

# 2022 Annual Groundwater Monitoring and Corrective Action Report

Ash Landfill

#### Hoot Lake Plant Fergus Falls, Minnesota

Prepared for Otter Tail Power Company

January 2023

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#### 2022 Annual Groundwater Monitoring and Corrective Action Report

#### Ash Landfill

#### Hoot Lake Plant Fergus Falls, Minnesota

#### January 2023

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#### Abbreviations

- CCR Coal Combustion Residuals
- CFR Code of Federal Regulations
- EPA Environmental Protection Agency
- OTP Otter Tail Power Company
- SSI Statistically Significant Increase

#### **Executive Summary**

This summary provides an overview of the Groundwater Monitoring & Corrective Action Program status as required by 40 CFR 257.90(e)(6). The CCR unit operated under the detection monitoring program described in §257.94 at the start of the 2022 annual reporting period. The monitoring program identified statistically significant increases (SSIs) over background for calcium, sulfate, and total dissolved solids at monitoring well S-3A-R during the spring 2022 detection monitoring event. On November 3, 2022, the CCR unit transitioned to an assessment monitoring program, as required by §257.94(e). At the end of the 2022 annual reporting period, the CCR unit was operating under the assessment monitoring program as described in §257.95. Corrective actions have not been implemented.

### 1 Introduction

Otter Tail Power Company (OTP) operated the Hoot Lake Generating Plant (Hoot Lake), located in Fergus Falls, Minnesota. Hoot Lake was a coal-fired electrical generating plant, the operation of which resulted in coal combustion residuals (CCR) as a by-product. Hoot Lake stopped burning coal on May 27, 2021. Management of CCR from plant operations included placing CCR in an on-site landfill, referred to as the Ash Landfill. The Ash Landfill is required to comply with the provisions of the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Parts 257 and 261, Disposal of Coal Combustion Residuals from Electric Utilities) for existing CCR landfills. The location of the Ash Landfill is shown on Figure 1.

This 2022 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the Ash Landfill at Hoot Lake. The Ash Landfill is currently in assessment monitoring, as described by §257.95 of the CCR Rule.

#### 1.1 Purpose

As stated in Section §257.90(e), the purpose of the Annual Report is to:

- Document the status of monitoring and corrective action program for the CCR unit
- Summarize key actions completed
- Describe any problems encountered
- Discuss actions to resolve the problems
- Highlight key activities for the upcoming year

#### 1.2 Status of the Groundwater Monitoring and Corrective Action Program

Baseline monitoring was completed in 2017, as documented in the 2017 Annual Groundwater Monitoring and Corrective Action Report, Ash Disposal Area (Barr, 2018). Evaluation of groundwater monitoring data for SSIs over background levels for the constituents listed in appendix III to the CCR Rule, began on October 17, 2017, and continued until November 2, 2022. Statistically significant increases (SSIs) over background were determined for the spring 2022 monitoring event for calcium, sulfate, and total dissolved solids at monitoring well S-3A-R. As a result, the CCR unit transitioned to assessment monitoring on November 2, 2022 (Section 2.3). At the end of 2022, the assessment monitoring program was ongoing. Corrective actions have not been implemented.

#### 1.3 CCR Rule Requirements

This Annual Report has been prepared in accordance with the requirements of \$257.90(e) of the CCR Rule, as outlined in the following Table 1.

#### Table 1 CCR Rule Requirements

CCR Rule Reference	Content Required in Report	Location
§257.90(e)(1)	Map showing the CCR unit and all monitoring wells that are part of the groundwater monitoring system	Section 2.1.1 Documentation; see Figure 1
§257.90(e)(2)	Discuss any new or decommissioned monitoring wells	Not applicable – no wells were installed or decommissioned
§257.90(e)(3)	All monitoring data obtained under §257.90 through §257.98; provide the number and date groundwater samples were collected, and the monitoring (i.e., detection or assessment)	Section 2.2 Monitoring and Analytical Results; Table 3, Figure 2, Figure 3, Figure 4, Appendices
§257.90(e)(4)	Discuss any transition between monitoring programs	Section 2.3 Transition to Assessment Monitoring
§257.90(e)(5)	Other information specified in §257.90 through §257.98	Throughout report
§257.90(e)(6)	Overview at beginning of annual report	Executive Summary

### 2 Groundwater Monitoring and Corrective Action Program

This section documents the status of the groundwater monitoring and corrective action program for the Ash Landfill for 2022. The groundwater monitoring system is described in Section 2.1, the monitoring and analytical results are described in Section 2.2, key actions completed and problems encountered are described in Section 2.4, and key activities planned for 2023 are described in Section 2.5.

#### 2.1 Groundwater Monitoring System

#### 2.1.1 Documentation

Figure 1 shows an aerial image of the Ash Landfill and all upgradient (background) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring system, as required by §257.90(e)(1). Further details on the monitoring system and the Ash Landfill monitoring wells can be found in the Groundwater Monitoring System Report (Barr, 2016).

#### 2.1.2 Changes to Monitoring System

The groundwater monitoring system was unchanged in 2022.

#### 2.2 Monitoring and Analytical Results

Groundwater samples (Table 2) were collected from monitoring wells S-51, S-52, S-10R, S-13, S-14R, and S-3A-R during two semiannual sampling events and from monitoring well S-2A during one spring semiannual sampling event. Groundwater samples were collected from monitoring wells S-51 and S-3A-R during one verification resampling event. A total of nine groundwater samples were collected and analyzed for the constituents listed in appendix III (Part 257) in 2022 under the detection monitoring program, consistent with the requirements of §257.94(c). A total of six groundwater samples were collected and analyzed for the constituents listed in appendix IV (Part 257) in 2022 under the assessment monitoring program, consistent with the requirements of §257.95(b). Dates of sampling are reported on the field data sheets, and analytical laboratory reports are presented in Appendix A. Results are summarized in Table 3. Groundwater flow data, as required by §257.93(c), are presented in Figure 2, Figure 3, Figure 4, and Appendix B.

#### 2.3 Transition to Assessment Monitoring

The Ash Landfill transitioned to assessment monitoring from detection monitoring on November 2, 2022, triggered by SSIs over background for calcium, sulfate, and total dissolved solids at monitoring well S-3A-R.

Monitoring Location	Spring 2022 Sampling	Verification Resampling	Fall 2022 Sampling
Date	May 3, 2022	June 23, 2022	November 17, 2022
S-51 (background)	Appendix III	Appendix III	Appendix IV
S-52 (background)	Appendix III	Water level only	Appendix IV
S-10R	Appendix III	Water level only	Appendix IV
S-13	Appendix III	Water level only	Appendix IV
S-14R	Appendix III	Water level only	Appendix IV
S-2A	Appendix III	Water level only	Water level only (insufficient volume)
S-3A-R	Appendix III	Appendix III	Appendix IV
Number of Samples	7	2	6

Table 2	2022 Groundwater Sampling Summary
	ZOZZ Oloonawaler sampling sommary

#### 2.4 Key Actions Completed/Problems Encountered

The following key actions were completed for the groundwater monitoring program during 2022:

- Completed semiannual groundwater sampling under the detection monitoring program during spring 2022.
- Determined, pursuant to §257.93(h), that an SSI over background levels occurred for three of the constituents listed in appendix III at downgradient monitoring well S-3A-R during the spring 2022 detection monitoring sampling event. Statistical analysis was conducted according to the Statistical Analysis Plan, Appendix B of the CCR Groundwater Sampling and Analysis Plan (Carlson McCain, 2017).
- Transitioned to assessment monitoring program for the fall 2022 monitoring event.
- Completed initial groundwater sampling (§257.95(b)) under the assessment monitoring program. At the end of 2022, final analytical results from the initial assessment monitoring groundwater sampling event were pending and will be included in the 2023 Annual Report.

The following problems were encountered, and the following actions were taken to resolve them:

 Monitoring well S-2A yielded insufficient water volume for sampling during the fall 2022 assessment monitoring event. Water level and volume at S-2A will be reassessed during the next sampling event required under §257.95(d), and changes to the monitoring system will be undertaken if needed.

#### 2.5 Key Activities for the Upcoming Year

The following key groundwater monitoring program activities are planned for 2023:

- Resample all wells for the constituents listed in appendix III and for those constituents in appendix IV that were detected during the fall 2022 initial assessment monitoring program sampling event, as per §257.95(d)(1).
- Establish groundwater protection standards for constituents in appendix IV.
- Continue the assessment monitoring program in accordance with the CCR Rule.
- Evaluate hydrogeologic conditions at monitoring well S-2A to determine whether monitoring system changes are needed for continued compliance with §257.91.

#### Table 3 Groundwater Analytical Data Summary Hoot Lake Station Otter Tail Power Company

		Location	S-10R	S-13	S-14R	S-2A	S-3A-R	S-3A-R	S-51	S-51	S-52
		Date	5/03/2022	5/03/2022	5/03/2022	5/03/2022	5/03/2022	6/23/2022	5/03/2022	6/23/2022	5/03/2022
	:	Sample Type	Ν	N	N	N	N	Resample	N	Resample	Ν
Parameter	Analysis Location	Units									
Appendix III											
Boron, total	Lab	mg/l	< 0.1 U	< 0.1 U	< 0.1 U	0.186	0.248	0.241	0.135	0.141	< 0.1
Calcium, total	Lab	mg/l	115.0	122.0	111.0	143.0	142.0	137.0	103.0	108.0	104.0
Chloride	Lab	mg/l	11.0	8.0	3.9	3.4	9.5	10.7	13.1	13.5	14.3
Fluoride	Lab	mg/l	0.180	0.210	0.240	0.240	0.190	0.200	0.240	0.230	0.220
pН	Field	pH units	6.89	7.30	7.24	6.76	7.21	7.14	6.53	7.11	6.62
Solids, total dissolved	Lab	mg/l	526	538	477	652	783	745	494	505	487
Sulfate, as SO4	Lab	mg/l	103	107	65.4	156	233	224	62.8	69.5	68.7
Groundwater elevation	Field	ft amsl	1209.77	1211.21	1201.86	1197.45	1203.92	1202.81	1238.56	1238.1	1216.17

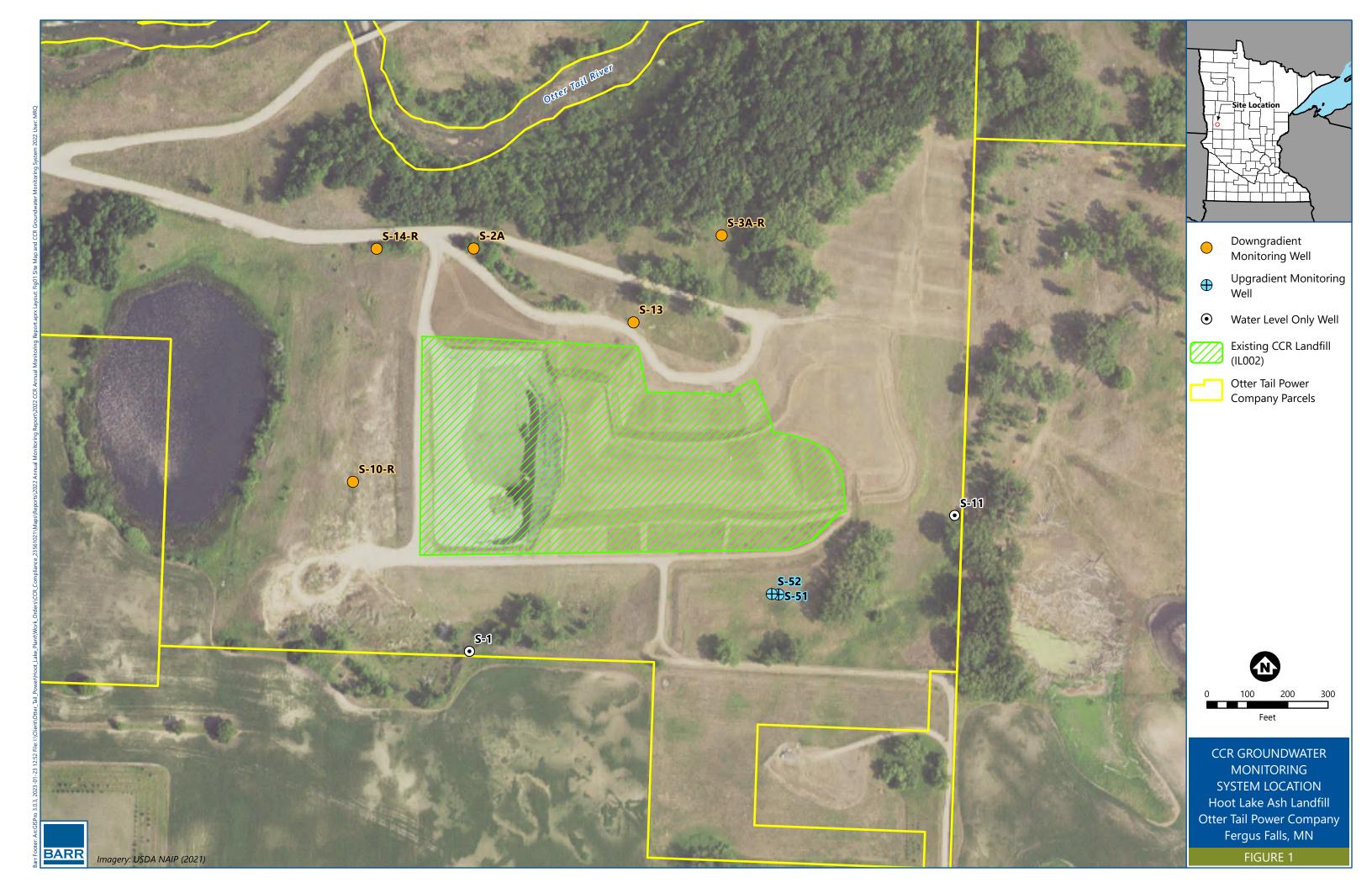
N Sample Type: Normal Detection Monitoring

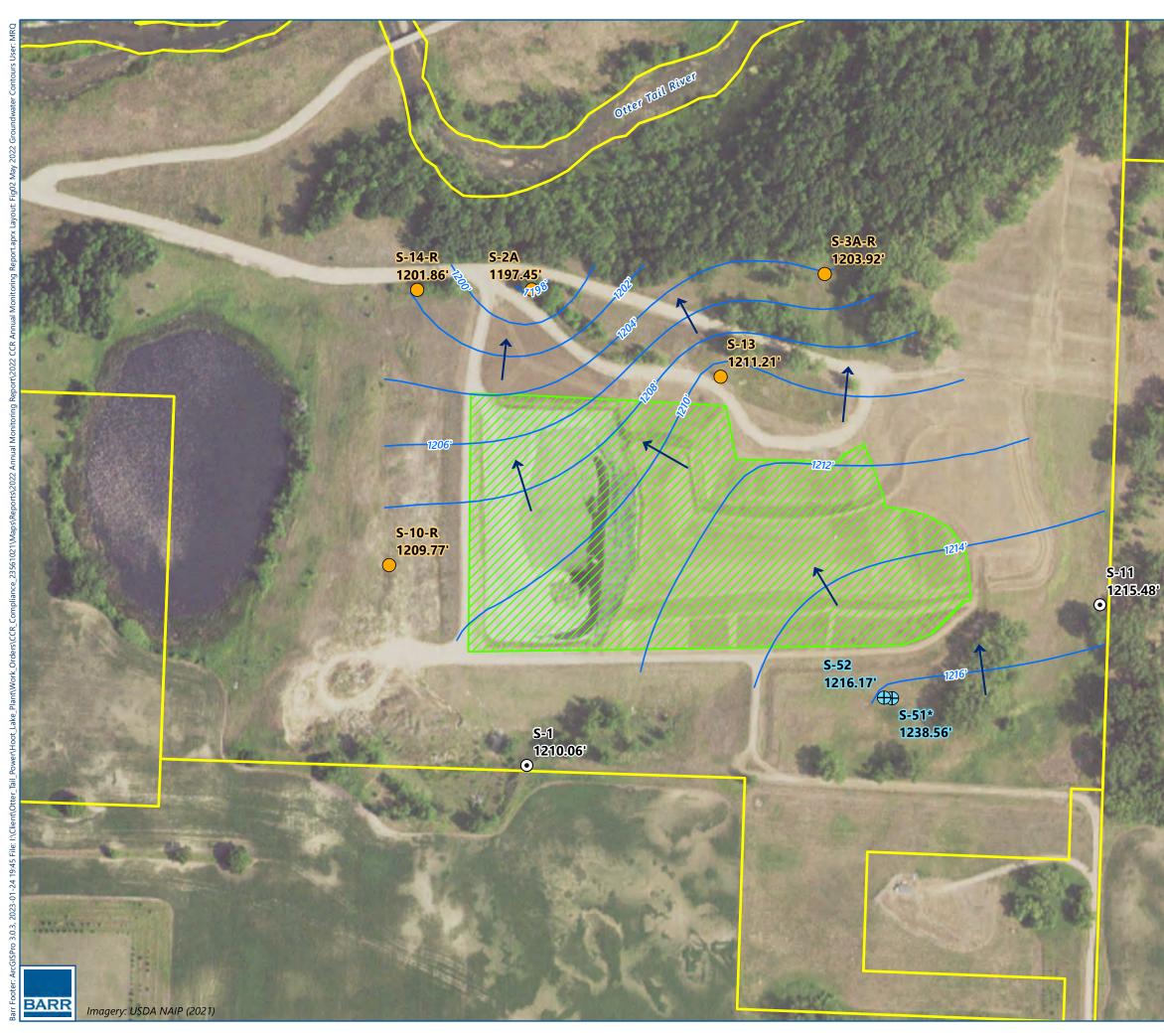
U The analyte was analyzed for, but was not detected.

#### **3 References**

- Barr, 2016. Groundwater Monitoring System Report, Ash Landfill, Hoot Lake Plant. Prepared for Otter Tail Power Company. November 2016.
- Barr, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report, Hoot Lake Plant. Prepared for Otter Tail Power Company. January 2018.
- Carlson McCain, 2017. CCR Groundwater Sampling and Analysis Plan (Including Statistical Method Selection and Certification), Ash Landfill-Hoot Lake Plant. Prepared for Otter Tail Power Company. October 2017.

### Figures









- DowngradientMonitoring Well
- Upgradient Monitoring
   Well
- Water Level Only Well

May 2022 Groundwater Contour (ft MSL)



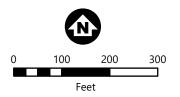
Groundwater Flow Direction

Existing CCR Landfill (IL002)

Otter Tail Power Company Parcels

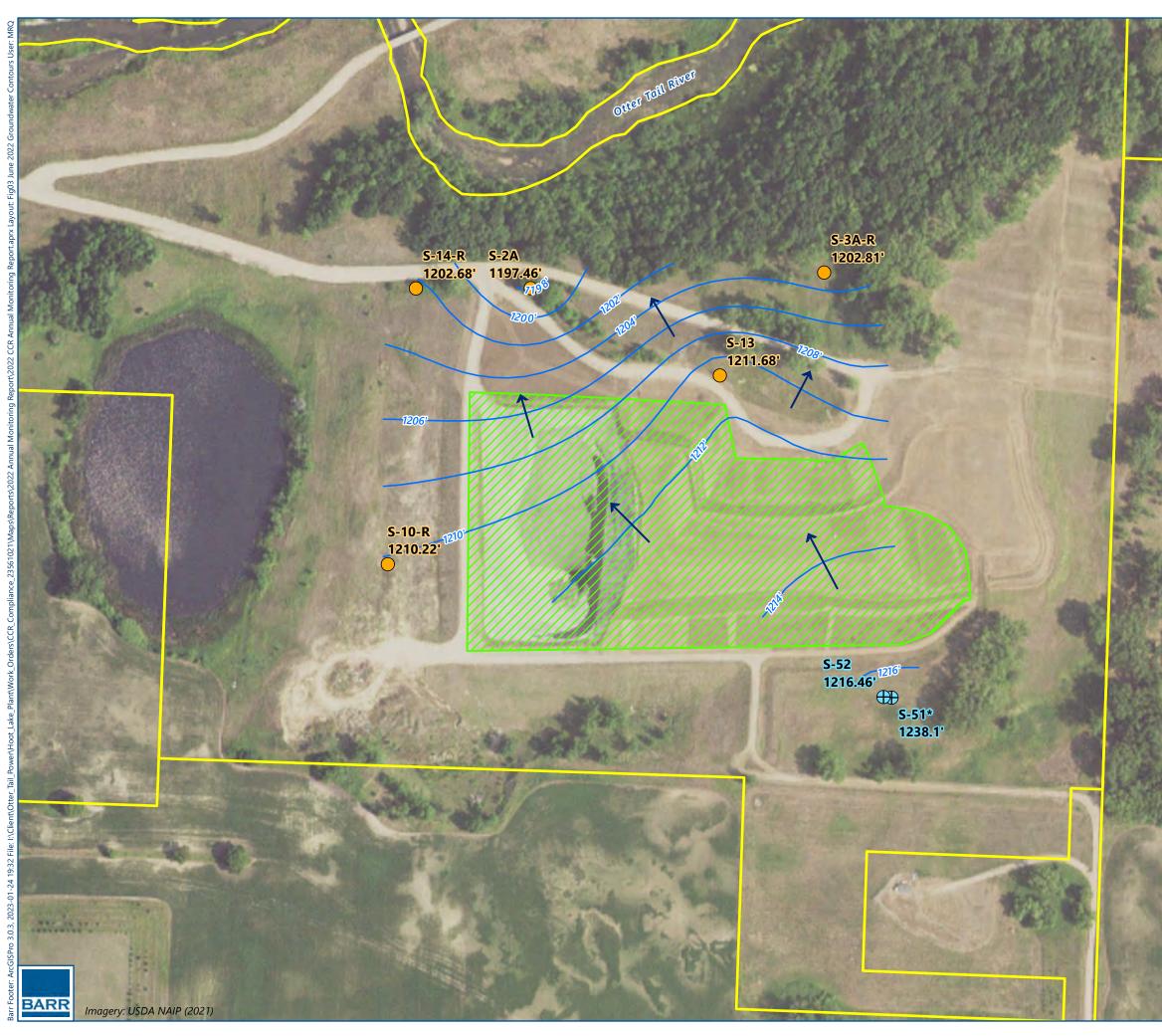
#### Note:

\* Water level not included in contouring. Indicates level of intermediate aquifer.



MAY 2022 GROUNDWATER CONTOURS Hoot Lake Ash Landfill Otter Tail Power Company Fergus Falls, MN

FIGURE 2

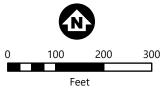






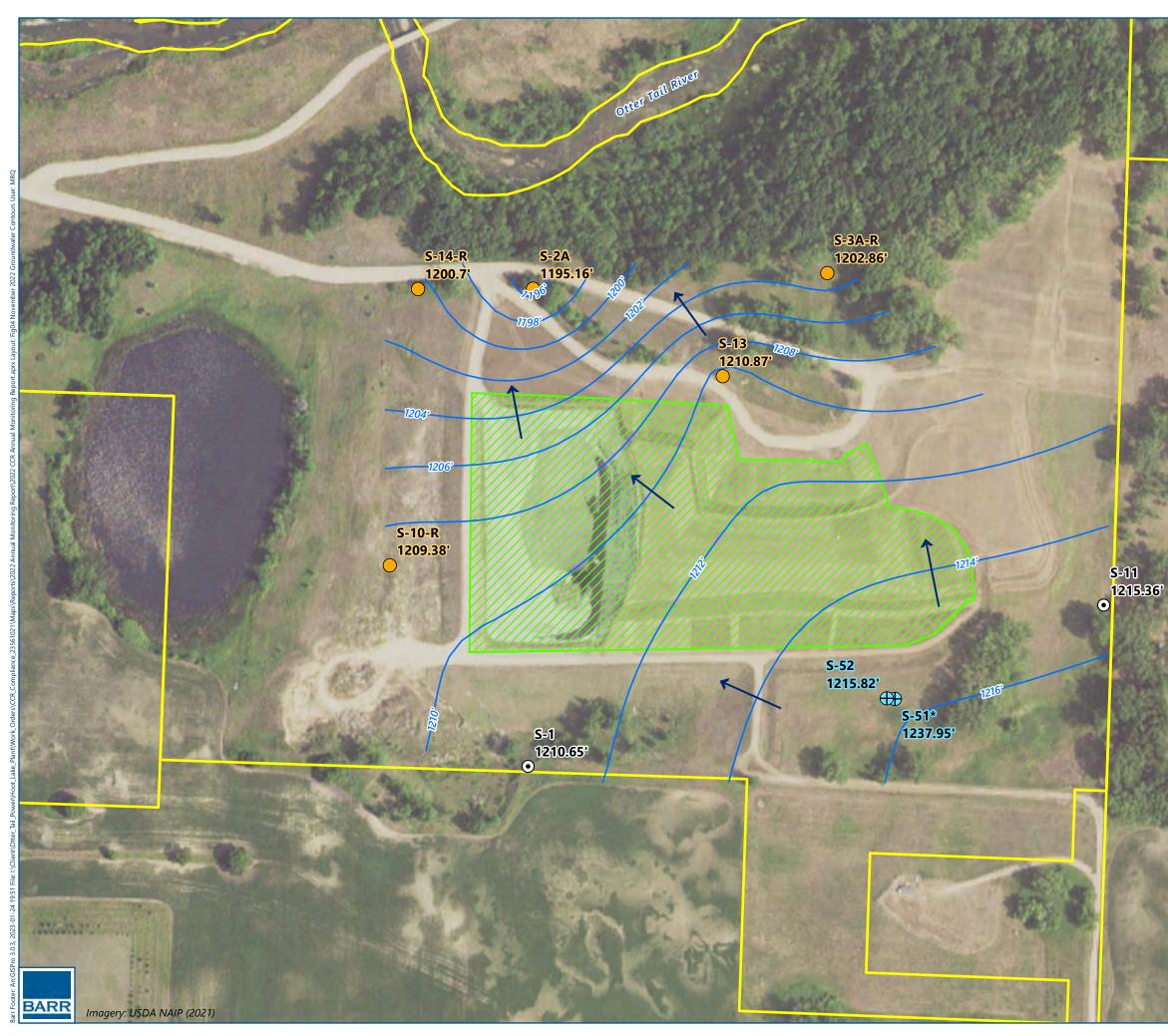
- Downgradient Monitoring Well
- Upgradient Monitoring Well
  - June 2022 Groundwater Contour (ft MSL)
- Groundwater Flow Direction
- Existing CCR Landfill (IL002)
- Otter Tail Power Company Parcels

\* Water level not included in contouring. Indicates level of intermediate aquifer.



JUNE 2022 GROUNDWATER CONTOURS Hoot Lake Ash Landfill Otter Tail Power Company Fergus Falls, MN

FIGURE 3







- DowngradientMonitoring Well
- Upgradient Monitoring
   Well
- Water Level Only Well

November 2022 Groundwater Contour (ft MSL)

Groundwater Flow Direction

Existing CCR Landfill (IL002)

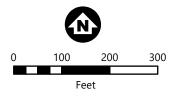
Otter Tail Power Company Parcels

#### Note:

 $\rightarrow$ 

 $\overline{\mathcal{N}}$ 

\* Water level not included in contouring. Indicates level of intermediate aquifer.



NOVEMBER 2022 GROUNDWATER CONTOURS Hoot Lake Ash Landfill Otter Tail Power Company Fergus Falls, MN

FIGURE 4

Appendices

### Appendix A

Laboratory Reports and Field Sheets



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Page:

FINAL REPORT COMPLETION DATE: 25 May 22 a R

Date Reported: 23 May 2022

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0180 Account #: 006106 PO #: 59640

1 of 8

Project Name: HOOT LAKE PLANT CCR

24 MAU 22 ) nager/Date Reviewed 23 May 22 Lab Manager/Date Reviewed hemistry uality Assurance Director/Date Reviewed RL = Reporting Limits

- NQ = Not Present, Qualitative Only
- PQ = Present, Qualitative Only
- ND = Not Determined

All data for this report has been approved by MVTL Laboratory Management



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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S2A

Report Date: 23 May 2022 Lab Number: 22-A20760 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 14:25 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Temp at Receipt: 0.0C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium Boron Fluoride	6.76 * 7.1 156 3.4 652 143.0 0.186 0.240 @	units units mg/L mg/L mg/L mg/L mg/L	$ \begin{array}{r} 1.00\\ 1.0\\ 5.0\\ 3.0\\ 10\\ 0.500\\ 0.100\\ 0.020\\ \end{array} $	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-11 SM 4500 Cl E SM 2540 C-97 SW6010D SW6010D EPA 300.0	6 May 22 3 May 22 14:25 6 May 22 7:10 12 May 22 6:54 12 May 22 6:45 10 May 22 13:36 11 May 22 16:57 11 May 22 16:57 9 May 22 13:25	CC KRM SS PJH 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
 ND WW/DW # R-040

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S3AR

Lab Number: 22-A20761 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 12:54 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Temp at Receipt: 0.0C

Report Date: 23 May 2022

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium	7.21 * 7.2 233 9.5 783 142.0	units units mg/L mg/L mg/L mg/L	1.00 1.0 5.0 3.0 10 0.500	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-11 SM 4500 Cl E SM 2540 C-97 SW6010D	6 May 22 3 May 22 12:54 6 May 22 7:10 12 May 22 6:54 12 May 22 6:45 10 May 22 13:36 11 May 22 16:57	JMS MS CC KRM SS PJH RMV
Boron Fluoride	0.248 0.190 @	mg/L mg/L	0.100 0.020	SW6010D EPA 300.0	11 May 22 16:57 9 May 22 13:25	RMV RMV

\* Holding Time Exceeded

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 CERTIFICATION: MN LAB # 027-015-125
 ND WW/DW # R-040

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

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Report Date: 23 May 2022 Lab Number: 22-A20762 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 13:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Project Name: HOOT LAKE PLANT CCR

Sample Description: S51

Temp at Receipt: 0.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium	6.53 * 7.2 62.8 13.1 494 103.0	units units mg/L mg/L mg/L mg/L	1.00 1.0 5.0 3.0 10 0.500	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-11 SM 4500 Cl E SM 2540 C-97 SW6010D	6 May 22 3 May 22 13:15 6 May 22 7:10 12 May 22 6:54 12 May 22 6:45 10 May 22 13:36 11 May 22 16:57	CC KRM SS PJH
Boron Fluoride	0.135 0.240 @	mg/L mg/L	0.100 0.020	SW6010D EPA 300.0	11 May 22 16:57 9 May 22 13:25	

\* Holding Time Exceeded

 RL - Reporting Limit

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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S52

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Report Date: 23 May 2022 Lab Number: 22-A20763 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 13:53 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Temp at Receipt: 0.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field	6.62	units	1.00	SM4500-H+-2011	6 May 22 3 May 22 13:53	JMS BMW
pH Sulfate	* 7.2 68.7	units mg/L mg/I	$1.0 \\ 5.0 \\ 3.0$	SM 4500 H+ B-2000 ASTM D516-11 SM 4500 Cl E	6 May 22 7:10 12 May 22 6:54 12 May 22 6:45	CC KRM SS
Chloride Solids, Total Dissolved Calcium	14.3 487 104.0	mg/L mg/L mg/L	10 0.500	SM 4500 C1 E SM 2540 C-97 SW6010D	10 May 22 13:36 11 May 22 16:57	
Boron Fluoride	< 0.1 0.220 @	mg/L mg/L	0.1 0.020	SW6010D EPA 300.0	11 May 22 16:57 9 May 22 13:25	RMV RMV

\* Holding Time Exceeded

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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Report Date: 23 May 2022 Lab Number: 22-A20764 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 15:30 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Project Name: HOOT LAKE PLANT CCR

Sample Description: S10R

Temp at Receipt: 0.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium Boron Fluoride	6.89 * 7.2 103 11.0 526 115.0 < 0.1 0.180 @	units units mg/L mg/L mg/L mg/L mg/L	1.00 1.0 5.0 3.0 10 0.500 0.1 0.020	SM4500-H+-2011 SM 4500 H+ B-2000 ASTM D516-11 SM 4500 Cl E SM 2540 C-97 SW6010D SW6010D EPA 300.0	6 May 22 3 May 22 15:30 6 May 22 7:10 12 May 22 6:54 10 May 22 13:33 11 May 22 16:55 11 May 22 16:55 9 May 22 13:25	CC KRM SS PJH RMV RMV RMV

\* Holding Time Exceeded

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 ! = Due to sample quantity
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JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE PLANT CCR

Sample Description: S13

Page: 7 of 8

Report Date: 23 May 2022 Lab Number: 22-A20765 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 11:32 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Temp at Receipt: 0.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions					6 May 22	JMS
pH, Field	7.30	units	1.00	SM4500-H+-2011	3 May 22 11:32	MS
pH	* 7.3	units	1.0	SM 4500 H+ B-2000	6 May 22 7:10	CC
Sulfate	107	mq/L	5.0	ASTM D516-11	12 May 22 6:54	KRM
Chloride	8.0	mg/L	3.0	SM 4500 Cl E	12 May 22 6:45	SS
Solids, Total Dissolved	538	mg/L	10	SM 2540 C-97	10 May 22 13:36	PJH
Calcium	122.0	mg/L	0.500	SW6010D	11 May 22 16:57	RMV
Boron	< 0.1	mg/L	0.1	SW6010D	11 May 22 16:57	RMV
Fluoride	0.210 0	mg/L	0.020	EPA 300.0	9 May 22 13:25	RMV

\* Holding Time Exceeded

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.



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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S14R

8 of 8 Page:

Report Date: 23 May 2022 Lab Number: 22-A20766 Work Order #: 31-0180 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 3 May 2022 12:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 4 May 2022 12:52 PO #: 59640

Temp at Receipt: 0.0C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst	
Water Digestions pH, Field pH Sulfate Chloride Solids, Total Dissolved Calcium Boron	7.24 * 7.3 65.4 3.9 477 111.0 < 0.1	units units 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 D516-11 SM 4500 Cl E SM 2540 C-97 SW6010D SW6010D	6 May 22 3 May 22 12:15 6 May 22 7:10 12 May 22 6:54 12 May 22 6:45 10 May 22 13:36 11 May 22 16:57	CC KRM SS PJH	
Fluoride	0.240 @	mg/L	0.020	EPA 300.0	9 May 22 13:25		

\* 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
 ND WW/DW # R-040

 RL = Reporting Limit

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

MVTL

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#### Page: 1 of 1

Quality Control Rep Lab IDs: 22-A20760 to 22-A2		Pro	niect: HO	ΟΤΙΑΚ	E PLANT CO	CR	Work (	Order: 20	02231-01	80							
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	96	85-115	1.00	22A20785q	< 0.1	0.977	98	75-125	0.977	0.976	98	0.1	10	98	90-110	< 0.1
Calcium mg/L	50.00	101	85-115	50.0	22A20785q	36.10	86.80	101	75-125	86.80	85.80	99	1.2	10	99	90-110	< 0.5
Chloride mg/L	-	-	-	60.0	22-A20769	< 3	63.7	106	86-117	63.7	64.2	107	0.8	5	100	90-110	< 3
Fluoride mg/L	-	-	-	1.00	22-A20762	0.240	1.27	103	75-125	1.27	1.28	104	0.8	10	101	90-110	< 0.02
pH units	-	-	-	_	-	-	-	-	-	7.6	7.6	-	0.0	2.5	101	90-110	-
Solids, Total Dissolved mg/L	-	-	-	-	-	-		-	-	526 460	520 460	-	1.1 0.0	7 10	100	85-115	< 10
Sulfate mg/L	-	-	-	50.0	22-A20766	65.4	119	107	68-132	119	118	105	0.8	5	92	80-120	< 5

10 pel Approved by:

#### **Minnesota Valley Testing Laboratories**

1126 North Front Street	New Ulm, MN 56003
Phone: 800 782 3557	Fax: 507 359 2890
Fi 110 - mine Chain of	Suctody Pacard

This is an exact copy of the original document By <u>Date</u> <u>HMay</u> 22 Pages <u>FI</u>

Field Service Chain of Custody Record

Project Nar	ne:	Otter Tail Powe	r Co.		Project	Type:	CCR				Nan	ne c	of Sa	amp	lers	<u>;;</u>	B-	1				
riojectita	<u>ne:</u>	Hoot Lake Plan															M					
Report To:	Otter Tail Pov	wer Company			Carbon (	Copy:	BarrDM@b	barr.com														
Attn:	Paul Vukonic				<u>Attn:</u>						Que	ote l	lum	ber:	mha		-		Ē			
Address:	P.O. Box 496				Address	<u>:</u>							rder mbe	'INU	mpe	<u>۶۱.</u>	31	-1	B	0		
		MN 56038-0496	5								Lau	nu	TIDE	15.								
Phone:	218-739-834		41									F	Bott	le T	vne	2					Analysis	
	Sa	ample Informa	tion							1	<i></i>	_ <u>_</u>	/		T	T	Τ	Τ	T	TT		
	/	/			/		lion /	1		'		1	' /				204	/	12			
1	/	/			/	be /	Cal	/		1	1	- [-	< /		< /	1.	ΞĮ		45S(	one		1
"be	<u> </u> ़	/			/	15	10			2/2	3/z		5/8		5/8		E   E	Ę / 3		sis red		
1	ole /	or le				/ ä	a	Set	10		Ĭ	12	Ĩ	12	128	14	Na/	[];;				
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	Filte,	500H2SO4	100	500 Nanu	Other: 150	l a	Analysis Required		
		1202					1.05		1		1	N								See Atta		
A20760	S2A		5M	fa/22	1425	GW			-				-			-			-			
61	S3AR				1254	GW			1		1	Ν	_	_					-			
62	S51				1315	GW			1		1	Ν							_			_
63	S52				1353	GW			1		1	Ν							_		9 p	
64	S10R				1530	GW			1		1	Ν							-			_
65	S13				1132	GW			1		1	Ν							-			
66	S14R				1215	GW			1		1	Ν										
									_													

Comments: CCR wells

	/				2
Develop Delingwiched By: 10 10	War		Samples Receive	ed By: /. Rude	A)
Samples Relinquished By:	Time: 125	1 Tomp: Cl. of The	755 Date: 4 May		
Date: 4May 22			Date. 1. TV (tto)		
Samples Relinduished into:	Fridge Lo	og in Cart Other:			
Samples Relinquished By:			Samples Receive	ed By:	
	Time:	Temp:	Date:	Time:	Temp:
Date:		Temp.	Seal Number(s) -	If Used	
Delive Samplers	Other:				
Transport: Ambient	Ice	Other:	Seals Intact?	Yes No	

## Hoot Lake Site CCR Sampling - 2022

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
	CCR 3	55.6	2	1286.904	Bladder	Yes	< 0.25	No
S51		88.3	2	1286.623	Bladder	Yes	< 0.25	No
S52	CCR 3	-	2	1281.47	Bladder	Yes	< 0.25	No
S10R	CCR 3	57.00	_	1296.423	Bladder	Yes	< 0.25	No
S13	CCR 3	90.19	2			Yes	< 0.25	Yes
S14R	CCR 3	70.86	2	1280.61	Bladder	105	0.20	

### 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\*

\* Field and Laboratory Measurements

#### **Total Concentration Parameters**

Boron Calcium Chloride Fluoride pH Sulfate Dissolved Solids, Total

· · ... - ·

> Method 6010 6010 SM4500 CL E EPA 300 SM 4500 H+B-96 ASTM D516 SM 2540 C-97

#### CCR - Appendix IV - Assessment Monitoring

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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

			Site:	Otter Ta	ail Powe	r Co./ Hoot La
Sampling Personnel:			Facility ID:	SW-211	1	
Ben Wolf			Date: 3 Ma	14 72		
	-		Unique Statior	7 n ID: 444350		
	_		Sample ID:	S-2A		
Well Condition						
Well Locked? Yes No	_		Protective Pos			10
Well Labeled? Yes No	-		State ID Tag? Grout Seal Inte			<u>10</u>
Casing Straight? Yes No	-	•	Grout Seat Inte		<u>I</u>	<u> 10</u>
Repairs Necessary: Well Information						
791	ว		Well Casing E	levation:	. 1	273.776
	4		Static Water E	1,	98.3	
Constructed Depth: 79.63	-		Previous Stati	1.0	80	
Casing Diameter: 2"	īς		Water Level A		75.	45
Water Level Before Purge: 75-4						
Well Volume: , 68	Gallons		Measurement	Method:	Elec. W	IL) Steel Ta
Sampling Information	53	Wind:	1a/	Sky: /	Fare	~
Weather Conditions: Temp:		Disp. Bailer	Whale	Grab Other:		
Sampling Method: Grundfos Dedicated Equipment: Ver No	Pladder SS/7	Disp. Dallel	Pumping Rate			gpm
<u>,                                     </u>				111.	>	
Well Purged Dry? Yes Mo			Time Pump E			am / p
			Time of Sam	pling: 170	25	am / (p
Time Purged Dry?				0'		
Time Purged Dry?           Duplicate Sample?         Yes         No?	_ID:		Sample EH:			
C	ID: C/ear	Color: A	Sample EH: のつと Phase			
Duplicate Sample? Yes No? Sample Appearance: General:			のっと Phase			
Duplicate Sample? Yes No Sample Appearance: General: Specific	C/ear	Color: A	クレン Phase Turbidity NTU	: Non	SEQ	
Duplicate Sample?     Yes     Yes       Sample Appearance:     General:       Time     pH     Specific       Cond.     Cond.	Clear Temp °C	D. O. mg/L	クレン Phase Turbidity NTU	Gallons	SEQ	Odor: NO'
Duplicate Sample?YesYesSample Appearance:General:TimepHSpecificCond.1419(o. 74)1479	C/ear Temp °C 12.65	D. O. mg/L 2. 17	のうと Phase Turbidity NTU ター 6	Gallons Removed	SEQ #	Odor: NO
Duplicate Sample?YesYesYesSample Appearance:General:TimepHSpecific Cond.1414(a. 714¥741422(a. 716¥80	C/ear Temp °C 12.65 12.60	D. O. mg/L 2-13 2-15	わっと Phase Turbidity NTU 早 6 1- 9	Gallons Removed 79 1.50	> # 1 2	Odor: NO'
Duplicate Sample?YesYesSample Appearance:General:TimepHSpecificCond.1419(o. 74)1479	C/ear Temp °C 12.65 12.60	D. O. mg/L 2-13 2-15	のうと Phase Turbidity NTU ター 6	Gallons Removed	> SEQ # 1 2 3	Odor: NO
Duplicate Sample?YesYesYesSample Appearance:General:TimepHSpecific Cond.14146.7647914226.76480	C/ear Temp °C 12.65 12.60	D. O. mg/L 2-13 2-15	わっと Phase Turbidity NTU 早 6 1- 9	Gallons Removed 79 1.50	> # 1 2	Odor: 100

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Comments:

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Exceptions to Protocol:

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Groundwater Assessmer	nt	-	Site: Otter Tail Power Co./ Hoot La						
Sampling Personnel:			Facility ID:	SW-211	1				
in S			Date: 3Ma	42Z					
			Unique Statior	D: 674671					
			Sample ID:	S-3A-R					
Well Labeled?	10 10 10		Protective Pos State ID Tag? Grout Seal Int	(Yes)	1	No No Noj			
Well Information									
Well Depth: 78,4	0		Well Casing E			1271.562			
Constructed Depth: 78.42			Static Water I		203.	92			
Casing Diameter: 2"			Previous Stat	ic: 1202					
	57.64		Water Level After Sample: 69,29						
Well Volume: 1.75	Gallons	_	Measurement	t Method: (	Elec.	VLI Steel Tape			
Sampling Information					-	_			
Weather Conditions: Temp:	49	Wind:	Lev	Sky:	Fail	-			
Sampling Method: Grundfo	s Bladder SS	Disp. Bailer		Grab Other:					
Dedicated Equipment: Yes	No	•	Pumping Rat			gpm			
Well Purged Dry? Yes (	Ng		Time Pump E		2 <u>33</u> 254	am (pm)			
Time Purged Dry?			Time of Sam	am (pm)					
Duplicate Sample? Yes (	<u>No</u> ID:		Sample EH:	- 39,5					
Sample Appearance: Gener	al: <u>closur</u>	Color: non	ve Phase	ict so.d		Odor: Sulfurous			
Time pH Cond.		D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:			
1240 7.23 102	9 9.37	5,30	3,6	1.75	1				
1247 7.22 103		5.30	3.7	3.5	2				
1254 7.21 103		5.38	4,4	5.25	3				
					4				
					5				
Stabilized? Yes No		Amount W	ater Removed:	5.25		Gallons			

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CCR

Comments:

Exceptions to Protocol:

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Groundwater Assessment		Site:	Otter Ta	ail Power Co./ Hoot Lake			
Sampling Personnel:		Facility ID:	SW-211				
Ber WOIF		Date: 3 /	ay W				
		Unique Station	n ID: 814830				
		Sample ID:	S-51				
Well Condition         Well Locked?       No         Well Labeled?       Kes         Casing Straight?       Yes         Repairs Necessary:       No		Protective Po State ID Tag? Grout Seal Int	Yes.		No No		
Well Information							
Well Depth: 55-40		Well Casing E	Elevation:		1286.904		
Constructed Depth: 55.60		Static Water		238	·510		
Casing Diameter: 2"		Previous Stat	ic: 1242	. 11			
Water Level Before Purge: 48-34		Water Level	After Sample:	48	<u> </u>		
Well Volume: /. / % Gallons	-	Measuremen	t Method:	Elec. V	VLI Steel Tape		
Sampling Information		LNJ		<u>ب</u>	2		
Weather Conditions: Temp: 52	Wind:		Sky:	Fair	- 		
Sampling Method: Grundfos Bladder SSPT	Disp. Bailer	Whale	Grab Other:				
Dedicated Equipment: (Yes) No		Pumping Rat			gpm		
Well Purged Dry? Yes No		Time Pump I		<u>&gt;0</u>	· am / pm		
Time Purged Dry?		Time of Sampling: 1315 am / 404					
Duplicate Sample? Yes No ID:		Sample EH:	-07-6				
Sample Appearance: General: Clear	Color: A	107 Phase	: Nor		Odor: ハゼアン		
Time pH Specific Temp	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:		
1305 6-51 742 8.68	.57	0.0	1.26	1			
1310 6.53 742 8.67		0.0	2.50	2			
1315 6-63 742 8.63		0.0	3.76	3			
				4			
				5			
Stabilized? (Yes No	Amount W	ater Removed	: 3.70	5	Gallons		

CCR

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Comments:

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Exceptions to Protocol:

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Groundwater Assessment		Site:	Otter Tail Power Co./ Hoot Lake			
Sampling Personnel:		Facility ID:	SW-21	1		
Rey WOIF		Date: 3 M	ay 72			
		Unique Statio	,			
<u>.</u>		Sample ID:	<u>S-52</u>			
Well Condition         Well Locked?       Yes       No         Well Labeled?       Yes       No         Casing Straight?       Yes       No         Repairs Necessary:       No       No		Protective Po State ID Tag? Grout Seal In	Keş		No No No	
Well Information					4000 000	
Well Depth: 88.30		Well Casing E			1286.623	
Constructed Depth: 88.30		Static Water		216.	//	
Casing Diameter: 2"		Previous Stat	ic: 12/6		Ē	
Water Level Before Purge: 70.45		Water Level	After Sample:	70	.45	
Well Volume: 2.91 Gallons		Measuremen	t Method:	Etec. V	VEL Steel Tape	
Sampling Information		1		Fair	_	
weather conditions. Temp.	Wind:	FW	Sky:	[q]!		
Sampling Method: Grundfos Bladder SST	Disp. Bailer	Whale	Grab Other:			
Dedicated Equipment: Key No		Pumping Rat	10		gpm	
Well Purged Dry? Yes No		Time Pump		17	am / pm/	
Time Purged Dry?	15.1	Time of Sam		53	am / (pm/	
Duplicate Sample? Kes No ID: 1)(	plicate	Sample EH:	-49-5		······	
Sample Appearance: General: Clear	Color: //	Gj~ Phase	: NOT		Odor: NOgu	
「人」 Specific Temp Time pH Cond. <sup>O</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:	
1329 6.61 713 8.50		0.0	3	1		
1341 6.62 712 8.58		0.0	6	2		
1353 6.62 713 8.67	7 ,15	0.0	9	3		
			1	4		
				5		
Stabilized?	Amount W	ater Removed	: 9		Gallons	

CCR

Comments:

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Exceptions to Protocol:

# Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

1-

Groundwater Assessment		5	Site:	Otter Ta	Otter Tail Power Co./ Hoot Lake				
Sampling Personnel:		F	acility ID:	SW-211					
MS		]	Date: 3May	,22					
BW			Jnique Station						
		<u>.</u>	Sample ID:	S-10R					
Well Condition         Well Locked?       Yes         Well Labeled?       Yes         Casing Straight?       Yes         Repairs Necessary:			Protective Pos State ID Tag? Grout Seal Inta	(Yès	ľ	10 10 10			
Well Information		<u> </u>							
Well Depth: 80,62		-	Well Casing E	levation:		1281.47			
Constructed Depth: 57.00		•	Static Water E	Elevation: /a	209.	-77			
Casing Diameter: 2"			Previous Stati	c: (210.					
Water Level Before Purge: 71.70			Water Level A		By				
Well Volume: 1.46 Ga	llons		Measurement	Method: <	Elec. V	/LI Steel Tape			
Sampling Information	er(1)		· · ·		-				
		Wind: La			-all				
	dder SSAT	Disp. Bailer		Grab Other:					
Dedicated Equipment: Yes No			Pumping Rate			gpm			
Well Purged Dry? Yes No			Time Pump E			am / Om)			
Time Purged Dry?		-	Time of Sam	-7.7		am /\pm)			
Duplicate Sample? Yes (No) ID:	,		Sample EH:	hal of					
Sample Appearance: General: C	lear	Color: //	<u> C</u> クー Phase	: proncy		Odor: NGIU			
Time pH Cond. °C		D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:			
1518 10.90 738	9.78	2.40	2.4	1.5	1	<u> </u>			
	9:75	2.34	3.3	3,0	2				
1530 6.89 738	9.77	2-32	1-6	4-5	3				
					4				
					5				
Stabilized? Yes No				4-5					

Comments:

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Exceptions to Protocol:

# Minnesota Valley Testing Laboratories, Inc. New Ulm, MN 56073 507 354 8517

Groundwater Assessment		<u>.</u>	Site:	Otter Ta	Otter Tail Power Co./ Hoot Lake					
Sampling Personnel:		_	Facility ID:	SW-21	1					
MS		-	Date: 3Mai	_ZZ_						
			Unique Statior	1	)					
	<del></del>	-	Sample ID:	S-13						
Well Condition						<u></u>				
Well Locked? (Yes, No			Protective Por			No No				
Well Labeled? (Yes No Casing Straight? (Yes ) No			State ID Tag? Grout Seal Int			No				
Repairs Necessary:	<u></u>	•	· ·							
Well Information	<u> </u>	<u></u>								
Well Depth: 90,27			Well Casing E	Elevation:		1296.423				
Constructed Depth: 90.19			Static Water	Elevation:	12111	21				
Casing Diameter: 2"			Previous Stat	ic: 1211.53	2					
Water Level Before Purge: 35	.2)		Water Level	After Sample:	Bela	J Pump				
Well Volume: 0,82	Gallons		Measuremen	t Method:	Elec. V	•				
Sampling Information				<u></u>		<u>,</u>				
Weather Conditions: Temp:	46	Wind:	Leo	Sky:	For	~				
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:						
Dedicated Equipment: (Yes No			Pumping Rat	e: , )5		gpm				
Well Purged Dry? Yes No	5		Time Pump I	Began:	1120	abr / pm				
Time Purged Dry?			Time of Sam	pling:	1132	(añ) / pm				
Duplicate Sample? Yes 세	/_ ID:		Sample EH:	240,	<b>(</b>					
Sample Appearance: General:	si, cldy	Color: terr	Phase	: 2+ se d		Odor: Sylfwars				
(4) Specific	Temp	Ď. O.	Turbidity	Gallons	SEQ					
Time pH Cond.	°C	mg/L	NTU	Removed	#	Comments:				
1124 7.30 GSI	12.25	3,60	25.6	1	1					
1128 7.29 655	12.25	3.40	21.1	2	2					
1132 7.30 657	12,30	3.44	20.9	3	3					
		///////		· .	4					
					5					
Stabilized?		Amount Wa	ater Removed	3		Gallons				
Comments:						·				
	EBQ IN	15								
	ph: 6.67									
Exceptions to Protocol:	ph: 6.67 cord: 8 Temp: 16.95									
	Lemp; 16.95									
	1×10; 0:4 Elt: 236									
	DO: 8.66									
••*		<u> </u>								
	(	CCR								

# Minnesota Valley Testing Laboratories, Inc. New Ulm. MN 56073 507 354 8517

New Ulm, MN 56073

Groundwater Asse	ssment		Ś	Site:	Otter Ta	ail Powe	r Co./ Hoot Lake				
Sampling Personnel:			-	Facility ID:	SW-211	1					
Sampling Perconnol	MS		-		yzz						
			-	Unique Station							
	- <u></u>		-	Sample ID:	S-14R						
Well Condition Well Locked? Well Labeled? Casing Straight?	Yes No Yes No Yes No			Protective Pos State ID Tag? Grout Seal Int	∑¥eś	1	10 10 10				
Repairs Necessary:					<u></u>						
Well Information Well Depth:	87.1			Well Casing E		1201.	1280.61				
Constructed Depth:	70.86			Static Water I	. 7	2.19					
Casing Diameter:	2"			Previous Stat	<u> </u>		4				
Water Level Before Pu				Water Level A							
Well Volume:	1.36	Gallons		Measurement	t Method:	Elec. N	/LI Steel Tap				
Sampling Informati Weather Conditions:	on Temp:	48	Wind: La	ະປ	Sky:	Faur	<u> </u>				
Sampling Method:		Bladder SS/T	Disp. Bailer	Whale	Grab Other:						
Dedicated Equipment:	100	<u> </u>		Pumping Rat	e: 0,2	5	gpm				
Well Purged Dry?	Yes No-	-		Time Pump E	Began: 115	57	am, / pr				
Time Purged Dry?		_		Time of Sam	pling: 🤘	315	am (pr				
Duplicate Sample?	Yes No	_ ID:		Sample EH:	-17,6	9					
Sample Appearance:	General: <i>c</i>	Coav-	Color: No	Phase	: none	<b></b>	Odor: noni				
Time <sub>1203</sub> pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:				
1200 7.23	747	9.42	4.28	18.0	1.50	1					
1209 7.23	747	9.50	5.01	17.9	3.0	2					
1215 7.24	748	9.56	5.06	17.1	4.5	3					
	_	1				4					
		_			·	5					
	No		Amount W	ater Removed	4.5		Gallons				
Stabilized? Yes	No		Amount Water Removed: 7. 5 Gallons								

CR

Comments:

. • مىر. ..

Exceptions to Protocol:





**REVISION 1** 

Page: 1 of 10

FINAL REPORT COMPLETION DATE: 16 Sept 12 af

Date Reported: 15 Sep 2022

JOSH HOLLEN OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0286 Account #: 006106 PO #: 59640

Project Name: HOOT LAKE PLANT CCR

Field Manager/Date 155ept 22 Lab Manager/Date Reviewed Chemistry 15 Xp22 Reviewed Assurance Director/Date

RL = Reporting Limits NQ = Not Present, Qualitative Only PQ = Present, Qualitative Only ND = Not Determined

All data for this report has been approved by MVTL Liaboratory Management. MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless



JOSH HOLLEN

PO BOX 496

Sample Description: S-3A-R

OTTER TAIL POWER CO

Project Name: HOOT LAKE PLANT CCR

FERGUS FALLS MN

MINNESOTA VALLEY TESTING LABORATORIES, INC. 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



2 of 10 Page:

Report Date: 15 Sep 2022 Lab Number: 22-A31806 Work Order #: 31-0286 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 23 Jun 2022 10:53 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29 PO #: 59640

Temp at Receipt: 0.8C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Solids, Total Dissolved Calcium Magnesium Sodium Potassium Boron Fluoride Sulfate Chloride	7.14 * 7.3 745 137.0 50.90 27.20 6.320 ^ 0.241 0.200 ~ 224 ~ 10.7 ~	units units mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	$\begin{array}{c} 1.00\\ 1.0\\ 0.500\\ 0.500\\ 0.500\\ 0.500\\ 0.100\\ 0.020\\ 0.150\\ 0.030\end{array}$	SM4500-H+-2011 SM 4500 H+ B-2000 SM 2540 C-97 SW6010D SW6010D SW6010D SW6010D EPA 300.0 EPA 300.0 EPA 300.0	24       Jun       22         23       Jun       22       10:53         24       Jun       22       7:18         28       Jun       22       13:00         27       Jun       22       20:03         27       Jun       22       10:55         27       Jun       22       10:55         27       Jun       22       10:55         27       Jun       22       10:55	MDH TMM TMM TMM TMM TMM MDH MDH

\* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

56538-0496

 KL = 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 analyte requiring a dilution as coded below:

 ! = Due to sample quantity
 + = Due to concentration of other analyte requiring a dilution as coded below:

 CERTIFICATION: MN LAB # 027-015-125
 ND WW/DW # R-040

# = Due to concentration of other analytes
+ = Due to internal standard response

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.





Page: 3 of 10

Date Reported: 15 Sep 2022

Work Order #: 202231-0286 Account Number: 006106 PO #: 59640

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

Project Name: HOOT LAKE PLANT CCR

LABORATORY NARRATIVE

Amended Report 14 Sept 2022 Added results for Magnesium, Sodium and Potassium per client request.



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

#### Project Name: HOOT LAKE PLANT CCR

Sample Description: S-51

4 of 10 Page:

Report Date: 1 Jul 2022 Lab Number: 22-A31807 Work Order #: 31-0286 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 23 Jun 2022 10:05 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29 PO #: 59640

Temp at Receipt: 0.8C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Water Digestions pH, Field pH Solids, Total Dissolved Calcium Boron	7.11 * 7.2 505 108.0 0.141	units units mg/L mg/L mg/L	1.00 1.0 0.500 0.100	SM4500-H+-2011 SM 4500 H+ B-2000 SM 2540 C-97 SW6010D SW6010D	24 Jun 22 23 Jun 22 10:05 24 Jun 22 7:18 28 Jun 22 13:00 27 Jun 22 20:03 27 Jun 22 20:03	JMS MS JD MDH TMM TMM
Fluoride Sulfate Chloride	0.230 ~ 69.5 ~ 13.5 ~	mg/L mg/L mg/L	0.020 0.150 0.030	EPA 300.0 EPA 300.0 EPA 300.0	27 Jun 22 10:55 27 Jun 22 10:55 27 Jun 22 10:55	MDH

\* Holding Time Exceeded

~ Sample diluted due to result above calibration of linear range.

RL = Reporting Limit 

 KL = 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
 ND WW/DW # R-040





Page: 5 of 10

Date Reported: 1 Jul 2022

Work Order #: 202231-0286 Account Number: 006106 PO #: 59640

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

Project Name: HOOT LAKE PLANT CCR

LABORATORY NARRATIVE

INORGANIC & METALS ANALYSES: No problems were encountered.





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PO #: 59640

Report Date: 1 Jul 2022 Lab Number: 22-A31808

Sample Matrix: GROUNDWATER

Date Sampled: 23 Jun 2022 10:24 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29

Work Order #: 31-0286

Account #: 006106

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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S-2A

Method Method Date As Received Analyzed Analyst RL Reference Result MS 23 Jun 22 10:24 79.62 feet NA Field Well Depth, Field NA NA 23 Jun 22 10:24 MS 75.44 feet Water Level Before Purge 23 Jun 22 10:24 MS Field 1198.33 NA Static Elevation, Field ft

 KL = 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
 ND WW/DW # R-040

 RL = Reporting Limit



Page:

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Report Date: 1 Jul 2022 Lab Number: 22-A31809

Sample Matrix: GROUNDWATER

Date Sampled: 23 Jun 2022 10:02 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29

Work Order #: 31-0286

Account #: 006106

PO #: 59640



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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S-52

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	88.30	feet	NA	Field	23 Jun 22 10:02	MS
Water Level Before Purge	70.16	feet	NA	NA	23 Jun 22 10:02	MS
Static Elevation, Field	1216.46	ft	NA	Field	23 Jun 22 10:02	MS

 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
 ND WW/DW # R-040





Page: 8 of 10

Report Date: 1 Jul 2022 Lab Number: 22-A31810

Sample Matrix: GROUNDWATER

Date Sampled: 23 Jun 2022 10:17 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29

Work Order #: 31-0286

Account #: 006106

PO #: 59640

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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S-10R

As Received Method Method Date Analyzed Analyst RLReference Result 23 Jun 22 10:17 MS Field Well Depth, Field 80.62 feet NA 23 Jun 22 10:17 71.25 feet NA NA MS Water Level Before Purge Field 23 Jun 22 10:17 MS 1210.22 NA Static Elevation, Field ft

 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
 ND WW/DW # R-040

 RL = Reporting Limit

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.



Page:

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Report Date: 1 Jul 2022 Lab Number: 22-A31811

Sample Matrix: GROUNDWATER

Date Sampled: 23 Jun 2022 10:27 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29

Work Order #: 31-0286

Account #: 006106

PO #: 59640



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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S-13

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	90.27	feet	NA	Field	23 Jun 22 10:27	MS
Water Level Before Purge	84.74	feet	NA	NA	23 Jun 22 10:27	MS
Static Elevation, Field	1211.68	ft	NA	Field	23 Jun 22 10:27	MS

 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 analy

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

 CERTIFICATION: MN LAB # 027-015-125
 ND WW/DW # R-040

# = Due to concentration of other analytes
+ = Due to internal standard response





Page: 10 of 10

Report Date: 1 Jul 2022 Lab Number: 22-A31812 Work Order #: 31-0286 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 23 Jun 2022 10:20 Sampled By: MVTL FIELD PERSONNEL Date Received: 23 Jun 2022 14:29 PO #: 59640

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

Project Name: HOOT LAKE PLANT CCR

Sample Description: S-14R

JOSH HOLLEN

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
Well Depth, Field	87.11	feet	NA	Field	23 Jun 22 10:20	MS
Water Level Before Purge	77.93	feet	NA	NA	23 Jun 22 10:20	
Static Elevation, Field	1202.68	ft	NA	Field	23 Jun 22 10:20	

RL = Reporting Limit 

 KL = 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
 ND WW/DW # R-040

MVTL

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#### Page: 1 of 1

Lab IDs: 22-A31806 to 22-A	LCS Spike Amt	LCS Rec %	LCS % Rec Limits	Matrix Spike Amt	CE PLANT CC 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	97	85-115	1.00	22A31280qc	0.467	1.460	99	75-125	1.460	1.450	98	0.7	10	99	90-110	< 0.1
Calcium mg/L	50.00	94	85-115	50.0	22A31280qc	120.0	170.0	100	75-125	170.0	168.0	96	1.2	10	101	90-110	< 0.5
Chloride mg/L	-	-	-	6.00	22-A31807	13.5	19.4	98	75-125	19.4	19.3	97	0.5	10	101	90-110	< 0.03
Fluoride mg/L		-	-	1.00 1.00	22-A30181 22-A31807	0.940 0.230	2.00 1.26	106 103	75-125 75-125	2.00 1.26	1.97 1.27	103 104	1.5 0.8	10 10	102 -	90-110 -	< 0.02
Magnesium mg/L	50.00	101	85-115	50.0	22A31280qc	48.80	100.0	102	75-125	100.0	100.0	102	0.0	10	101	90-110	< 0.5
pH units	-	-	-	-	-	-	-	-	-	7.6	7.6	-	0.0	2.5	101	90-110	-
Potassium mg/L	50.00	104	85-115	50.0	22A31280qc	5.840	58.20	105	75-125	58.20	58.70	106	0.9	10	102	90-110	< 0.5
Sodium mg/L	50.00	107	85-115	50.0	22A31280qc	151.0	207.0	112	75-125	207.0	205.0	108	1.0	10	104	90-110	< 0.5
Solids, Total Dissolved mg/L				-	-	-	-		-	505 2120	509 2070	-	0.8 2.4	7 7	102	85-115	< 10
Sulfate mg/L				30.0	22-A31807	69.5	100	102		100	99.5	100	0.5		102		< 0.15

Approved by:

MVTL

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#### Page: 1 of 1

Änalyte	LCS Spike Amt	LCS Rec %		Matrix Spike Amt	Matrix Spike ID	Matrix Spike Orig Result		Matrix Spike Rec %	Matrix Spike % Rec Limits	MSD/ Dup Orig Result	MSD/ Dup Result	MSD Rec %	MSD/		Known Rec (%)		Method Blank
Boron mg/L	1.000	97	85-115	1.00	22A31280qc	0.467	1.460	99	75-125	1.460	1.450	98	0.7	10	99	90-110	< 0.1
Calcium mg/L	50.00	94	85-115	50.0	22A31280qc	120.0	170.0	100	75-125	170.0	168.0	96	1.2	10	101	90-110	< 0.5
Chloride mg/L	-	-		6.00	22-A31807	13.5	19.4	98	86-117	19.4	19.3	97	0.5	5	101	90-110	< 0.03
Fluoride mg/L	-	-	-	1.00 1.00	22-A30181 22-A31807	0.940 0.230	2.00 1.26	106 103	75-125 75-125	2.00 1.26	1.97 1.27	103 104	1.5 0.8	10 10	102	90-110	< 0.02
pH units	-	-	-	-	-	-	-	-	-	7.6	7.6	-	0.0	2.5	101	90-110	-
Solids, Total Dissolved mg/L	-	-	-		-	-		-	-	505 2120	509 2070		0.8 2.4	7 7	102	85-115	< 10
Sulfate mg/L	-	-	-	30.0	22-A31807	69.5	100	102	68-132	100	99.5	100	0.5	5	102	80-120	< 0.15

Approved by:

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

This is an exact copy of the original document By <u>AB</u> Date <u>23June</u> 22 Pages 1-10

Field Service Chain of Custody Record

Project Na	oject Name: Otter Tail Power Co.			Project	Type:	CCR				Na	me	of S	am	pler	S:	5	19t	t	Stein		
		Hoot Lake Pla	nt					-								-		C	NotF		
Report To:	Otter Tail Po	ower Company		Carbon	Copy:	BarrDM@bai	rr.cor	n								5	Sen	. 1	Not		_
Attn:	Paul Vukoni	ch		Attn:						Qu	ote	Nun	nber	<u>:</u>							
Address:	P.O. Box 49	6		Address	<u>s:</u>					Wo	ork (	Orde	r Nu	umb	er:	3	1-0	0.	286		
	Fergus Falls	, MN 56038-049	6							Lat	D NL	umbe	ers:								
Phone:	218-739-834	19																			
<b></b>	S	ample Information	ation								1	Bot	tle	Гур	е					Analysis	
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	Voc.sei	1000 noc	1000 HNOC	500 HNO3	Filter? V	500 HNOS	Filter? V.	500H2SOA	1000 Amt	500 NaOH H2SO4	Other: 150.	Other 150.	Analysis Required		
			1																See Attato	hed	
A31806	S3AR		2354nez2	1053	GW			1		1	N										
07	S51		ZIJINEZ		GW			1		1	N										
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Comments	CCR wells		1			*/	lus	6	A	na	14	5	s!	1							
		$\bigcirc$	$\cap$													0		~			
Samples R	elinquished By	i mark				,	Sar	nple	s R	ecei	ived	By:	1	1.	/	ni	edi	in			
the second se		and the second s	Time: 14	29	Temp:/	14TM615	_		_		_			Tim	e:	142			Temp: D.	81	7
100			Log in Cart Other:				0	MU L		~ 1								-			
							s R	ecei	ived	By.									-		
Samples Relinquished By:			-			Dai	inpic	es Received By:								<b>T</b>	a la com	-			

Date: Time: Temp: Date: Time: Temp: Seal Number(s) - If Used Delivery: Other: Samplers No Seals Intact? Yes Transport: Ambient Ice Other:

# Jeff Hoffman

From:	Hollen, Josh <jhollen@otpco.com></jhollen@otpco.com>
Sent:	Monday, June 13, 2022 12:16 PM
То:	Jeff Hoffman
Subject:	Hoot Lake - CCR Resampling

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Jeff,

We need to conduct resampling at Hoot Lake ASAP. It is CCR groundwater sampling. We need to resample S-3A-R for the following:

	nondiv III D	tection Monit	oring .	<u> </u>	<u> </u>	• i	<u> </u>
				···· ··· ···			
Field Par	ameters						
pH*_							<i>.</i> .
		<b>.</b> .					
* Field an	d Laborator	y Measureme	nts	,			
• • •							
Total Col	ncentration	n Parameters		÷		- ,	Method
Boron					· ··· · ··· ·		6010
Calcium	1	-			r		6010
Chloride		• - •-	-			-	SM4500 CL E
Fluoride			• -+			-	EPA 300
рH	• • •	·				Ę	SM 4500 H+B-96
Sulfate	· · · · ·				· · · · ·		ASTM D516
Dissolved	l Solids, To	tal	ан аны а а	· · · · ·	·		SM 2540 C-97
			· · · · · · · · · · · · · · · · · · ·				

Also, bring enough bottles to sample an additional well. We may need to resample upgradient well S-51 for the entire list of parameters listed above.

And last but not least, we will need to get water levels for all the CCR wells. So a water level on the following wells as part of the resampling, just use your normal field sheets.

,	Hc	ot La	ke Site	e CCR	S
Well	Parameter List	Well Depth	Diameter (Inches)	Well Elevation	Ē
S2A	CCR 3	79.63	2	1273.776	
S3AR	CCR 3	78.42	2	1271.562	
S51	CCR 3	55.6	2	1286.904	
S52	CCR 3	88.3	2	1286.623	•
S10R	CCR 3	57.00	2	1281.47	
S13	CCR 3	90.19	2	1296.423	•
S14R	CCR 3	70.86	2	1280.61	•

# Note: CCR samples must be on their own COC.

Thank you.

 Josh Hollen Environmental Compliance Specialist Environmental Services Dept.

Phone: (218) 739-8314

otpco.com



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New Ulm, MN 56073

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507 354 8517

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Groundwater Asse	essment			Site:	Otterta	ail Powe	r Co./Hoot Lake
Sampling Personnel:				Facility ID:	SW-2	11	
	ms			Date: 23 J			
	Bu	_		Unique Statio		1	
		_		Sample ID:			<u> </u>
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	(Mes No (Mes No (Mes No	-		Protective Po State ID Tag Grout Seal In	osts? Yes ? Yes		
Well Information	-						
Well Depth:	78.40			Well Casing	Elevation:		1271.562
Constructed Depth:	78.42	-		Static Water	Elevation:	1202	.81
Casing Diameter: 2"				Previous Stat	tic: 1200.7	1	
Water Level Before Purge: 68,75				Water Level After Sample: 68,91			
Well Volume:	1.57	Gailons	_	Measuremen	t Method:	Flec. V	VLI Steel Tape
Sampling Information	on	<u> </u>		Seis			
Weather Conditions:	Temp:	20	Wind:		Sky:	Fair	
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Yes No			Pumping Rat	te: 0,2	5	gpm
Well Purged Dry?	Yes No	_		Time Pump I	Began:	1032	(an) / pm
Time Purged Dry?		_		Time of Sam	pling: /	053	S (and ) pm
Duplicate Sample?	Yes No	_1D:	•	Sample EH:	47.9	7	
Sample Appearance:	General:	Clear	Color: Ac	>∿e_ Phase	: NOND		Odor: vone
Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1039 7.20	862	10.10	5,98	4.3	1.75	1	
1046 7.17	862	10.02	5,73	3.5	3.5	2	
1053 7,14	862	10.04	5,55		5,25	3	
						4	
		1	<u> </u>	+		5	
Stabilized? (Yes)	 No		Amount Wa	ter Removed:	525		Gallons
Comments:							

New Ulm, MN 56073

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Groundwa	ater Asse	ssment			Site:	Otterta	ail Powe	r Co./Hoot Lake
Sampling Pe	rsonnel:				Facility ID:	SW-21	1	
		MS			Date: 23:5	10027		
<b></b>		BW			Unique Statio		0	
		1/VO	,		Sample ID:	S-51		
Well Cond								
Well Locked		Mes No			Protective Po	osts? Y.es	(	No
Well Labeled	<u> </u>	Yes No			State ID Tag	<u> </u>	<u> </u>	NO
Casing Strai	ght? (	Yes No	•		Grout Seal Ir	itact? Yes		No
Repairs Nec	essary:							<u> </u>
Well Inform	nation							
Well Depth:		55.60	-		Well Casing			1286.904
Constructed	Depth:	55.60	_		Static Water	Elevation:	1233	.14
Casing Diameter: 2" Previous Static: 1242.11								
Water Level Before Purge: 49.90 Water Level After Sample: 49,						8,82		
Well Volume	e:	1.10	Gallons		Measureme	nt Method:	Eléc.	WLI Steel Tape
Sampling	Informatio	<u></u>				<u> </u>		
Weather Co	onditions:	Temp: S	Po	Wind: <	5-15	Sky:	Frit	
Sampling M	ethod:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated E	quipment:	(es) No	-		Pumping Ra	te: .2	5	gpm
Well Purgeo	i Dry?	Yes (Do	_		Time Pump	Began:	~{50	(añ) / pm
Time Purge	d Dry?	$\sim$	_		Time of Sampling: 1005 (am, / pm			
Duplicate S	ample?	Yes (No)	_ _ID:		Sample EH:	39.0		
Sample App	pearance:	General:	(leer	Color:	have Phas	e: ver	<u>بر</u>	Odor: ~me
(5)	1	Specific	Temp	D. O.	Turbidity	Gallons	SEQ	
Time	рН	Cond.	°C	mg/L		Removed	#	Comments:
955	7.25	673	9.70	5,19	4.7	1.25	1	
1000	7,17	676	9.51	5.29	3.9	ə.5	2	<u> </u>
1005	7.11	679	9,35	5,29	3.4	3.75	3	
							4	
	<u>-</u>		1				5	
		No.	1	Amount 14/	ater Removed	3.75		Gallons
Stabilized?		No		Amount W	aler removed			
Comment	5.							

New Ulm, MN 56073

507 354 8517

			2			
Groundwater Assessment			Site: '	Otterta	ail Powe	r Co./Hoot Lak
Sampling Personnel:			Facility ID:	SW-2	11	
<u></u>	-		Date: 23	June 27	٢	
Bu	_		Unique Station	ID: 44435	0	
	_		Sample ID:	S-2A		
Well Condition		<u> </u>				
Well Locked? Tes No	_		Protective Pos			No
Well Labeled? (78) No Casing Straight? (78) No	-		State ID Tag? Grout Seal Inta	Yes act? (Yes)	(	<u>Nô)</u> No
Repairs Necessary:	_		Grout Sear mita		<u> </u>	
Well Information				<u> </u>		
Well Depth: 79.6Z			Well Casing E	levation:		1273.776
Constructed Depth: 79.63			Static Water E		198,33	3
Casing Diameter: 2"	_		Previous Statio	x 1147-80	2	
Water Level Before Purge: 75		Water Level A	fter Sample:			
Well Volume: 0,68	Gallons		Measurement	Method:	Elec	VLI Steel T
Sampling Information		<u> </u>				• •
Weather Conditions: Temp:	80	Wind:	5-15	Sky:	fair	-
Sampling Method: Grundfos	BladderSSA	Disp. Bailer	Whale G	Grab Other:		
			Pumping Rate	:	<u> </u>	gpm
Dedicated Equipment: (1) No	_					
Dedicated Equipment:         Yes         No           Well Purged Dry?         Yes         No	-		Time Pump Be	egan:		am /
· · · · · · · · · · · · · · · ·	- -		<u> </u>		 24	•
Well Purged Dry? 4es No	_ _ _ID:		Time Pump Be		əy 	
Well Purged Dry?     Yes     No       Time Purged Dry?	ID:	Color:	Time Pump Be Time of Samp		24 	
Well Purged Dry?       Yes       No         Time Purged Dry?			Time Pump Be Time of Samp Sample EH: Phase:	ling: (o	~_~ ~_	(am)/
Well Purged Dry?       Yes       No         Time Purged Dry?	ID:	D. O.	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ	(am) /
Well Purged Dry?       Yes       No         Time Purged Dry?			Time Pump Be Time of Samp Sample EH: Phase:	ling: (o	SEQ #	(atm) /
Well Purged Dry?       Yes       No         Time Purged Dry?		D. O.	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ #	(am) /
Well Purged Dry?       Yes       No         Time Purged Dry?		D. O.	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ # 1 2	(am) /
Well Purged Dry?       Yes       No         Time Purged Dry?		D. O.	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ # 1 2 3	(am)/) Odor:
Well Purged Dry?       Yes       No         Time Purged Dry?		D. O.	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ # 1 2 3 4	(am)/) Odor:
Well Purged Dry?       Yes       No         Time Purged Dry?		D. O. mg/L	Time Pump Be Time of Samp Sample EH: Phase:	ling: (a 	SEQ # 1 2 3	(am) / ) Odor:

W.L. only

Exceptions to Protocol:

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New Ulm, MN 56073

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Groundwater Asses	sment			Site: Ottertail Power Co./Hoot Lake			
Sampling Personnel:				Facility ID: SW-211			
	IMS			Date: 23-5	Line2)		
	Bω		•	Unique Statio	n ID:		
				Sample ID:	S-52		
Well Labeled?	Ges No Ges No Yes No	 - -		Protective Po State ID Tag Grout Seal In			No No No
Repairs Necessary: Well Information				· · · · · · · · · · · · · · · · · · ·			<u> </u>
Well Depth: <u>\$8.30</u>				Well Casing			1286.623
••••••		Static Water	Elevation:	216.4	ما		
Casing Diameter:		Previous Stat	tic: 1216.7	1			
Water Level Before Purg		Water Level	After Sample:		<b>&gt;</b>		
Well Volume:	2.95	Gallons	-	Measuremen	t Method:	Flec.V	VLI Steel Tape
Sampling Information		0		_			
		<u>80</u>	Wind:	5-15	Sky:	(may	
	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:	<u> </u>	
	Yes No	-		Pumping Rate:     gpm       Time Pump Began:     am / om			
	Yes (No?	-		Time Pump Began: am / pm			
Time Purged Dry?	Voc No-	-		Time of Sampling: 1002 (a) 1 pm			
<u>.</u>	Y <del>es No</del> General:	<u> </u>	Color:	Sample EH: Odor:			Odor:
Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ # 1 2	Comments:
						3	
						4	<u> </u>
						5	
Stabilized? Yes	No		Amount Wa	ter Removed:		$\overline{}$	Gallons
Comments:	<u> </u>						·

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Exceptions to Protocol:

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New Ulm, MN 56073

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			Site:	Ottert	ail Powe	r Co./Hoot Lake
Sampling Personnel:		·	Facility ID:	SW-2	11	
MS			Date: 235	inezz		
			Unique Stati		£1	
	_		Sample ID:	S-10F		
Well Condition         Well Locked?       No         Well Labeled?       No         Casing Straight?       Yes       No         Repairs Necessary:       No       No			Protective P State ID Tag Grout Seal I	1? (Yeg		No No No
Well Information	<u> </u>		<del></del>			
Well Depth: S/).(6	2		Well Casing	Elevation:		1281.47
Constructed Depth: 57.00			Static Water		1210.2	2-2
Casing Diameter: 2" Previous Static: 12/0.67						
Water Level Before Purge: 7		Water Level After Sample:				
						ýLI Steel Ta
Sampling Information			-			
Weather Conditions: Temp:	90	Wind:	Reis	Sky:	Fair	
Weather Conditions:         Temp:           Sampling Method:         Grundfos	GO Bladder SSAT	Wind: C	Whale	Grab Other:	Fair	
Weather Conditions:Temp:Sampling Method:GrundfosDedicated Equipment:YesNo		· · · ·	Pumping Ra	Grab Other: ate:	Fair	gpm
Weather Conditions:Temp:Sampling Method:GrundfosDedicated Equipment:YesWell Purged Dry?Yes		· · · ·	Pumping Ra	Grab Other:		am / pr
Weather Conditions:Temp:Sampling Method:GrundfosDedicated Equipment:YesWell Purged Dry?YesTime Purged Dry?	Bhadder SS/T	· · · ·	Pumping Ra Time Pump Time of Sar	Grab Other: ate:	Fair 	am / pr
Weather Conditions:Temp:Sampling Method:GrundfosDedicated Equipment:YesWell Purged Dry?Yes		· · · ·	Pumping Ra	Grab Other: ate:		am / pr
Weather Conditions:Temp:Sampling Method:GrundfosDedicated Equipment:YesVell Purged Dry?YesTime Purged Dry?YesDuplicate Sample?YesYesNo	Bhadder SS/T	Disp. Bailer	Pumping Ra Time Pump Time of Sar Sample EH	Grab Other: ate:		am / pr @m)/ pr
Weather Conditions:       Temp:         Sampling Method:       Grundfos         Dedicated Equipment:       Yes         Well Purged Dry?       Yes         Time Purged Dry?       Yes         Duplicate Sample?       Yes         Sample Appearance:       General:         Specific       Specific	Bhadder SS/T	Disp. Bailer Color: D. O.	Pumping Ra Time Pump Time of Sar Sample EH Phas	Grab Other: ate: Began: mpling: : Se: Gallons		am / pr @m)/ pr Odor:
Weather Conditions:       Temp:         Sampling Method:       Grundfos         Dedicated Equipment:       Yes         Vell Purged Dry?       Yes         Time Purged Dry?       Yes         Duplicate Sample?       Yes         Sample Appearance:       General:         Specific       Specific	Bhadder SS/T	Disp. Bailer Color: D. O.	Pumping Ra Time Pump Time of Sar Sample EH Phas	Grab Other: ate: Began: mpling: : Se: Gallons	01 7   5EQ #	am / pr @m)/ pr Odor:
Weather Conditions:       Temp:         Sampling Method:       Grundfos         Dedicated Equipment:       Yes         Vell Purged Dry?       Yes         Time Purged Dry?       Yes         Duplicate Sample?       Yes         Sample Appearance:       General:         Specific       Specific	Bhadder SS/T	Disp. Bailer Color: D. O.	Pumping Ra Time Pump Time of Sar Sample EH Phas	Grab Other: ate: Began: mpling: : Se: Gallons	SEQ #	am / pr @m)/ pr Odor:
Weather Conditions:       Temp:         Sampling Method:       Grundfos         Dedicated Equipment:       Yes         Vell Purged Dry?       Yes         Time Purged Dry?       Yes         Duplicate Sample?       Yes         Sample Appearance:       General:         Specific       Specific	Bhadder SS/T	Disp. Bailer Color: D. O.	Pumping Ra Time Pump Time of Sar Sample EH Phas	Grab Other: ate: Began: mpling: : Se: Gallons	SEQ # 1 2	am / pr @m)/ pr Odor:
Weather Conditions:       Temp:         Sampling Method:       Grundfos         Dedicated Equipment:       Yes         Vell Purged Dry?       Yes         Time Purged Dry?       Yes         Duplicate Sample?       Yes         Sample Appearance:       General:         Specific       Specific	Bhadder SS/T	Disp. Bailer Color: D. O.	Pumping Ra Time Pump Time of Sar Sample EH Phas	Grab Other: ate: Began: mpling: : Se: Gallons	SEQ # 1 2 3	am / pr @m)/ pr Odor:

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Exceptions to Protocol:

New Ulm, MN 56073

507 354 8517

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Groundwater Asse	essment			Site:	Otterta	ul Power	Co./Hoot Lake
Sampling Personnel:				Facility ID:	SW-21	1	
	MS	_		Date: 23Jur	ez C		
	ษณ	-		Unique Station	ID: 632810	0	
		-		Sample ID:	S-13		
Well Condition Well Locked? Well Labeled? Casing Straight? Repairs Necessary:	Cres No Cres No Cres No	- - -		Protective Post State ID Tag? Grout Seal Inta	(Yes)		No No No
Well Information							
Well Depth:	90.27	_		Well Casing El	evation:		1296.423
Constructed Depth:	90.19	-		Static Water El	evation:	1211	.68
Casing Diameter:	2"	5.0		Previous Static	: 1211.5	2	
Water Level Before Pur	ge: \$7-],	74		Water Level Af	ter Sample:		A
Well Volume:	0.90	Gallons		Measurement l	Method:	Elec. M	LI Steel Tape
Sampling Information	on		_				· · · · ·
Weather Conditions:	Temp:	80		-15	Sky:	Farr	
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer		rab Other:		
Dedicated Equipment:	≪es No	_		Pumping Rate:			gpm
Well Purged Dry? Time Purged Dry?	Yes No	-		Time of Same		~~~~	am / pm
Duplicate Sample?	Yes No	- 1D:		Time of Sampl Sample EH:		1027	(am) / pm
Sample Appearance:	General:		Color:	Phase:			Odor:
Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	•	Gallons Removed	SEQ #	Comments:
	$\sim$			┼───┥		1	
		<b></b>				2	
			<u> </u>			3	
	<u>.</u>	ļ				4	
						5	
Stabilized? Yes			Amount Wa	ter Removed:			Gallons
Comments:					7		

Wit only

Exceptions to Protocol:

New Ulm, MN 56073

507 354 8517

Groundwater Asse	essment		*	site:	Ottert	ail Power	r Co./Hoot Lake
Sampling Personnel:				Facility ID:	 SW-2	.11	
	MS.			Date: 23.Jun	. 77		
	Biw		•	Unique Statio		12	
	-	-		Sample ID:	S-14F	र	
Well Condition Well Locked? Well Labeled? Casing Straight?	Ves No Ves No Yes No	- - -	<u> </u>	Protective Po State ID Tag Grout Seal In			No No No
Repairs Necessary:				· · · · · · · · · · · · · · · · · · ·		<u> </u>	
Well Depth:	87.11			Well Casing	Elevation:	<u> </u>	1280.61
Constructed Depth:	70.86	-		Static Water	Elevation:	1202	.68
Casing Diameter:	2"	_		Previous Stat	tic: 1202,	19	
Water Level Before Purge: 77.43 Water Level A				After Sample:		<u>-</u>	
Well Volume:	1.49	Gallons	-	Measuremen	t Method:	Elec. V	VLI Steel Tape
Sampling Information	on						<u> </u>
Weather Conditions:	Temp:	80	Wind:	5-15	Sky:	Farl	
Sampling Method:	Grundfos	BladderSS	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Yes, No	-		Pumping Rat	ie:		gpm
Well Purged Dry?	YesNo	-		Time Pump Began:		am / pm	
Time Purged Dry?		-		Time of Sampling: 1 o Z つ		apa / pm	
Duplicate Sample?	Yes No	<u> 1D</u>		Sample EH:			
Sample Appearance:	General:		-Color:	Phase	e:		Odor:
Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
	$\rightarrow$					1	
		<u> </u>				2	
						3	
	1					4	
						5	
Stabilized? Yes	No		Amount W	ater Removed:	<u> </u>	- 1	Gallons
Comments:					$\overline{}$		
		W	L only			~.	

Exceptions to Protocol:

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FINAL REPORT COMPLETION DATE: 29 DAC 23 AK

Page:

Date Reported: 28 Dec 2022

1 of 13

PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Work Order #: 31-0547 Account #: 006106 PO #: 59640

Project Name: HOOT LAKE CCR

29 Dec 22 NOWN nager/Date Reviewed Field 28Decz Lab Manager/Date Reviewed chemistr 18 pere Assurance Director/Date Reviewed Quality

RL = Reporting Limits NQ = Not Present, Qualitative Only PQ = Present, Qualitative Only ND = Not Determined

All data for this report has been approved by MVTL Laboratory Management.



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

#### Project Name: HOOT LAKE CCR

Sample Description: S3AR

2 of 13 Page:

Report Date: 28 Dec 2022 Lab Number: 22-A56722 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 13:33 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Temp at Receipt: 1.3C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	0.022	mg/L	0.020	SW6010D	21 Nov 22 12:33	RMV
Barium	0.046	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Lead	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	1.74	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	3.53 ^	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Fluoride	0.220 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

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



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

3 Of 13 Page:

Report Date: 28 Dec 2022 Lab Number: 22-A56723 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 12:00 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

Project Name: HOOT LAKE CCR

Sample Description: S51

Temp at Receipt: 1.3C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions Water Digestions Mercury Lithium Barium Cobalt Antimony Arsenic Beryllium Cadmium Chromium Lead Molybdenum Selenium Thallium Fluoride	< 0.005 ug/L 0.021 mg/L 0.071 mg/L < 0.005 mg/L < 0.5 ug/L < 0.05 ug/L < 0.1 ug/L 1.55 ug/L < 0.5 ug/L 2.88 ug/L < 1 ^ ug/L < 0.1 ug/L 0.230 @ mg/L	$\begin{array}{c} 0.005\\ 0.020\\ 0.005\\ 0.50\\ 0.5\\ 0.50\\ 0.05\\ 0.1\\ 0.50\\ 0.5\\ 0.5\\ 0.5\\ 0.5\\ 0.5\\ 0.1\\ 0.020\\ \end{array}$	EPA 245.7 SW6010D SW6010D SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B EPA 300.0	21 Nov 22 20 Nov 22 23 Nov 22 12:07 21 Nov 22 12:33 21 Nov 22 12:33 21 Nov 22 12:33 22 Nov 22 19:08 23 Nov 22 19:08 23 Nov 22 19:08 22 Nov 22 19:08 21 Nov 22 19:08 21 Nov 22 19:08	KAM KAM KAM KAM KAM KAM

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE CCR

Sample Description: S52

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Report Date: 28 Dec 2022 Lab Number: 22-A56724 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 12:45 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

Temp at Receipt: 1.3C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions Water Digestions Mercury	< 0.005	ug/L	0.005	EPA 245.7 SW6010D	21 Nov 22 20 Nov 22 23 Nov 22 12:07 21 Nov 22 13:50	RRA RRA RMB RMV
Lithium Barium Cobalt Antimony Arsenic Beryllium Cadmium	0.021 0.111 < 0.005 < 0.5 1.78 < 0.05 < 0.1	mg/L mg/L ug/L ug/L ug/L ug/L	$\begin{array}{c} 0.020\\ 0.005\\ 0.005\\ 0.5\\ 0.50\\ 0.05\\ 0.1\\ \end{array}$	SW6010D SW6010D SW6020B SW6020B SW6020B SW6020B SW6020B	21 Nov 22 13:50 21 Nov 22 13:50 22 Nov 22 19:08 22 Nov 22 19:08 23 Nov 22 11:02 22 Nov 22 19:08	RMV RMV KAM KAM KAM
Chromium Lead Molybdenum Selenium Thallium Fluoride	< 0.5 < 0.5 1.63 < 1 ^ < 0.1 0.210 @	ug/L ug/L ug/L ug/L mg/L	0.5 0.5 0.50 0.5 0.1 0.020	SW6020B SW6020B SW6020B SW6020B SW6020B EPA 300.0	22 Nov 22 19:08 22 Nov 22 19:08 19 Nov 22 11:29	KAM KAM KAM KAM MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

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: (e = 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 ND WW/DW # R-040



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

#### Project Name: HOOT LAKE CCR

Sample Description: S10R

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Report Date: 28 Dec 2022 Lab Number: 22-A56725 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 12:58 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Temp at Receipt: 1.3C

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	0.021	mg/L	0.020	SW6010D	21 Nov 22 12:33	RMV
Barium	0.092	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	10.5	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Chromium	0.93	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Lead	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	1.93	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Fluoride	0.190 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit

 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
 ND WW/DW # R-040



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Project Name: HOOT LAKE CCR

Sample Description: S13

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Report Date: 28 Dec 2022 Lab Number: 22-A56726 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 11:37 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

Temp at Receipt: 1.3C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	0.023	mg/L	0.020	SW6010D	21 Nov 22 12:33	RMV
Barium	0.066	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Lead	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	3.15	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Thallium	0.12	ug/L	0.10	SW6020B	22 Nov 22 19:08	KAM
Fluoride	0.230 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit

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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 ND WW/DW # R-040

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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

Lab Number: 22-A56727 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 12:15 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08

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Report Date: 28 Dec 2022

Page:

#### Project Name: HOOT LAKE CCR

Sample Description: S14R

MVTI

#### Temp at Receipt: 1.3C

PO #: 59640

	As Receive Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	0.029	mg/L	0.020	SW6010D	21 Nov 22 12:33	RMV
Barium	0.048	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	2.92	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Lead	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	2.24	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:00	KAM
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

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PAUL VUKONICH OTTER TAIL POWER CO FERGUS FALLS MN 56538-0496 Lab Number: 22-A56728 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 11:37 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

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Report Date: 28 Dec 2022

Page:

Temp at Receipt: 1.3C

	As Receiv Result	red	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	< 0.02	mg/L	0.02	SW6010D	21 Nov 22 12:33	RMV
Barium	0.065	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Lead	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	2.54	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Thallium	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit

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PO BOX 496

Project Name: HOOT LAKE CCR

Sample Description: S6

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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

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Report Date: 28 Dec 2022 Lab Number: 22-A56729 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 12:11 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Project Name: HOOT LAKE CCR

Sample Description: S11

Temp at Receipt: 1.3C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions Water Digestions Mercury Lithium Barium Cobalt Antimony Arsenic Beryllium Cadmium	< 0.005 ug/L 0.022 mg/L 0.061 mg/L < 0.005 mg/L 0.84 ug/L < 0.05 ug/L < 0.05 ug/L < 0.05 ug/L < 0.1 ug/L	0.1	EPA 245.7 SW6010D SW6010D SW6020B SW6020B SW6020B SW6020B SW6020B	21 Nov 22 20 Nov 22 23 Nov 22 12:07 21 Nov 22 12:33 21 Nov 22 12:33 21 Nov 22 12:33 22 Nov 22 19:08 22 Nov 22 19:08 23 Nov 22 11:02 22 Nov 22 19:08	RRA RRA RMB RMV RMV RMV KAM KAM KAM
Chromium Lead Molybdenum Selenium Thallium Fluoride	1.00 ug/L < 0.5 ug/L 4.89 ug/L < 1 ^ ug/L < 0.1 ug/L 0.230 @ mg/L	0.50 0.5 0.50 0.5 0.1 0.020	SW6020B SW6020B SW6020B SW6020B SW6020B EPA 300.0	22 Nov 22 19:08 22 Nov 22 19:08 19 Nov 22 11:29	KAM KAM KAM KAM MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit



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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496

#### Project Name: HOOT LAKE CCR

Sample Description: M1

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Report Date: 28 Dec 2022 Lab Number: 22-A56730 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 13:10 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

Temp at Receipt: 1.3C

	As Receiv Result	ed	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions					21 Nov 22	RRA
Water Digestions					20 Nov 22	RRA
Mercury	< 0.005	ug/L	0.005	EPA 245.7	23 Nov 22 12:07	RMB
Lithium	0.027	mg/L	0.020	SW6010D	21 Nov 22 12:33	RMV
Barium	0.091	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Cobalt	< 0.005	mg/L	0.005	SW6010D	21 Nov 22 12:33	RMV
Antimony	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Arsenic	9.95	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Beryllium	< 0.05	ug/L	0.05	SW6020B	23 Nov 22 11:02	KAM
Cadmium	0.12	ug/L	0.10	SW6020B	22 Nov 22 19:08	KAM
Chromium	< 0.5	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Lead	4.01	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Molybdenum	1.84	ug/L	0.50	SW6020B	22 Nov 22 19:08	KAM
Selenium	< 1 ^	ug/L	0.5	SW6020B	22 Nov 22 19:08	KAM
Thallium ,	< 0.1	ug/L	0.1	SW6020B	22 Nov 22 19:08	KAM
Fluoride	0.250 @	mg/L	0.020	EPA 300.0	19 Nov 22 11:29	MDH

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit



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Report Date: 28 Dec 2022

PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Lab Number: 22-A56731 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 13:07 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Project Name: HOOT LAKE CCR

Sample Description: S1

#### Temp at Receipt: 1.3C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions Water Digestions Mercury Lithium Barium Cobalt Antimony Arsenic Beryllium Cadmium Chromium Lead Molybdenum Selenium Thallium Fluoride	0.015 ug/L 0.026 mg/L 0.139 mg/L 0.005 mg/L 0.77 ug/L 3.42 ug/L 0.35 ug/L 0.24 ug/L 12.7 ug/L 2.31 ug/L 3.68 ^ ug/L 0.13 ug/L 0.170 @ mg/L	$\begin{array}{c} 0.005\\ 0.020\\ 0.005\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.10\\ 0.020\\ \end{array}$	EPA 245.7 SW6010D SW6010D SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B	21 Nov 22 20 Nov 22 23 Nov 22 12:07 21 Nov 22 12:33 21 Nov 22 12:33 21 Nov 22 12:33 22 Nov 22 12:33 22 Nov 22 19:08 23 Nov 22 19:08 22 Nov 22 19:08 21 Nov 22 11:29	RRA RRA RMB RMV RMV KAM KAM KAM KAM KAM KAM KAM KAM KAM KAM

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

# = Due to concentration of other analytes
+ = Due to internal standard response

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PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 FERGUS FALLS MN 56538-0496 Report Date: 28 Dec 2022 Lab Number: 22-A56732 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 13:30 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Project Name: HOOT LAKE CCR

Sample Description: M3

Temp at Receipt: 1.3C

	As Received Result	Method RL	Method Reference	Date Analyzed	Analyst
MS Water Digestions Water Digestions Mercury Lithium Barium Cobalt Antimony Arsenic Beryllium Cadmium Chromium Lead Molybdenum Selenium Thallium Fluoride	< 0.005 ug/L 0.028 mg/L 0.145 mg/L < 0.005 mg/L < 0.5 ug/L < 0.05 ug/L < 0.1 ug/L < 0.1 ug/L < 0.5 ug/L < 0.5 ug/L < 0.5 ug/L < 0.1 ug/L < 1^u ug/L < 1^u ug/L < 0.1 ug/L < 0.1 ug/L < 0.1 ug/L < 0.1 ug/L	$\begin{array}{c} 0.005\\ 0.020\\ 0.005\\ 0.50\\ 0.5\\ 0.50\\ 0.5\\ 0.1\\ 0.5\\ 0.50\\ 0.50\\ 0.50\\ 0.50\\ 0.5\\ 0.1\\ 0.020\\ \end{array}$	EPA 245.7 SW6010D SW6010D SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B SW6020B EPA 300.0	21 Nov 22 20 Nov 22 23 Nov 22 12:58 21 Nov 22 13:11 21 Nov 22 13:11 21 Nov 22 13:11 22 Nov 22 20:01 22 Nov 22 20:01 23 Nov 22 11:35 22 Nov 22 20:01 22 Nov 22 20:01 19 Nov 22 16:23	KAM KAM KAM KAM KAM

^ The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

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: The reporting limit was elevated for any analyte requiring a dilution as coded below: (e) = Due to sample matrix (e) = Due to sample quantity CERTIFICATION: MN LAB # 027-015-125 ND WW/DW # R-040



Project Name: HOOT LAKE CCR

Sample Description: S3

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Report Date: 28 Dec 2022

PAUL VUKONICH OTTER TAIL POWER CO PO BOX 496 56538-0496 FERGUS FALLS MN

Lab Number: 22-A56733 Work Order #: 31-0547 Account #: 006106 Sample Matrix: GROUNDWATER Date Sampled: 17 Nov 2022 13:27 Sampled By: MVTL FIELD PERSONNEL Date Received: 17 Nov 2022 18:08 PO #: 59640

#### Temp at Receipt: 1.3C

As Received Method Method Date Result Analyst RL Reference Analyzed MS Water Digestions 21 Nov 22 RRA Water Digestions 20 Nov 22 RRA < 0.005 ug/L 0.005 23 Nov 22 12:58 Mercury EPA 245.7 RMB 21 Nov 22 13:11 < 0.02 0.02 SW6010D Lithium mg/L RMV Barium 0.095 mg/L 0.005 SW6010D 21 Nov 22 13:11 RMV < 0.005 0.005 SW6010D 21 Nov 22 13:11 Cobalt mg/L RMV Antimony < 0.5 0.5 SW6020B 22 Nov 22 20:01 ug/L KAM < 0.5 Arsenic ug/L 0.5 SW6020B 22 Nov 22 20:01 KAM Beryllium < 0.05 ug/L 0.05 SW6020B 23 Nov 22 11:35 KAM Cadmium < 0.1 0.1 SW6020B 22 Nov 22 20:01 ug/L KAM ug/L Chromium 1.38 0.50 SW6020B 22 Nov 22 20:01 KAM 0.55 Lead ug/L 0.50 SW6020B 22 Nov 22 20:01 KAM Molybdenum 2.54 22 Nov 22 20:01 ug/L 0.50 SW6020B KAM 1.31 ^ Selenium ug/L 0.50 SW6020B 22 Nov 22 20:01 KAM Thallium < 0.1 ug/L 0.1 SW6020B 22 Nov 22 20:01 KAM Fluoride 0.200 @ mg/L 0.020 EPA 300.0 19 Nov 22 16:23 MDH

 $^{\circ}$  The reporting limit (RL) was elevated due to instrument performance at the lower limit of quantitation (LLOQ). This will only impact results that are found to be below the elevated RL. Results above the elevated RL are unaffected.

RL = Reporting Limit

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Lab IDs: 22-A56722 to	22-A56733	Pro	oject: HC	OT LAK	E CCR		Work (	Order: 2							1000 - 100 -	100000000000000000000000000000000000000	T
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
Antimony ug/L	25.0 25.0	102 102	85-115 85-115	25.0 25.0	22A56722q 22A56733q	< 0.5 < 0.5	26.0 26.3	104 105	75-125 75-125	26.0 26.3	27.2 26.7	109 107	4.5 1.5	10 10	94 100	90-110 90-110	< 0.5 < 0.5
Arsenic ug/L	25.0 25.0	98 98	85-115 85-115	25.0 25.0	22A56722q 22A56733q	< 0.5 < 0.5	26.0 26.5	104 106	75-125 75-125	26.0 26.5	26.4 26.4	106 106	1.5 0.4	10 10	98 96	90-110 90-110	< 0.5 < 0.5
Barium mg/L	1.000 1.000 1.000 1.000	100 100 102 100	85-115 85-115 85-115 85-115 85-115	1.00 1.00 1.00 1.00	22A56725q 22A56724q a56564qc 22A56714q	0.092 0.111 0.089 0.056	1.100 1.130 1.100 1.060	101 102 101 100	75-125 75-125 75-125 75-125	1.100 1.130 1.100 1.060	1.110 1.140 1.100 1.070	102 103 101 101	0.9 0.9 0.0 0.9	10 10 10 10	101 100 100 -	90-110 90-110 90-110 -	< 0.005 < 0.005 < 0.005 < 0.005
Beryllium ug/L	2.50 2.50	112 112	85-115 85-115	2.50 2.50	22-A56722 22-A56733	< 0.05 < 0.05	2.45 2.44	98 98	75-125 75-125	2.45 2.44	2.48 2.47	99 99	1.2 1.2	10 10	100 103	90-110 90-110	< 0.05 < 0.05
Cadmium ug/L	5.00 5.00	99 99	85-115 85-115	5.00 5.00	22A56722q 22A56733q	<0.1 <0.1	4.95 5.07	99 101	75-125 75-125	4.95 5.07	5.11 5.08	102 102	3.2 0.2	10 10	94 100	90-110 90-110	< 0.1 < 0.1
Chromium ug/L	25.0 25.0	100 100	85-115 85-115	25.0 25.0	22A56722q 22A56733q	< 0.5 1.38	23.6 25.3	94 96	75-125 75-125	23.6 25.3	24.1 25.1	96 95	2.1 0.8	10 10	102 100	90-110 90-110	< 0.5 < 0.5
Cobalt mg/L	1.000 1.000 1.000 1.000	102 103 104 102	85-115 85-115 85-115 85-115 85-115	1.00 1.00 1.00 1.00	22A56725q 22A56724q a56564qc 22A56714q	< 0.005 < 0.005 < 0.005 < 0.005	0.989 0.991 0.995 0.999	99 99 100 100	75-125 75-125 75-125 75-125	0.989 0.991 0.995 0.999	0.998 0.996 1.000 1.000	100 100 100 100	0.9 0.5 0.5 0.1	10 10 10 10	102 103 102 -	90-110 90-110 90-110 -	< 0.005 < 0.005 < 0.005 < 0.005
Fluoride mg/L	-	-	-	1.00 1.00	22-A56728 22-A56733	0.250 0.200	1.32 1.26	107 106	75-125 75-125	1.32 1.26	1.31 1.27	106 107	0.8 0.8	10 10	103 103	90-110 90-110	< 0.020 < 0.020
Lead ug/L	25.0 25.0	99 99	85-115 85-115	25.0 25.0	22A56722q 22A56733q	< 0.5 0.55	25.4 26.1	102 102	75-125 75-125	1	25.8 26.7	103 105	1.6 2.3	10 10	102 100	90-110 90-110	< 0.5 < 0.5
Lithium mg/L	1.000 1.000 1.000	98 98 98	85-115 85-115 85-115	1.00 1.00 1.00	22-A56731 22-A56724 22-A56714qq	0.026 0.021 0.033	1.000 1.000 1.030	97 98 100	75-125 75-125 75-125	1.000	1.020 1.010 1.030	99 99 100	2.0 1.0 0.0	10 10 10	99 98 99	90-110 90-110 90-110	

MVTL

**Quality Control Report** 

### MINNESOTA VALLEY TESTING LABORATORIES, INC.

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.mvtl.com

MEMBER ACIL

#### Page: 2 of 2

Lab IDs: 22-A56722 to 22-A	\$56733	Pro	oject: HC	OT LAK	E CCR		Work (	Order: 2	02231-05	47							
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
Mercury ug/L	- 2	-	-	0.10 0.10	22-A56731 22-A56789	0.015 < 0.005	0.114 0.110	99 110	63-111 63-111	0.114 0.110	0.112 0.108	97 108	1.8 1.8	18 18	95 99	76-113 76-113	< 0.005 < 0.005
Molybdenum ug/L	25.0 25.0	97 97	85-115 85-115	25.0 25.0	22A56722q 22A56733q	1.74 2.54	26.1 27.8	97 101	75-125 75-125	26.1 27.8	26.9 28.2	101 103	3.0 1.4	10 10	92 100	90-110 90-110	< 0.5 < 0.5
Selenium ug/L	25.0 25.0	104 104	85-115 85-115	and the second second	22A56722q 22A56733q	3.53 1.31	31.0 28.7	110 110	75-125 75-125	31.0 28.7	31.6 27.8	112 106	1.9 3.2	10 10	102 100	90-110 90-110	< 0.5 < 0.5
Thallium ug/L	5.00 5.00	98 98	85-115 85-115		22A56722q 22A56733q	< 0.1 < 0.1	5.11 5.22	102 104	75-125 75-125	5.11 5.22	5.30 5.29	106 106	3.7 1.3	10 10	102 100	90-110 90-110	< 0.1 < 0.1

Approved by: \_\_\_\_

Phil

### Minnesota Valley Testing Laboratories

1126 North Front Street	New Ulm, MN 56003
Phone: 800 782 3557	Fax: 507 359 2890
Field Service Chain of	Custody Record

	in in didd	,
	This is an exact copy of	
	the original document	
1	By AR Date 17NOV22	
	pages 1-17	

Project Name:       Otter Tail Power Co.       Project Type:       CCR       Name of Gampions:       Arr, Frig, for         Hoot Lake Plant       Carbon Copy:       BarrDM@barr.com         Attn:       Paul Vukonich       Attn:       Quote Number:       Quote Number:         Address:       P.O. Box 496       Address:       Mork Order Number:       31-547	
Report To:       Otter Tail Power Company       Carbon Copy:       BarrDM@barr.com         Attn:       Paul Vukonich       Attn:       Quote Number:         Address:       P.O. Box 496       Address:       Vork Order Number:	
Attn:     Paul Vukonich     Attn:     Quote Number:       Address:     P.O. Box 496     Address:     Work Order Number:	
Address: P.O. Box 496 Address: Voir Order Numbers:	
Lab Numbers:	
Fergus Falls, MN 56058-0490	
Phone: 218-739-8349 Bottle Type Analysis	
Sample Information Bottle Type Analysis	
Phone:     218-739-8349       Bottle Type     Analysis       Sample Information     Bottle Type       Quadratic of the second seco	/
Lab Num Lab Num Sample I Unique Sample ID ate Date Date Date Soo ANO Soo ANO Soo ANO Soo ANO Soo ANO Soo ANO Soo ANO Analysis Require	[
34 - S2A 17 Nov22 Sminple GW N N See Attatched	
ADG BA - SJAR	
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25 TSTOR	
25 STOR 1 1 N 1 1 N 1	1
26     S13     1137     600     1     1     N     1       27     S14R     1215     GW     1     1     N     1       75     S16     1125     GW     1     1     N     1	
28 - 56 1137 GW 1 1 N 4	
26 TM1 13(0 GW 1 1 N 3	
Comments: CCR wells	
1 st was	
	-
Samples Balingwiched By: Mall	
Samples Relinquisited by. The second se	
	4
Samples Reiniquished into.	
Samples Relinquished By. Temp: Date: Time: Temp:	
Date: Seal Number(s) - If Used	-
Delivery:     Semplers     Other:     Sear Number(s) in coord       Transport:     Ambient     Ice     Other:     Seals Intact?     Yes     No	I

#### Minnesota Valley Testing Laboratories 1126 North Front Street New Ulm, MN 56003

1126 North Front Street	New Ulm, MN 560
Phone: 800 782 3557	Fax: 507 359 2890
Field Service Chain of	f Custody Record

Project Na	me:	Otter Tail Powe	r Co.	Project	Type:	CCR			Na	ame	of S	amp	olers	<u>;;</u>	21	h' I	mş	, DS	>		
		Hoot Lake Plan	t						_												
Report To:	Otter Tail Pov			Carbon (	Copy:	BarrDM@barr	.com	1			N I	hor									
<u>Attn:</u>	Paul Vukonic			<u>Attn:</u>						uote			-								
Address:	P.O. Box 496			Address	<u>;;</u>					ork (			impe	<u>er:</u>							
		MN 56038-0496								<u>ıb Nı</u>	ambe	ers:									
Phone:	218-739-8349	and the second		<u> </u>							Bott	1. 7	<u></u>							Analysi	
	Sa	ample Informa	tion	<i>_</i>				<del>, ,</del>		-7			7 7	; 7	T			T		-mary 51	<u> </u>
Lab Number	Sample ID	Unique Station ID	Date	Time	Sample Type	Sample Location	Voc Set	1000 none	1000 HNO3 500	Filters 1	500 HNDS		500H2SOA	1000 HNO	500 NaOH	Other: 150 Hac	Other 450 12504	Analysis Required	Dette		
	1	1701	T		GW	105	1-	1	1					ð			1	See At	tatche	ed	
32 -	<sup>•</sup> M-3	· · · · · · · · · · · · · · · · · · ·	17 NOUZ	1330						-							1	0007.0			
33	S-3		<u> </u>	1327	GW			1	1	N				X			ľ				
				<del> </del>	<u> </u>												T				
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Comments	CCR wells	Rush	R. 22	6/22	8	2250 mL	Pla	stie	- Pa	.ce/	)				4						
			$\supset$				1						An		f.	$\frac{1}{1}$	$\overline{}$				
Samples R	elinquished By	alle -				F			Rec			l	<u>//.</u>	_Ĺ		di			1 2	0	
	12NOUZZ		Time: 180			1.374.75	Dat	:e: )	1 NI	012	2		Tim	ie:	181	80		Temp:	1. 3	L	
Samples R	elinquished int	0:	Fridge	Log in C		Other:	-r														
	elinquished By						Sar	nples	s Rec	eive	d By:	:									
Date:		<u>~</u>	Time:		Temp:		Dat						Tim	ie:				Temp:			
Delivery:		Samplers	Other:						mber		lf Us										
Transport:		Ambient	∕ice)		Other:		Sea	als In	tact?			Yes	5		No				<del></del>		

New 10-24-22 Sampling on 11-12-22

## Hoot Lake Site CCR Sampling - 2022 Assessment

Well	Parameter List	Well Depth	Diameter (Inches)	Well Elevation	Sample Equipment	Dedicated?	Pump Rate (gal/minute)	Goes Dry?
S2A	CCR 4	79.63	2	1273.776	Bladder	Yes	< 0.25	No
S3AR	CCR 4	78.42	2	1271.562	Bladder	Yes	< 0.25	No
S51	CCR 4	55.6	2	1286.904	Bladder	Yes	< 0.25	No
S52	CCR 4	88.3	2	1286.623	Bladder	Yes	< 0.25	No
\$10R	CCR 4	57.00	2	1281.47	Bladder	Yes	< 0.25	No
S101	CCR 4	90.19	2	1296.423	Bladder	Yes	< 0.25	No
S13	CCR 4	70.86	2	1280.61	Bladder	Yes	< 0.25	Yes
	1	L						
S6 Ø	CCR 4	58.9	2	1263.63	Grundfos	No	0.15	No
S11 0	CCR 4	75.97	2	1279.076	Grundfos	No	0.25	No
M1	CCR 4	115	4	1282.06	N/A	Yes	N/A	N/A
	CCR 4	74.00	2	1273.496	Grundfos	No	N/A	No
S1 0		110.00	4	1275.826	N/A	Yes	N/A	N/A
M-3 0	CCR 4 CCR 4	22.67	2	1276.666	Whale	No	0.25	No

whale - good

### Note: CCR samples must be on their own COC.

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

CCR-use whale pump (Nor Bailers)

1000 NONR 250 NONR 500 HMDZ

### 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 + 228 250 mL \$10700	

### Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment	Site:	Otter Tail Pow	er Co./ Hoot Lake
Sampling Personnel:	Facility ID:	SW-211	
ZH	Date:	Nou22	
	Unique Station II	- )	
	Sample ID:	S-3A-R	
Well Condition			and a star a
Well Locked? Kes No	Protective Posts		No
Well Labeled? Kes No Casing Straight? Kes No	State ID Tag? Grout Seal Intac	(Yes t? Yes	No
	Glout Seal Mac	<u>ir 165 (</u>	NO
Repairs Necessary: Well Information			
Well Depth: スタイク	Well Casing Ele	vation:	1271.562
Constructed Depth: 78.42	Static Water Ele		12.862
Casing Diameter: 2"	Previous Static:		
Water Level Before Purge: 68.70	Water Level After	er Sample:	70.79
Well Volume: 1.58 Gallons	Measurement M		
Sampling Information			
Weather Conditions: Temp: 22	Wind: Nいっぽ	Sky: Clay	Dr.
Sampling Method: Grundfos Bladder SS	Disp. Bailer Whale Gra	ab Other:	
Dedicated Equipment: Ves No	Pumping Rate:	0,25	gpm
Well Purged Dry? Yes (No)	Time Pump Beg	gan: パろいつ	am / pm
Time Purged Dry?	Time of Samplin	ng: <u>\333</u>	am / 🕅
Duplicate Sample? Yes 😡 ID: 🦛	Sample EH:	18.0	
Sample Appearance: General: Cleur	Color: Nore Phase:	NONL	Odor: Sy Hyrona
7 Specific Temp	Turbidity Ga	allons SEQ	
Time pH Cond. <sup>o</sup> C		emoved #	Comments:
1319 7,12 989 8,2	7 1,22 0,0	1.75 1	
1324 7.07 985 8.30		3.5 2	
1333 7.09 983 8.34		5.25 3	
		4	
		5	
Stabilized? Kes No	Amount Water Removed:	5,25	Gallons
Staniizen ( Yes No			

New Ulm, MN 56073

Groundwater Assessment		Site:	Otter Ta	ail Powe	r Co./ Hoot Lake
Sampling Personnel:		Facility ID:	SW-21	1	
<u> </u>		Date: /	NOV2	22	
· · · · · · · · · · · · · · · · · · ·		Unique Station	ID: 814830	i	
		Sample ID:	S-51		
Well Condition         Well Locked?       Ves       No         Well Labeled?       Yes       No         Casing Straight?       Yes       No         Repairs Necessary:       Ves       No		Protective Posts State ID Tag? Grout Seal Intag	(Yes)	<u> </u>	No No No
Well Information	<u></u>				
Well Depth: SS.60		Well Casing Ele	evation:		1286.904
Constructed Depth: 55.60		Static Water El	evation:	6	37.95
Casing Diameter: 2"		Previous Static	• • • • • • • • • • • • • • • • • • • •		
Water Level Before Purge: 48, 95		Water Level Af	ter Sample:	48	.75
Well Volume: 1.0 G Gallons		Measurement N	Method:	Elec. W	L Steel Tape
Sampling Information				. /	
Weather Conditions: Temp: 23 V	Vind: 🦯	NW-20	Sky:	Cld	4
	Disp. Bailer	Whale G	rab Other:		, 
Dedicated Equipment: (Yes) No		Pumping Rate:			gpm
Well Purged Dry? Yes No		Time Pump Be		148	am pm
Time Purged Dry?		Time of Sampli		1201	<u>)</u> am / (pm)
Duplicate Sample? Yes (No) ID:		Sample EH:	-18.7	/	
Sample Appearance: General: Class (	Color: <u></u> പം	re Phase:	64-Spa		Odor: Str Firens
( $\dot{\mu}$ ) Specific Temp		Turbidity G	64-Spci Ballons Removed	SEQ #	Odor: <u>Sinfine</u> Comments:
(H)     Specific     Temp       Time     pH     Cond. <sup>o</sup> C     I		Turbidity G	Gallons	1	
$\begin{array}{c c} (H) & Specific & Temp \\ \hline Time & pH & Cond. & ^{\circ}C & I \\ \hline 1152 & 7.38 & 665 & 7.28 \end{array}$	D. O. mg/l 3. a l	Turbidity G NTU F	Gallons	#	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D. O. mg/l 3. o 1 3. 21	Turbidity G	Gallons Removed	#	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	D. O. mg/l 3. a l	Turbidity NTU 19.1 23.4	Gallons Removed ( 2	# 1 2 3	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D. O. mg/l 3. o 1 3. 21	Turbidity NTU 19.1 23.4	Gallons Removed ( 2	# 1 2	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D. O. mg/l 3. a 1 3. 21 3. 21	Turbidity NTU 19.1 23.4	Gallons Removed ( 2	# 1 2 3 4	

Both

### Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessment	Site: Otter Tail Power Co./ Hoot Lake
Sampling Personnel:	Facility ID: SW-211
mś	Date: 17NOV22
	Unique Station ID:
	Sample ID: S-52
Well Condition	
Well Locked? (Tes No	Protective Posts? (res) No
Well Labeled? Veg No	State ID Tag? Ves No
Casing Straight? (Yes No	Grout Seal Intact? Yes No
Repairs Necessary:	
Well Information	
Well Depth: SS. 30	Well Casing Elevation: 1286.623
Constructed Depth: 88.30	Static Water Elevation: 1215182
Casing Diameter: 2"	Previous Static:
Water Level Before Purge: 70, 80	Water Level After Sample: うし・91
Well Volume: <u>3.85</u> Gallons	Measurement Method: Elec. WEI Steel Tape
Sampling Information	· · · · · · · · · · · · · · · · · · ·
Weather Conditions: Temp: 23 Wind:	NW-23 sky: cldy
Sampling Method: Grundfos Bladder SSP Disp. Bai	
Dedicated Equipment: (Yes) No	Pumping Rate: 5 gpm
Well Purged Dry? Yes No	Time Pump Began: 1209 am / mi
Time Purged Dry?	Time of Sampling: (245 am (pm)
Duplicate Sample? Yes No ID:	Sample EH: ー つう デ
Sample Appearance: General: Close Color:	New Phase: L SP ( Odor: Nor
Specific Temp	
Time pH Cond. <sup>O</sup> C D. O.	Turbidity Gallons SEQ mg/L NTU Removed # Comments:
	120.0
1245 7.20 694 7.60 2.0	38 2.7 9 3
	4
	5
Stabilized? Yes No Amour	it Water Removed: 7 Gallons

130+4 PFA X 3 035 041 039

New Ulm, MN 56073

Groundwater Asse	essment			Site:	Ottertai	I Power	Co./Hoot Lake
Sampling Personnel:				Facility ID:	SW-21	1	
	JH			Date: 17	Nov 22		
				Unique Statio	n ID: 806341		
				Sample ID:	S-10R		
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:	80.42			Well Casing	Elevation:		1281.47
Constructed Depth:	57.00			Static Water	Elevation:	ľ	202.38
Casing Diameter:	2"			Previous Sta	tic:	P	······
Water Level Before Pu	irge: 72,	09		Water Level	After Sample:	Be	low pump
Well Volume: )	.39	Gallons	•	Measuremen	t Method:	Elec. V	All Steel Tape
Sampling Information	on			~			A
Weather Conditions:	Temp: 20		Wind: N	12-18	Sky:	Clou	idy
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		J
Dedicated Equipment:		<b>_</b>		Pumping Ra			gpm
Well Purged Dry?				Time Pump		<u>x; 40</u>	am / (pm)
Time Purged Dry?				Time of Sam		21.58	am / pm
Duplicate Sample?		<u>_</u> ID:		Sample EH:	29.6		
Sample Appearance:	General: 3.	croudy	Color: Nor	v∡ Phase	: Lf Jedin	onion	Odor: NOVR
ム Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1246 7.04	868	8.42	1.90	19.2	1.5	1	
1252 7,06		8.48	1.81	19,7	3.0	2	
1258 7.06		8,49	1.5>	19,07	4,5	3	
100 1.00	010					4	·
						5	
Stabilized?	 No	<u> </u>	Amount Wa	 ater Removed	: 4.5	1~	Gallons

Comments:

049

New Ulm, MN 56073

Groundwater Assessment			Site:	Otterta	ail Powe	r Co./Hoot Lake
Sampling Personnel:			Facility ID:	SW-2	11	
ZH		,	Date:	7 Nou	22	
			Unique Statio	on ID: 63281		
			Sample ID:	S-13		
Well Condition         Well Locked?       Yes       No         Well Labeled?       Yes       No         Casing Straight?       Yes       No         Repairs Necessary:       Yes       No			Protective Po State ID Tag Grout Seal Ir	? Yes		No No No
Well Information						
Well Depth: 90,27	·		Well Casing	Elevation:		1296.423
Constructed Depth: 90.19			Static Water	Elevation:	13	0.873
Casing Diameter: 2"			Previous Sta	atic:		
Water Level Before Purge: 85	5,55		Water Level	After Sample	: 8.	5.7Le
Well Volume: ひっし	Gallons	_	Measureme	nt Method:	Elec. V	VLI Steel Tape
Sampling Information			4			
Weather Conditions: Temp: Z	ζ	Wind: NL	0-17	Sky:	SNO	J
Sampling Method: Grundfos	Bladder SS/T	) Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: (Yes) No			Pumping Ra	ate: ,25		gpm
Well Purged Dry? Yes No			Time Pump		<u>, 25</u>	(am)/ pm
Time Purged Dry?			Time of San	npling: <u>\}</u> ;	ל <u>ז</u>	(am) / pm
Duplicate Sample? Yes (No	<u>D:</u>		Sample EH:	15414		
Sample Appearance: General:	Clear	Color: NO	1/2 Phase	e: NONC		Odor: NONE
		•			1	
거 Specific Time pH Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
Time pH Cond.				1		Comments:
Time         pH         Cond.           1129         7.34         895	°C 8,5(g	mg/L 4,フツ	NTU 7.9	Removed	#	Comments:
Time         pH         Cond.           1129         7.34         895           1133         7.32         895	°C 8,5(e 8,5]	mg/L 4,フツ 4.70	NTU 7,9 7, Los	Removed	#1	Comments:
Time         pH         Cond.           1129         7.34         895           1133         7.32         895	°C 8,5(g	mg/L 4,フツ	NTU 7.9	Removed	# 1 2	Comments:
Time         pH         Cond.           1129         7.34         895           1133         7.32         895	°C 8,5(e 8,5]	mg/L 4,フツ 4.70	NTU 7,9 7, Los	Removed	# 1 2 3	Comments:
Time         pH         Cond.           1129         7.34         895           1133         7.32         895	°C 8,5(e 8,5]	mg/L 4,フツ 4.70 4.56	NTU 7,9 7, Los	Removed	# 1 2 3 4	Comments:

Both 051

New Ulm, MN 56073

Groundwater Assessment			Site:	Otterta	il Powe	r Co./Hoot Lake
Sampling Personnel:			Facility ID:	SW-21	1	
IH			Date: 17	Nov 22		
			Unique Statio	on ID: 80634	2	
			Sample ID:	S-14R		
Well ConditionWell Locked?YesNoWell Labeled?YesNoCasing Straight?YesNoRepairs Necessary:Ket StateKet State			Protective Po State ID Tag Grout Seal In	? Yes		No No No
Well Information						
Well Depth: 87.1			Well Casing	Elevation:		1280.61
Constructed Depth: 70.86			Static Water	Elevation:	12	00.70
Casing Diameter: 2"			Previous Sta	atic:	~	······
Water Level Before Purge: 7 9	.91		Water Level	After Sample	: 8	1.01
Well Volume: 1,17	Gallons	_	Measureme	nt Method:	Elec. N	VLI Steel Tape
Sampling Information						1
Weather Conditions: Temp: 2	<u>z</u>	Wind: 🕂 V	2-17	Sky:	Cloy	dy
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment: Yes No			Pumping Ra	ite: 7), 55	)	gpm
Well Purged Dry? Yes No	2		Time Pump	Began: )	2:00	
Time Purged Dry?			Time of San		<u>2:15</u>	am /(pm)
Duplicate Sample? Yes No.	∑ID:	<u> </u>	Sample EH:	47.3		
Sample Appearance: General:	Clear,	Color: NC	1/2 Phase	e: NOMQ		Odor: NOM
SSpecificTimepHCond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
	7:38	1.02	0.0	1.25	1	
1205 7.04 848	1 100				1	
1205 7.04 848		0.85	0.0	2.50	2	
1210 7.04 899	7.91	0.85	0.0	2,50	2	
1210 7.04 899		0.85	- 0.0 D.O		3	
1210 7.04 899	7.91				3 4	
1210 7.04 899	7.91	0,82		3,75	3	Gallons

Both

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Groundwater Assessment	3	Site:	Otterta	ail Powe	r Co./Hoot Lake
Sampling Personnel:		Facility ID:	SW-2	11	
m S		Date: 17ル	0022		
	-	Unique Statio	n ID: 44435	3	
	-	Sample ID:	S-6		
Well Condition       Yes       No         Well Locked?       Yes       No         Well Labeled?       Yes       No         Casing Straight?       Yes       No         Repairs Necessary:       Ket       Ket	-	Protective Po State ID Tag Grout Seal In	? Yes	(	No No No
Well Information					
Well Depth: 58.59		Well Casing	Elevation:		1263.63
Constructed Depth: 58.90		Static Water	Elevation:		
Casing Diameter: 2"		Previous Sta	tic:	1210	
Water Level Before Purge: 53.50		Water Level	After Sample		53-50
Well Volume: ©.83 Gallons		Measuremen	t Method:	Elec. V	Nu Steel Tape
Sampling Information					.1
Weather Conditions: Temp: 23		iwaci	Sky:	$C^{(1)}$	ay
Sampling Method: Grundfos Bladder SS/T	Disp. Bailer 🤇	Whale	Grab Other:		J
Dedicated Equipment: Yes (No)		Pumping Ra		(	gpm
Well Purged Dry? Yes (Nd)		Time Pump		125	(am) / pm
Time Purged Dry?		Time of Sam		1137	am / pm
Duplicate Sample? Yes (No) ID:	-	Sample EH:	262.3		
Sample Appearance: General: (Levy	Color: No	Phase Phase	: une		Odor: worl
Time pH Cond. <sup>O</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1129 7.01 629 8.85	2.63	7.6	1	1	
1133 704 629 885	2.59	6.5	S	2	
1137 7.08 629 8.84	2.58	5.6	3	3	
				4	
				5	
Stabilized? Yes No	Amount W/2	ter Removed	. 3		Gallons
Stabilized 165 / NU	7 anount ava		•		

### Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

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Groundwater Asse	essment			Site:	Otterta	il Powe	r Co./Hoot Lake
Sampling Personnel:				Facility ID:	SW-21	1	
	25			Date:	17A	6122	
				Unique Static	on ID: 63280	9	
				Sample ID:	S-11		
Well Condition					.~~		
Well Locked?	Yes No			Protective Po			No
Well Labeled?	Yes No			State ID Tag Grout Seal In			No No
Casing Straight?	Yés) No			Grout Gear III			
Repairs Necessary: Well Information							
Well Depth:	75.91			Well Casing	Elevation:		1279.076
Constructed Depth:	75.97			Static Water			1715.36
Casing Diameter:	2"			Previous Sta		1	216,32
Water Level Before Pu	~ ~	,72_		Water Level	After Sample	•	63.72
Well Volume:	199	Gallons		Measuremer		Elec. V	VLI Steel Tape
Sampling Information	<u></u> on		•				- i
Weather Conditions:		21°	Wind: 🕖	NUO 13	Sky:	Me	Hy Claudy
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated Equipment:	Yes (No)			Pumping Ra	te: <i>()</i> .	<u>25</u>	gpm
Well Purged Dry?	Yes (No)			Time Pump	Began:	1147	(am)/ pm
Time Purged Dry?		_		Time of Sam	npling: 1	211	and pm
Duplicate Sample?	Yes (No)	ID:		Sample EH:	2	3.6	
Sample Appearance:	General: S	-1 Clarch	Color: Bre	iy Phase	e: Ut Sed	•	Odor: Non
B	Specific	Temp	D. O.	Turbidity	Gallons	SEQ	
Time pH	Cond.	°C	mg/L	NTU	Removed	#	Comments:
1155 7.41	940	6.75	4.90	74.8	5	1	
1203 7.40	940	6.76	4.91	74.1	4	2	
1211 7.41	942	6.76	4.93	73.4	6	3	
						4	
						5	
Chabilized 2 Mag	No	1		ater Removed	: 6		Gallons
Stabilized? Ves					• • • •		
Comments:							

PFA Field Blank # 046

Both 047

New Ulm, MN 56073

Groundwater Assessment			Site:	Otterta	il Powe	r Co./Hoot Lake
Sampling Personnel:			Facility ID:	SW-21	1	
<u>D</u> S	_		Date:		ML	<u>~</u>
	_		Unique Static	on ID: 115737	7	
	-		Sample ID:	M-1		
Well ConditionWell Locked?YesWell Labeled?YesWell Labeled?YesCasing Straight?YesRepairs Necessary:	_		Protective Po State ID Tag Grout Seal In	? Yes	(	No No No
Well Information	· ·					
Well Depth: 102.80			Well Casing	Elevation:		1282.026
Constructed Depth: 115.00	_ ·		Static Water	Elevation:	/	1219.90
Casing Diameter: 4"			Previous Sta	tic:	Ĵ	221.01
Water Level Before Purge: 67.13	3		Water Level	After Sample:		8/.19
Well Volume: Z6,58	Gallons		Measuremer	nt Method:	Elec. V	VLI) Steel Tape
Sampling Information	<b>-</b> 16		14100		11	Hy Clark
Weather Conditions: Temp:	21°	Wind: (八	1NW018	Sky:		<u> </u>
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	Whale (	<u> </u>	subme	
Dedicated Equipment: (Yes) No			Pumping Ra			gpm
Well Purged Dry? Yes No			Time Pump	. ~	310	<u>am / pm</u>
Time Purged Dry?	<b></b>	فتبد	Time of Sam			am /(pm)
Duplicate Sample? Yes No	_ID:		Sample EH:		<u> 8.6</u>	Ν
Sample Appearance: General: (	<u>landy</u>	Color: /c/	n Phase	e: A Scel		Odor: NON
Specific Time pH Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1310 7.61 1071	6.62	5.49	86.8		1	
					2	
· · · · · · · · · · · · · · · · · · ·					3	
					4	
		-			5	
Stabilized? Yes No		Amount W	ater Removed	<u>.                                    </u>	1-	Gallons

Comments:

Bath

New Ulm, MN 56073

Groundwater Assessment			Site:	Otterta	ail Powe	er Co./Hoot Lake
Sampling Personnel:			Facility ID:	SW-21	1	
ms			Date: 17/	VOUZZ		
			Unique Static	on ID: 44435	1	
			Sample ID:	S-1		
Well Condition Well Locked?YesNoWell Labeled?YesNoCasing Straight?YesNoRepairs Necessary:YesNo			Protective Po State ID Tag Grout Seal In	? Yes	(	No No No
Well Information			Well Casing	Elevation:		1273.496
Constructed Depth: 74.00			Static Water	Elevation:	1210	.64
Casing Diameter: 2"	_		Previous Sta	tic:		
Water Level Before Purge:	2.85		Water Level	After Sample	: 68	<u>x. 80</u>
Well Volume: 1.78	Gallons	_	Measuremen	nt Method:	Elec. V	NI Steel Tape
Sampling Information					•	
Weather Conditions: Temp:	રર	Wind:	NW-20	Sky:	cide	1
Sampling Method: Grundfos	Bladder SS/T	Disp. Bailer	(Whale)	Grab Other:		f
Dedicated Equipment: Yes (No	<u>)                                    </u>		Pumping Rat	te: ,25		gpm
Well Purged Dry? (Yes) No			Time Pump I	Began:	1922	am / pm
Time Purged Dry? 302			Time of Sam		1307	7 am /(pm
Duplicate Sample? Yes No	ID:		Sample EH:	39.1		· · · · · · · · · · · · · · · · · · ·
Sample Appearance: General:	e lay	Color: ten	Phase	: L+ Sed		Odor: Sylfevens
(1)SpecificTimepHCond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1302 7.30 540	6,90	11.01	203.3	1.7	1	
1307 7.36 579	6.47	10.84	188.3		2	Report.
					3	-
					4	
	······································				5	·
Stabilized? Yes No		Amount W	ater Removed:	1.7		Gallons
Comments:						

036 Bath

### Minnesota Valley Testing Laboratories, Inc.

New Ulm, MN 56073

507 354 8517

Groundwater Assessmen	t	Site:	Otter Tail Power Co./ Hoot Lake
Sampling Personnel:		Facility ID:	SW-211
ms		Date: 17.0002	2
Market	<u></u>	Unique Station ID:	151505
····		Sample ID:	M-3
Well Labeled? Yes N	م اه اه	Protective Posts? State ID Tag? Grout Seal Intact?	Yes No Yes No Yes No
Well Information			
Well Depth:	0	Well Casing Eleva	tion: 1275.826
Constructed Depth: 110.00		Static Water Eleva	A
Casing Diameter: 4"		Previous Static:	
Water Level Before Purge:	VA	Water Level After	Sample: <i>NA</i>
Well Volume:	Gallons	Measurement Met	hod: Elec. WLD Steel Tape
Sampling Information Weather Conditions: Temp:	Q3 Wind:	NW-23	sky: cldc
Sampling Method: Grundfos	Bladder SS/T Disp. Baile	r Whale Grab	Other: Subwers blo
Dedicated Equipment: Yes I	No	Pumping Rate:	<u>५२</u> ० gpm
Well Purged Dry? -Yes-	No	Time Pump Begar	· • ·
Time Purged Dry?		Time of Sampling:	
Duplicate Sample? Yes		Sample EH:	-163.7
Sample Appearance: Genera	al: Clear Color:	Vare Phase:	Val Odor: Nery
Specifi Time pH Cond.	<sup>0</sup> C D. O.	<u> </u>	ons SEQ loved # Comments:
1330 7.97 62	14 7.5Z 2.5	5 5.4	<u> </u>
	•	,	2
			3
			4
			5
Stabilized? Yes (No)	Amount	Water Removed:	Gallons
Comments:	Water Level Only-		040

Both

New Ulm, MN 56073

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Groundwater Asse	essment			Site:	Otterta	il Powe	r Co./Hoot Lake
Sampling Personnel:				Facility ID:	SW-21	1	
	ins			Date: 7/	10022		
				Unique Statio	n ID: 432728	3	
		-		Sample ID:	S-3		
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 Nờ No
Well Information							
Well Depth:	22.59	_		Well Casing	Elevation:		1276.666
Constructed Depth:	22.67	_		Static Water	Elevation:	1264	. 36
Casing Diameter:	2"	_		Previous Sta	tic:		
Water Level Before Pu	urge: <u>1</u> 2	30		Water Level	After Sample		J. 45
Well Volume:	1.67	Gallons	_	Measuremen	t Method:	Elec.	WIT Steel Tape
Sampling Informati	on				~~·	~ 1	1
Weather Conditions:	Temp:	<u> </u>	Wind:	NWS	S Sky:	Ch	·y
Sampling Method:	Grundfos	Bladder SS/T	Disp. Bailer	(Whale)	Grab Other:		
Dedicated Equipment:				Pumping Ra	te:		gpm
Well Purged Dry?	Yes No	-		Time Pump	Began:	1315	am / pm
Time Purged Dry?	1322			Time of Sam	pling:	1327	am (kpm)
Duplicate Sample?	Yes No	_ID:		Sample EH:	60.7		
Sample Appearance:	General:	51. cldy	Color: 4a	Y Phase	: Ltsod		Odor: Nove
Time pH	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
1322 7.29	752	9,40	2.59	55,	1.75	1	
1327 7.28	735	9.67	2.71	19.6		2	recharge
						3	
						4	
						5	
Stabilized? Yes (	No		Amount W	ater Removed	: [, 7		Gallons

Comments:

CCR only

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Groundw	ater Asse	essment			Site:	Otterta	ail Powe	er Co./Hoot Lake
Sampling P	ersonnel:				Facility ID:	SW-2	11	
	•••	JH			Date: 1	1 Nov 22	3	
					Unique Stati	on ID: 44435	0	
	<u>,</u> ,				Sample ID:	S-2A		
Well Cond Well Locked Well Labele Casing Stra Repairs Ned	d? ed? ight?	Yes No Ves No			Protective P State ID Tag			No No No
Well Infor	mation			<u>, , , , , , , , , , , , , , , , , , , </u>				
Well Depth:		79.62			Well Casing	Elevation:		1273.776
Constructed	Depth:	79.63			Static Water	r Elevation:		96.036
Casing Diar	meter:	2"			Previous Sta	atic:	<del></del> ,	
Water Leve	l Before Pu	rge: フフ	.74		Water Level	After Sample	:	
Well Volum	ie: C	0,30	Gallons		Measureme	nt Method:	Elec.	WLI) Steel Tape
Sampling Weather Co		on Temp: ここ	7	Wind: <i>N</i> և	ノーノフ	Sky:	Cloy	d 5
Sampling M	lethod:	Grundfos	Bladder SS/T	Disp. Bailer	Whale	Grab Other:		
Dedicated E	Equipment:	Ces No	. Λ	1-A	Pumping Ra	ate:		gpm
Well Purge	d Dry?	Yes No	· 4	,,,,	· · · · · · · · · · · · · · · · · · ·			am / pm
Time Purge	ed Dry?		- )				am / pm	
Duplicate S	ample?	Yes No	ID:		Sample EH:			
Sample Ap	pearance:	General:		Color:	Phase: Odor:		Odor:	
Time	рН	Specific Cond.	Temp <sup>o</sup> C	D. O. mg/L	Turbidity NTU	Gallons Removed	SEQ #	Comments:
				<u>\</u>			1	
	-						2	
							3	
							4	
							5	
Stabilized?	Yes	No		Amount Wa	ater Removed	l:		Gallons
Comment	s:							
Exceptions	to Protocol		No 5, Insn 11:50		olyme	40 5 m	ipl	

### Appendix B

**Groundwater Flow Calculations** 

#### Hoot Lake Ash Disposal Facility Groundwater Velocity Calculation

Sampling Date 5/3/2022

Upgradient (S-52)

opgraalent (0 02)		
Top of Casing Elevation	1286.62 ft amsl	Groundwater Monitoring System Report (Barr, 2016)
Depth to Water	70.45 ft below TC	OC
Water Level Elevation	1216.17 ft amsl	

Downgradient (S-2A)

Top of Casing Elevation	1272.90 ft amsl	Groundwater Monitoring System Report (Barr, 2016)
Depth to Water	75.45 ft below TOC	
Water Level Elevation	1197.45 ft amsl	

horizontal hydraulic	2.30E-03	cm/s	Groundwater Monitoring System Report (Barr, 2016)
-			Groundwater Monitoring System Report (Dan, 2010)
conductivity (Kh)	6.52E+00	tt/day	
porosity (n)	0.25		Groundwater Monitoring System Report (Barr, 2016)
horizontal distance	1131	ft	
WL elevation difference	18.72	ft	
gradient (i)	0.017	ft/ft	
linear velocity (V)	0.4316	ft/day	
V	157.7	ft/yr	

#### Hoot Lake Ash Disposal Facility Groundwater Velocity Calculation

Sampling Date 6/23/2022

Upgradient (S-52)

opgraaione (o oz)			
Top of Casing Elevation	1286.62 ft ams	sl Groundwater Monitoring System Report (Barr, 20	016)
Depth to Water	70.16 ft belo	ow TOC	
Water Level Elevation	1216.46 ft ams	sl	

Downgradient (S-2A)

Top of Casing Elevation	1272.90 ft ams	sl Groundwater Monitoring System Report (Barr, 2016
Depth to Water	75.44 ft belo	DOT WO
Water Level Elevation	1197.46 ft ams	sl

horizontal hydraulic	2.30E-03	cm/s	Groundwater Monitoring System Report (Barr, 2016)
conductivity (Kh)	6.52E+00		
porosity (n)	0.25	,	Groundwater Monitoring System Report (Barr, 2016)
horizontal distance	1131	ft	
WL elevation difference	19.00	ft	
gradient (i)	0.017	ft/ft	
linear velocity (V)	0.4381	ft/day	
V	160.0	ft/yr	

#### Hoot Lake Ash Disposal Facility Groundwater Velocity Calculation

Sampling Date 11/17/2022

Upgradient (S-52)

Top of Casing Elevation	1286.62	ft amsl	Groundwater Monitoring System Report (Barr, 2016)
Depth to Water	70.80	ft below TOC	
Water Level Elevation	1215.82	ft amsl	

Downgradient (S-2A)

Top of Casing Elevation	1272.90 ft amsl	Groundwater Monitoring System Report (Barr, 2016)
Depth to Water	77.74 ft below T	TOC
Water Level Elevation	1195.16 ft amsl	

horizontal hydraulic	2.30E-03	cm/s	Groundwater Monitoring System Report (Barr, 2016)
2			Groundwater Monitoning System Report (Ban, 2010)
conductivity (Kh)	6.52E+00	ft/day	
porosity (n)	0.25		Groundwater Monitoring System Report (Barr, 2016)
horizontal distance	1131	ft	
WL elevation difference	20.66	ft	
gradient (i)	0.018	ft/ft	
linear velocity (V)	0.4764	ft/day	
V	174.0	ft/yr	