D. O.	Turbidity NTU	Gallons Removed	SEQ #		nents:	
Time pH	Cond.	ļ <u>.</u>	mg/L				Com	Hents.	
1313 6.75	1109	7.70	1.90	0,6	,75	1			
1316 6.74	1107	7.89	1.78	0.0	1.50	2			
1314 6.75	1107	7.95	1.58	0.0	2,25	3			
10 1 4 10	1.07	# J			V	4		1,	
						5			
						lo l			
Stabilized? Yes	No		Amount W	ater Removed	1: 2,2 <u>6</u>		Gallo	ns	
Comments:									

State & CCR

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Groundwater Assessment	Site:	Ottertail Power Co./Hoot Lake
Sampling Personnel:	Facility ID:	SW-211
15	Date:	19Apro
	Unique Station II	D: 674671
	Sample ID:	S-3A-R
Well Condition		- (0
Well Locked? Yes No	Protective Posts	
Well Labeled? Yes /No	State ID Tag?  Grout Seal Intact	res No
Casing Straight? Ves No	Glout Seal Illiact	t: Tes (NO)
Repairs Necessary: Well Information		
	Well Casing Elev	vation: 1271.562
Well Depth: 78.49  Constructed Depth: 78.42	Static Water Ele	
Casing Diameter: 2"	Previous Static:	1203.72
Water Level Before Purge: (\$\infty\$)	Water Level After	
	ns Measurement Me	ethod: Elec. WL) Steel Tape
Sampling Information		
Weather Conditions: Temp: 75	Wind: 1140 @ 12	sky: Overcost
Sampling Method: Grundfos (Bla	er SS/T Disp. Bailer Whale Grab	
Dedicated Equipment: Yes No	Pumping Rate:	O,Z gpm
Well Purged Dry? Yes No	Time Pump Beg	an: 1315 (m) (6m)
Time Purged Dry?	Time of Samplin	ng: 1355 am (pm)
Duplicate Sample? Yes (No ID:	Sample EH:	-11.7
Sample Appearance: General: Co	Color: Gran Phase:	Lt Sed Odor: None
	P D.O. Turbidity Gal	llons  SEQ
Time pH   Specific   OC		moved # Comments:
	03 5.99 395.3	2 1
	04 5.99 390.1	4 2
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	06 6.01 381.3	6 3
	06 6.04 350,2	8 4
	07 6.07 307.3	1.0 5
Stabilized? Yes (No)	Amount Water Removed:	/ O Gallons
Comments:		i:

New Ulm, MN 56073

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<b>Groundwater Ass</b>	essment			Site:	Otter	tail Powe	er Co./Hoot Lake	
Sampling Personnel:				Facility ID:	SW-2	211		
Bes	WO14			Date: 14	Apr 20			
1				Unique Stat	ion ID: 8148	30		
		<del></del>		Sample ID:	S-51			
Well Condition								
Well Locked?	Yes No			Protective F		(	No	
Well Labeled?	No No	_		State ID Tag	· \/ ~/	)	No	
Casing Straight?	Yes / No	<b>-</b> -		Grout Seal I	ntact? (res/		No	
Repairs Necessary:						<del></del>		
Well Information	<b>5</b>							
Well Depth:	<i>55-60</i>	<u>)</u>		Well Casing	Elevation:		1286.904	
Constructed Depth:	55.60	_		Static Wate	r Elevation:	1236.	. 19	
Casing Diameter:	2"			Previous St	atic: 1226	-31		
Water Level Before Pu	ırge: 5 <i>0</i>	- - 7/		Water Leve	l After Sample		173	
Well Volume:	,80	Gallons		Measureme	nt Method:	Elec. \	WLI Steel Tape	
Sampling Information	on							
Weather Conditions:	Temp:	30_	Wind: に	1010	Sky	do	coly	
Sampling Method:	Grundfos	Bladder SS/	Disp. Bailer	Whale	Grab Other:	:*	,	
Dedicated Equipment:	(es No			Pumping Ra	ate: .25		gpm	
Well Purged Dry?	Yes (No)	_		Time Pump	Began: 132	27	am (pm)	
Time Purged Dry?		_		Time of Sampling: /3 47 am /				
Duplicate Sample?	Yes No	_ ID:		Sample EH:	-105.5			
Sample Appearance:	General:	Cleur	Color: No		e: Light.	Sed.	Odor: Sultarou	
	Specific	Temp	ID. O.	Turbidity	Gallons	JSEQ		
Time / pH	Cond.	°C	mg/L	NTU	Removed	#	Comments:	
1371 6,91	914	7-58	.52	25.5	17	1		
1335 6.91	916	7.61		12.8	1 5	2		
			1.50		3			
1339 6.92	923	7,78	1,32	0.0		3		
1343 6.92	924	7.84	130	0.0	4	4		
1347 6.93	924	7.88	,30	00	5	5		
Stabilized? Yes	No		Amount Wa	ter Removed	: 5		Gallons	
Comments:	<del></del>							

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Groundwater Assessment		Site:	Otter	tail Pow	er Co./Hoot Lake		
Sampling Personnel:		Facility ID:	SW-2	211			
Ber WOIT		Date: 14 14pr 20					
, ,		Unique Stat	ion ID:				
		Sample ID:	S-52				
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:		Protective F State ID Tag Grout Seal I	g? 🚱	> -	No No No		
Well Information							
Well Depth: \$\&\delta \cdot O		Well Casing		2 % 6-	1286.623		
Constructed Depth: 88.30		Static Wate	<u>.</u> '	1215.	40		
Casing Diameter: 2"		Previous St	atic: / 2/5	67	· · · · · · · · · · · · · · · · · · ·		
Water Level Before Purge: 7/22		Water Leve	l After Sample	e: フ/	122		
Well Volume: 2.79 Gallons		Measureme	nt Method:	Elec.	Wild Steel Tape		
Sampling Information							
Weather Conditions: Temp: 29	Wind: L	SQ10	Sky:	Clou	udy		
Sampling Method: Grundfos Bladder SS/TV	Disp. Bailer	Whale	Grab Other:				
Dedicated Equipment: Yes No		Pumping Ra		•	gpm		
Well Purged Dry? Yes (No)		Time Pump	Began: 13	52	am / pm		
Time Purged Dry?		Time of Sampling: 1474 am /pm					
Duplicate Sample? Yes No ID:		Sample EH: - /39, 9					
Sample Appearance: General: Clear	Color: NC	クァン Phas	e: Nor		Odor: Sultaroa		
	D. O.	Turbidity	Gallons	SEQ			
Time <sup>1</sup> pH Cond. OC	mg/L	NTU	Removed	#	Comments:		
1904 6-98 903 7.42	1.31	4.0	3	1			
1416 6-98 901 7.53	1.44	0.0	6.	2			
1428 6.95 961 7.45	1.25	0.0	9	3			
				4			
				5			
Stabilized? (es) No	Amount Wa	ater Removed	ı. q	12	Gallons		
	·						

Comments:

New Ulm, MN 56073

507 354 8517

Groundwater Assessment		Site:	Otterta	il Powe	r Co./Hoot Lake		
Sampling Personnel:		Facility ID:	SW-21	1			
5		Date:	14 Apr	(70)			
		Unique Static	on ID: 80634	1			
		Sample ID:	S-10R				
Well Condition Well Locked? Well Labeled? Ves No Casing Straight? Repairs Necessary:		Protective Po State ID Tag' Grout Seal In	? Yes		No No No		
Well Information							
Well Depth: 80.62		Well Casing	Elevation:		1281.47		
Constructed Depth: 57.00		Static Water	Elevation:	,	709.75		
Casing Diameter: 2"		Previous Sta	tic:	16	208.77		
Water Level Before Purge: 71.72		Water Level	After Sample:	F.	Sclar Punt		
Well Volume: 1,45 Gallo	ns	Measuremen	t Method:	Elec.1	NL Steel Tape		
Sampling Information				-	`		
Weather Conditions: Temp: 25	Wind: N	NOIS	Sky:	<u> </u>	ccst		
Sampling Method: Grundfos gladde	r SSA Disp. Bailer	Whale	Grab Other:				
Dedicated Equipment: Yes No		Pumping Rat		25	gpm		
Well Purged Dry? (Yes) No	•	Time Pump I	· ,	19	am / p(m)		
Time Purged Dry? /225		Time of Sampling: 1230 am / pm/					
Duplicate Sample? Yes (No) ID:		Sample EH:	183.4	· 			
Sample Appearance: General:	dy Color: Ta,	γ Phase	: L+ Seal		Odor: Nage		
Time Specific Temp	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:		
1225 7.26 810 9.	11. 6.34	168.7	1.5	1			
27 0000				2			
				3			
				4			
1230 7.23 823 8.	84 7.21	147.8	Chicae ,	5	reches		
Stabilized? Yes No		ater Removed:	1.5		Gallons		
Comments:							

Comments:

New Ulm, MN 56073

507 354 8517

Groundwater Assessment	Site:	Otterta	ail Power Co./Hoot Lake			
Sampling Personnel:	Facility	D: SW <sub>-</sub> -2	11			
<u> </u>	Date:	14 Ap	1770			
	Unique S	Station ID: 63281				
	Sample	ID: S-13				
Well Condition Well Locked? Yes No Well Labeled? Yes No Casing Straight? Yes No Repairs Necessary:	State ID	ve Posts? Yes Tag? Yes eal Intact? Yes	No No No			
Well Information						
Well Depth: 90-27	· Well Ca	sing Elevation:	1296.423			
Constructed Depth: 90.19	Static W	ater Elevation:	1208.34			
Casing Diameter: 2"	Previous	s Static:	1210.82			
Water Level Before Purge:	Water L	evel After Sample:				
Well Volume: O. 3.6 Gallon		ement Method:	Elec. WLI) Steel Tape			
Sampling Information						
Weather Conditions: Temp: 25	Wind: NW@17	Sky:	averast			
Sampling Method: Grundfos Rladder	SS/T) Disp. Bailer Whale	Grab Other:				
Dedicated Equipment: Yes No	Pumping	g Rate: 0,1	ZS gpm			
Well Purged Dry? Yes (No)	Time Pu	Time Pump Began: 1245 (am)/ pm				
Time Purged Dry?	Time of	Sampling: / -	25/ am / pm			
Duplicate Sample? (Yes) No ID:	Deplicate Sample	EH: /,	<u> </u>			
Sample Appearance: General: Clea	Color: None P	hase: Minc	Odor: Sulfivo			
Time pH Specific Temp	D. O. Turbidity	Gallons Removed	# Comments:			
1247 7.33 776 7.6	6 4.40 0.0	65	1			
1249 7.31 785 7.6	1		2			
	8 4.08 0.0		3			
			4			
			5			
Stabilized? Yes No	Amount Water Remo	ved: 1,5				
Comments:	7 III CAIL TTAKE TOTAL	, , , , , , , , , , , , , , , , , , ,				

New Ulm, MN 56073

507 354 8517

Groundwater Assessment	·	Site:	Ottertail F	Power Co./Hoot Lake
Sampling Personnel:	,	Facility ID:	SW-211	
		Date:	14 Apr	76
		Unique Station	•	
	•	Sample ID:	S-14R	
Well Condition Well Locked? Well Labeled? Casing Straight?  Repairs Necessary:		Protective Posts State ID Tag? Grout Seal Intac	Yes )	No No No
Well Information				
Well Depth: 87.1/		Well Casing Ele	vation:	1280.61
Constructed Depth: 70.86		Static Water Ele	evation:	1201.97
Casing Diameter: 2"		Previous Static:	1201.71	
Water Level Before Purge: 78.6	<del>Li</del>	Water Level Aft	er Sample:	78.74
Well Volume: 138 Ga	allons	Measurement M	ethod: Ele	ec. WLI Steel Tape
Sampling Information				
Weather Conditions: Temp: 2		ii@12	Sky: 🥷	vercist
	dder SS/T Disp. Bailer	Whale Gra	b Other:	
Dedicated Equipment: (Yes) No		Pumping Rate:	0.75	gpm
Well Purged Dry? Yes (No)		Time Pump Beg	an: 152	5 am / 6m
Time Purged Dry?		Time of Samplir	7 am /(pm)	
Duplicate Sample? Yes (No) ID:		Sample EH:	-123.	
Sample Appearance: General:	Color:	Phase:		Odor:
Time pH Specific Te	mp D. O. mg/L	1 2 1	llons SE moved #	Q Comments:
1528 7,10 931 -	7.60 1.58	54.1	1.5 1	
	8.20 0.57	16.8	3 2	
1534 7.06 912	5.23 0.47		7,S 3	***************************************
	5.24 0.43	14.2	6 4	
	•		5	



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Page:

1 of 4

final report completion date: 11000

Date Reported: 29 Jun 2020

Work Order #: 31-0271 Account #: 006106

PO #: 28649

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Field Service Manager/Date Reviewed

Chemistry Lab Manager/Date Reviewed

Willity Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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Page: 2 of 4

CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S3AR

Report Date: 29 Jun 2020 Lab Number: 20-A26862 Work Order #: 31-0271 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 11 Jun 2020 13:14 Sampled By: MVTL FIELD PERSONNEL Date Received: 11 Jun 2020 18:00

PO #: 28649

Temp at Receipt: 1.7C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					15 Jun 20	JMS
pH, Field	7.08	units	1.00	SM4500-H+-2011	12 Jun 20 13:14	BMW
Н	* 7.0	units	1.0	SM 4500 H+ B-2000	12 Jun 20 12:19	BA
Sulfate	57.0 @	mg/L	5.0	ASTM D516-07	18 Jun 20 8:17	AKF
Chloride	13.3	mg/L	3.0	SM 4500 Cl E	18 Jun 20 7:58	SS
Solids, Total Dissolved	502	mq/L	10	SM 2540 C-97	16 Jun 20 13:57	BA
Calcium	109.0	mg/L	0.500	SW6010C	18 Jun 20 13:32	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	18 Jun 20 13:32	KAM
Fluoride	0.210 @	mg/L	0.020	EPA 300.0	16 Jun 20 12:22	RMV

<sup>\*</sup> Holding Time Exceeded

RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards. The reporting limit was elevated for any analyte requiring a dilution as coded below:

8 = Due to sample matrix
9 = Due to sample quantity
1 = Due to sample quantity
4 = Due to concentration of other analytes
1 = Due to sample quantity
4 = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 WI LAB # 999447680 ND MICRO # 1013-M ND WW/DW # R-040



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S-10R

Page: 3 of 4

Report Date: 29 Jun 2020 Lab Number: 20-A26863 Work Order #: 31-0271 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 11 Jun 2020 13:50 Sampled By: MVTL FIELD PERSONNEL Date Received: 11 Jun 2020 18:00

PO #: 28649

Temp at Receipt: 1.7C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					15 Jun 20	JMS
pH, Field	7.09	units	1.00	SM4500-H+-2011	11 Jun 20 13:50	BMW
pH pH	* 7.1	units	1.0	SM 4500 H+ B-2000	12 Jun 20 12:19	BA
Sulfate	83.7 @	mg/L	5.0	ASTM D516-07	18 Jun 20 8:17	AKF
Chloride	11.4	mq/L	3.0	SM 4500 Cl E	18 Jun 20 7:58	SS
Solids, Total Dissolved	544	mq/L	10	SM 2540 C-97	16 Jun 20 13:57	BA
Calcium	126.0	mg/L	0.500	SW6010C	18 Jun 20 13:32	KAM
Boron	< 0.1	mg/L	0.1	SW6010C	18 Jun 20 13:32	KAM
Fluoride	0.200 @	mg/L	0.020	EPA 300.0	16 Jun 20 12:22	RMV

<sup>\*</sup> Holding Time Exceeded



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4 of 4 Page:

INORGANIC AND METALS ANALYSES: No problems were encountered with these analyses.

The report was amended on 7 July 2020 to have the Certificate of Analysis changed from State to CCR.



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Page: 1 of 1

**Quality Control Report** 

Data 183. 20 1120002 to 20 1	LCS Spike	LCS Rec	LCS % Rec Limits	Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result	Matrix Spike Result	Matrix Spike Rec	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/ Dup RPD	MSD/ Dup RPD Limit (<)	Known Rec	Known % Rec Limits	Method Blank
Analyte	Amt	/0	Limits	Amt	110	IXESUIT	acsuit	/0	Limits	IXESUIT	IXCSUIT	70	IN D	Dimit (5)	(70)	LIMITS	Dialik
Boron mg/L	1.000	93	85-115	1.00	20A26556q	0.351	1.390	104	75-125	1.390	1.370	102	1.4	10	100	90-110	< 0.1
Calcium mg/L	50.00	105	85-115	50.0	20A26556q	128.0	178.0	100	75-125	178.0	173.0	90	2.8	10	105	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	20-A27457	81.0	144	105	86-117	144	146	108	1.4	5	100	90-110	< 3
Fluoride mg/L				0.20	20-A26720	0.300	0.510	105	75-125	0.510	0.500	100	2.0	10	103	90-110	< 0.02
pH units	-	-	_	-	-	-	-	-	-	7.4	7.4	-	0.0	2.5	101	90-110	-
Solids, Total Dissolved mg/L	-	-	-	-	-	-	-	-	-	967	967	-	0.0	7	100	85-115	< 10
_	-	-	-	-	-	-	-	-	-	764	765	-	0.1	7			
Sulfate mg/L	-	-	-	50.0	20-A26717	85.7	138	105	68-132	138	132	93	4.4	5	100	80-120	< 5

Approved by:

1126 North Front Street Phone: 800 782 3557

Samples Relinquished into:

Samples Relinquished By:

Date:

Delivery:

Transport:

New Ulm, MN 56003 Fax: 507 359 2890

### Field Service Chain of Custody Record

This is an exact copy of the original document

By Bases Hount 20

D 1 (N)		Otter Tail Powe	- 00		Project	Typer	CCR				Nan	20.0	of Sa	mn	lare	. /	D	2		1-6		1
Project Nar		Hoot Lake Plan			Project	Type.	COR				IVAI	ne c	71 08	ШР	1013	• [	12e	2	ĺ	Noif		
Danari Tar		wer Company	<u> </u>		Carbon	Convi	Carlson McCai	in		-						•						1
					Attn:	сору.	Megan Lindstre			1	Ouc	nte l	Numl	ner:								1
Attn:	Paul Vukonic				Address		wegan Linusin	OIII								r.	91	. /	1	12		1
Address:	P.O. Box 496				Address	<u>.</u>					Lah	Mu	mbe	re:	HIDC	ے	21	-0	0	71		
, Di		MN 56038-0496	1								Lau	INU	IIIDC	3.								
Phone:	218-739-834		4ian								_		Bottl	ο T	Vno		-			Analy	eie	1
		ample Informa	uon /				<del></del>		7	7	T	7	7		T = T		7	_	T	T /	<u> </u>	
Lab Number	Sample ID	Unique Station ID	Date		Time	Sample Type	Sample Location	VOC Set	1000 none	1000 HNO3	500 HNO3	Filter? Y.	500 HNO3	Filler? Y or A.	500H2SO4	1000 Amber 1	500 NaOH	Other: 150 u.g.	Other 150 A.	Analysis Required		
																				See Attatched		
M 7 1810	COAD		117	المحادي	1314	GW			1		1	N										1
A26862	S3AR		11 10	N/CON	101	GVV	-	-	-	$\vdash$		-	$\dashv$	+	$\dashv$	-	$\dashv$	-	-			1
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12	S10R				1350	GW			1		1	N										]
63	STUR			<u></u>	1000	OVV	+	$\vdash$	÷		-		_	-	$\dashv$	$\neg$	_	$\neg$	_			1
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Comments:	CCR wells	<u> </u>	-			•																
	·			/														/)	,			_
Samples Re	elinquished By	: Bul W	art					Sar	nple	es R	ecei	ived	Ву:		1.		N	U	di	۷)		
Date: // 🗇				e: 18	00	Temp:	1.7 My 784	Dat	te: (	(1	Ju	n ó	9		Time	e: _	180	0		Temp: 1.7C		

Other:

Samples Received By:

Seal Number(s) - If Used

Date:

Seals Intact?

Time:

Yes

No

Temp:

(Fridge

Time:

Other:

Ice

Samplers

**Ambient** 

Log in Cart

Temp:

Other:

CCR - Appendix III Detection Monitoring Field Parameters

рН\*

\* Field and Laboratory Measurements

Total Concentration Parameters	Method
Boron	6010
Calcium	6010
Chloride	SM4500 CL E
Fluoride	EPA 300
pH	SM 4500 H+B-96
Sulfate	ASTM D516
Dissolved Solids, Total	SM 2540 C-97

New Ulm, MN 56073

507 354 8517

Sampling Personnel:  Ber Wolf  Date: // Tuncto  Unique Station ID: 674671  Sample ID: S-3A-R	
Unique Station ID: 674671	
Sample ID: 9:3A:B	
Cample Ib. 0-0A-1	
Well Condition	
Well Locked? Yes No Protective Posts? Yes No	
Well Labeled? Yes No State ID Tag? Yes No	
Casing Straight? (es) No Grout Seal Intact? Yes	
Repairs Necessary:	
Well Information	
Well Depth: 78-70 Well Casing Elevation: 1271.56	2
Constructed Depth: 78.42 Static Water Elevation: 1203 542	
Casing Diameter: 2" Previous Static: 1203,49	-
Water Level Before Purge: 68.09  Water Level After Sample: 68.09	
Well Volume: 1.74 Gallons Measurement Method: Elec. WLD S	Steel Tape
Sampling Information	
Weather Conditions: Temp: 73 Wind: NO 10 Sky: Fa-	
Sampling Method: Grundfos Bladder SS/T Disp. Bailer Whale Grab Other:	
Dedicated Equipment: Ves No Pumping Rate: 25 gpm	
Well Purged Dry? Yes No Time Pump Began: 1239 a	m /Qm
10 (	
Time Purged Dry? Time of Sampling: \(\sigma \) 3 i 4 a	m / pm
Time Purged Dry?  Duplicate Sample?  Yes No ID:  Sample EH: -560	-
	m / pm
Duplicate Sample? Yes NO ID: Sample EH: -56-0  Sample Appearance: General: Clear Color: Sl. Ten Phase: NO Odor: N	m / pm
Duplicate Sample? Yes No ID: Sample EH: -550  Sample Appearance: General: Clear Color: Sl. Ten Phase: No 1 Odor: No Time PH Specific Temp D. O. Turbidity Gallons Removed # Comme	m /pm
Duplicate Sample? Yes No ID: Sample EH: -550  Sample Appearance: General: Clear Color: Sl. Ten Phase: No Odor: No Odor: No D. O. Turbidity Gallons Removed # Comme	m /pm
Duplicate Sample? Yes NO ID: Sample EH: -560  Sample Appearance: General: Clear Color: Sl. Ten Phase: No Polor: No Color: No Color: Sl. Ten Phase: No Color:	m /pm
Duplicate Sample?         Yes         NO         ID:         Sample EH: -560           Sample Appearance:         General:         Clear         Color: Sl. Ten         Phase:         No         Odor: No           Time         pH         Specific Cond.         Temp occupant         D. O. mg/L         Turbidity NTU         Gallons Removed         SEQ Removed         Commendation           12B6         7:17         942         11.93         1.99         157.9         1.75         1           12B3         7:15         953         11.52         1.07         97.4         3.50         2	m /pm
Duplicate Sample?         Yes         NO         ID:         Sample EH: -560           Sample Appearance:         General:         Clear         Color: Sl. Ten         Phase:         NO         Odor: No           Time         pH         Specific Cond.         Temp Oc.         D. O.         Turbidity Removed         # Commell           12B6         7.17         942         11.93         1.99         157.9         1.75         1           12B3         7.15         953         11.52         1.07         97.4         3.50         2           1300         7.11         955         11.24         1.19         55.0         5.25         3           12m7         7.10         959         11.24         1.19         36.0         5.25         3	m /pm
Duplicate Sample?         Yes No ID:         Sample EH: -560           Sample Appearance:         General:         Clear         Color: SI. Text         Phase:         No Yes         Odor: No           Time         pH         Specific Cond.         Temp occurrence         D. O. mg/L         Turbidity Removed # Commer         SEQ Removed # Commer           12B6         7.17         942         11.93         1.99         157.9         1.75         1           12B3         7.15         953         11.52         1.07         97.4         3.50         2           1300         7.11         955         11.24         1.19         55.0         5.25         3           1307         7.10         959         11.12         1.14         39.2         7.00         4	m /pm
Duplicate Sample?         Yes         NO         ID:         Sample EH: -560           Sample Appearance:         General:         Clear         Color: Sl. Ten         Phase:         NO         Odor: No           Time         pH         Specific Cond.         Temp Oc.         D. O.         Turbidity Removed         # Commell           12B6         7.17         942         11.93         1.99         157.9         1.75         1           12B3         7.15         953         11.52         1.07         97.4         3.50         2           1300         7.11         955         11.24         1.19         55.0         5.25         3           12m7         7.10         959         11.24         1.19         36.0         5.25         3	m /pm

New Ulm, MN 56073

507 354 8517

Well Deve	lopment Sh	eet			Site:		Otter	tail Power Co./	Hoot Lake
Sampling Per	rsonnel:				Facilit	y ID:	SW-2	211	
E	Ber Wo	11f			Date:	110	Tuze 20		
					Uniqu	e Statio		71	
		,			Samp	le ID:	S-3A	R	
Well Condi	tion								
Well Locked?		No			Protec	ctive Po	osts? Teg	No	_
Well Labeled						ID Tag		No	
Casing Straig		No			Grout	Seal Ir	tact? Yes	(No)	_
Repairs Nece			W-12-12-12-12-12-12-12-12-12-12-12-12-12-						
Well Inform	~ -								
Well Depth B	efore: 78	5.65		je.	Well [	Depth A	After:	18.70	ζ.
Constructed I	Depth: 78.4	12			: Well C	Casing	Elevation:	1271	.562
Casing Diam	eter: 2				Static	Water	Elevation:	<u> </u>	
Water Level I	Before:	_			Water	Level	After :		
Well Volume:	·	Gal	lons		Measi	uremer	nt Method:	Rec. WLI	Steel Tape
Sampling I	nformation		-						
Weather Con	nditions: Ten	np: (ွဲ	9	Wind: 🔥	1010		Sky:	Fair	
Sampling Me	thod: Grur	dfos Blad	der SS/T	Disp. Bailer	Whale		Grab Other:	, i	
Dedicated Ed	quipment: Yes	No			Pump	ing Rat	te: 5	gpm	
Well Purged	Dry? Yes	(N)	9		Time	Pump I	Began: //2	43	(am)/ pm
Time Purged	Dry? —				Time	of Sam	pling: 1/40	}	(am) / pm
Sample Appe	earance: Ger	neral:		Color:	_	Phase	):	Odor	•
		Gallons	SEQ	1	<b>.</b>				
	Furbidity NTU	Removed	#	Comments:	Water	Level		·	
1178	438-7	12	. 1 .		<u> </u>				
//33	264.4	4	2						
1138	224.4	6	3				•		
1143	198-7	8	4	÷					
			5					<u></u>	
				Amount Wa	veltein	noved:		Gallo	ns

Comments:

& Developed with bouter

New Ulm, MN 56073

507 354 8517

	elopment	Snee	et			Site:		Ot	tertail Pov	ver Co./	Hoot Lake
Sampling P	Personnel:					Facility	y ID:	SV	V-211		
	Ber V	VOIF	· · · · · · · · · · · · · · · · · · ·			Date:	117	41020	>		
P						Unique	e Statio	n ID: 80	6341		
						Sampl	le ID:	S-	10R		
Well Cond Well Locker Well Labele Casing Strat Repairs Ne	d? ed? aight? cessary:	ves Ves Ves	No No No			State I	tive Pos D Tag? Seal Int	Ye	<b>a</b> )	No No No	-
Well Infor	mation										
Well Depth	Before:	80.0	10			Well D	epth Af	ter: 8	0,92		
Constructed	d Depth:	80.62				Well C	asing E	levation:		1281.	47
Casing Diar	meter:	2				Static	Water E	Elevation:			
Water Leve	el Before:	_				Water	Level A	Nfter:			
Well Volum	ie:		Gallons		_	Measu	ırement	Method:	Ælec.	WLJ)	Steel Tape
Sampling	Informatio	on								,	
Weather Co	onditions:	Temp	: 73		Wind: //	10/0		Sk	y: Fai	~	·····
Weather Co	fethod:	Grundfo		S/T	Wind: // Disp. Bailer	Whale	(	Sk Grab Oth	<del></del>		
Weather Co		Grundfo		S/T		Whale	ing Rate	Grab Oth	<del></del>	gpm	
Weather Co	lethod: Equipment: (	Grundfo	os Bladder S	es/T		Whale Pumpi		Grab Oth	<del></del>	,	em ) pm
Weather Co Sampling M Dedicated E	Method: Equipment: ( d Dry?	Grundfo	No Bladder S	S/T		Whale Pumpi Time I	ing Rate	Grab Oth e: — egan:	er:	,	am / pm
Weather Co Sampling M Dedicated E Well Purgeo	fethod: Equipment: ( d Dry? ed Dry?	Grundfo	No Bladder S	SS/T		Whale Pumpi Time I	ing Rate Pump B	Grab Oth e: — egan:	er: - 157:	,	am /pm
Weather Co Sampling M Dedicated E Well Purged Time Purged Sample App	Method: Equipment: @d Dry? ed Dry? pearance:	Grundfo Yes Yes Gener	No No ral:	SEQ	Disp. Bailer	Whale Pumpi Time I	ing Rate Pump B of Samp	Grab Oth e: — egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purged Time Purged Sample App	Method: Equipment: © d Dry? ed Dry? pearance: Turbidity N	Grundfo Yes Yes Gener	No No ral: Gallons Removed		Disp. Bailer	Whale Pumpi Time I	ing Rate Pump B of Samp Phase:	Grab Oth e: — egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purged Time Purged Sample App	Method: Equipment: (d Dry? ed Dry? pearance: Turbidity N	Grundfo Yes Yes Gener	No No ral:	SEQ	Disp. Bailer  Color:	Whale Pumpi Time F	ing Rate Pump B of Samp Phase:	Grab Oth e: — egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purged Time Purged Sample App	Method: Equipment: © d Dry? ed Dry? pearance: Turbidity N	Grundfo Yes Yes Gener	No No ral: Gallons Removed	SEQ #	Disp. Bailer  Color:	Whale Pumpi Time F	ing Rate Pump B of Samp Phase:	egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purger Time Purger Sample App	Method: Equipment: (d Dry? ed Dry? pearance: Turbidity N	Grundfo Yes Yes Gener	No No ral: Gallons Removed	SEQ #	Disp. Bailer  Color:	Whale Pumpi Time F	ing Rate Pump B of Samp Phase:	Grab Oth e: — egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purger Time Purger Sample App Time	Method: Equipment: 6 d Dry? ed Dry? pearance: Turbidity N 1792. 1511.	Grundfo Yes Yes Gener	No Bladder S No No Fal:  Gallons Removed	SEQ # 1	Disp. Bailer  Color:	Whale Pumpi Time F	ing Rate Pump B of Samp Phase:	egan:	er: - 157:	gpm	am /pm
Weather Co Sampling M Dedicated E Well Purger Time Purger Sample App Time 1202 1207 (212	Method: Equipment: @ d Dry? ed Dry? pearance: Turbidity N	Grundfo Yes Yes Gener	S Bladder S No No Tral:  Gallons Removed	SEQ # 1 2	Disp. Bailer  Color:	Whale Pumpi Time F	ing Rate Pump B of Samp Phase:	egan:	er: - - - - - - - - - - - - - - - - - - -	gpm	am /pm

Comments:

Alexensed with bailer

New Ulm, MN 56073

507 354 8517

Groundy	vater Ass	essment			Site:	Otter	tail Pow	ver Co./Hoot Lake
Sampling F	Personnel:				Facility ID:	SW-2	211	
	Ber 1	NOIF	animat		Date: // 丁	care 20		
			·······		Unique Stati	on ID: 8063	41	
No.	· · · · · · · · · · · · · · · · · · ·				Sample ID:	S-10i	₹	
Well Cone Well Locke Well Labele Casing Stra Repairs Ne	d? ed? aight?	Ves No	-		Protective Postate ID Tag Grout Seal I	1? <b>(es)</b>		No No No
Well Infor		_						
Well Depth	: ?	30.92	-		Well Casing	Elevation:		1281.47
Constructed	d Depth:	57.00	_		Static Water	Elevation: /	209.	94
Casing Dia	meter:	2"			Previous Sta	ntic: 1209	75	
Water Leve	el Before Pur	ge: 71.63			Water Level	After Sample:	Bek	on pump
Well Volum	ie: 🚶	63	Gallons	_	Measureme		Ælec.	
Sampling	Informatio	on						
Weather Co	onditions:	Temp:	14	Wind: /	VB/10	Sky:	Fai	
Sampling M	lethod:	Grundfos	Bladder SS/7	Disp. Bailer	Whale	Grab Other:		
Dedicated E	Equipment:	Yes No			Pumping Ra	te: , 25		gpm
Well Purge	d Dry? (	Yes No	<del></del>		Time Pump	Began: <i>1</i> 33	8	am / pm
Time Purge	ed Dry?	1345			Time of Sam	npling: /350	<u> </u>	am /pm
Duplicate S	ample?	Yes (No)	_ID:		Sample EH:	-46-2		
Sample App	pearance:	General: S	it cloudy	Color: Ta	n Phase	Light	Sed.	Odor: Nore
Time	рН	Specific Cond.	Temp <sup>O</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1349	7-07	1008	11.06	1.47	43.3	1.75	1	
							2	
1260	7 . (2)	1000	11.50	1,5	D D F		3	
1350	7.09	1009	11.52	1.67	32-5		4	Kechange
		<u> </u>					5	
Stabilized?	Yes	No .		Amount Wa	ter Removed:	1.75		Gallons
Comments	<b>3</b> :							



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FINAL REPORT COMPLETION DATE: 24 OCT 20 AS

Date Reported: 22 Oct 2020

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0437 Account #: 006106

PO #: 48679

Project Name: HOOT LAKE PLANT

Lab Manager/Date Reviewed

2200 WW Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S2A

Report Date: 22 Oct 2020 Lab Number: 20-A49000 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER Date Sampled: 5 Oct 2020 13:02

Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					8 Oct 20	JMS
pH, Field	6.94	units	1.00	SM4500-H+-2011	5 Oct 20 13:02	BMW
он	* 7.0	units	1.0	SM 4500 H+ B-2000	7 Oct 20 15:19	HO
Sulfate	201	mg/L	5.0	ASTM D516-07	8 Oct 20 8:41	SS
Chloride	3.3	mg/L	3.0	SM 4500 Cl E	8 Oct 20 10:11	AKF
Solids, Total Dissolved	741	mg/L	10	SM 2540 C-97	8 Oct 20 16:06	RLY
Calcium	157.0	mg/L	0.500	SW6010C	12 Oct 20 9:08	RMV
	0.258	mg/L	0.100	SW6010C	12 Oct 20 9:08	RMV
Boron Fluoride	0.220 @	mg/L	0.020	EPA 300.0	9 Oct 20 14:14	

\* Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCK

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S3AR

Page: 3 of 9

Report Date: 22 Oct 2020 Lab Number: 20-A49001 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 13:46 Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium Boron Fluoride	7.08 * 7.2 90.5 12.8 484 113.0 < 0.1 0.210 @	units units mg/L mg/L mg/L mg/L mg/L mg/L mg/L	1.00 1.0 5.0 3.0 10 0.500 0.1	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-07 SM 4500 C1 E SM 2540 C-97 SW6010C SW6010C EPA 300.0	8 Oct 20 5 Oct 20 13:46 7 Oct 20 15:19 8 Oct 20 8:41 8 Oct 20 10:11 8 Oct 20 16:06 12 Oct 20 9:08 12 Oct 20 9:08 9 Oct 20 14:14	JMS DS HO SS AKF RLY RMV RMV RMV

<sup>\*</sup> Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S51

Report Date: 22 Oct 2020 Lab Number: 20-A49002 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 11:54 Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

·	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions		///			8 Oct 20	JMS
pH, Field	6.77	units	1.00	SM4500-H+-2011	5 Oct 20 11:54	BMW
pH pH	* 6.9	units	1.0	SM 4500 H+ B-2000	7 Oct 20 15:19	HO
Sulfate	459 ~	mq/L	5.0	ASTM D516-07	8 Oct 20 8:41	SS
Chloride	12.7	mg/L	3.0	SM 4500 Cl E	8 Oct 20 10:11	AKF
Solids, Total Dissolved	1190	mq/L	10	SM 2540 C-97	8 Oct 20 16:06	RLY
Calcium	243.0	mq/L	0.500	SW6010C	12 Oct 20 9:08	RMV
Boron	0.151	mg/L	0.100	SW6010C	12 Oct 20 9:08	RMV
Fluoride	0.200 @	mg/L	0.020	EPA 300.0	9 Oct 20 14:14	RMV

<sup>\*</sup> Holding Time Exceeded

<sup>~</sup> Sample diluted due to result above calibration of linear range.



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S52

5 of 9 Page:

Report Date: 22 Oct 2020 Lab Number: 20-A49003 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 12:36 Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field	6.95	units	1.00	SM4500-H+-2011	8 Oct 20 5 Oct 20 12:36	JMS BMW
pH Sulfate	* 7.1 74.3	units	1.0	SM 4500 H+ B-2000 ASTM D516-07	7 Oct 20 15:19 8 Oct 20 8:59	
Chloride Solids, Total Dissolved	13.4 496	mg/L mg/L	3.0	SM 4500 Cl E SM 2540 C-97	8 Oct 20 10:11 8 Oct 20 16:06	
Calcium	110.0	mg/L	0.500 0.1	SW6010C SW6010C	12 Oct 20 9:08 12 Oct 20 9:08	RMV
Boron Fluoride	< 0.1 0.220 @	mg/L mg/L	0.020	EPA 300.0	9 Oct 20 19:43	

<sup>\*</sup> Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCR "

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S10R

Report Date: 22 Oct 2020 Lab Number: 20-A49004 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 11:32 Sampled By: MVTL FIELD PERSONNEL

Date Received: 6 Oct 2020 13:05 PO #: 48679

Temp at Receipt: 1.6C

,	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate	7.11 * 7.1 113	units units mg/L	1.00 1.0 5.0	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-07	8 Oct 20 5 Oct 20 11:32 7 Oct 20 15:19 8 Oct 20 8:59	HO SS
Chloride Solids, Total Dissolved Calcium Boron Fluoride	10.9 526 120.C < 0.1 0.200 @	mg/L mg/L mg/L mg/L mg/L	3.0 10 0.500 0.1 0.020	SM 4500 C1 E SM 2540 C-97 SW6010C SW6010C EPA 300.0	8 Oct 20 10:11 8 Oct 20 16:06 12 Oct 20 9:08 12 Oct 20 9:08 9 Oct 20 19:43	RLY RMV RMV

\* Holding Time Exceeded

RL = Reporting Limit

Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes

! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: MN LAB # 027-015-125 WI LAB # 999447680 ND MICRO # 1013-M ND WW/DW # R-040



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CERTIFICATE of ANALYSIS - CCK

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S13

Page: 7 of 9

Report Date: 22 Oct 2020 Lab Number: 20-A49005 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 13:07 Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					8 Oct 20	JMS
pH, Field	7,20	units	1.00	SM4500-H+-2011	5 Oct 20 13:07	DS
pH	* 7.2	units	1.0	SM 4500 H+ B-2000	7 Oct 20 15:19	НО
Sulfate	93.2	mg/L	5.0	ASTM D516-07	8 Oct 20 8:59	SS
Chloride	8.6	mg/L	3,0	SM 4500 Cl E	8 Oct 20 10:31	AKF
Solids, Total Dissolved	516	mg/L	10	SM 2540 C-97	8 Oct 20 16:06	RLY
Calcium	112.0	mg/L	0.500	SW6010C	12 Oct 20 9:08	RMV
Boron	< 0.1	mg/L	0.1	SW6010C	12 Oct 20 9:08	RMV
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	9 Oct 20 19:43	RMV

<sup>\*</sup> Holding Time Exceeded



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S14R

Report Date: 22 Oct 2020 Lab Number: 20-A49006 Work Order #: 31-0437 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 5 Oct 2020 12:26 Sampled By: MVTL FIELD PERSONNEL Date Received: 6 Oct 2020 13:05

PO #: 48679

Temp at Receipt: 1.6C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst	
Water Digestions		<u></u>			8 Oct 20	JMS	
pH, Field	7.03	units	1.00	SM4500-H+-2011	5 Oct 20 12:26	DS	
pH	* 7.1	units	1.0	SM 4500 H+ B-2000	7 Oct 20 15:19	HO	
Sulfate	102	mg/L	5.0	ASTM D516-07	8 Oct 20 8:59	SS	
Chloride	3.5	mg/L	3.0	SM 4500 Cl E	8 Oct 20 10:31	AKF	
Solids, Total Dissolved	534	mg/L	10	SM 2540 C-97	8 Oct 20 16:06	RLY	
Calcium	132.0	mq/L	0.500	SW6010C	12 Oct 20 9:08	RMV	
Boron	< 0.1	mg/L	0.1	SW6010C	12 Oct 20 9:08	RMV	
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	9 Oct 20 19:43	RMV	

<sup>\*</sup> Holding Time Exceeded



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INORGANIC & METALS ANALYSES: No problems were encountered with these analyses.



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Page: 1 of 1

**Quality Control Report** 

Work Order: 202031-0437 Lab IDs: 20-A49000 to 20-A49006 Project: HOOT LAKE PLANT MSD/ Matrix Matrix MSD/ Matrix MSD/ MSD MSD Dup Known Known Matrix Spike Spike Spike Dup LCS Matrix Matrix LCS LCS Method **RPD** % Rec % Rec Orig Dup Rec Dup Rec Spike Orig Spike Rec % Rec Spike Spike Rec % RPD Limit (<) (%) Limits Blank Result Result Limits m Result Result % Limits % Amt Amt Analyte 90-110 < 0.1 0.997 10 98 101 75-125 1.010 100 1.3 1.010 87 85-115 1.00 20A48995q < 0.1 1.000 Boron mg/L < 0.5 88.90 103 2.1 10 105 90-110 75-125 90.80 37.20 90.80 107 105 85-115 50.0 20A48995q 50.00 Calcium mg/L 5 98 < 3 1.5 90-110 71.2 72.3 102 71.2 86-117 60.0 20-A49004 10.9 100 Chloride mg/L 93 1.1 5 98 90-110 < 3 86-117 271 268 212 271 98 20-A49047 60.0 1.7 10 104 90-110 < 0.02 99 75-125 1.19 1.21 101 1.19 20-A49002 0.200 1.00 Fluoride mg/L 75-125 1.27 1.29 104 1.6 10 104 90-110 1.27 102 20-A49006 0.250 1.00 7.1 0.0 2.5 101 90-110 7.1 pH units 7 < 10 104 85-115 534 563 5.3 Solids, Total Dissolved mg/L 1330 1.5 7 1310 \_ 2.7 5 99 80-120 < 5 53.2 106 51.8 104 68-132 51.8 20-A48993 < 5 50.0 Sulfate mg/L 5 101 80-120 < 5 68-132 53.6 90 1.1 89 53.0 8.7 53.0 50.0 20-A48278

Approved by:

1126 North Front Street Phone: 800 782 3557

New Ulm, MN 56003

Fax: 507 359 2890

### Field Service Chain of Custody Record

This is an exact copy of
the original document
By Date 6 0 Ct 30
pages 1-11

Project Nar	ne:	Otter Tail Powe Hoot Lake Plan		Project	Type:	CCR			]	Nar	ne d	of Sa	amp	lers	<u>: /</u>	30	7	h	rolt ichreck		
Attn: Address:	Paul Vukonio P.O. Box 496	wer Company h S MN 56038-0496		Carbon Attn: Address	-	Carlson McCa Megan Lindstr				Que Wo	rk C	Num Irdei mbe	ber: · Nu							Kenberg	
	S	ample Informa	tion			(F)					E	3ott	le T	уре	)					Analysis	
Lab Number	Sample ID	Unique Station ID	Date	7. Time	Sample Type	Sample Location	Voc Set	1000 none	1000 HNO3	500 HNO3		500 HNO3		500H2SO4	1000 Amber 1	500 NaOH H2SO4	Other: 150 HS	Other 150 %	Analysis Required		
A	S2A		50C+20	1302	GW			1		1	N								See Attato	ched	
	S3AR			13-16	GW			1		1	N										
02	S51	12-12-12-12-12-12-12-12-12-12-12-12-12-1		1154	GW			1		1	N									4	
	S52			1236	GW			1		1	N										
	S10R			1132	GW			1		1	N										
OS	S13			1307	GW			1		1	N										
06	S14R			1226	GW			1		1	N										
			·				Ш	$\perp$	$\perp$	_											_
ene es in transcription							$\square$	4	4	_				_	_						_
Comments:	CCR wells																				

Samples Relinquished By	: Bon War	$\gamma$		Samples Received By: 💪	1. Neder	
Date: 0 OCT 20	fj	ime: 1305	Temp: 1.0 TM78U	Date: 6 0ける0	Time: 1305	Temp: \.\chi
Samples Relinquished int	o: <b>(</b> Fr	ridge Log in C	Cart Other:			,
Samples Relinquished By	•			Samples Received By:		
Date:	Ti	ime:	Temp:	Date:	Time:	Temp:
Delivery <sup>.</sup>	Samplers O	ther:		Seal Number(s) - If Used		
Transpo	Ambient Ic	е	Other:	Seals Intact? Yes	s No	

## Hoot Lake Site CCR Sampling - 2020

Site	Parameter List	Well Depth	Diameter (Inches)	Well Elevation	Sample Equipment	Dedicated?	Pump Rate (gal/minute)	Goes Dry?
S2A	CCR 3	79.63	2	1273.776	Bladder	Yes	< 0.25	No
S3AR	CCR 3	78.42	2	1271.562	Bladder	Yes	< 0.25	No
S51	CCR 3	55.6	2	1286.904	Bladder	Yes	< 0.25	No
S52	CCR 3	88.3	2	1286.623	Bladder	Yes	< 0.25	No
S10R	CCR 3	57.00	2	1281.47	Bladder	Yes	< 0.25	No
S13	CCR 3	90.19	2	1296.423	Bladder	Yes	< 0.25	No
S14R	CCR 3	70.86	2	1280.61	Bladder	Yes	< 0.25	Yes

Note: CCR samples must be on their own COC.

Total Recoverable Metals! Groundwater samples shall not be field filtered prior to analysis.

### CCR - Appendix III Detection Monitoring

### Field Parameters

pH\*

<sup>\*</sup> Field and Laboratory Measurements

Total Concentration Parameters	Method
Boron	6010
Calcium	6010
Chloride	SM4500 CL E
Fluoride	EPA 300
рН	SM 4500 H+B-96
Sulfate	ASTM D516
Dissolved Solids, Total	SM 2540 C-97

### CCR - Appendix IV - Assessment Monitoring

Total Concentration Parameters	Method
Antimony	SW6020A
Arsenic	SW602A
Barium	SW6010C
Beryllium	SW6020A
Cadmium	SW6020A
Chromium, Total	SW6020A
Cobalt	SW6010C
Fluoride	EPA 300
Lead	SW6020A
Lithium	SW6010C
Mercury	EPA 245.7
Molybdenum	SW6020A
Selenium	SW6020A
Thallium	SW6020A
Radium 226 + 228	

# Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073

Groundwater Assessment		Site:	Otter Ta	ail Powe	er Co./ Hoot Lake	
Sampling Personnel:		Facility ID:	SW-21	1		
Ben Worf		Date: 5 O	CTZO			
- LOCI TITLE		Unique Statio		)		
		Sample ID:	S-2A			
Well Condition			9			
Well Locked? (es) No		Protective Po			No.	
Well Labeled? (eg No		State ID Tag			<u>√o&gt;</u> No	
Casing Straight? Yes No.		Glout Seat III	tact: (10g			
Repairs Necessary:		· 100.01.01.0000 1.00				
Well Information		Well Casing I	Elevation:		1273.776	
Well Depth: 79.62			,	97.5		
Constructed Depth: 79.63		Static Water				
Casing Diameter: 2"		Previous Stat			10	
Water Level Before Purge: 7(2.19	•		After Sample:			
Well Volume: ,56 Gallons	-	Measuremen	t Method:	Elec. V	VIJ Steel Tape	
Sampling Information	0	77.00		D. Y	•	
Weather Conditions: Temp: 58	Wind: 3	Eero	Sky: 7	Pair		
Sampling Method: Grundfos Bladder SS/T	Disp. Bailer	Whale	Grab Other:			
Dedicated Equipment: Yes No		Pumping Ra			gpm	
Well Purged Dry? Yes		Time Pump			am / (pm)	
Time Purged Dry?		Time of Sam	npling: 130	<u>ス</u>	am / (pm)	
Duplicate Sample? Yes No ID:		Sample EH:	Sample EH: -7/-3			
Sample Appearance: General: Clca	Color: M	and Phase	e: Nanc		Odor: Non~	
	<del></del>	1	Ta "	ICEO		
Specific Temp Cond.  Cond.	D. O.	Turbidity NTU	Gallons Removed	SEQ #	Comments:	
1 04 1201 1000	mg/L	0.0	. 75	1.		
1256 6.95 1294 9.82	634			1		
1259 6-94 1296 9.72	6.07	0.0	1-50	2		
1302 6-94 1297 9-68	5.97	0.0	2.25	3		
				4		
				5		
No.	A mount \//	ater Removed	: 2-26		Gallons	
Stabilized? (Fest No	Altiount VV	ater i terrioveu	0			
Comments:						

<b>Groundwater Asset</b>	essment			Site:	Otter Ta	ail Powe	r Co./ Hoot Lake
Sampling Personnel:	N			Facility ID:	SW-21	1	
S.C	d70			Date:	SOC	+20	
				Unique Station	n ID: 674671		
			,	Sample ID:	S-3A-R		
Well Condition				D : :: D-	-4-0 \653	1	No
Well Locked?	Yes No			Protective Pos State ID Tag?			<u> </u>
Well Labeled?	Yes No			Grout Seal Int			( <u>6</u> )
Casing Straight?	Yes/ No	•		<u></u>			
Repairs Necessary:							. ,
Well Information	10117			Well Casing E	Elevation:		1271.562
Well Depth:	78.40	•		Static Water			703.83
Constructed Depth:	78.42	•				<u>`</u>	203.49
Casing Diameter:	2"	•		Previous Stat			
Water Level Before Pu	rge: 67.	73_			After Sample:		57.81
Well Volume:	1.74	Gallons	•	Measuremen	t Method:	Elec. V	VLD Steel Tape
Sampling Informati	ion					$\sim$	
Weather Conditions:	Temp: 5	59	Wind:	@15	Sky:	Cks	
Sampling Method:	Grundfos	Bladder SS/J	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Yes) No	_		Pumping Ra			gpm
Well Purged Dry?	Yes (No)			Time Pump		<u> 25                                    </u>	am / m
Time Purged Dry?				Time of Sam		18	am (pin)
Duplicate Sample?	Yes (No)	ID:		Sample EH:		34.8	
Sample Appearance:	General:	Cleer	Color: /	one Phase	e: None		Odor: Norc
		Temp	D. O.	Turbidity	Gallons	SEQ	
Time pH	Specific Cond.	OC Lemb	mg/L	NTU	Removed	#	Comments:
1 -1 + 0	1021	10.20	9.77	0.0	1.75	1	
19 2 111		10,01	9.76	0.0	3.5	2	
1331	1023						
1346 7.08	1019	9.89	9.80	0.0	5.25	3	
						4	
						5	
Stabilized? Yes	No	•	Amount W	ater Removed	: <i>S. 7</i> 5	- 	Gallons
Comments:	110						
Comments.							

roundwater Assessment		Site:	Otter T	ail Powe	er Co./ Hoot Lake
Sampling Personnel:		Facility ID:	SW-21	1	
Ber Wolf		Date: 5 00	C+ 20		
		Unique Station		)	
		Sample ID:	S-51		
Well Condition Well Locked? Well Labeled? Casing Straight?  Repairs Necessary:	•	Protective Pos State ID Tag? Grout Seal Inte	<b>₹</b>		No No No
Well Information					
Well Depth: 55-60		Well Casing E			1286.904 Or #
Constructed Depth: 55.60		Static Water E			9/
Casing Diameter: 2"		Previous Stati	c: 12310	~	
Water Level Before Purge: 50.99		Water Level A	After Sample:	60.	74
Well Volume: .75 Gallons		Measurement	Method:	Elec. V	VLI Steel Tape
Sampling Information	(	TAN	<u>.</u> .	Fair	_
Weather Conditions: Temp: 56	Wind:	トドデン	Sky:	Var.	
	<del></del>			-	
Sampling Method: Grundfos Bladder S8/1	Disp. Bailer		Grab Other:		
Sampling Method: Grundfos Eladder Sert  Pedicated Equipment: (es) No	Disp. Bailer	Pumping Rate	e: ,26		gpm
	Disp. Bailer	Pumping Rate	e: 26 Began: 1146		am / pm
edicated Equipment: Ves No	Disp. Bailer	Pumping Rate Time Pump B Time of Samp	e: 26 Segan: 1145 Joling: 1154		
edicated Equipment: (es No Well Purged Dry? Yes No	Disp. Bailer	Pumping Rate Time Pump B Time of Samp Sample EH:	e: 26 legan: //46 pling: //54 -99-5	/	am / pm
edicated Equipment: (es No Well Purged Dry? Yes No Time Purged Dry?	Disp. Bailer  Color: NC	Pumping Rate Time Pump B Time of Samp Sample EH:	e: 26 Segan: 1145 Joling: 1154	/	am / pm
edicated Equipment: (es) No  Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No  Sample Appearance: General: Clear  Specific Temp		Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity	e: 26 legan: //46 pling: //54 -99-5	/	am / pm
edicated Equipment: (es) No Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No  Sample Appearance: General: Clear  Time pH Specific Temp  Cond. C	Color: NC	Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity	e: 26  segan: 1145  oling: 1154  -99-5  : Ly4+  Gallons	SEQ	am/pm  Odor: Sa/fwog
edicated Equipment: (es) No  Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No ID:  Sample Appearance: General: Clear  Time pH Specific Cond. C Temp  Cond. 1762 8.82	D. O. mg/L	Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity NTU	e: 76  legan: 1146  loling: 1154  -99-5  Ly4+5  Gallons  Removed	SEQ #	am/pm  Odor: Sa/fwog
Pedicated Equipment: (es) No Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No  Sample Appearance: General: Clear  Time pH Specific Cond.  Time pH Cond.  1148 (2.79 1762 8.82	D. O. mg/L .91	Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity NTU IO OOO	e: 76  segan: 1146  oling: 1154  -99-5  : Ly4+  Gallons  Removed  -75	SEQ #	am/pm  Odor: Sa/fwog
edicated Equipment: (es) No  Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No ID:  Sample Appearance: General: Clear  Time pH Specific Cond. C Temp  Cond. 1762 8.82	D. O. mg/L	Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity NTU	e: 76  legan: 1146  loling: 1154  -99-5  Ly4+5  Gallons  Removed	SEQ # 1 2 3	am/pm  Odor: Sa/fwog
Pedicated Equipment: (es) No Well Purged Dry?  Time Purged Dry?  Duplicate Sample? Yes No  Sample Appearance: General: Clear  Time pH Specific Cond.  Time pH Cond.  1148 (2.79 1762 8.82  1161 (2.78 1771 8.70	D. O. mg/L .91	Pumping Rate Time Pump B Time of Samp Sample EH: Turbidity NTU IO OOO	e: 76  segan: 1146  oling: 1154  -99-5  : Ly4+  Gallons  Removed  -75	SEQ #	am/pm  Odor: Sa/fwog

Comments:

# Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073

roundwater Assessme	ent		Site:	Otter T	ail Pow	er Co./ Hoot	Lake
Sampling Personnel:			Facility ID:	SW-21	1		
Bu Woi	<u>f</u>		Date: 5	ic+ 20			
•			Unique Statio	on ID:			
			Sample ID:	S-52			
Well Labeled? (es)	No No No		Protective Po State ID Tag Grout Seal In	? <b>(es</b> )		No No No	
Well Information		· · · · · · · · · · · · · · · · · · ·					
Well Depth: 88-3	<u> </u>		Well Casing			1286.623	
Constructed Depth: 88.30			Static Water		<u> 215.1</u>	<u>4</u>	
Casing Diameter: 2"			Previous Sta	tic: 1215-			
Water Level Before Purge:	71.48		Water Level	After Sample:	71-	48	
Well Volume: 2.74	Gallons		Measuremer	nt Method:	Elec. V	VL) Steel	Tape
Sampling Information	~~	<u> </u>	F (220	• •	D '		
Weather Conditions: Temp:	: 58	Wind: 5	EQ20	Sky:	ter		
Sampling Method: Grundfo	os Bladder SS/T	Disp. Bailer	Whale	Grab Other:			
	No		Pumping Ra	10		gpm	<u>~</u>
Well Purged Dry? Yes	<u>₩</u>		Time Pump	175		<u>am /</u>	6m/
Time Purged Dry?			Time of San	-	0	am /	(pm)
Duplicate Sample? Yes	·		Sample EH:				
Sample Appearance: Gener	ral: Clear	Color: N	ひつ Phase	e: Noフレ		Odor: NO	20
Time 1 pH Specif	°C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:	
1214 6.93 968	8 8.95	,25	0.0	2.75	1		
	Ø 994	.26	0.0	5.50	2		
1236 695 969	8 8.95	.26	0.0	8.25	3		
7 10 10					4		
					5		
Stabilized? (Yes No				: 8.25		Callons	
		Amount W	ater Removed	: 0.25		Gallons	

Groundwater Assessment			Site:	Otter i	all Powe	SI CO./ FIGOR Lar	
Sampling Personnel:			Facility ID:	SW-21	1		
DS			Date:	500	+20		
<u> </u>	•		Unique Station	1 ID: 80634			
	•	•	Sample ID:	S-10R			
Well Condition				,			
Well Locked? Yes No	_		Protective Pos			No	
Well Labeled? (Yes \No	•		State ID Tag?			No No	
Casing Straight? Yes No	-		Grout Seal Int	act? Yes		110	
Repairs Necessary:							<b>=</b> .
Well Information			Mall Cooling E	lovation:		1281.47	
Well Depth: <b>(0</b> , S2	-		Well Casing E			210.63	
Constructed Depth: 57.00	-		Static Water I		· · · · · · · · · · · · · · · · · · ·	209.75	_
Casing Diameter: 2"	-		Previous Stat				
<u> </u>	-84		Water Level A			Selvin Perry	
Well Volume: ISS	Gallons		Measurement	Method:	E/ec. V	VD Steel Ta	pe
Sampling Information	ec.		(A)(2)	<b>C</b> 1	<i>a</i> !	. (	
Weather Conditions: Temp:			<u>@13</u>	Sky:	Clea	<u>u</u>	
Sampling Method: Grundfos	Bladder SS/1 Dis	sp. Bailer		Grab Other:			_
Dedicated Equipment: Yes No	_		Pumping Rat			gpm	
√Vell Purged Dry? Yes No			Time Pump E		ZO	(am) / pr	
Time Purged Dry?	_		Time of Sam		<u> </u>	(ám)/ pr	<u>n</u>
Duplicate Sample? Yes (No	_ID:	<del></del>	Sample EH:		<u>.</u> Z.		
Sample Appearance: General: (	Soudy c	olor: LFC	Vary Phase	: Lt Seg	/ 	Odor: None	
Specific	1	. O.	Turbidity	Gallons	SEQ		
Time pH Cond.		ıg/L	NTU ·	Removed	#	Comments:	
12\$ 6.95 1018	1073	997	356.2	1.75	1		_
	•		-		2		
					3		
					4		
1132 711 1043	10.66	11.04	1967		5	rechoe	刀
	A			1.7		Gallons	
Stabilized? Yes No	<u> </u>	mount vva	ter Removed:	(- /		Galions	
Comments:	<b>C</b> 2	01.00	•				
	FBO	@1105					•
	Temp	: 17.9	4	<u>.</u>	San	udo cleme	ed 1
Exceptions to Protocol:	-			, <del>7</del>	1110	nde cleare Durines Ser	
		5			a	brujus Za	mρl
	PH	5.20				~	,
	EH	6/55.0	7				
	- '	9.39					
		7 74					

roundwater Ass	roundwater Assessment				Site: Otter Tail Power Co./ Hoot Lake					
Sampling Personnel:			/	Facility ID:	SW-21	1				
	05	_	,	Date:	5 0c	+20	I			
		_		Unique Statio	on ID: 63281	0				
		_		Sample ID:	S-13					
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	Yes No Yes No Yes No	-		Protective Po State ID Tag Grout Seal In	? Yes		No No No			
Well Information										
Well Depth:	90.27			Well Casing	Elevation:		1296.423			
Constructed Depth:	90.19	_		Static Water	Elevation:	12	08.59			
Casing Diameter:	2"	_		Previous Sta	tic:	12	208,34			
Water Level Before P	0-91						87.91			
Well Volume:	0.40	Gallons	···	Measuremer	nt Method:	E(ec. V	VLI) Steel Tape			
Sampling Informat	ion					~.				
Weather Conditions:	Temp:	<u>59</u>	Wind:	<u>5013</u>	Sky:	aeg	<u> </u>			
Sampling Method:	Grundfos	Bladder SS/1	Disp. Bailer	Whale	Grab Other:					
edicated Equipment	Yes No			Pumping Ra	2		gpm			
Well Purged Dry?	Yes (No)	_		Time Pump	Began: 1/3	<u> </u>	am / (pm)			
Time Purged Dry?		- l	<i>1.</i> .	Time of Sam		07	am / (pm)			
Duplicate Sample?	(Yes)(No)	_ID: <u>()</u>	rate	Sample EH:	- 36	5. <u>6</u>				
Sample Appearance:	General:	(Veer"	Color: 🖊	re Phase	: None		Odor: Suffer			
Time pH	Specific Cond.	Temp °C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:			
1303 7.27	992	11.56	9.99	13.9	0,5	1				
1305 7.24	1 1221	11119	9.93	8.9	1.0	2				
1302 1.24	1001	11.29		<del></del>		1				
1307 7.20	1	1009	9.98	6.3	1.5	3				
1	1				1.5	3				
1	1				1.5					

Comments:

Groundwater Assessment			Site:	Otter 7	ail Pow	ver Co./ Hoot Lake			
Sampling Personnel:			Facility ID:	SW-21	1				
DS	_		Date:	50	10/2	0			
	-		Unique Statio	on ID: 80634	2				
	<del>-</del>		Sample ID:	S-14R					
Well Condition Well Locked? Well Labeled? Casing Straight?  Repairs Necessary:  Yes No Yes No	-		Protective Po State ID Tag Grout Seal In	? Yes		No No No			
Well Information									
Well Depth: 87.11	<b>_</b>		Well Casing	Elevation:		1280.61			
Constructed Depth: 70.86	_		Static Water	Elevation:		1202.22			
Casing Diameter: 2"			Previous Sta	tic:		1201.97			
Water Level Before Purge: 78	5.39		Water Level	After Sample:	,	78.47			
Well Volume: 1.42	Gallons	_	Measurement Method: E(ec. W) Steel						
Sampling Information						_			
Weather Conditions: Temp:	59	Wind:	<u> 5013</u>	Sky:	<u>C</u>	lecr			
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:	<u></u>				
Dedicated Equipment: Yes No	_		Pumping Ra	te: め, ?	25	gpm			
Well Purged Dry? Yes (No)			Time Pump		208	am / @m			
Time Purged Dry?			Time of Sam	npling: / Z	226	am / (pm)			
Duplicate Sample? Yes No	_ID:		Sample EH:	-16	12.1				
Sample Appearance: General:	Oler	Color: /\ou	me Phase	e: None		Odor: None			
Time pH Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:			
1214 7.02 1118	10.54	9.87	21.7	1,5	1				
1720 7.03 1105	10.52	9.83	9.8	3	2				
1226 7.03 1085	10.49	9.73	5.3	4.5	3				
	<u>\</u> .				4				
					5				
	<del></del>								
Stabilized?(Yes / No		Amount Wa	ter Removed:	4.	\	Gallons			



1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mvtl.com



Page: 1 of 3

FINAL REPORT COMPLETION DATE: 23Nov20 04

Date Reported: 20 Nov 2020

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0539 Account #: 006106

PO #: 38307

Project Name: HOOT LAKE PLANT

Field Service Manader/Date Reviewed

Chemistry Lab Manager/Date Reviewed

Quality Assurance Director/Date Reviewed

RL = Reporting Limits

NQ = Not Present, Qualitative Only

PQ = Present, Qualitative Only

ND = Not Determined



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CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: S2A

2 of 3 Page:

Report Date: 20 Nov 2020 Lab Number: 20-A57278 Work Order #: 31-0539 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 18 Nov 2020 10:36 Sampled By: MVTL FIELD PERSONNEL Date Received: 18 Nov 2020 14:18

PO #: 38307

Temp at Receipt: 0.3C

	As Receive Result	d	Method RL	Method Reference	Date Analyzed	Analyst		
рН, field Chloride	6.01 3.0	units mg/L	1.00	SM4500-H+-2011 SM 4500 Cl E	18 Nov 20 10:36 19 Nov 20 8:24			

RL = Reporting Limit
Analyses performed under our Minnesota Department of Health Accreditation conform to the current TNI standards.
The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity # = Due to internal standard response
CERTIFICATION: MN LAB # 027-015-125 WI LAB # 999447680 ND MICRO # 1013-M ND WW/DW # R-040



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Page: 3 of 3

CERTIFICATE of ANALYSIS - CCR

JOSH HOLLEN
OTTER TAIL POWER CO
PO BOX 496

FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT

Sample Description: DUPLICATE

Report Date: 20 Nov 2020 Lab Number: 20-A57279 Work Order #: 31-0539 Account #: 006106

Sample Matrix: GROUNDWATER

Date Sampled: 18 Nov 2020 10:36 Sampled By: MVTL FIELD PERSONNEL Date Received: 18 Nov 2020 14:18

PO #: 38307

Temp at Receipt: 0.3C

	As Recei Result	ived	Method RL	Method Reference	Date Analyzed	Analyst
Chloride	3.5	mg/L	3.0	SM 4500 Cl E	19 Nov 20 8:24	AKF



1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890 2616 E. Broadway Ave. ~ Bismarck, ND 58502 ~ 800-279-6885 ~ Fax 701-258-9724 1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885 www.mytl.com

MEMBER ACIL

Page: 1 of 1

**Quality Control Report** 

Project: HOOT LAKE PLANT Work Order: 202031-0539 Lab IDs: 20-A57278 to 20-A57279 MSD/ Matrix Matrix MSD/ Matrix MSD/ MSD MSD/ Dup Known Known Matrix Spike Spike: Dup Matrix Spike LCS LCS Matrix LCS RPD Rec % Rec Method Rec Dup Spike Rec % Rec Orig Dup Spike % Rec Spike Orig Spike Rec Limit (<) (%) Limits Blank Result % RPD Limits Result %  $\mathbf{m}$ Result Result % Limits Amt Amt Analyte 106 3.2 5 102 90-110 < 3 69.3 67.1 69.3 110 86-117 3.5 60.0 20-A57279 Chloride mg/L 5 85-115 67.4 64.7 108 4.1 20-A56519 < 3 67.4 112 60.0 2.7 5 88.4 106 90.8 110 86-117 90.8 20-A56966 24.5 60.0 5 103 0.9 86-117 1110 1100 104 600 20-A56191 483 1110

Approved by:

1126 North Front Street

New Ulm, MN 56003

Phone: 800 782 3557

Fax: 507 359 2890

### Field Service Chain of Custody Record

Ambient

Transport:

(řće

Other:

This is an exact copy of the original document

By Date 18 Nov 20

No

Yes

												/	6	/		_					
Project Na	me:	Otter Tail Powe	er Co.	Project	Type:	CCR			Na	ame	of S	amp	lers				<i>_</i> :-				
		Hoot Lake Plan	nt											M)cı	1	- ?	) te	74/			
Report To:	Otter Tail Po	ower Company		Carbon	Copy:	Carlson McCa															l
Attn:	Paul Vukoni			Attn:		Megan Lindst	rom			uote											
Address:	P.O. Box 49			Address	<u>3:</u>				<u> W</u>	ork (	<u>Orde</u>	r Nu	mbe	<u>r.</u> 3	1 -	53	39				
		, MN 56038-0496	3						<u> La</u>	ab Nu	ımbe	ers:									
Phone:	218-739-834			<u></u>							2 11	. 7							A a live !		l
	S	ample Informa	ition					<del></del>	<del>, ,</del>		Bott	ie i	ype	7			<del></del>		Analysi	5	
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	VOCSat	500 none	1000 HNO3	Filler?	500 HNO3	Filter? Y or 1.	500H2SO4	1000 Amber H2SC	500 NaOH	Other: 150 H2SO	Other 150 Non-	Analysis Required			
A57278	S2A		1840000	1036	GW			1									(	Chloride (F	Rush)		
79	Duplicate		1	1036	GW			1		T											
	Duplicate	<del> </del>	<u> </u>	1.504			$\top$			+	$\Box$		$\neg$	$\dashv$	十	$\top$	$\top$				
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	+		<del>                                     </del>			<b>†</b>				1					$\top$						
Comments	: CCR wells		$\overline{}$	<u> </u>				<u> </u>												is.	ļ
			1										_	1	<u>,                                    </u>	_	_				1
Samples R	elinquished B	y: MM ()					_		s Rec		d By:	_4	1.	1	la		بل				
Date: 18 NO			Time: 14	18	Temp:	0.3	Da	te: /	8 Nov	120			Time	e: <u>/</u>	41	8_		Temp: 🖔 .	3C_		
Samples R	elinquished in	ito:	Fridge	Log in		Other:															
	elinquished B						Sai	mple	s Rec	eive	d By:										
Date:	• • • • • • • • • • • • • • • • • • • •		Time:		Temp:		Da	te:					Time	9:				Temp:	AP 1911	٠.	
Delive _		Samplers	Qther:				Sea	al Nu	umber	(s) -	If Us	ed								J.	

Seals Intact?

New Ulm, MN 56073

Groundwater Asse	essment			Site:	Otter T	ail Pow	er Co./ Hoot Lake
Sampling Personnel:				Facility ID:	SW-21	1	
	MS			Date: /8/	varde		
				Unique Static	on ID: 44435	0	
				Sample ID:	S-2A		
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	Ves No Yes No			Protective Po State ID Tag Grout Seal In	? Yes		No No No
Well Information	. **	_					
Well Depth:	70.6	2		Well Casing	Elevation:		1273.776
Constructed Depth:	79.63			Static Water		NA	7
Casing Diameter:	2"	^		Previous Sta	tic: 119		0
Water Level Before Pur	ge: Belo	w Hump		Water Level	After Sample:	Be	law Rimp
Well Volume:	<u> NA</u>	Gallons	-	Measuremen	t Method:	Zlec. \	אַצוו Steel Tape
Sampling Information Weather Conditions:	on Temp:	3 <u>5</u>	Wind:	5-12	Sky:	cid	4
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Ves No			Pumping Rat			gpm
Well Purged Dry?	Yes (No			Time Pump I		1028	
Time Purged Dry?				Time of Sam		<u>36</u>	(am) / pm
Duplicate Sample?	(es No	ID: Det	slicate	Sample EH:	14.9		
Sample Appearance:	General: 6	lecur	Color: Nor	Phase	: It sed		Odor: Aone
Time pH	Specific Cond.	Temp <sup>O</sup> C		Turbidity NTU	Gallons Removed	SEQ #	Comments:
1630 5.64	1004	8.89	6.62	1.0	.75	1	
1033 5.80	1062	9,50	6.77	0.3	1.5	2	
1036 6.01	1062	8.57	6.43	060	2.25	3	
						4	
						5	
Stabilized? (Yes	No	L	Amount Wa	ter Removed:	٦.٥	5	Gallons
		- U.L. 5 gal. pe			ew Pung	D (befo Sh 11	ne 1 october)