



2022 Annual Groundwater Monitoring and Corrective Action Report

Blue Pit

Coyote Station
Beulah, North Dakota

Prepared for
Otter Tail Power Company

January 2023

2022 Annual Groundwater Monitoring and Corrective Action Report

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Acronyms

Acronym	Description
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
NDAC	North Dakota Administrative Code
NDDEQ	North Dakota Department of Environmental Quality
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 §257.94(e)(6). The CCR unit operated under the detection monitoring program described in 40 CFR §257.94 and NDAC 33.1-20-08-06-04 at the start and at the end of the 2022 annual reporting period. The monitoring program did not identify any statistically significant increases over background for any of the detection monitoring constituents listed in appendix III to the EPA CCR Rule and appendix I to the NDDEQ CCR Rule; therefore, constituents listed in appendix IV to the EPA CCR Rule and appendix II to the NDDEQ CCR Rule were not monitored. Corrective action provisions of the CCR Rules were not required.

1.0 Introduction

Otter Tail Power Company (OTP) operates the Coyote Station (Coyote), located near Beulah, North Dakota. Coyote is a coal-fired electrical generating plant, operation of which results in coal combustion residuals (CCR) as a by-product. The Blue Pit is an existing CCR landfill at Coyote that 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), and the North Dakota Department of Environmental Quality (NDDEQ) CCR Rule (North Dakota Administrative Code [NDAC] Title 33.1, Article 20, Chapter 8). The Blue Pit is shown on Figure 1.

This 2022 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) describes the monitoring program and results for the Blue Pit at Coyote. The Blue Pit is currently in detection monitoring as described by 40 CFR 257.94 of the EPA CCR Rule and NDAC 33.1-20-08-06-04 of the NDDEQ CCR Rule.

1.1 Purpose

As stated in 40 CFR 257.90(e) and NDAC 33.1-20-08-06-01(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
- Project 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, Blue Pit Area (Barr, 2018). Statistical evaluation of monitoring results under detection monitoring program, which is the evaluation of groundwater monitoring data for statistically significant increases (SSIs) over background levels for the detection monitoring constituents listed in appendix III to the EPA CCR Rule and appendix I to the NDDEQ CCR Rule, began on October 17, 2017, and continued through 2022. In 2022, the monitoring program did not identify any statistically significant increases over background for any of the detection monitoring constituents listed in the CCR Rules; therefore, assessment monitoring constituents listed in appendix IV to the EPA CCR Rule and appendix II to the NDDEQ CCR Rule were not monitored. Corrective action provisions of the CCR Rules were not required.

1.3 CCR Rule Requirements

This Annual Report has been prepared in accordance with the requirements of 40 CFR 257.90(e) of the EPA CCR Rule and NDAC 33.1-20-08-06-01(e) of the NDDEQ CCR Rule, as outlined in the following Table 1.

Table 1 CCR Rule Requirements

EPA CCR Rule Reference (40 CFR)	NDDEQ CCR Rule Reference (NDAC)	Content Required in Report	Location
§257.90(e)(1)	§33.1-20-08-06-01(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)	§33.1-20-08-06-01(e)(2)	Discuss any new or decommissioned monitoring wells	Section 2.1.2 Changes to Monitoring System
§257.90(e)(3)	§33.1-20-08-06-01(e)(3)	All monitoring data obtained under §257.90 through §257.98 and §33.1-20-08-06; 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 2, Figure 2, Figure 3, Figure 4, Appendices
§257.90(e)(4)	§33.1-20-08-06-01(e)(4)	Discuss any transition between monitoring programs	Not applicable – no transition between monitoring programs occurred
§257.90(e)(5)	§33.1-20-08-06-01(e)(5)	Other information specified in §257.90 through §257.98	Throughout report
§257.90(e)(6)	n/a	Overview at beginning of annual report	Executive Summary

2.0 Groundwater Monitoring and Corrective Action Program

This section documents the status of the groundwater monitoring and corrective action program for the Blue Pit 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 2.3, and key activities planned for 2023 are described in Section 2.4.

2.1 Groundwater Monitoring System

2.1.1 Documentation

Figure 1 shows an aerial image of the Blue Pit and all upgradient (background) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring system, as required by 40 CFR 257.90(e)(1) and NDAC 33.1-20-08-06-01(e)(1). Further details on the monitoring system and the Blue Pit monitoring wells are included in the Groundwater Monitoring System Report, Coyote Station Blue Pit Area (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 were collected during two semiannual sampling events and one verification resampling event. A total of 12 groundwater samples (six monitoring wells and two sampling events) were collected and analyzed for the detection monitoring constituents in 2022 under the detection monitoring program, consistent with the requirements of 40 CFR 257.94(c) and NDAC 33.1-20-08-06-04(c). Elevated levels of calcium were measured in monitoring wells BLUE14 and BLUE15 during the spring 2022 detection monitoring event. These two monitoring wells were resampled for calcium following the spring 2022 detection monitoring event. The results of the resampling indicated that calcium concentrations were not statistically significantly higher than background. Dates of sampling are reported on the field data sheets, and analytical laboratory reports are presented in Appendix A. Results are summarized in Table 2. Groundwater flow data, as required by 40 CFR 257.93(c) and NDAC 33.1-20-08-06-03(c), are presented in Figure 2, Figure 3, Figure 4, and Appendix B.

2.3 Key Actions Completed/Problems Encountered

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

- Completed semiannual detection monitoring sampling for each background and downgradient well.
- Evaluated monitoring results pursuant to 40 CFR 257.93(h) and NDAC 33.1-20-08-06-03(h).
- Determined that a statistically significant increase over background levels did not occur for the detection monitoring constituents at any downgradient monitoring well during the semiannual

detection monitoring sampling events. Statistical analysis was conducted according to the Statistical Analysis Plan, Appendix B of the CCR Groundwater Sampling and Analysis Plan (Carlson McCain, 2017).

Problems were not encountered during the reporting period.

The Annual Fugitive Dust Control Report (40 CFR 257.80(c) and NDAC 33.1-20-08-05-01(c)) is included as Appendix C.

2.4 Key Activities for Upcoming Year

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

- Evaluate analytical results from both 2023 semiannual detection monitoring events for statistically significant increases (SSIs) according to the Statistical Analysis Plan (Carlson McCain, 2017).
- Continue the detection monitoring program in accordance with the CCR Rules.

Table 2
Groundwater Analytical Data Summary
Coyote Station
Otter Tail Power Company

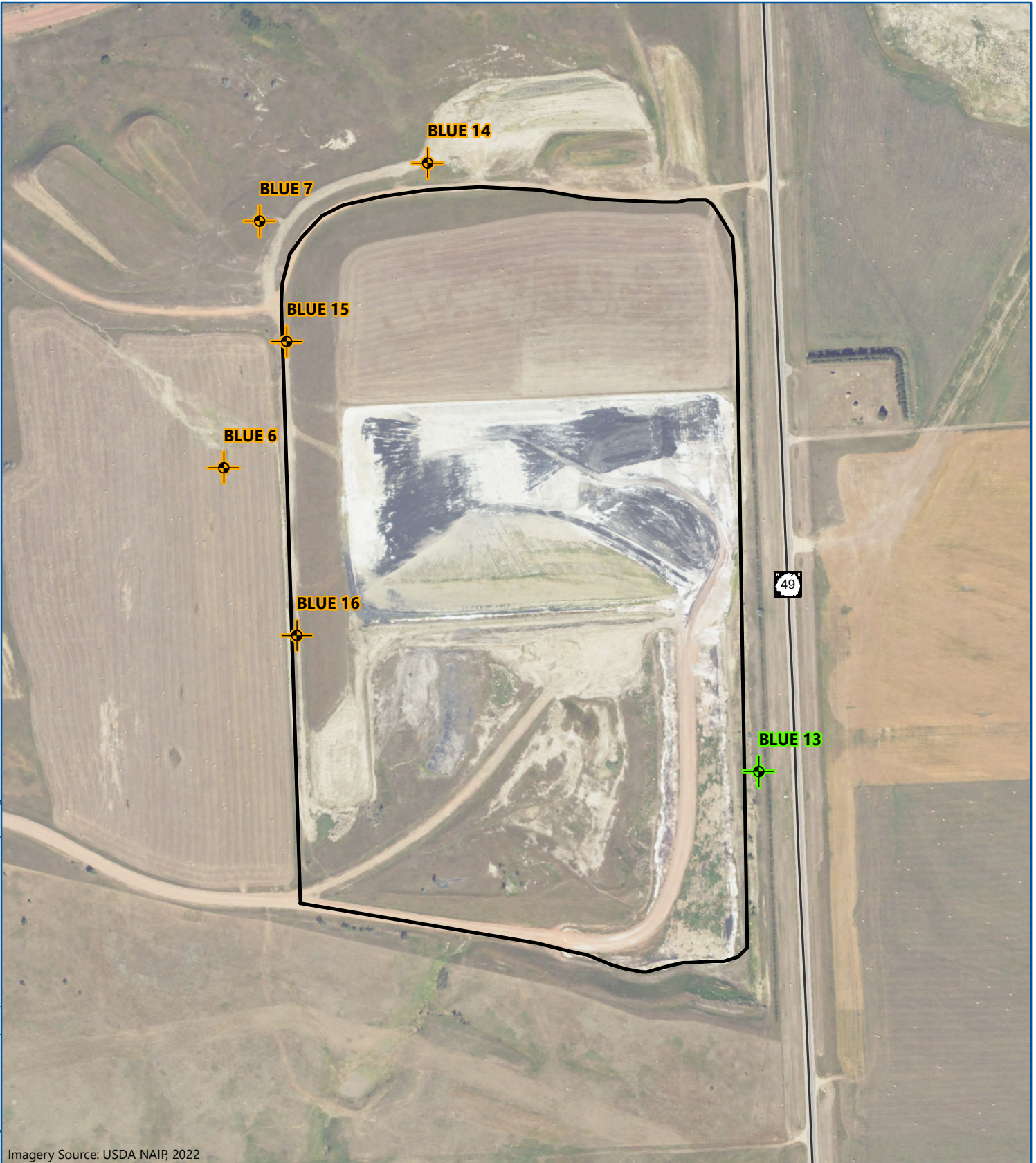
Location Date Sample Type			BLUE 6 6/1/22 N	BLUE 6 10/4/22 N	BLUE 7 5/31/22 N	BLUE 7 10/4/22 N	BLUE 13 6/1/22 N	BLUE 13 10/4/22 N	BLUE 14 5/31/22 N	BLUE 14 8/2/22 Resample	BLUE 14 10/4/22 N	BLUE 15 5/31/22 N	BLUE 15 8/2/22 Resample	BLUE 15 10/3/22 N	BLUE 16 5/31/22 N	BLUE 16 10/3/22 N
Parameter	Analysis Location	Units														
Appendix III																
Boron, total	Lab	mg/l	0.38	0.44	0.40	0.45	< 0.5 U	0.44	0.70	--	0.62	0.60	--	0.57	0.37	0.60
Calcium, total	Lab	mg/l	188	185	195	182	129	145	362	352	318	260	146	131	150	137
Chloride	Lab	mg/l	9.6	8.4	10.1	8.3	35.0	43.3	11.8	--	10.5	10.7	--	10.2	10.3	8.3
Fluoride	Lab	mg/l	0.18	0.19	0.17	0.18	0.26	0.27	< 0.1 U	--	0.12	0.13	--	0.18	0.18	0.20
pH	Field	pH units	6.45	6.83	6.64	6.71	6.91	7.34	6.88	6.73	6.76	6.5	6.71	6.64	6.68	6.84
Solids, total dissolved	Lab	mg/l	1930	1870	2030	1830	4960	5100	5080	--	4420	3520	--	2440	1890	1770
Sulfate, as SO4	Lab	mg/l	904	959	1100	910	2660	2770	2960	--	2670	2060	--	1160	870	804
Groundwater elevation	Field	ft amsl	1921.05	1917.83	1919.51	1916.93	1940.65	1938.49	1921.85	1922.21	1919.49	1920.56	1920.99	1917.61	1922.36	1921.62

-- Not analyzed/Not available.
N Sample Type: Normal Detection Monitoring
U The analyte was analyzed for, but was not detected.

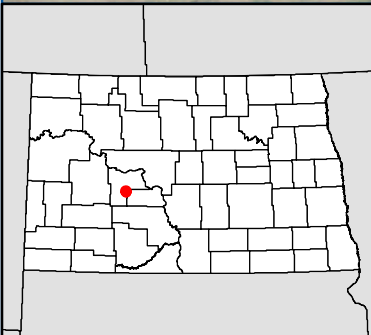
3.0 References




- Barr, 2018. 2017 Annual Groundwater Monitoring and Corrective Action Report, Coyote Station Blue Pit Area. Prepared for Otter Tail Power Company. January 2018.
- Barr, 2016. Groundwater Monitoring System Report, Coyote Station Blue Pit Area. Prepared for Otter Tail Power Company. November 2016.
- Carlson McCain, 2017. CCR Groundwater Sampling and Analysis Plan (Including Statistical Method Selection and Certification), Coyote Station Blue Pit. Prepared for Otter Tail Power Company. October 2017.

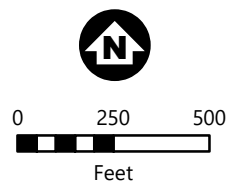
Figures



Imagery Source: USDA NAIP, 2022

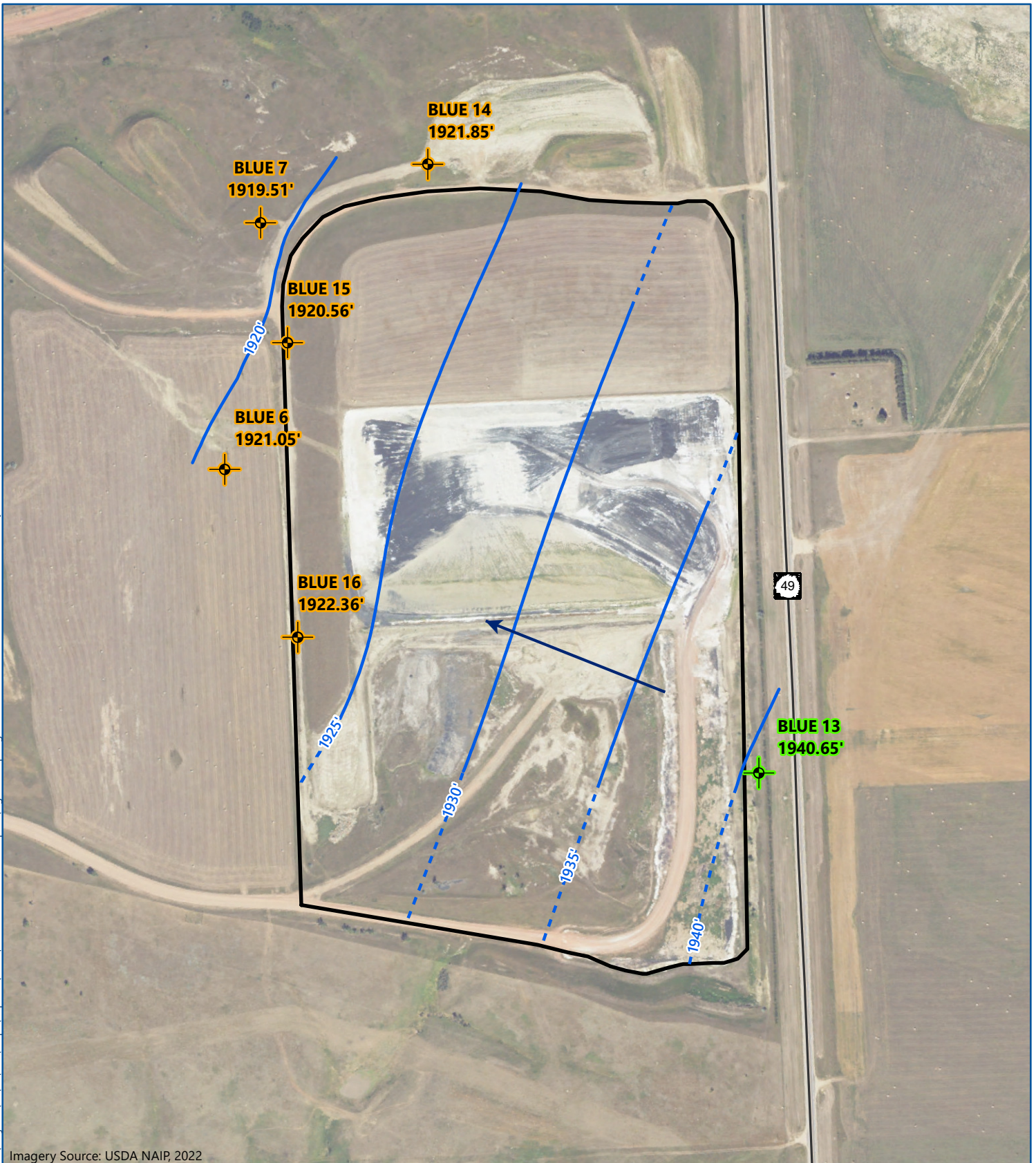


-  Upgradient Monitoring Well
-  Downgradient Monitoring Well
-  Blue Pit

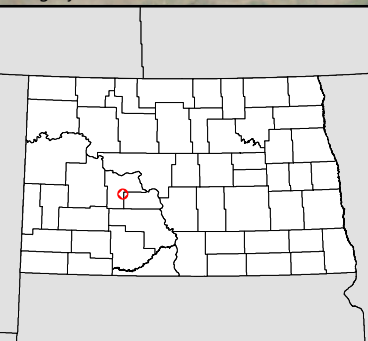







BLUE PIT LOCATION
Coyote Station
Otter Tail Power Company
Beulah, North Dakota

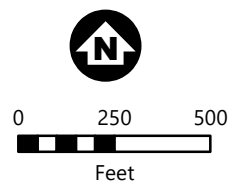
FIGURE 1



Imagery Source: USDA NAIP, 2022

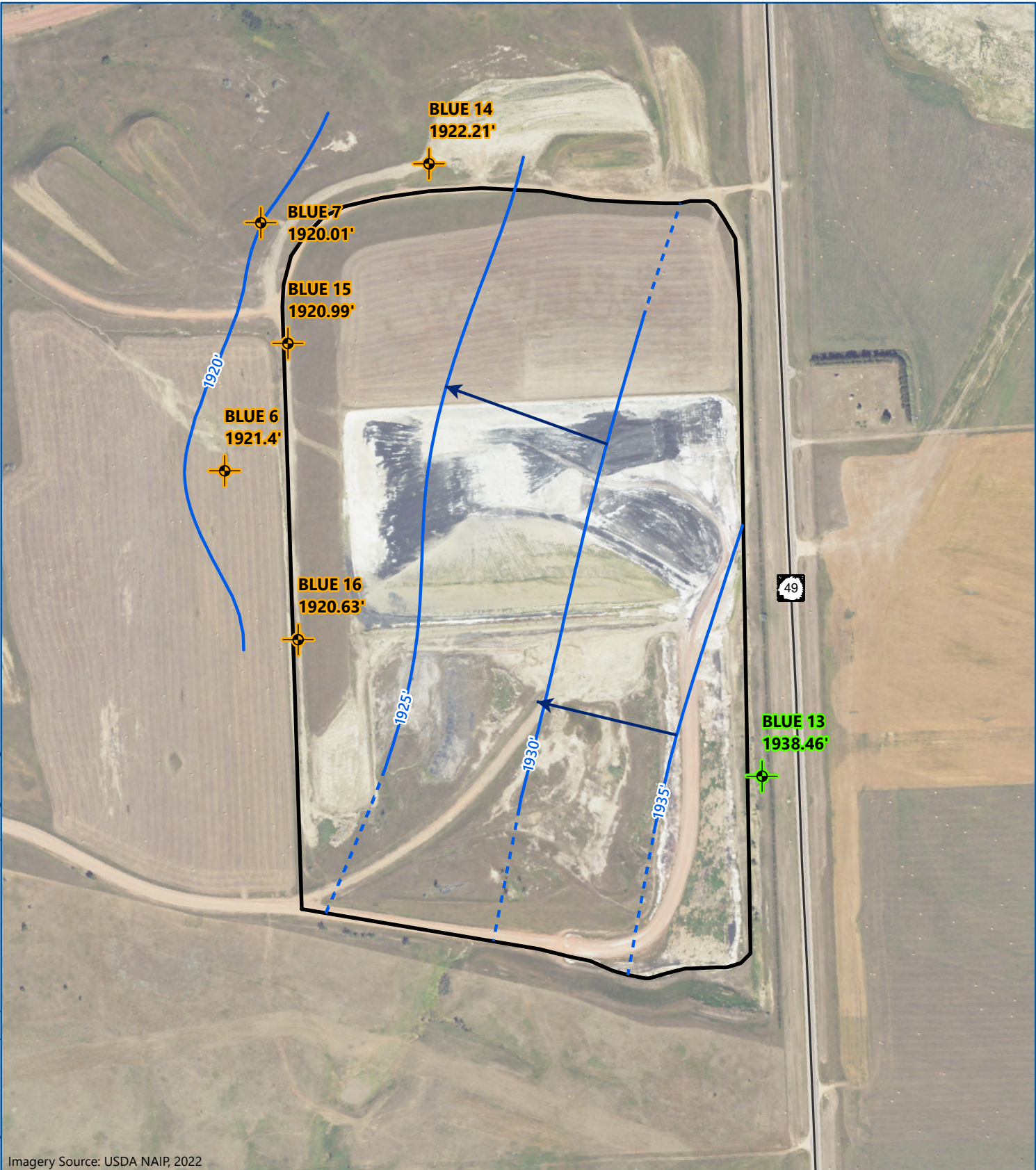


-  Upgradient Monitoring Well
-  Downgradient Monitoring Well
-  Groundwater Contour (ft MSL)
dashed where inferred
-  Groundwater Flow Direction
-  Blue Pit

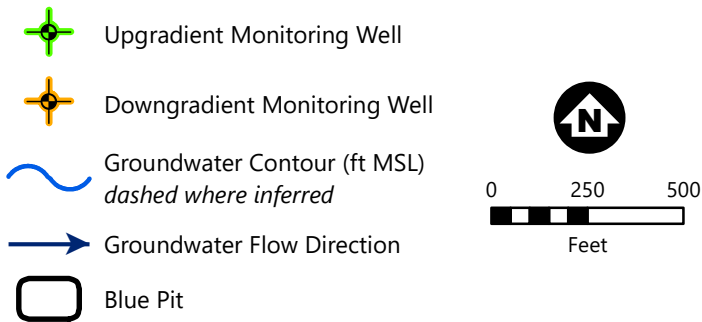
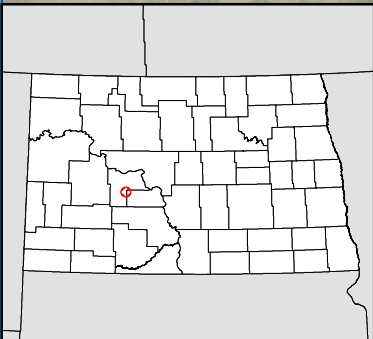


SPRING 2022
GROUNDWATER CONTOURS
Coyote Station
Otter Tail Power Company
Beulah, North Dakota

FIGURE 2

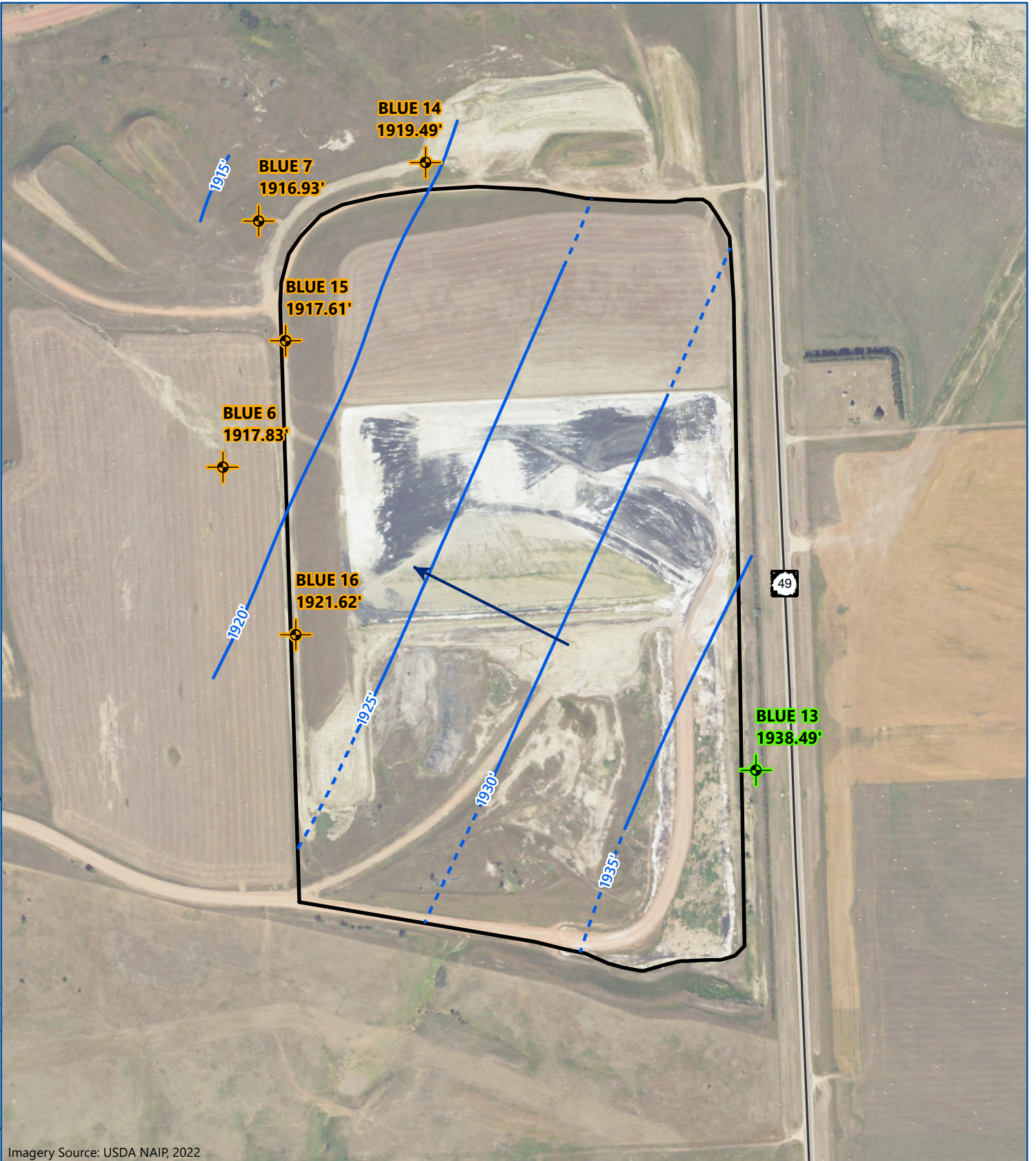


Imagery Source: USDA NAIP, 2022

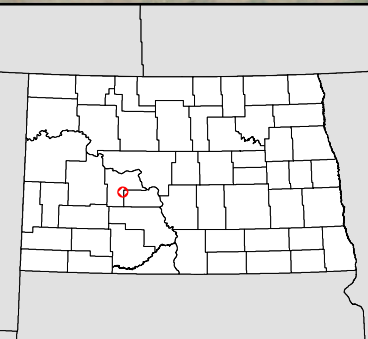







AUGUST 2022
GROUNDWATER CONTOURS
Coyote Station
Otter Tail Power Company
Beulah, North Dakota

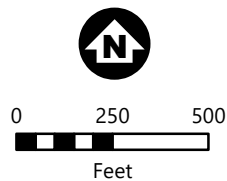
FIGURE 3



Imagery Source: USDA NAIP, 2022



-  Upgradient Monitoring Well
-  Downgradient Monitoring Well
-  Groundwater Contour (ft MSL)
dashed where inferred
-  Groundwater Flow Direction
-  Blue Pit



OCTOBER 2022
GROUNDWATER CONTOURS
Coyote Station
Otter Tail Power Company
Beulah, North Dakota

FIGURE 4

Appendices

Appendix A

Laboratory Reports and Field Sheets

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www.MVTL.com



Account #: 6106 **Client:** Otter Tail Power Company
Workorder: OTP Coyote - Blue Spring 2022 (1372) **PO:** 59625

Josh Hollen
Otter Tail Power Company
PO Box 496
Fergus Falls, MN 56538

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016 SD SDWA

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company**Workorder Summary****Workorder Comments**

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

Analysis Results Comments**1372001 (FB Blue)**

Sample analyzed beyond holding time.(pH)

1372002 (Blue 6)

Sample analyzed beyond holding time.(pH)

1372003 (Blue 7)

Sample analyzed beyond holding time.(pH)

1372004 (Blue 13)

Sample analyzed beyond holding time.(pH)

1372005 (Blue 14)

Sample analyzed beyond holding time.(pH)

1372006 (Blue 15)

Sample analyzed beyond holding time.(pH)

1372007 (Blue 16)

Sample analyzed beyond holding time.(pH)

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372001 **Date Collected:** 06/01/2022 08:36 **Matrix:** Groundwater
Sample ID: FB Blue **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.5 **Received on Ice:** Yes

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	<5	mg/L	5	1	06/10/2022 09:27	06/10/2022 09:27	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	5.6	units	0.1	1	06/02/2022 19:56	06/02/2022 19:56	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	<2	mg/L	2	1	06/09/2022 15:08	06/09/2022 15:08	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	<0.1	mg/L	0.1	1	06/02/2022 19:56	06/02/2022 19:56	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	<10	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	<0.1	mg/L	0.1	1	06/02/2022 18:19	06/20/2022 15:52	SLZ	MA,NDA	
Calcium	<1	mg/L	1	1	06/02/2022 18:19	06/10/2022 15:03	MDE	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372002
Sample ID: Blue 6

Date Collected: 06/01/2022 08:11
Date Received: 06/02/2022 07:09

Matrix: Groundwater
Collector: MVTL Field Service

Temp @ Receipt (C): 0.5

Received on Ice: Yes

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	904	mg/L	25	5	06/10/2022 09:28	06/10/2022 09:28	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	6.8	units	0.1	1	06/02/2022 20:27	06/02/2022 20:27	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	9.6	mg/L	2	1	06/09/2022 15:09	06/09/2022 15:09	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.18	mg/L	0.1	1	06/02/2022 20:27	06/02/2022 20:27	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	1930	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.38	mg/L	0.1	1	06/02/2022 18:19	06/20/2022 15:54	SLZ	MA,NDA	
Calcium	188	mg/L	1	1	06/02/2022 18:19	06/10/2022 15:06	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2252	umhos/cm	1	1	06/01/2022 08:11	06/01/2022 08:11	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.45	units	0.01	1	06/01/2022 08:11	06/01/2022 08:11	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372002 **Date Collected:** 06/01/2022 08:11 **Matrix:** Groundwater
Sample ID: Blue 6 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.5 **Received on Ice:** Yes

Sampling Information**Method:** 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.58	degrees C		1	06/01/2022 08:11	06/01/2022 08:11	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372003
Sample ID: Blue 7

Date Collected: 05/31/2022 10:42
Date Received: 06/02/2022 07:09

Matrix: Groundwater
Collector: MVTL Field Service

Temp @ Receipt (C): 0.5

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	1100	mg/L	50	10	06/10/2022 09:49	06/10/2022 09:49	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	6.9	units	0.1	1	06/02/2022 20:33	06/02/2022 20:33	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	10.1	mg/L	2	1	06/09/2022 15:10	06/09/2022 15:10	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.17	mg/L	0.1	1	06/02/2022 20:33	06/02/2022 20:33	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	2030	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.40	mg/L	0.1	1	06/02/2022 18:19	06/20/2022 15:56	SLZ	MA,NDA	
Calcium	195	mg/L	1	1	06/02/2022 18:19	06/10/2022 15:08	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2515	umhos/cm	1	1	05/31/2022 10:42	05/31/2022 10:42	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.64	units	0.01	1	05/31/2022 10:42	05/31/2022 10:42	DJN		

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results****Lab ID:** 1372003**Date Collected:** 05/31/2022 10:42**Matrix:** Groundwater**Sample ID:** Blue 7**Date Received:** 06/02/2022 07:09**Collector:** MVTL Field Service**Temp @ Receipt (C):** 0.5**Sampling Information****Method:** 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.71	degrees C		1	05/31/2022 10:42	05/31/2022 10:42	DJN		

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www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372004 **Date Collected:** 06/01/2022 08:34 **Matrix:** Groundwater
Sample ID: Blue 13 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.5 **Received on Ice:** Yes

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	2660	mg/L	200	40	06/10/2022 09:54	06/10/2022 09:54	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.2	units	0.1	1	06/02/2022 20:21	06/02/2022 20:21	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	35.0	mg/L	2	1	06/09/2022 15:12	06/09/2022 15:12	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.26	mg/L	0.1	1	06/02/2022 20:21	06/02/2022 20:21	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	4960	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	<0.5	mg/L	0.5	5	06/02/2022 18:19	06/20/2022 16:05	SLZ	MA,NDA	
Calcium	129	mg/L	5	5	06/02/2022 18:19	06/10/2022 15:10	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	5965	umhos/cm	1	1	06/01/2022 08:34	06/01/2022 08:34	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.91	units	0.01	1	06/01/2022 08:34	06/01/2022 08:34	DJN		

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www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372004 **Date Collected:** 06/01/2022 08:34 **Matrix:** Groundwater
Sample ID: Blue 13 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.5 **Received on Ice:** Yes

Sampling Information**Method:** 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.14	degrees C		1	06/01/2022 08:34	06/01/2022 08:34	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372005
Sample ID: Blue 14

Date Collected: 05/31/2022 12:34
Date Received: 06/02/2022 07:09

Matrix: Groundwater
Collector: MVTL Field Service

Temp @ Receipt (C): 0.5

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	2960	mg/L	200	40	06/10/2022 09:31	06/10/2022 09:31	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.0	units	0.1	1	06/02/2022 19:45	06/02/2022 19:45	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	11.8	mg/L	2	1	06/09/2022 15:13	06/09/2022 15:13	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	<0.1	mg/L	0.1	1	06/02/2022 19:45	06/02/2022 19:45	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	5080	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.70	mg/L	0.5	5	06/02/2022 18:19	06/20/2022 16:07	SLZ	MA,NDA	
Calcium	362	mg/L	5	5	06/02/2022 18:19	06/10/2022 15:12	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	5599	umhos/cm	1	1	05/31/2022 12:34	05/31/2022 12:34	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.88	units	0.01	1	05/31/2022 12:34	05/31/2022 12:34	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372005
Sample ID: Blue 14

Date Collected: 05/31/2022 12:34
Date Received: 06/02/2022 07:09

Matrix: Groundwater
Collector: MVTL Field Service

Temp @ Receipt (C): 0.5

Sampling Information

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.82	degrees C		1	05/31/2022 12:34	05/31/2022 12:34	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372006
Sample ID: Blue 15

Date Collected: 05/31/2022 17:05
Date Received: 06/02/2022 07:09

Matrix: Groundwater
Collector: MVTL Field Service

Temp @ Receipt (C): 0.5

Inorganic Chemistry**Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	2060	mg/L	100	20	06/10/2022 09:33	06/10/2022 09:33	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	6.7	units	0.1	1	06/02/2022 19:50	06/02/2022 19:50	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	10.7	mg/L	2	1	06/09/2022 15:19	06/09/2022 15:19	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.13	mg/L	0.1	1	06/02/2022 19:50	06/02/2022 19:50	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	3520	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.60	mg/L	0.5	5	06/02/2022 18:19	06/20/2022 16:09	SLZ	MA,NDA	
Calcium	260	mg/L	5	5	06/02/2022 18:19	06/10/2022 15:16	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	4170	umhos/cm	1	1	05/31/2022 17:05	05/31/2022 17:05	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.5	units	0.01	1	05/31/2022 17:05	05/31/2022 17:05	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372006 **Date Collected:** 05/31/2022 17:05 **Matrix:** Groundwater
Sample ID: Blue 15 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.5**Sampling Information****Method:** 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	12.63	degrees C		1	05/31/2022 17:05	05/31/2022 17:05	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372007 **Date Collected:** 05/31/2022 15:57 **Matrix:** Groundwater
Sample ID: Blue 16 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.5**Inorganic Chemistry****Method: ASTM D516-11**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	870	mg/L	25	5	06/10/2022 09:34	06/10/2022 09:34	EJV	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.0	units	0.1	1	06/02/2022 20:04	06/02/2022 20:04	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	10.3	mg/L	2	1	06/09/2022 15:20	06/09/2022 15:20	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.18	mg/L	0.1	1	06/02/2022 20:04	06/02/2022 20:04	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	1890	mg/L	10	1	06/07/2022 15:49	06/07/2022 15:49	AMC	MA,NDA	

Metals**Method: EPA 6010D**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.37	mg/L	0.1	1	06/02/2022 18:19	06/20/2022 16:11	SLZ	MA,NDA	
Calcium	150	mg/L	1	1	06/02/2022 18:19	06/10/2022 15:23	MDE	MA,NDA	

Sampling Information**Method: 120.1**

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2463	umhos/cm	1	1	05/31/2022 15:57	05/31/2022 15:57	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.68	units	0.01	1	05/31/2022 15:57	05/31/2022 15:57	DJN		

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 1372007 **Date Collected:** 05/31/2022 15:57 **Matrix:** Groundwater
Sample ID: Blue 16 **Date Received:** 06/02/2022 07:09 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.5**Sampling Information****Method:** 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	13.15	degrees C		1	05/31/2022 15:57	05/31/2022 15:57	DJN		

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Account #: 6106

Client: Otter Tail Power Company



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June 3, 2022

Otter Tail Power Company
Josh Hollen
P.O. Box 496
Fergus Falls, MN 56538-0496

RE: Coyote Station Groundwater Sampling – Spring 2021

Dear Mr. Hollen,

From May 31-June 2, 2022, MVTL Laboratories' Field Services division collected groundwater samples from wells with sufficient volume at the Coyote Station near Beulah, ND.

The Blue Pit wells were sampled using bladder pumps and low flow sampling. Six of the six wells were sampled for Coyote CCR analysis list.

The Yard Pond wells were sampled using bladder pumps and low flow sampling. 10 of the 10 wells and one surface water were sampled for Coyote Yard analysis list.

The Black Pit wells with sufficient water were sampled using bailers. Two of the three wells and one surface water were sampled for Coyote Black analysis list.

Samples collected were placed on ice and then transported back to the MVTL laboratory for analysis.

Thank you for your trust and support of our services. If you have any questions, please call me at (800) 279-6885.

Sincerely,

Jeremy Meyer
MVTL Field Services

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**Account #:** 6106**Client:** Otter Tail Power Company

	Minnesota Valley Testing Laboratories	OTter Tail Power Company	Chain of Custody Record 1372
	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	WO: 1372 	
Report To: Otter Tail Power Attn: Josh Hollen Address: PO Box 496 Fergus Falls, MN 56538-0496 Phone: Email: jhollen@otpc.com	CC:	Project Name: OTP Coyote - Blue Event: Spring 2022 Sampled By: <i>Dawn Nieswar</i>	

Lab Number	Sample ID	Date	Time	Sample Type	Sample Containers				Field Readings				Analysis Required
					1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4	Temp (°C)	Spec. Cond.	pH	Appearance (Clear-C, Partly Cloudy-PC, Cloudy-CL)	
001	FB Blue	1 June 22	0836	GW	X	X			NA	NA	NA	NA	OTP CCR App 3
002	Blue 6	1 June 22	0811	GW	X	X			10.58	2252	6.45	C	
003	Blue 7/MS7/MSD7	31 May 22	1042	GW	3	3			10.71	2515	6.64	C	
004	Blue 13	1 June 22	0834	GW	X	X			10.14	5965	6.91	C	
005	Blue 14	31 May 22	1234	GW	X	X			10.82	5599	6.88	C	
006	Blue 15	31 May 22	1705	GW	X	X			12.63	4170	6.50	C	
007	Blue 16	31 May 22	1557	GW	X	X			13.15	2463	6.68	C	

Comments:

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
1 <i>[Signature]</i>	1 June 22 1845	Log In Walk In #2	TM562 / TM805	<i>[Signature]</i>	2 June 22 0109
2		7/19/20 015			

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 1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
 www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**Event: **Spring 2022**Sample ID: **Blue 13**Sampling Personal: *Patricia Nisenz*

Weather Conditions: Temp: **47°F** Wind: **South @ 10** Precip: **Sunny / Partly Cloudy / Cloudy**

WELL INFORMATION		
Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	Not Visible	
Casing Diameter:	2"	
Water Level Before Purge:	104.62 ft	
Total Depth of Well:	116.65 ft	
Well Volume:	2.5 liters	
Depth to Top of Pump:	114.82 ft	
Water Level After Sample:	114.81 ft	
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION		
Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:		
Control Settings:		
Purge:	Sec.	
Recover:	Sec.	
PSI:		
Bottle List:		
1 Liter Raw		
500mL Nitric		

FIELD READINGS										
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed
Purge Date	Time									Appearance or Comment Clarity, Color, Odor, Ect.
3 May 22	1010	Start of Well Purge								
	1015	10.12	5410	6.72	4.22	-44.9	17.2	106.65	120	500
	1045	9.99	5740	6.80	1.06	-77.9	7.04	114.02	450	1350
	1045							107		
15 June 22	0834							106.93	100	500

Well Stabilized? YES **NO**Total Volume Purged: **14,500** Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.
1 June 22	0834	10.14	5965	6.91	4.35	-66.1	27.2				Clear, yellow
Comments: FB Collected at well											

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Account #: 6106

Client: Otter Tail Power Company



2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: OTP Coyote
 Event: Spring 2022
 Sample ID: Blue 14
 Sampling Personal: *Darren Nielsen*

Weather Conditions: Temp: 50 °F Wind: NW @ 20 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION		
Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	Not Visible	
Casing Diameter:	2"	
Water Level Before Purge:	77.70 ft	
Total Depth of Well:	82.00 ft	
Well Volume:	5.18 liters	
Depth to Top of Pump:	ft	
Water Level After Sample:	78.50 ft	
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION		
Purging Method:	Bladder	
Sampling Method:	Bladder	
Dedicated Equipment?	YES	NO
Duplicate Sample?	YES	NO
Duplicate Sample ID:	—	
Bottle List:		
1 Liter Raw		
500ml Nitric		
Control Settings:		
Purge:	Sec.	
Recover:	Sec.	
PSI:		

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
Purge Date	Time										
	1104	Start of Well Purge									
	1109	10.19	5644	7.30	8.51	21.2	34.8	78.3	100	500	(37)
	1139	10.44	5593	7.22	6.36	-21.2	14.6	78.50	100	3000	Turbid
	1209	10.49	5592	6.69	2.92	-24.6	30.2	78.50	100	3000	Clear
	1224	10.70	5595	6.89	2.65	-25.6	14.9	78.50	100	1500	Clear
	1229	10.89	5610	6.88	2.52	-25.5	15.4	78.50	100	500	Clear
	1234	10.82	5558	6.88	2.46	-25.6	15.0	78.50	100	500	Clear

Well Stabilized? YES

NO

Total Volume Purged: 9000 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
3/1 May 22	1234	10.82	5599	6.88			15.0				Clear

Comments:

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Account #: 6106

Client: Otter Tail Power Company

MVTL		Field Datasheet		Company: OTP Coyote							
Groundwater Assessment		Event: Spring 2022		Sample ID: Blue 7							
Sampling Personal: Darren Hickey		Precip: Sunny/Partly Cloudy / Cloudy		Control Settings:							
Weather Conditions: Temp: 60 °F Wind: NW @ 20		Purging Method: Bladder		Purge: Sec.							
Well Information		Sampling Method: Bladder		Recover: Sec.							
Well Locked? YES NO		Dedicated Equipment? YES NO		PSI:							
Well Labeled? YES NO		Duplicate Sample? YES NO									
Casing Strait? YES NO		Duplicate Sample ID: m5/m50									
Grout Seal Intact? YES NO Not Visible		Bottle List:									
Repairs Necessary?		1 Liter Raw									
Casing Diameter: 2"		500ml Nitric									
Water Level Before Purge: 28.92 ft		X3									
Total Depth of Well: 92.66 ft											
Well Volume: 11.6 liters											
Depth to Top of Pump: 11.6 ft											
Water Level After Sample: 28.94 ft											
Measurement Method: Electric Water Level Indicator											
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
Purge Date	Time										
	1252	Start of Well Purge									
	1257	10.40	2493	6.60	2.45	-75.6	11.2	28.93	100	500	CL
	1327	11.60	2462	6.63	2.83	-81.4	11.5	28.93	100	3000	CL
	1337	10.85	2522	6.63	0.49	-81.6	10.8	28.94	100	8500	CL
	1347	10.91	2513	6.63	0.47	-81.7	10.5	28.94	100	500	CL
	1042	10.71	2515	6.64	0.50	-82.0	9.52	28.94	100	500	CL
Well Stabilized? YES NO		Total Volume Purged: 5,090 Liters									
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
3/1 May 22	1042	10.71	2515	6.64			9.52				CL
Comments:											

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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: OTP Coyote**Event:** Spring 2022**Sample ID:** Blue 16**Sampling Personal:** *Dan Niswonger*

Weather Conditions: Temp: 55 °F Wind: NW @ 20 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Well Labeled?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Casing Strait?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Grout Seal Intact?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Not Visible
Repairs Necessary?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Casing Diameter:	2"
Water Level Before Purge:	73.58 ft
Total Depth of Well:	93.52 ft
Well Volume:	14.8 liters
Depth to Top of Pump:	-
Water Level After Sample:	73.58 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Duplicate Sample?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	
500ml Nitric	
Control Settings:	
Purge:	Sec.
Recover:	Sec.
PSI:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate ml/Min	mL Removed	Appearance or Comment
Purge Date	Time										
	1424	Start of Well Purge									
	1432	15.31	2487	6.70	5.21	-81.8	10.7	73.62	100	500	ST
	1502	14.31	2471	6.67	0.44	-82.7	12.5	73.58	100	500	ST
	1532	13.32	2465	6.67	0.39	-82.3	55.7	73.58	100	2100	Clear
	1547	13.46	2467	6.67	0.39	-83.9	43.9	73.58	100	1500	Clear
	1552	13.21	2477	6.68	0.41	-83.6	42.6	73.58	100	500	Clear
	1557	13.15	2463	6.68	0.45	-83.9	42.8	73.58	100	500	Clear
Well Stabilized?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO									
Total Volume Purged: 9,000 Liters											
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
8/16/22	1557	13.15	2463	6.68			42.8				Clear
Comments:											

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Account #: 6106

Client: Otter Tail Power Company



2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: OTP Coyote

Event: Spring 2022

Sample ID: Blue 15

Sampling Personal: *Jason Nigam*

Weather Conditions: Temp: 55 °F Wind: NW @ 20 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION		
Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Grout Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	75.32 ft	
Total Depth of Well:	77.85 ft	
Well Volume:	7.8 liters	
Depth to Top of Pump:	7.8 ft	
Water Level After Sample:	75.50 ft	
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	
500ml Nitric	

Control Settings:	
Purge:	Sec.
Recover:	Sec.
PSI:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
Purge Date	Time										Clarity, Color, Odor, Ect.
31 May 22	1620	Start of Well Purge									
	1625	13.24	4554	6.41	0.67	-80.8	17.9	75.40	100	500	CL
	1640	12.81	4245	6.49	0.32	-82.6	10.8	75.46	100	1500	CL
	1655	12.83	4190	6.49	0.31	-83.1	5.84	75.48	100	1500	CL
	1700	12.71	4177	6.50	0.31	-83.2	5.29	75.50	100	500	CL
	1705	12.63	4170	6.50	0.34	-83.3	4.16	75.50	100	500	CL

Well Stabilized? YES NO

Total Volume Purged: 4500 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
31 May 22	1705	12.63	4170	6.50			4.16				CL

Comments:	
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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**Event: **Spring 2022**Sample ID: **Blue**Sampling Personal: *Parren Niswonger*Weather Conditions: Temp: °F Wind: @ Precip: **Sunny / Partly Cloudy / Cloudy**

WELL INFORMATION			
Well Locked?	YES	NO	
Well Labeled?	YES	NO	
Casing Strait?	YES	NO	
Grout Seal Intact?	YES	NO	Not Visible
Repairs Necessary?			
Casing Diameter:	2"		
Water Level Before Purge:	6.118 ft		
Total Depth of Well:	7.10 ft		
Well Volume:	11.1 liters		
Depth to Top of Pump:	-		
Water Level After Sample:	-		
Measurement Method:	Electric Water Level Indicator		

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	
500mL Nitric	

Control Settings:	
Purge:	Sec.
Recover:	Sec.
PSI:	

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time										
3/1/22	0924	Start of Well Purge									
	0929	9.45	2486	6.67	8.29	-77.8	11.9	62.24	130	500	CL
	0949	9.53	2468	6.86	6.67	-77.3	16.7	21.77	450	900	CL
								701			
15 June 22	0806							60.80	100	500	
	0811										

Well Stabilized? YES NO

Total Volume Purged: 10,000 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	DO	ORP	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
15 June 22	0811	10.58	2252	6.45	8.74	-61.5	19.1	CL

Comments:

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Account #: 6106

Client: Otter Tail Power Company

CCR - Appendix III Detection Monitoring

Field Parameters

pH*

* Field and Laboratory Measurements

Total Concentration Parameters

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

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

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Account #: 6106 **Client:** Otter Tail Power Company
Workorder: OTP Coyote - Blue (2475) **PO:** 59625

Josh Hollen
Otter Tail Power Company
PO Box 496
Fergus Falls, MN 56538

Certificate of Analysis**Approval**

All data reported has been reviewed and approved by:

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:
MN LAB # 027-015-125 ND WW/DW # R-040

BISMARCK LAB CERTIFICATIONS:
MN LAB # 038-999-267 ND W/DW # ND-016

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**Account #:** 6106**Client:** Otter Tail Power Company

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 2475001 **Date Collected:** 08/02/2022 11:52 **Matrix:** Groundwater
Sample ID: Blue 14 **Date Received:** 08/02/2022 15:22 **Collector:** MVTL Field Service

Temp @ Receipt (C): 9.0 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	5537	umhos/cm	1	1	08/02/2022 11:52	08/02/2022 11:52	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.73	units	0.01	1	08/02/2022 11:52	08/02/2022 11:52	DJN		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	14.57	degrees C		1	08/02/2022 11:52	08/02/2022 11:52	DJN		

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Calcium	352	mg/L	1	1	08/02/2022 16:40	08/04/2022 14:49	MDE	MA,NDA	

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Report Date: Tuesday, August 9, 2022 2:09:51 PM

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www.MVTL.com

**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 2475002 **Date Collected:** 08/02/2022 13:20 **Matrix:** Groundwater
Sample ID: Blue 15 **Date Received:** 08/02/2022 15:22 **Collector:** MVTL Field Service

Temp @ Receipt (C): 9.0 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	3326	umhos/cm	1	1	08/02/2022 13:20	08/02/2022 13:20	DJN		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.71	units	0.01	1	08/02/2022 13:20	08/02/2022 13:20	DJN		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	15.12	degrees C		1	08/02/2022 13:20	08/02/2022 13:20	DJN		

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Calcium	146	mg/L	1	1	08/02/2022 16:40	08/04/2022 14:54	MDE	MA,NDA	

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Account #: 6106

Client: Otter Tail Power Company



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August 5, 2022

Otter Tail Power Company
Josh Hollen
P.O. Box 496
Fergus Falls, MN 56538-0496

RE: Coyote Station Groundwater Sampling -- Blue Pit Resample

Dear Mr. Hollen,

On August 2, 2022, MVTL Laboratories' Field Services division resampled wells Blue 14 and Blue 15. Water levels were recorded on the remaining Blue Pit wells.

Samples collected were placed on ice and then transported back to the MVTL laboratory for analysis.

Thank you for your trust and support of our services. If you have any questions, please call me at (800) 279-6885.

Sincerely,

Jeremy Meyer
MVTL Field Services

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Account #: 6106

Client: Otter Tail Power Company



2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: OTP Coyote

Event:

Sample ID: Blue 14

Sampling Personal: *Darren Niesing*

Weather Conditions: Temp: 82°F Wind: Light @ Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Casing Strait?	YES NO
Grout Seal Intact?	YES NO Not Visible
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	77.74 ft
Total Depth of Well:	86.96 ft
Well Volume:	6.0 liters
Depth to Top of Pump:	ft
Water Level After Sample:	78.71 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	
Bottle List:	
1 Liter Raw	
500mL Nitric	

Control Settings:	
Purge:	5 Sec.
Recover:	55 Sec.
PSI:	

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	D ₁₅ (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time										
Start of Well Purge											
2 Aug 22	1002	14.64	5820	6.97	1.12	-17.8	69.0	78.12	100	500	clear yellow
	1002	14.35	5512	6.84	1.68	-7.0	82.8	78.74	100	4000	clear yellow
	1112	14.38	5526	6.95	1.91	-3.7	14.3	78.45	100	3000	clear yellow
	1112	14.65	5514	6.98	1.92	-2.6	7.93	78.50	100	1500	clear yellow
	1142	14.31	5532	6.74	2.51	7.9	2.56	78.68	100	1500	clear yellow
	1147	14.20	5540	6.73	2.60	8.2	2.38	78.70	100	500	clear yellow
	1152	14.07	5537	6.73	2.50	8.9	2.41	78.70	100	500	clear yellow
Well Stabilized? YES NO											
Total Volume Purged:										11500	Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH	Turbidity (NTU)	Appearance or Comment Clarity, Color, Odor, Ect.
2 Aug 22	1152	14.07	5537	6.73	2.41	clear yellow

Comments:

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Account #: 6106

Client: Otter Tail Power Company

MVTL		Field Datasheet		Groundwater Assessment		Company: OTP Coyote					
2616 E. Broadway Ave, Bismarck, ND						Event:					
Phone: (701) 258-9720						Sample ID: Blue 15					
						Sampling Personal: <i>Patricia Niswonger</i>					
Weather Conditions:		Temp: 84 °F	Wind: 50 @ 10	Precip: Sunny / Partly Cloudy / Cloudy							
WELL INFORMATION				SAMPLING INFORMATION							
Well Locked?	YES	NO		Purging Method:	Bladder	Control Settings:					
Well Labeled?	YES	NO		Sampling Method:	Bladder	Purge:	5 Sec.				
Casing Strait?	YES	NO		Dedicated Equipment?	YES	Recover:	55 Sec.				
Grout Seal Intact?	YES	NO	Not Visible			PSI:					
Repairs Necessary?				Duplicate Sample?	YES						
Casing Diameter:	2"			Duplicate Sample ID:							
Water Level Before Purge:	74.89 ft			Bottle List:							
Total Depth of Well:	87.83 ft			1 Liter Raw							
Well Volume:	8.0 liters			500ml Nitric							
Depth to Top of Pump:	5 ft										
Water Level After Sample:	75.05 ft										
Measurement Method:	Electric Water Level Indicator										
FIELD READINGS											
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment
Purge Date	Time										
	1220	Start of Well Purge									
	1225	14.91	3333	6.77	0.64	-1.4	26.2	75.02	100	500	ch
	1255	15.25	3347	6.72	1.77	8.7	4.86	75.04	100	3000	ch
	1310	14.77	3339	6.72	1.93	6.6	4.99	75.05	100	1500	ch
	1315	15.02	3319	6.72	1.95	6.3	4.31	75.05	100	500	ch
	1320	15.12	3326	6.71	2.00	6.6	4.66	75.05	100	500	ch
Well Stabilized?		YES	NO	Total Volume Purged: 6000 Liters							
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment
2 Aug 22	1320	15.12	3326	6.71			4.66				ch
Comments:											

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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Surface water Assessment

Company: OTP Coyote

Event: _____

Sampling Personal: Parker NiesingWeather Conditions: _____ Temp: 73 °F Wind: Light @ _____ Precip: Sunny / Partly Cloudy / Cloudy

Well ID	Date	Time	Casing Diameter	Water Level (ft)	Total Depth (ft)	Comments
Blue 6	<u>2 Aug 22</u>	<u>0921</u>	<u>2"</u>	<u>60.83</u>	<u>79.13</u>	
Blue 7		<u>0933</u>	<u>2"</u>	<u>78.32</u>	<u>97.74</u>	
Blue 13		<u>0944</u>	<u>2"</u>	<u>106.81</u>	<u>117.05</u>	
Blue 14		<u>0937</u>	<u>2"</u>	<u>77.34</u>	<u>86.96</u>	
Blue 15		<u>0929</u>	<u>2"</u>	<u>74.89</u>	<u>82.83</u>	
Blue 16		<u>0926</u>	<u>2"</u>	<u>75.31</u>	<u>97.54</u>	

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**Account #:** 6106**Client:** Otter Tail Power Company**Workorder:** OTP Coyote (3724)**PO:** 59625**REVISION 1**

Josh Hollen
Otter Tail Power Company
PO Box 496
Fergus Falls, MN 56538

Certificate of Analysis**Approval****All data reported has been reviewed and approved by:**

Claudette Carroll, Lab Manager Bismarck, ND

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

NEW ULM LAB CERTIFICATIONS:

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

BISMARCK LAB CERTIFICATIONS:

MN LAB # 038-999-267 ND W/DW # ND-016

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**Account #:** 6106**Client:** Otter Tail Power Company

Workorder Summary

Workorder Comments

All analytes with dilution factors greater than 1 (displayed in DF column) required dilution due to matrix or high concentration of target analyte unless otherwise noted and reporting limits (RDL column) have been adjusted accordingly.

Sample Comments

3724001 (FB Blue) - Sample

Time sampled was not supplied by the client.

Analysis Results Comments

3724001 (FB Blue)

Sample analyzed beyond holding time.(pH)

3724002 (Blue 6)

Sample analyzed beyond holding time.(pH)

3724003 (Blue 7)

Sample analyzed beyond holding time.(pH)

3724004 (Blue 13)

Sample analyzed beyond holding time.(pH)

3724005 (Blue 14)

Sample analyzed beyond holding time.(pH)

3724006 (Blue 15)

Sample analyzed beyond holding time.(pH)

3724007 (Blue 16)

Sample analyzed beyond holding time.(pH)

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724001 **Date Collected:** **Matrix:** Groundwater
Sample ID: FB Blue **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	<5	mg/L	5	1	10/12/2022 09:27	10/12/2022 09:27	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	<0.1	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 11:59	MDE	MA,NDA	
Calcium	<1	mg/L	1	1	10/05/2022 16:45	10/10/2022 13:00	SLZ	MA,NDA	

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	5.8	units	0.1	1	10/05/2022 15:58	10/05/2022 15:58	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	<2.0	mg/L	2.0	1	10/10/2022 12:07	10/10/2022 12:07	EJV	MA,NDA	

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	<0.1	mg/L	0.1	1	10/05/2022 15:58	10/05/2022 15:58	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	<10	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724002 **Date Collected:** 10/04/2022 10:43 **Matrix:** Groundwater
Sample ID: Blue 6 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2307	umhos/cm	1	1	10/04/2022 10:43	10/04/2022 10:43	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.83	units	0.01	1	10/04/2022 10:43	10/04/2022 10:43	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	11.8	degrees C		1	10/04/2022 10:43	10/04/2022 10:43	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	959	mg/L	25	5	10/12/2022 09:28	10/12/2022 09:28	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.44	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:02	MDE	MA,NDA	
Calcium	185	mg/L	1	1	10/05/2022 16:45	10/10/2022 13:01	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Clear			1	10/04/2022 10:43	10/04/2022 10:43	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	6.8	units	0.1	1	10/05/2022 15:18	10/05/2022 15:18	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	8.4	mg/L	2.0	1	10/10/2022 12:08	10/10/2022 12:08	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724002 **Date Collected:** 10/04/2022 10:43 **Matrix:** Groundwater
Sample ID: Blue 6 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.19	mg/L	0.1	1	10/05/2022 15:18	10/05/2022 15:18	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	1870	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724003 **Date Collected:** 10/04/2022 10:10 **Matrix:** Groundwater
Sample ID: Blue 7 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2351	umhos/cm	1	1	10/04/2022 10:10	10/04/2022 10:10	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.71	units	0.01	1	10/04/2022 10:10	10/04/2022 10:10	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.47	degrees C		1	10/04/2022 10:10	10/04/2022 10:10	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	910	mg/L	25	5	10/12/2022 09:29	10/12/2022 09:29	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.45	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:02	MDE	MA,NDA	
Calcium	182	mg/L	1	1	10/05/2022 16:45	10/10/2022 13:02	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Clear			1	10/04/2022 10:10	10/04/2022 10:10	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	6.9	units	0.1	1	10/05/2022 14:56	10/05/2022 14:56	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	8.3	mg/L	2.0	1	10/10/2022 12:09	10/10/2022 12:09	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724003 **Date Collected:** 10/04/2022 10:10 **Matrix:** Groundwater
Sample ID: Blue 7 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.18	mg/L	0.1	1	10/05/2022 14:56	10/05/2022 14:56	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	1830	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724004 **Date Collected:** 10/04/2022 12:57 **Matrix:** Groundwater
Sample ID: Blue 13 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	5458	umhos/cm	1	1	10/04/2022 12:57	10/04/2022 12:57	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	7.34	units	0.01	1	10/04/2022 12:57	10/04/2022 12:57	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	13.42	degrees C		1	10/04/2022 12:57	10/04/2022 12:57	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	2770	mg/L	100	20	10/12/2022 09:31	10/12/2022 09:31	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.44	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:04	MDE	MA,NDA	
Calcium	145	mg/L	5	5	10/05/2022 16:45	10/10/2022 13:05	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Clear			1	10/04/2022 12:57	10/04/2022 12:57	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.2	units	0.1	1	10/05/2022 15:29	10/05/2022 15:29	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	43.3	mg/L	2.0	1	10/10/2022 12:15	10/10/2022 12:15	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724004 **Date Collected:** 10/04/2022 12:57 **Matrix:** Groundwater
Sample ID: Blue 13 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.27	mg/L	0.1	1	10/05/2022 15:29	10/05/2022 15:29	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	5100	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724005 **Date Collected:** 10/04/2022 12:13 **Matrix:** Groundwater
Sample ID: Blue 14 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	5096	umhos/cm	1	1	10/04/2022 12:13	10/04/2022 12:13	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.76	units	0.01	1	10/04/2022 12:13	10/04/2022 12:13	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	12.53	degrees C		1	10/04/2022 12:13	10/04/2022 12:13	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	2670	mg/L	100	20	10/12/2022 09:32	10/12/2022 09:32	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.62	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:05	MDE	MA,NDA	
Calcium	318	mg/L	5	5	10/05/2022 16:45	10/10/2022 13:06	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Clear			1	10/04/2022 12:13	10/04/2022 12:13	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.0	units	0.1	1	10/05/2022 15:35	10/05/2022 15:35	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	10.5	mg/L	2.0	1	10/10/2022 12:16	10/10/2022 12:16	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724005 **Date Collected:** 10/04/2022 12:13 **Matrix:** Groundwater
Sample ID: Blue 14 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.12	mg/L	0.1	1	10/05/2022 15:35	10/05/2022 15:35	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	4420	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724006 **Date Collected:** 10/03/2022 10:05 **Matrix:** Groundwater
Sample ID: Blue 15 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	3239	umhos/cm	1	1	10/03/2022 10:05	10/03/2022 10:05	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.64	units	0.01	1	10/03/2022 10:05	10/03/2022 10:05	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	10.89	degrees C		1	10/03/2022 10:05	10/03/2022 10:05	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	1160	mg/L	50	10	10/12/2022 09:33	10/12/2022 09:33	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.57	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:06	MDE	MA,NDA	
Calcium	131	mg/L	1	1	10/05/2022 16:45	10/10/2022 13:07	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Clear			1	10/03/2022 10:05	10/03/2022 10:05	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.0	units	0.1	1	10/05/2022 15:24	10/05/2022 15:24	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	10.2	mg/L	2.0	1	10/10/2022 12:17	10/10/2022 12:17	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724006 **Date Collected:** 10/03/2022 10:05 **Matrix:** Groundwater
Sample ID: Blue 15 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.18	mg/L	0.1	1	10/05/2022 15:24	10/05/2022 15:24	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	2440	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724007 **Date Collected:** 10/03/2022 12:25 **Matrix:** Groundwater
Sample ID: Blue 16 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service
Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: 120.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Specific Conductance - Field	2297	umhos/cm	1	1	10/03/2022 12:25	10/03/2022 12:25	JSM		

Method: 150.2

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH - Field	6.84	units	0.01	1	10/03/2022 12:25	10/03/2022 12:25	JSM		

Method: 170.1

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Temperature - Field C	11.56	degrees C		1	10/03/2022 12:25	10/03/2022 12:25	JSM		

Method: ASTM D516-16

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Sulfate	804	mg/L	25	5	10/12/2022 09:34	10/12/2022 09:34	EJV	MA,NDA	

Method: EPA 6010D

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Boron	0.60	mg/L	0.1	1	10/05/2022 16:45	10/07/2022 12:06	MDE	MA,NDA	
Calcium	137	mg/L	1	1	10/05/2022 16:45	10/10/2022 13:08	SLZ	MA,NDA	

Method: SM2110

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Appearance - Field	Partly Cloudy			1	10/03/2022 12:25	10/03/2022 12:25	JSM		

Method: SM4500 H+ B-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
pH	7.1	units	0.1	1	10/05/2022 18:33	10/05/2022 18:33	RAA	MA,NDA	*

Method: SM4500-Cl-E 2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Chloride	8.3	mg/L	2.0	1	10/10/2022 12:18	10/10/2022 12:18	EJV	MA,NDA	

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**Account #:** 6106**Client:** Otter Tail Power Company**Analytical Results**

Lab ID: 3724007 **Date Collected:** 10/03/2022 12:25 **Matrix:** Groundwater
Sample ID: Blue 16 **Date Received:** 10/05/2022 08:00 **Collector:** MVTL Field Service

Temp @ Receipt (C): 0.9 **Received on Ice:** Yes

Method: SM4500-F-C-2011

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Fluoride	0.20	mg/L	0.1	1	10/05/2022 18:33	10/05/2022 18:33	RAA		

Method: USGS I-1750-85

Parameter	Results	Units	RDL	DF	Prepared	Analyzed	By	Cert	Qual
Total Dissolved Solids	1770	mg/L	10	1	10/07/2022 08:37	10/07/2022 08:37	RAA	MA,NDA	

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Account #: 6106

Client: Otter Tail Power Company



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October 7, 2022

Otter Tail Power Company
Josh Hollen
P.O. Box 496
Fergus Falls, MN 56538-0496

RE: Coyote Station Groundwater Sampling

Dear Mr. Hollen,

From October 2-6, 2022, MVTL Laboratories' Field Services division collected groundwater samples from wells with sufficient volume at the Coyote Station near Beulah, ND.

The Blue Pit wells were sampled using bladder pumps and low flow sampling. Six of the six wells were sampled for Coyote CCR analysis list.

The Yard Pond wells were sampled using bladder pumps and low flow sampling. 10 of the 10 wells and one surface water was sampled for Coyote Pond analysis list.

The Black Pit wells with sufficient water were sampled using bailers. Two of the three wells and one surface water were sampled for Coyote Black analysis list.

Samples collected were placed on ice and then transported back to the MVTL laboratory for analysis.

Thank you for your trust and support of our services. If you have any questions, please call me at (800) 279-6885.

Sincerely,

Jeremy Meyer
MVTL Field Services

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**Account #:** 6106**Client:** Otter Tail Power Company

	Minnesota Valley Testing Laboratories	2616 E. Broadway Ave Bismarck, ND 58501 (701) 258-9720	Otter Tail Power Company W0: 3724 	Chain of Custody Record
	Report To: Otter Tail Power Attn: Josh Hollen Address: PO Box 496 Fergus Falls, MN 56538-0496 Phone: Email: jhollen@otpc.com	CC:	Project Name: OTP Coyote - Blue Event: Fall 2022 Sampled By: <i>[Signature]</i>	

Lab Number	Sample Information				Sample Containers						Field Readings				Analysis Required	
	Sample ID	Date	Time	Sample Type	1 Liter Raw	500 mL HNO3	500 mL HNO3 (filtered)	250 mL H2SO4				Temp (°C)	Spec. Cond.	pH		Appearance (Clear-C, Partly Cloudy-PC, Cloudy-CL)
001	FB Blue			GW	X	X						NA	NA	NA	NA	OTP CCR App 3
002	Blue 6	4 Oct 22	1043	GW	X	X						11.80	2307	6.83	C	
003	Blue 7/MS7/MSD7	4 Oct 22	1010	GW	3	3						10.47	2351	6.71	C	
004	Blue 13	4 Oct 22	1257	GW	X	X						13.42	5458	7.34	C	
005	Blue 14	4 Oct 22	1213	GW	X	X						12.53	5096	6.76	C	
006	Blue 15	3 Oct 22	1005	GW	X	X						10.89	3239	6.64	C	
007	Blue 16	3 Oct 22	1225	GW	X	X						11.56	2297	6.84	PC	

Relinquished By		Sample Condition		Received By	
Name	Date/Time	Location	Temp (°C)	Name	Date/Time
<i>[Signature]</i>	4 Oct 22 1845	Log In Walk In #2	0.9 Post TMS62 / TMS809	<i>[Signature]</i>	03 Oct 22 0800

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Report Date: Thursday, October 13, 2022 5:28:35 PM

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1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**Event: **Fall 2022**Sample ID: **Blue**Sampling Personal: *[Signature]*

Weather Conditions: Temp: **50°F** Wind: **N @ 5-10** Precip: **Sunny / Partly Cloudy / Cloudy**

WELL INFORMATION	
Well Locked?	YES NO
Well Labeled?	YES NO
Casing Strait?	YES NO
Well Seal Intact?	YES NO Not Visible
Repairs Necessary?	
Casing Diameter:	2"
Water Level Before Purge:	81.40 ft
Total Depth of Well:	— ft
Well Volume:	— liters
Depth to Top of Pump:	— ft
Water Level After Sample:	81.46 ft
Measurement Method:	Electric Water Level Indicator

SAMPLING INFORMATION	
Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	YES / MSD
Bottle List:	
1 Liter Raw	
500mL Nitric	
Control Settings:	
Purge:	3 Sec.
Recover:	7 Sec.
PSI:	80

FIELD READINGS												
Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.	
Purge Date	Time											
4 Oct 22	0935	Start of Well Purge										
	0935	10.24	2352	6.71	1.66	84.2	0.29	81.46	100.0	200.0	Clear	
	1000	10.29	2353	6.71	1.79	84.1	0.28	81.45	100.0	500.0	Clear	
	1005	10.27	2352	6.71	1.85	84.3	0.28	81.46	100.0	500.0	Clear	
	1010	10.47	2351	6.71	1.87	81.4	0.03	81.46	100.0	500.0	Clear	
Well Stabilized?		YES	NO	Total Volume Purged: 3500.0 Liters								
Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.	
4 Oct 22	1010	10.47	2351	6.71			0.03				Clear	
Comments:												

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Account #: 6106

Client: Otter Tail Power Company



2616 E. Broadway Ave, Bismarck, ND
Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**

Event: Fall 2022

Sample ID: Blue |

Sampling Personal: 157

Weather Conditions: Temp: 55°F Wind: 13 @ 5-10 Precip: Sunny / Partly Cloudy / Cloudy

WELL INFORMATION

WELL INFORMATION		
Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Well Seal Intact?	YES	NO
Repairs Necessary?		Not Visible
Casing Diameter:	2"	
Water Level Before Purge:	106.78	ft
Total Depth of Well:	116.63	ft
Well Volume:	6.1	liters
Depth to Top of Pump:	114.00	ft
Water Level After Sample:	110.02	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder
Sampling Method:	Bladder
Dedicated Equipment?	YES NO
Duplicate Sample?	YES NO
Duplicate Sample ID:	

Control Settings:		
Purge:	5 / 5	Sec
Recover:	15 / 55	Sec
PSI:	100 / 100	

FIELD READINGS

[illegible]

Well Stabilized? YES NO

Total Volume Purged: 6,900.5 Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)			Appearance or Comment
									Clarity, Color, Odor, Ect.
4 Oct 22	1257	13.42	5458	7.34		76.54			Clear

Comments:

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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**Event: **Fall 2022**Sample ID: **Blue 14**Sampling Personal: **J. J. J.**

Weather Conditions: Temp: **50°F** Wind: **N @ 5-10** Precip: **Sunny / Partly Cloudy / Cloudy**

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Well Seal Intact?	YES	NO
Repairs Necessary?	YES	NO
Casing Diameter:	2"	
Water Level Before Purge:	80.00	ft
Total Depth of Well:		ft
Well Volume:		liters
Depth to Top of Pump:		ft
Water Level After Sample:	81.80	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: 2 Sec.
Dedicated Equipment?	YES	Recover: 8 Sec.
Duplicate Sample?	YES	PSI: 80
Duplicate Sample ID:		

Bottle List:

1 Liter Raw
 500mL Nitric

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time										
4 Oct 22	11:03	Start of Well Purge									
	11:23	10.91	5132	6.75	5.35	81.7	15.96	81.35	100.0	2000.0	Clear
	11:43	11.85	5092	6.76	5.76	81.7	6.61	81.43	100.0	2000.0	Clear
	12:03	12.16	5091	6.76	5.27	77.7	3.10	81.70	100.0	2000.0	Clear
	12:08	12.48	5092	6.76	5.17	77.2	2.53	81.75	100.0	500.0	Clear
	12:13	12.53	5096	6.76	5.10	76.2	1.98	81.77	100.0	500.0	Clear

Well Stabilized? **YES** NO Total Volume Purged: **7000.0** Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH		Turbidity (NTU)		Appearance or Comment Clarity, Color, Odor, Ect.
4 Oct 22	12:13	12.53	5096	6.76		1.98		Clear

Comments:	Collected Field Blank @ 1100
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**Account #:** 6106**Client:** Otter Tail Power Company

2616 E. Broadway Ave, Bismarck, ND
 Phone: (701) 258-9720

Field Datasheet

Groundwater Assessment

Company: **OTP Coyote**Event: **Fall 2022**Sample ID: **Blue 16**Sampling Personal: **J. J. J.**

Weather Conditions: Temp: **60 °F** Wind: **N @ 5-10** Precip: **Sunny / Partly Cloudy / Cloudy**

WELL INFORMATION

Well Locked?	YES	NO
Well Labeled?	YES	NO
Casing Strait?	YES	NO
Well Seal Intact?	YES	NO Not Visible
Repairs Necessary?		
Casing Diameter:	2"	
Water Level Before Purge:	74.32	ft
Total Depth of Well:		ft
Well Volume:		liters
Depth to Top of Pump:		ft
Water Level After Sample:	75.27	ft
Measurement Method:	Electric Water Level Indicator	

SAMPLING INFORMATION

Purging Method:	Bladder	Control Settings:
Sampling Method:	Bladder	Purge: 5 Sec.
Dedicated Equipment?	YES NO	Recover: 25 Sec.
Duplicate Sample?	YES NO	PSI: 80
Duplicate Sample ID:		
Bottle List:		
1 Liter Raw		
500mL Nitric		

FIELD READINGS

Stabilization Parameters (3 Consecutive)		Temp. (°C)	Spec. Cond. ±5%	pH ±0.1	DO (mg/L) ±10%	ORP (mV) ±10	Turbidity (NTU) <5.0	Water Level (ft)	Pumping Rate mL/Min	mL Removed	Appearance or Comment Clarity, Color, Odor, Ect.
Purge Date	Time										
3 Oct 22	1025	Start of Well Purge									
	1045	10.62	2307	6.99	9.50	136.2	986.41	74.82	100.0	2000.0	Slightly Turbid (ST)
	1105	11.81	2313	7.01	8.66	156.8	826.72	74.94	100.0	2000.0	ST
	1125	11.81	2305	6.93	7.16	112.2	369.15	75.01	100.0	2000.0	ST
	1145	11.62	2296	6.85	5.30	155.4	155.31	75.12	100.0	2000.0	ST
	1205	11.54	2298	6.85	4.94	154.7	127.06	75.20	100.0	2000.0	ST
	1215	11.60	2300	6.85	4.81	156.1	134.44	75.22	100.0	1000.0	ST
	1220	11.73	2299	6.84	4.66	155.5	149.22	75.23	100.0	500.0	ST
	1225	11.56	2297	6.84	4.60	155.8	119.44	75.26	100.0	500.0	ST

Well Stabilized? **YES** NOTotal Volume Purged: **17,000.0** Liters

Sample Date	Time	Temp. (°C)	Spec. Cond.	pH			Turbidity (NTU)				Appearance or Comment Clarity, Color, Odor, Ect.
3 Oct 22	1225	11.56	2297	6.84			119.44				ST

Comments:	Post-purge Turbidity remained above 100 NTU
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Original Sample	QC Type	Analyte	Analysis Date	QC Result	Original Sample Re Units	Spike Amount	Spike Residual	Spike % Recovery	Spike Duplicate	Spike Duplicate RPD (%)	Lower Control Limit	Upper Control Limit	RPD Limit (%)	
3524003	PDS	Boron	10/07/2022 10:54:10	92.1	0.37	mg/L	0.4	0.7424	92.1		75	125		
3524003	PDSD	Boron	10/07/2022 10:54:55	90	0.37	mg/L			0.7337	90	1.18	75	125	20
3561006	PDS	Boron	10/07/2022 11:02:51	86.1	0.58	mg/L	0.4	0.9263	86.1		75	125		
3561006	PDSD	Boron	10/07/2022 11:03:37	112	0.58	mg/L			1.031	112	10.70	75	125	20
3724001	MS	Boron	10/07/2022 12:00:42	116	<0.1	mg/L	0.4	0.4632	116		75	125		
3724001	MSD	Boron	10/07/2022 12:01:24	114	<0.1	mg/L			0.4564	114	1.48	75	125	20
3724003	MS	Boron	10/07/2022 12:03:28	110	0.45	mg/L	0.4	0.8866	110		75	125		
3724003	MSD	Boron	10/07/2022 12:04:11	115	0.45	mg/L			0.9057	115	2.13	75	125	20
3745001	MS	Boron	10/07/2022 12:11:04	105	0.90	mg/L	0.4	1.32	105		75	125		
3745001	MSD	Boron	10/07/2022 12:11:51	105	0.90	mg/L			1.32	105	0.00	75	125	20
	LFB-OE	Boron	10/07/2022 11:59:06	93.6		mg/L	0.4	0.3744	93.6		85	115		
	LFB-OE	Boron	10/07/2022 12:09:00	115		mg/L	0.4	0.46	115		85	115		
	MB	Boron	10/07/2022 11:58:12	<0.1		mg/L								
	MB	Boron	10/07/2022 12:08:46	<0.1		mg/L								
3576004	PDS	Calcium	10/10/2022 12:18:36	94	82.1	mg/L	100	176.1	94		75	125		
3576004	PDSD	Calcium	10/10/2022 12:19:36	95.3	82.1	mg/L			177.4	95.3	0.74	75	125	20
3576006	PDS	Calcium	10/10/2022 12:24:13	95.4	126	mg/L	100	221.5	95.4		75	125		
3576006	PDSD	Calcium	10/10/2022 12:25:04	98.8	126	mg/L			224.9	98.8	1.52	75	125	20
3592001	PDS	Calcium	10/10/2022 12:47:19	102		mg/L	100	122.5	102		75	125		
3592001	PDSD	Calcium	10/10/2022 12:48:07	101		mg/L			122.2	101	0.25	75	125	20
3721001	DUP	Calcium	10/10/2022 12:56:35	655.9	665	mg/L					1.38			20
3724003	PDS	Calcium	10/10/2022 13:03:00	88	189	mg/L	100	269.5	88		75	125		
3724003	PDSD	Calcium	10/10/2022 13:04:00	90.5	189	mg/L			272	90.5	0.92	75	125	20
3734001	DUP	Calcium	10/10/2022 13:09:51	47.71	46.9	mg/L					1.71			20
3790003	PDS	Calcium	10/10/2022 13:24:00	94.9	1200	mg/L	1000	2144	94.9		75	125		
3790003	PDSD	Calcium	10/10/2022 13:25:00	95.9	1200	mg/L			2154	95.9	0.47	75	125	20
3790016	PDS	Calcium	10/10/2022 13:39:00	96.6	1220	mg/L	1000	2182	96.6		75	125		
3790016	PDSD	Calcium	10/10/2022 13:40:00	99.7	1220	mg/L			2213	99.7	1.41	75	125	20
3790018	PDS	Calcium	10/10/2022 13:44:57	104	<1	mg/L	100	104.3	104		75	125		
3790018	PDSD	Calcium	10/10/2022 13:45:42	104	<1	mg/L			103.8	104	0.48	75	125	20
3791011	PDS	Calcium	10/10/2022 14:01:00	100	387	mg/L	1000	1387	100		75	125		
3791011	PDSD	Calcium	10/10/2022 14:02:00	99.7	387	mg/L			1384	99.7	0.22	75	125	20
3845007	PDS	Calcium	10/10/2022 14:20:00	101	164	mg/L	500	670.2	101		75	125		
3845007	PDSD	Calcium	10/10/2022 14:21:00	99.9	164	mg/L			664.1	99.9	0.91	75	125	20
	LFB-MI	Calcium	10/10/2022 12:55:04	109		mg/L	100	108.7	109		85	115		
	LFB-MI	Calcium	10/10/2022 13:14:17	109		mg/L	100	108.7	109		85	115		
	MB	Calcium	10/10/2022 12:53:52	<1		mg/L								
	MB	Calcium	10/10/2022 13:13:05	<1		mg/L								
3724003	MS	Chloride	10/10/2022 12:27:13	90.3	8.3	mg/L	30	35.4	90.3		80	120		
3724003	MSD	Chloride	10/10/2022 12:28:24	89.5	8.3	mg/L			35.1	89.5	0.85	80	120	20
3790006	MS	Chloride	10/10/2022 14:15:43	110	2860	mg/L	1200	4180	110		80	120		
3790006	MSD	Chloride	10/10/2022 14:16:53	112	2860	mg/L			4200	112	0.48	80	120	20
3824001	MS	Chloride	10/10/2022 14:51:12	130	105	mg/L	30	144	130		80	120		
3824001	MSD	Chloride	10/10/2022 14:52:22	130	105	mg/L			144	130	0.00	80	120	20
	LFB	Chloride	10/10/2022 12:30:45	91.3		mg/L	30	27.4	91.3		90	110		
	LFB	Chloride	10/10/2022 12:11:51	91.4		mg/L	30	27.4	91.4		90	110		
	LFB	Chloride	10/10/2022 11:55:18	90.7		mg/L	30	27.2	90.7		90	110		
	LFB	Chloride	10/10/2022 12:47:19	91.3		mg/L	30	27.4	91.3		90	110		
	LFB	Chloride	10/10/2022 14:54:44	91.2		mg/L	30	27.4	91.2		90	110		
	LFB	Chloride	10/10/2022 14:19:16	90.3		mg/L	30	27.1	90.3		90	110		
	LFB	Chloride	10/10/2022 14:35:49	91.2		mg/L	30	27.4	91.2		90	110		
	MB	Chloride	10/10/2022 14:53:34	<2.0		mg/L								

	MB	Chloride	10/10/2022 14:34:38	<2.0		mg/L											
	MB	Chloride	10/10/2022 14:18:04	<2.0		mg/L											
	MB	Chloride	10/10/2022 12:46:08	<2.0		mg/L											
	MB	Chloride	10/10/2022 12:29:35	<2.0		mg/L											
	MB	Chloride	10/10/2022 12:10:40	<2.0		mg/L											
	MB	Chloride	10/10/2022 11:54:07	<2.0		mg/L											
3724003	MS-F	Fluoride	10/05/2022 15:02:45	102	0.18	mg/L	0.5	0.69	102					80	120		
3724003	MSD-F	Fluoride	10/05/2022 15:08:42	110	0.18	mg/L				0.73	110	5.63		80	120	20	
3724007	MS-F	Fluoride	10/05/2022 18:39:01	112	0.20	mg/L	0.5	0.76	112					80	120		
3724007	MSD-F	Fluoride	10/05/2022 18:44:50	110	0.20	mg/L				0.75	110	1.32		80	120	20	
	CRM-F	Fluoride	10/05/2022 11:56:00	106		mg/L	3.39	3.6	106					83.8	111		
	LFB-F	Fluoride	10/05/2022 12:08:52	106		mg/L	0.5	0.53	106					90	110		
	LFB-F	Fluoride	10/05/2022 16:45:23	98		mg/L	0.5	0.49	98					90	110		
	LFB-F	Fluoride	10/05/2022 20:27:33	98		mg/L	0.5	0.49	98					90	110		
	MB-F	Fluoride	10/05/2022 12:02:25	<0.1		mg/L											
	MB-F	Fluoride	10/05/2022 16:39:04	<0.1		mg/L											
	MB-F	Fluoride	10/05/2022 20:21:15	<0.1		mg/L											
3724003	MS	Sulfate	10/12/2022 09:35:26	90.2	910	mg/L	500	1360	90.2					85	115		
3724003	MSD	Sulfate	10/12/2022 09:36:32	91	910	mg/L				1360	91	0.00		85	115	20	
3790006	MS	Sulfate	10/12/2022 09:53:05	112	254	mg/L	500	814	112					85	115		
3790006	MSD	Sulfate	10/12/2022 09:54:11	113	254	mg/L				818	113	0.49		85	115	20	
3790008	MS	Sulfate	10/12/2022 10:41:40	87.4	5920	mg/L	5000	10300	87.4					85	115		
3790008	MSD	Sulfate	10/12/2022 10:42:46	88	5920	mg/L				10300	88	0.00		85	115	20	
3790018	MS	Sulfate	10/12/2022 10:35:04	106	<5	mg/L	100	106	106					85	115		
3790018	MSD	Sulfate	10/12/2022 10:36:10	96.7	<5	mg/L				96.7	96.7	9.18		85	115	20	
3845003	MS	Sulfate	10/12/2022 11:05:58	92.8	3200	mg/L	5000	7840	92.8					85	115		
3845003	MSD	Sulfate	10/12/2022 11:07:03	92.3	3200	mg/L				7820	92.3	0.26		85	115	20	
3845006	MS	Sulfate	10/12/2022 11:28:04	94.3	445	mg/L	1000	1390	94.3					85	115		
3845006	MSD	Sulfate	10/12/2022 11:29:09	99.3	445	mg/L				1440	99.3	3.53		85	115	20	
3866001	MS	Sulfate	10/12/2022 11:53:25	104	195	mg/L	500	717	104					85	115		
3866001	MSD	Sulfate	10/12/2022 11:46:49	104	195	mg/L				718	104	0.14		85	115	20	
3866008	MS	Sulfate	10/12/2022 12:06:40	83.9	416	mg/L	500	836	83.9					85	115		
3866008	MSD	Sulfate	10/12/2022 12:11:04	91.1	416	mg/L				871	91.1	4.10		85	115	20	
3872001	MS	Sulfate	10/12/2022 12:36:28	79.9	430	mg/L	500	830	79.9					85	115		
3872001	MSD	Sulfate	10/12/2022 12:29:51	81	430	mg/L				835	81	0.60		85	115	20	
3872007	MS	Sulfate	10/12/2022 14:12:00	102	157	mg/L	200	362	102					85	115		
3872007	MSD	Sulfate	10/12/2022 14:13:07	101	157	mg/L				358	101	1.11		85	115	20	
3921001	MS	Sulfate	10/12/2022 14:28:35	89	1120	mg/L	1000	2010	89					85	115		
3921001	MSD	Sulfate	10/12/2022 14:29:41	86	1120	mg/L				1980	86	1.50		85	115	20	
	LFB	Sulfate	10/12/2022 11:31:22	98.5		mg/L	100	98.5	98.5					85	115		
	LFB	Sulfate	10/12/2022 11:11:27	94.7		mg/L	100	94.7	94.7					85	115		
	LFB	Sulfate	10/12/2022 10:44:59	98.8		mg/L	100	98.8	98.8					85	115		
	LFB	Sulfate	10/12/2022 10:17:23	97.3		mg/L	100	97.3	97.3					85	115		
	LFB	Sulfate	10/12/2022 09:58:36	107		mg/L	100	107	107					85	115		
	LFB	Sulfate	10/12/2022 14:32:59	104		mg/L	100	104	104					85	115		
	LFB	Sulfate	10/12/2022 14:15:20	106		mg/L	100	106	106					85	115		
	LFB	Sulfate	10/12/2022 11:50:07	95.2		mg/L	100	95.2	95.2					85	115		
	LFB	Sulfate	10/12/2022 12:14:24	97.1		mg/L	100	97.1	97.1					85	115		
	LFB	Sulfate	10/12/2022 09:17:45	110		mg/L	100	110	110					85	115		
	LFB	Sulfate	10/12/2022 09:38:44	112		mg/L	100	112	112					85	115		
	LFB	Sulfate	10/12/2022 12:33:09	99.8		mg/L	100	99.8	99.8					85	115		
	MB	Sulfate	10/12/2022 09:37:38	<5		mg/L											
	MB	Sulfate	10/12/2022 09:23:17	<5		mg/L											
	MB	Sulfate	10/12/2022 09:57:30	<5		mg/L											

	MB	Sulfate	10/12/2022 14:31:53	<5		mg/L								
	MB	Sulfate	10/12/2022 14:14:13	<5		mg/L								
	MB	Sulfate	10/12/2022 12:32:03	<5		mg/L								
	MB	Sulfate	10/12/2022 12:13:16	<5		mg/L								
	MB	Sulfate	10/12/2022 11:49:01	<5		mg/L								
	MB	Sulfate	10/12/2022 11:30:16	<5		mg/L								
	MB	Sulfate	10/12/2022 11:10:21	<5		mg/L								
	MB	Sulfate	10/12/2022 10:43:52	<5		mg/L								
	MB	Sulfate	10/12/2022 10:22:54	<5		mg/L								
3724003	DUP	Total Dissolved Solids	10/07/2022 08:37:00	1820	1830	mg/L				0.55				20
	CRM	Total Dissolved Solids	10/07/2022 08:37:00	92		mg/L	736	680	92			90.35	110.33	
	MB	Total Dissolved Solids	10/07/2022 08:37:00	<10		mg/L								
3657001	DUP	pH	10/05/2022 14:44:29	7.54	7.6	units				0.79				20
3721002	DUP	pH	10/05/2022 18:23:11	5.83	6.1	units				4.53				20
	CRM-PH	pH	10/05/2022 20:45:08	98.5		units	6	5.9	98.5			98.33	101.67	
	CRM-PH	pH	10/05/2022 11:26:11	99.17		units	6	6	99.17			98.33	101.67	
	CRM-PH	pH	10/05/2022 17:03:02	98.33		units	6	5.9	98.33			98.33	101.67	

Appendix B

Groundwater Flow Calculations

Appendix B
Annual Groundwater Monitoring and Corrective Action Report

Coyote Blue Pit Groundwater Velocity Calculation

Sampling Date	5/31/2022-6/1/2022
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Upgradient (BLUE 13)

Top of Casing Elevation	2045.27	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	104.62	ft below TOC	
Water Level Elevation	1940.65	ft amsl	

Downgradient (BLUE 15)

Top of Casing Elevation	1995.88	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	75.32	ft below TOC	
Water Level Elevation	1920.56	ft amsl	

horizontal hydraulic conductivity (Kh)	5.20E-05	cm/s	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
	1.47E-01	ft/day	
porosity (n)	0.2		<i>Groundwater Monitoring System Report (Barr, 2016)</i>
horizontal distance	2403.4	ft	
WL elevation difference	20.09	ft	
gradient (i)	0.008	ft/ft	
linear velocity (V)	0.0062	ft/day	
V	2.3	ft/yr	

Appendix B
Annual Groundwater Monitoring and Corrective Action Report

Coyote Blue Pit Groundwater Velocity Calculation

Sampling Date	8/2/2022
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Upgradient (BLUE 13)

Top of Casing Elevation	2045.27	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	106.81	ft below TOC	
Water Level Elevation	1938.46	ft amsl	

Downgradient (BLUE 15)

Top of Casing Elevation	1995.88	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	74.89	ft below TOC	
Water Level Elevation	1920.99	ft amsl	

horizontal hydraulic conductivity (Kh)	5.20E-05	cm/s	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
	1.47E-01	ft/day	
porosity (n)	0.2		<i>Groundwater Monitoring System Report (Barr, 2016)</i>
horizontal distance	2403.4	ft	
WL elevation difference	17.47	ft	
gradient (i)	0.007	ft/ft	
linear velocity (V)	0.0054	ft/day	
V	2.0	ft/yr	

Appendix B
Annual Groundwater Monitoring and Corrective Action Report

Coyote Blue Pit Groundwater Velocity Calculation

Sampling Date	10/3/2022-10/4/2022
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Upgradient (BLUE 13)

Top of Casing Elevation	2045.27	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	106.78	ft below TOC	
Water Level Elevation	1938.49	ft amsl	

Downgradient (BLUE 15)

Top of Casing Elevation	1995.88	ft amsl	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
Depth to Water	78.27	ft below TOC	
Water Level Elevation	1917.61	ft amsl	

horizontal hydraulic conductivity (Kh)	5.20E-05	cm/s	<i>Groundwater Monitoring System Report (Barr, 2016)</i>
	1.47E-01	ft/day	
porosity (n)	0.2		<i>Groundwater Monitoring System Report (Barr, 2016)</i>
horizontal distance	2403.4	ft	
WL elevation difference	20.88	ft	
gradient (i)	0.009	ft/ft	
linear velocity (V)	0.0064	ft/day	
V	2.3	ft/yr	

Appendix C

Annual Fugitive Dust Control Report

Coal Combustion Residuals
2022 Annual Fugitive Dust Control Report
Coyote Station Plant – Blue Pit
Date: December 5, 2022

Introduction

This report is the Annual Fugitive Dust Control Report that is required by the Coal Combustion Residual (CCR) rule that went into effect in October of 2015. This report is for the Blue Pit landfill for the Coyote Station Plant located in Mercer County, North Dakota. It is for the time period of December 2021 to December 2022.

Section 257.80(c) of the CCR requires three segments for the completion of this report. The first is actions taken by the owner/operator to control CCR fugitive dust. The second is a record of all citizen complaints (Table 1). The third is a summary of any corrective measures taken.

Actions taken to control CCR fugitive dust

The following Best Management Practices have been identified as CCR fugitive dust control measures at the Coyote Plant.

Water

- Fugitive dust is largely controlled by the use of water. Water is used to condition the ash prior to its transfer from silos to transport vehicles and is also used to wet the in-place ash and haul roads as needed.

Vehicle Speed Control

- Drivers are instructed to travel no faster than 25 miles per hour when traveling to and from ash disposal areas or other CCR units.

Minimize the Open Working Area

- The working face of the landfill or CCR unit will be as small as is practicable to prevent erosion. This is accomplished by installing intermediate and final cover to reduce footprint size.

Vehicle covering

- Occasionally other vehicles may be used to transport CCR. These vehicles will be enclosed or covered during transport if fugitive dust is a concern.

Curtailing operations

- In extreme weather events, transport of CCR will be reduced or delayed until conditions improve.

Table 1
Citizen Complaint Record

Fugitive Dust Citizen Complaint			
Date	Citizen Complaint	Was complaint confirmed (Yes/No)	Corrective Measures Taken
	No citizen complaints occurred over this time period		

Summary of corrective measures taken

There were no emergency corrective measures taken in the Blue Pit landfill due to the lack of fugitive dust present from this CCR unit.