

North Dakota Department of Environmental Quality Public Notice
Reissue of an NDPDES Permit

Public Notice Date: 5/26/2022

Public Notice Number: ND-2022-010

Purpose of Public Notice

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 2/22/2022

Application Number: ND0026824

Applicant Name: Beulah WTP

Mailing Address: PO Box 910, Beulah, ND 58523-0910

Telephone Number: 701.873.4637

Proposed Permit Expiration Date: 6/30/2027

Facility Description

The application is for a water treatment plant which supplies drinking water to the city of Beulah. Wastewater from the operation of the reverse osmosis membranes discharge through a diffuser placed in the Knife River, a Class II stream. The discharge point is located at latitude 47.25528, longitude -101.77417.

Tentative Determinations

Proposed effluent limitations and other permit conditions have been made by the Department. They assure that State Water Quality Standards and applicable provisions of the FWPCA will be protected.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by June 27, 2022 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

**FACT SHEET FOR NDPDES PERMIT
ND0026824**

PERMIT ISSUANCE

**CITY OF BEULAH
WATER TREATMENT PLANT**

FACT SHEET DATE – MAY 2022

INTRODUCTION

The Federal Clean Water Act (CWA, 1972, and later amendments in 1977, 1981, and 1987, etc.) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES), which the US Environmental Protection Agency (EPA) has oversight authority. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality (NDDEQ), hereafter referred to as "department", has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is hereby authorized to take all action necessary or appropriate to secure to this state the benefits of the act and similar federal acts. The department's authority and obligations for the wastewater discharge permit program is in the NDAC 33.1-16 (North Dakota Administrative Code) which was promulgated pursuant to NDCC chapter 61-28 (North Dakota Century Code). The department uses North Dakota Pollutant Discharge Elimination System (NDPDES) as its permitting title.

The following rules or regulations apply to NDPDES permits:

Procedures the department follows for issuing NDPDES permits (NDAC chapter 33.1-16-01), Standards of Quality for Waters of the State (NDAC chapter 33.1-16-02.1).

These rules require any treatment facility operator to obtain an NDPDES permit before discharging wastewater to state waters. They also define the basis for limits on each discharge and for other requirements imposed by the permit.

According to the North Dakota Administrative Code (NDAC) section 33.1-16-01-08, the department must prepare a draft permit and accompanying fact sheet, and make it available for public review. The department must also publish an announcement (public notice) during a period of thirty days, informing the public where a draft permit may be obtained and where comments regarding the draft permit may be sent (NDAC section 33.1-16-01-07). For more information regarding preparing and submitting comments about the fact sheet and permit, please see Appendix A - Public Involvement. Following the public comment period, the department may make changes to the draft NDPDES permit. The department will summarize the responses to comments and changes to the permit in Appendix D - Response to Comments.

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FACILITY DESCRIPTION

The reapplication is for a reverse osmosis (RO) WTP located within the city limits of Beulah, North Dakota. The NDPDES permit shall cover the discharge of wastewater generated in the water filtration and treatment processes used in the production of potable water for distribution.

Background

Beulah uses groundwater for its source of drinking water. The updated RO system WTP draws water from the Knife River aquifer to process potable water. The wastewater from the treatment process is routed to Knife River and discharged through outfall 001 or sent to the sanitary sewer. The facility is similar to the Mayville WTP, a RO system WTP located in Mayville, North Dakota.

Plant Process

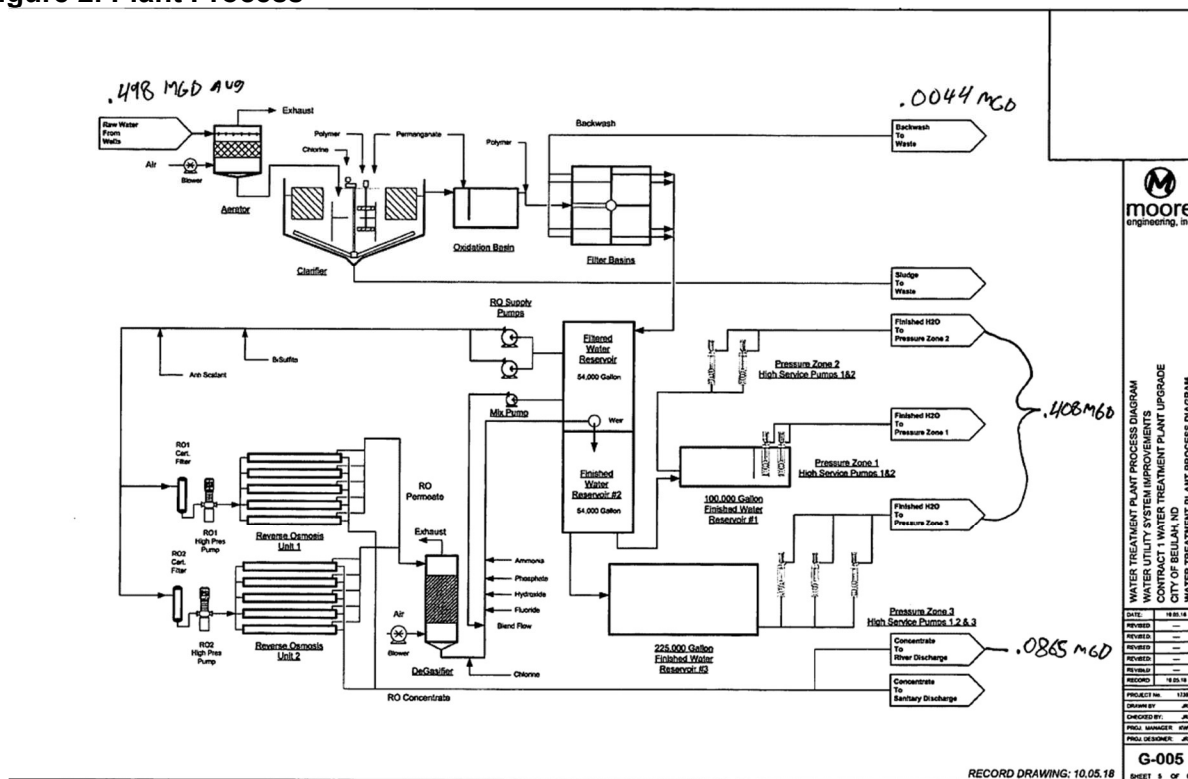
The water treatment process consists of aeration, sedimentation and oxidation, granular media gravity filtration, reverse osmosis, degasification, and addition of chemicals. The process produces a backwash stream from the membranes and a concentrate waste stream from the membranes. The backwash stream is discharged to the city's sanitary sewer system. When stream conditions allow, the concentrate waste stream is discharged to the Knife River. When river conditions do not allow a direct discharge, the concentrate waste stream can be discharged to Beulah's sanitary sewer system. Cleaning solutions from the membrane clearing system will be neutralized in place before discharging to Beulah's sanitary sewer system.

The plant capacity and wastewater sources are summarized in the table and figure below:

Table 2. Plant Flow Rates

Water Source	Destination	Expected Flow
Finished Water	Distribution System	0.408 mgd
Backwash	Sanitary Sewer System	0.0044 mgd
RO Concentrate	Knife River or Sanitary Sewer System	0.144 mgd
Membrane Cleaning	Sanitary Sewer System	0.0013 mgd (for 2-3 days, 1-4 times per year).

Figure 2. Plant Process



In the consideration of permit requirements for this proposed discharge, the department based all evaluations on the operation of the plant at its planned full capacity. The initial permit application included a separate mixing zone analyses for the 20-foot diffuser placed in the Knife River. The permit application included descriptions of plant processes and anticipated wastewater quality.

Discharge Outfall

Outfall 001. Active. Final Outfall.			
Latitude: 47.25528		Longitude: -101.77417	
County: Mercer			
Township: 144 North		Range: 88 West	
Section: 36		QQ: BA	
Receiving Stream: Knife River		Classification: Class II Stream	
Outfall Description: The discharge will be conveyed via an 8-inch gravity pipeline from the WTP to the Knife River, a Class II water body. The outfall is a submerged pipe/diffuser in the stream bed. All discharge water is RO concentrate water.			

PERMIT STATUS

The department issued the previous permit for the facility on July 1, 2017. The previous permit had effluent limits on the following parameters: Total Suspended Solids (TSS), DO, and pH.

The department has been in contact with the Beulah WTP to obtain information to reissue their permit. The department received EPA applications Form 1 and Form 2C on February 22, 2022. The application was accepted by the department February 24, 2022.

Summary Of Compliance with Previous Permit

The department performed two, non-sampling compliance inspection on the facility during the previous permit cycle. The initial inspection was completed during a compliance inspection of the POTW and only reviewed basic level of operation for the WTP. The facility did not sample for the discharges occurring between April 1, 2019, through September 30, 2019. An Administrative Consent Agreement (ACA) was issued to the City of Beulah for failure to sample discharges from the WTP and failure to submit Discharge Monitoring Reports (DMR) by the due date.

The second inspection reviewed DMRs that were submitted to the department for discharges from October 1, 2020, through March 31, 2021. There were deficiencies noted of improper reporting of samples below the Lower Reporting Limit as well as sample frequency errors. DMRs were corrected and resubmitted to address the deficiency. The city completed ACA milestones of documents that provide instruction on sampling and discharge operations for future plant operators.

Table 3. Summary of DMR Data July 1, 2017 – March 31, 2022

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
pH	S.U.	7.36 – 8.2	NA	7.0 – 9.0	0
Total Suspended Solids (TSS)	mg/l	>3 – 7	5.2	90 - Daily Max	0
Total Sulfate	mg/l	70.1– 858	712.1	NA	0
Arsenic	mg/l	0.004 - 0.012	0.006	NA	0
Chloride	mg/l	8.15 - 146	87.85	NA	0
Magnesium	mg/l	18.8 - 194	132.74	NA	0
Calcium	mg/l	28.1-427	307.11	NA	0
Iron	mg/l	0 - 1.42	0.21	NA	0
Dissolved Oxygen (DO)	mg/l	6.45 - 11.2	8.64	NA	0
Conductivity	µmho/cm	3400 - 5350	4618	NA	0
Drain	MGAL	0.198 - 11.731	5.758	NA	0
Flow	MGD	0.04 – 0.797	0.068	NA	0

PROPOSED PERMIT LIMITS

The discharge of wastewater generated in the production of drinking water is not regulated by national effluent limitations guidelines, which establish technology-based effluent limitations for various industries. In the absence of a federal standard, limitations may be determined using Best Professional Judgment (BPJ) to ensure reasonable control technologies are used to prevent potential harmful effects of the discharge. In addition, the department must consider and include limitations necessary to protect water quality standards applicable to the receiving waters. The permit applicant provided a mixing zone analysis and diffuser design to demonstrate that the effluent would have complete mixing within the mixing zone allowed in the state's water quality standards.

Effluent Limitations

In the consideration of permit requirements for this proposed discharge, the department based all evaluations on the operation of the plant at its planned full capacity. The permit application, including the mixing zone analysis, provides a description of plant processes and anticipated wastewater quality.

The proposed effluent limitations shall take effect once the permit becomes active. The effluent limitations and the basis for the limitations are provided in the table below:

Table 4. Effluent Limits for Outfall 001

Effluent Parameter	Monthly Average	7-Day Average	Daily Maximum	Basis^a
pH, SU	Shall remain between 6.0 to 9.0			WQS
Total Suspended Solids (TSS), mg/l	*	*	90	BPJ
Conductivity, umho/cm	*	*	*	BPJ
Total Sulfate, mg/l	*	*	*	WQS
Total Chloride, mg/l	*	*	*	BPJ
Dissolved Oxygen (DO), mg/l	*	*	5 minimum	BPJ
General Chemistry ^b	*	*	*	BPJ
Arsenic	*	*	*	BPJ
Flow, MGD	*	*	*	BPJ
Total Drain	*	*	*	BPJ
Receiving Stream Flow, CFS	*	*	*	BPJ
Notes:				
<p>*</p> <p>This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.</p>				
<p>a. The basis of the effluent limitations is given below:</p> <p>“BPJ” refers to limits based on the department’s “best professional judgment” which considers the technology available at the facility for controlling the discharge.</p> <p>“WQS” refers to effluent limitations based on the <i>State of North Dakota’s Standards of Quality for Waters of the State</i>, NDAC Chapter 33-16-02.1.</p>				
<p>b. The analysis shall include the following parameters: Calcium Iron Magnesium</p>				

Self-Monitoring Requirements

All effluent samples shall be collected at a point following the addition of all process waste streams and prior to entering the Knife River.

Table 5. Self-Monitoring Requirements

Effluent Parameter	Frequency	Sample Type^a
pH, SU	1/Month	Instantaneous
TSS, mg/l	1/Month	Grab
Conductivity, umho/cm	3/Week or Continuous	Grab or Recorder
Total Sulfate, mg/l	1/Month	Grab
Total Chloride, mg/l	1/Month	Grab
Dissolved Oxygen (DO), mg/l	1/Month	Grab
General Chemistry	1/Month	Grab
Arsenic	1/Month	Grab
Flow, MGD ^b	1/Day	Instantaneous
Total Drain, MG	1/Quarter	Calculated
Receiving Stream Flow, CFS	1/Day	USGS Gauge 06340500
Notes:		
a.	Refer to Appendix B for definitions.	
b.	Flow shall be restricted when the Knife River is below 5 cfs. Any discharge taking place when the Knife River is below 5 cfs shall either be routed to the Beulah sanitary sewer system (after contacting Beulah POTW) or the facility may contact the department for a modified discharge rate.	

Table 6: Upstream Self-Monitoring Requirements for Outfall 001

Effluent Parameter	Frequency	Sample Type ^a
Total Sulfate, mg/l	1/Month ^b	Grab
Notes:		
a.	Refer to Appendix B for definitions.	
b.	Sampling for these parameters shall be taking at the following location. When discharging from Outfall 001, the up-stream sample shall be collected from the Knife River at the Highway 49 Bridge, 0.5 miles upstream from Outfall 001.	
Stipulations:		
1.	When dangerous conditions exist for personnel (e.g., thin ice, melting ice, flooding, etc.), the scheduled river sampling may be suspended until conditions are suitable.	

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

The North Dakota State Water Quality Standards (NDAC Chapter 33.1-16-02.1) are designed to protect existing water quality and preserve the beneficial uses of North Dakota's surface waters. Wastewater discharge permits must include conditions that ensure the discharge will meet the surface water quality standards. Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin wide total maximum daily load (TMDL) study. TMDLs result from a scientific study of the water body and are developed in order to reduce pollution from all sources.

The segment of the Knife River that the WTP discharges into (from its confluence with Spring Creek downstream to its confluence with Antelope Creek) has a current *E. coli* TMDL completed in 2017. There is also a Fecal Coliform TMDL placed on this segment of the Knife River. Per the permit application, there is no indication of *E. coli* and/or Fecal Coliform being present in the wastewater discharge. The department will assess the status of this segment during the next permit cycle.

Numerical Criteria for the Protection of Aquatic Life and Recreation

Numerical water quality criteria are listed in the water quality standards for surface waters (NDAC 33.1-16-02.1). They specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. The department uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

Numerical Criteria for the Protection of Human Health

The U.S. EPA has published numeric water quality criteria for the protection of human health that are applicable to dischargers. These criteria are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The Water Quality Standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative Criteria

Narrative water quality criteria (NDAC 33.1-16-02.1-08) limit concentrations of pollutants from exceeding applicable standards of the receiving waters. The department adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

Antidegradation

The purpose of North Dakota's Antidegradation Policy (NDAC 33.1-16-02(Appendix IV)) is to:

- Provide all waters of the state one of three levels of antidegradation protection.
- Determine whether authorizing the proposed regulated activity is consistent with antidegradation requirements.

This fact sheet demonstrates that the existing and designated uses of the receiving water will be protected under the conditions of the proposed permit.

The department conducted an antidegradation review for this facility in 2017 and determined that all existing uses of this Knife River segment will be protected and maintained (**Appendix E**).

Mixing Zones

The department's water quality standards contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33-16-02.1 (Appendix III). This policy addresses how mixing and dilution of point source discharges with receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point source discharges. Depending upon site-specific mixing patterns and environmental concerns, some pollutants/criteria may be allowed a mixing zone or dilution while others may not. In all cases, mixing zone and dilution allowances shall be limited, as necessary, to protect the integrity of the receiving water's ecosystem and designated uses.

Mixing Zone Modeling

The following is a summary of the mixing zone modeling conditions evaluated for the proposed discharge:

Diffuser (Proposed):	20-foot multi-port (16 ports)
Model program:	CORMIX 10.0 (CORMIX Mixing Zone Expert System)
Mix Zone considered:	Near instantaneous and complete (Standards of Water Quality, Appendix III, Step 5); dilution at mixing zone boundary
Criteria to meet:	Less than 10 percent difference in concentration; concentration (dilution) at mixing zone boundary
Distance allowed:	750 feet (stream allowance; Standards of Water Quality, Appendix III)

The mixing zone modeling completed for the planned diffuser demonstrated that near instantaneous and complete mixing can be expected. The report provided mixing zone model results for the outfall 001 diffuser, using the estimated discharge density along with the ambient density. The model provided the distance it would take the effluent plume to meet the regulatory mixing zone (RMZ) (maximum capacity distance was 90 feet). The following summarizes the CORMIX modeling results for the described conditions:

Table 7. Beulah WTP - CORMIX Modeling Results

Case No.	Discharge Configuration	Rate of Effluent Discharge (gpm)	Water Depth (ft)	Stream Velocity (fps)	Temperature (C) Density, (Kg/m ³)		Distance to Complete Mixing (ft)
					River Water Density	Discharge	
Outfall 001	20' 16-port	190	2.5	0.0266	10 999.7	10 1003	90

Source: Mixing Zone Modeling Results; Moore Engineering, Inc.

To ensure that operation of the discharge reflects the proposed design capabilities and the information from the CORMIX model, the permit will include a statement that the conditions and monitoring requirements are based on the use of a diffuser. A new mixing zone analysis and verification of the mixing zone may be required if the discharge rate or pollutant concentrations change substantially from those provided in the application.

When conditions permit, this facility shall verify that the diffuser meets the water quality standards requirement for instantaneous mix.

EVALUATION OF WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA

Sulfate and Conductivity

The RO filtration process has the potential to diminish beneficial uses of a water body and adversely affect water quality due to high concentration levels of dissolved minerals in the waste stream. The state's water quality standards do not include numeric criteria for TDS, a combined measure of dissolved minerals. However, the standards do include criteria for sulfate, chloride, and sodium (as a percent of cations), which are constituents of TDS. The expected sulfate concentration in the discharge represents the most limiting of the mineral constituents in regard to the water quality standards. As such, sulfate was evaluated with respect to the water quality standards, and it was found a diffuser was required. Department monitoring sites for the Knife River and its tributaries listed below were reviewed in the evaluation of Sulfate concentration in the Knife River.

Department Station ID 380080 *Knife River- E Of Beulah 1 Mi East Of Beulah On Gravel Road Bridge Downstream Of Lagoon - October 18, 2021*

Department Station ID: 380060 *Spring Creek - At Zap Located at bridge in Zap ND - March 1993 – October 2012*

Department Station ID: 380086 *Knife River - S Of Beulah 0.5 Mi S Of Beulah 0.5 Mi Upstream of Lagoon Discharge - March – October 1993*

Table 8. Sulfate Concentration Values

Station ID	380086	380060	380080
Max (mg/L)	550	958	260
Median (mg/L)	477	527	260
Average (mg/L)	448	501	260

Sulfate concentrations in the Knife River have historically been above the WQS, but the data for this area is not current and may not represent the current water quality. The department does not have adequate ambient data to run RP for sulfate. The department proposes continued effluent monitoring of sulfate on a monthly basis, and to add upstream monitoring for sulfate in the Knife River. The department will review this parameter during the next permit issuance.

The department proposes to continue with conductivity monitoring. A strong correlation can be made between the sulfate content in the Knife River and what the plant is discharging for sulfate concentration. This timely method can quickly show if the plant maintains a consistent removal of dissolved minerals.

Chloride

The department has reviewed the chloride data provided on DMRs. Utilizing the chloride concentrations, the department conducted RP analyses (**Appendix C**). The department utilized the maximum result reported of 31.4 mg/L from the data available on the Knife River from department stations ID 380080, 380060 and 380083 collected between 1993 and 2021 to conduct the RP analysis. The discharge had monthly samples reported on DMRs, so a multiplier of 1.9 was used based on the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991).

The department determined that there was no RP to exceed the WQS for discharges to the Knife River. The department proposes to continue monitoring chloride concentrations on a monthly basis. The department will review this parameter during the next permit issuance.

Flow

Flow shall be restricted when the Knife River is below 5 cfs. Flow restrictions are in place to achieve instantaneous mixing with the diffuser in accordance with the CORMIX model summary. Any discharge taking place when the Knife River is below 5 cfs shall either be routed to the Beulah sanitary sewer system (after contacting Beulah POTW) or the facility may contact the department for a modified discharge rate.

Biochemical Oxygen Demand

The Biochemical Oxygen Demand (BOD) limits are standard limitations applied to domestic wastewater and similar organic wastewater discharges. Due to all backwash and cleaning events being routed to the City of Beulah's sanitary sewer, the department proposes to not include BOD as a monitored parameter.

pH

The department proposes pH limitation of between 6.0 to 9.0. This is based upon the updated 2021 WQS for class II streams outlined in NDAC 33.1-16-02.1.

Total Suspended Solids

Total Suspended Solids (TSS) limits are standard limitations applied to domestic wastewater and similar organic wastewater discharges. TSS is required for other similar facilities and for membrane filtration water treatment plants in the water treatment plants and potable distribution systems general permit (Table 3 of NDG520000 Part II(B)). There were no exceedances reported in the current permit.

The department proposes to continue with a TSS limit of 90 mg/l based upon BPJ.

Dissolved Oxygen (DO)

The department has reviewed the DO data. The department compared the minimum DO sample results to the WQS of a daily minimum of 5.0 mg/l. The lowest DO sample result was 6.45 mg/l. The department proposes to continue with a DO limit of 5.0 mg/l based upon WQS until the plant has run for a full permit cycle. The department will review this parameter during the next permit issuance.

Monitored Parameters

As a result of the antidegradation review, the department determined the effluent should be monitored for the following parameters: Calcium, Iron, Magnesium, and Arsenic.

The department has reviewed DMR data provided for Arsenic and conducted RP analysis. The department determined that there was no reasonable potential to violate the WQS. The department proposes to continue with monthly monitoring for Calcium, Iron, Magnesium and Arsenic.

Human Health

North Dakota's water quality standards include numeric, human health-based criteria that the department must consider when writing NDPDES permits. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria. The department determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health. The department will reevaluate this discharge for impacts to human health at the next permit reissuance.

Monitoring Requirements

The department requires monitoring, recording, and reporting (NDAC Chapter 33-16-01; 21 through 23) and 40 CFR 122.41 to verify the treatment process is functioning correctly and the discharge complies with the permit's limits.

Test Procedures

The collection and transportation of all samples shall conform to EPA preservation techniques and holding times. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

OTHER PERMIT CONDITIONS

Water Treatment Additives

The membrane filtration equipment requires routine cleaning and conditioning as part of the normal operation. While using these chemicals in routine cleaning and conditioning, such as the control of scaling and bio-fouling, care should be used in the selection and management of these chemicals. To ensure selection and management of chemicals used in this facility minimize the potential for harmful effects in the discharge or sewerage, the permittee will be required to provide the following information on chemical additives. The information on the chemical additives shall include the following usage and discharge information:

- Material Safety Data Sheet (MSDS);
- The proposed water additive discharge concentration;
- The discharge frequency (i.e. number of hours per day and number of days per year);
- The monitoring point from which the product is to be discharged;

- • The type of removal treatment, if any, that the water additive receives prior to discharge;
- • Product function (i.e. microbiocide, flocculant, etc.);
- • A 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp. Or *Simocephalus* sp.); and
- • The results for a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean).

PERMIT ISSUANCE PROCEDURES

Permit Modifications

The department may modify this permit to impose numerical limits, if necessary to comply with water quality standards for surface waters, with sediment quality standards, or with water quality standards for ground waters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The department may also modify this permit to comply with new or amended state or federal regulations.

Proposed Permit Issuance

This proposed permit meets all statutory requirements for the department to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to issue a permit to the Beulah WTP, Beulah, North Dakota. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and the department's reasons for requiring permit conditions.

The department will place a Public Notice of Draft on **May 26, 2022** in the **Beulah Beacon** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The notice:

- Indicates where copies of the draft permit and fact sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges individuals to submit their comments before the end of the comment period.
- Informs the public that if there is significant interest, a public hearing will be scheduled.

You may obtain further information from the department by telephone, 701.328.5210, or by writing to the address listed below.

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy Street, 3rd Floor
Bismarck, ND 58503

The primary contact for this permit and fact sheet is Sam DeVries.

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APPENDIX B – GLOSSARY

DEFINITIONS Standard Permit BP 2019.05.29

1. “**Act**” means the Clean Water Act.
2. “**Average monthly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. “**Average weekly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. “**Best management practices**” (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. “**Bypass**” means the intentional diversion of waste streams from any portion of a treatment facility.
6. “**Composite**” sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. “**Daily discharge**” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. “**Department**” means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. “**DMR**” means discharge monitoring report.
10. “**EPA**” means the United States Environmental Protection Agency.
11. “**Geometric mean**” means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

12. **“Grab”** for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.

13. **“Instantaneous”** for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.

14. **“Maximum daily discharge limitation”** means the highest allowable “daily discharge.”

15. **“Salmonid”** means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

16. **“Sanitary Sewer Overflows (SSO)”** means untreated or partially treated sewage overflows from a sanitary sewer collection system.

17. **“Severe property damage”** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

18. **“Total drain”** means the total volume of effluent discharged.

19. **“Upset”** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

DFLOW

USGS gage station 06340500 on the Knife River by Hazen, ND was used to determine critical low flows using the DFLOW (3.1b) program. Data used for these calculations ranged from May 1, 2001, to May 1, 2022

DFLOW 1B3 (ACUTE)	6.22	CFS	DFLOW 1Q10 (ACUTE)	6.0	CFS
DFLOW 4B3 (CHRONIC)	6.48	CFS	DFLOW 7Q10 (CHRONIC)	6.39	CFS
DFLOW 30B10 (AMMONIA)	NA	CFS			

Reasonable Potential Analysis**Chloride**

The reasonable potential determination for chloride is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The default coefficient of variation of 0.2 was used with n=1.

**Receiving Water Concentration (RWC)
Reasonable Potential (RP)
Determination**

Technical Support Document (TSD) For Water Quality-based Toxics Control
EPA/505/2-90-001; March 1991

Facility Name:	Beulah WTP	Receiving Stream:	Knife River
NDPDES Permit:	ND0026824	1Q10 Acute	6 cfs
Daily Maximum Flow (mgd):	0.80	1B3 Acute	6.22 cfs
Daily Average Flow (mgd):	0.07	7Q10 Chronic	6.39 cfs
Stream Design Mixing:	50.0%	4B3 Chronic	6.48 cfs
Statistical Multiplier:	1.9		
Upstream Concentration:	31.0000	mg/l	Parameter:
Effluent Concentration (max):	883.0000	mg/l	Chloride
			Outfall:
			002

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)

Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)

Qe = Effluent Design Flow

Ce = Highest effluent concentration reported.

pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.

Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)

Cs = Background concentration of the receiving water.

Qe - Acute	0.80	mgd	Qs - 1Q10	3.88	mgd
Qe - Chronic	0.07	mgd	Qs - 1B3	4.02	mgd
Ce	883.0000	mg/l	Qs - 7Q10	4.13	mgd
Cs	31.0000	mg/l	Qs - 30B10	4.19	mgd
Stat	1.90				
pmf	50.0%				

Acute RP

RWC - 1Q10 510.9562 mg/l

RWC - 1B3 498.8028 mg/l

Chronic RP

RWC - 7Q10 83.6933 mg/l

RWC - 30B10 82.9846 mg/l

Criterion Maximum Concentration (CMC)

Acute Criterion N/A mg/l

Criterion Continuous Concentration (CCC)

Chronic Criterion 250.0000 mg/l

If the calculated RWC is greater than its respective criterion then there is RP and if RWC is less than the criterion then there is no RP.

CMC RP Present:

1Q10 Acute OR

NO

1B3 Acute

NO

CCC RP Present:

7Q10 Chronic OR

NO

4B3 Chronic

NO

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design and harmonic mean flows to determine Water Quality Based Effluent Limits (WQBELs) and Whole Effluent Toxicity (WET) limits.

Arsenic

The reasonable potential determination for arsenic is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The default coefficient of variation of 0.3 was used with n=1.

**Receiving Water Concentration (RWC)
Reasonable Potential (RP)
Determination**

Technical Support Document (TSD) For Water Quality-based Toxics Control
EPA/505/2-90-001; March 1991

Facility Name:	Beulah WTP	Receiving Stream:	Knife River
NDPDES Permit:	ND0026824	1Q10 Acute	6 cfs
Daily Maximum Flow (mgd):	0.80	1B3 Acute	6.22 cfs
Daily Average Flow (mgd):	0.07	7Q10 Chronic	6.39 cfs
Stream Design Mixing:	50.0%	4B3 Chronic	6.48 cfs
Statistical Multiplier:	3.6		
Upstream Concentration:	0.0120	mg/l	Parameter:
Effluent Concentration (max):	0.0120	mg/l	Arsenic
			Outfall:
			002

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)

Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)

Qe = Effluent Design Flow

Ce = Highest effluent concentration reported.

pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.

Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)

Cs = Background concentration of the receiving water.

Qe - Acute	0.80	mgd	Qs - 1Q10	3.88	mgd
Qe - Chronic	0.07	mgd	Qs - 1B3	4.02	mgd
Ce	0.0120	mg/l	Qs - 7Q10	4.13	mgd
Cs	0.0120	mg/l	Qs - 4B3	4.19	mgd
Stat	3.60				
pmf	50.0%				

Acute RP

RWC - 1Q10	0.0211	mg/l
RWC - 1B3	0.0209	mg/l

Chronic RP

RWC - 7Q10	0.0130	mg/l
RWC - 30B10	0.0130	mg/l

Criterion Maximum Concentration (CMC)

Acute Criterion	0.34	mg/l
-----------------	------	------

Criterion Continuous Concentration (CCC)

Chronic Criterion	0.1500	mg/l
-------------------	--------	------

If the calculated RWC is greater than its respective criterion then there is RP and if RWC is less than the criterion then there is no RP.

CMC RP Present:

1Q10 Acute OR	NO
1B3 Acute	NO

CCC RP Present:

7Q10 Chronic OR	NO
4B3 Chronic	NO

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design and harmonic mean flows to determine Water Quality Based Effluent Limits (WQBELs) and Whole Effluent Toxicity (WET) limits.

APPENDIX D – RESPONSE TO COMMENTS

Comments received during the public notice/comment period will be placed here.

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APPENDIX E – ANTIDEGRADATION REVIEW

ANTIDEGRADATION REVIEW WORKSHEET	
1. GENERAL INFORMATION NAME OF REVIEWER: <u>PETER N. WAX, SARAH STARR, MARTY HAROLDSON</u> NAME OF RECEIVING WATER: <u>KNIFE RIVER</u> BASIN: <u>MISSOURI RIVER</u> STREAM CLASSIFICATION: <u>CLASS II</u> OTHER: _____	
2. DESCRIPTION OF PROPOSED ACTIVITY: <u>CONTINUOUS DISCHARGE PERMIT FOR THE NEW CITY OF BEULAH WATER TREATMENT PLANT FACILITY FOR REVERSE OSMOSIS AND DISCHARGE OF REVERSE OSMOSIS CONCENTRATE.</u>	
3. WHICH CATEGORY OF ANTIDEGRADATION APPLIES? <input checked="" type="checkbox"/> CATEGORY 1 – GO TO QUESTION 4. <input type="checkbox"/> CATEGORY 2 – GO TO QUESTION 10. <input type="checkbox"/> CATEGORY 3 – GO TO QUESTION 14.	
CATEGORY 1 QUESTIONS	
4. DOES THE WATERBODY QUALIFY FOR CATEGORY 1 PROTECTION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF NO, GO TO CATEGORY 2 PROTECTION, QUESTION 10.	
5. WILL THE PROPOSED ACTIVITY RESULT IN SIGNIFICANT DEGRADATION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – RECOMMEND APPROVAL OF THE PROPOSED ACTIVITY.	
6. HAS THE APPLICANT COMPLETED AN ADEQUATE EVALUATION OF ALTERNATIVES AND DEMONSTRATED THAT THERE ARE NO REASONABLE ALTERNATIVES TO ALLOWING THE DEGRADATION? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – RECOMMEND DENIAL OF THE PROPOSED ACTIVITY.	
7. HAS THE APPLICANT DEMONSTRATED THAT THE PROPOSED ACTIVITY WILL PROVIDE IMPORTANT SOCIOECONOMIC DEVELOPMENT IN THE AREA WHERE THE AFFECTED WATERS ARE LOCATED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – RECOMMEND DENIAL OF THE PROPOSED ACTIVITY.	
8. WILL EXISTING USES BE PROTECTED AND CONSISTENT WITH THE CATEGORY 2 PROCEDURES OUTLINED BY QUESTIONS 11 AND 13? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO – RECOMMEND DENIAL OF THE PROPOSED ACTIVITY.	
CATEGORY 1 QUESTIONS (CONTINUED)	

9. HAVE ALL STATE-REQUIRED CONTROLS ON POINT SOURCES TO THE SEGMENT BEEN ACHIEVED, OR ARE THEY ON A COMPLIANCE SCHEDULE?



YES



NO – RECOMMEND DENIAL OF THE PROPOSED ACTIVITY.

IF YES, PROVIDE THE BASIS FOR THE CONCLUSION: THE FACILITY IS IMPLEMENTING A DIFFUSER.

CATEGORY 2 QUESTIONS

10. THE BASIS FOR CONCLUDING THAT CATEGORY 1 REQUIREMENTS DO NOT APPLY:

N/A

11. ARE THERE USES THAT EXIST, OR HAVE EXISTED SINCE 1967, WITH MORE STRINGENT WATER QUALITY PROTECTION REQUIREMENTS THAN THE CURRENT DESIGNATED USES?



YES



NO

IF YES, PROVIDE THE BASIS FOR THE CONCLUSION:

12. IF THE ANSWER TO 11 IS YES, WHAT WATER QUALITY CRITERIA REQUIREMENTS WILL ENSURE PROTECTION OF SUCH EXISTING USES? INDICATE SPECIFIC PARAMETER(S) AND APPLICABLE WATER QUALITY CRITERIA:

13. WILL EXISTING USES BE MAINTAINED AND PROTECTED?



YES



NO – RECOMMEND DENIAL OF THE PROPOSED ACTIVITY.

IF NO, PROVIDE THE BASIS FOR THE CONCLUSION:

CATEGORY 3 QUESTIONS

14. WILL THE PROPOSED ACTIVITY RESULT IN A PERMANENT NEW OR EXPANDED SOURCE OF POLLUTANT(S) DIRECTLY TO AN OUTSTANDING STATE RESOURCE WATER (OSRW) SEGMENT?



YES – RECOMMEND DENIAL OF PROPOSED ACTIVITY.



NO

15. IF THE PROPOSED ACTIVITY WILL RESULT IN A PERMANENT NEW OR EXPANDED SOURCE OF POLLUTANT(S) TO A SEGMENT UPSTREAM FROM AN OSRW SEGMENT, WILL THE PROPOSED ACTIVITY AFFECT OSRW WATER QUALITY?



YES – RECOMMEND DENIAL OF PROPOSED ACTIVITY.



NO

IF NO, PROVIDE THE BASIS FOR CONCLUSION:

16. IF THE PROPOSED ACTIVITY WILL RESULT IN A NON-PERMANENT NEW OR EXPANDED SOURCE OF POLLUTANT(S) TO AN OSRW SEGMENT OR A SEGMENT UPSTREAM FROM AN OSRW SEGMENT, WILL THE PROPOSED ACTIVITY RESULT IN "TEMPORARY AND LIMITED" EFFECTS ON OSRW WATER QUALITY?



YES



NO – RECOMMEND DENIAL OF PROPOSED ACTIVITY.

IF NO, PROVIDE THE BASIS FOR THE CONCLUSION:

PRELIMINARY DECISION

17. BASED ON THE INFORMATION PROVIDED IN THIS WORKSHEET, CAN THE PROPOSED ACTIVITY BE AUTHORIZED PURSUANT TO THE STATE ANTIDEGRADATION POLICY?



YES



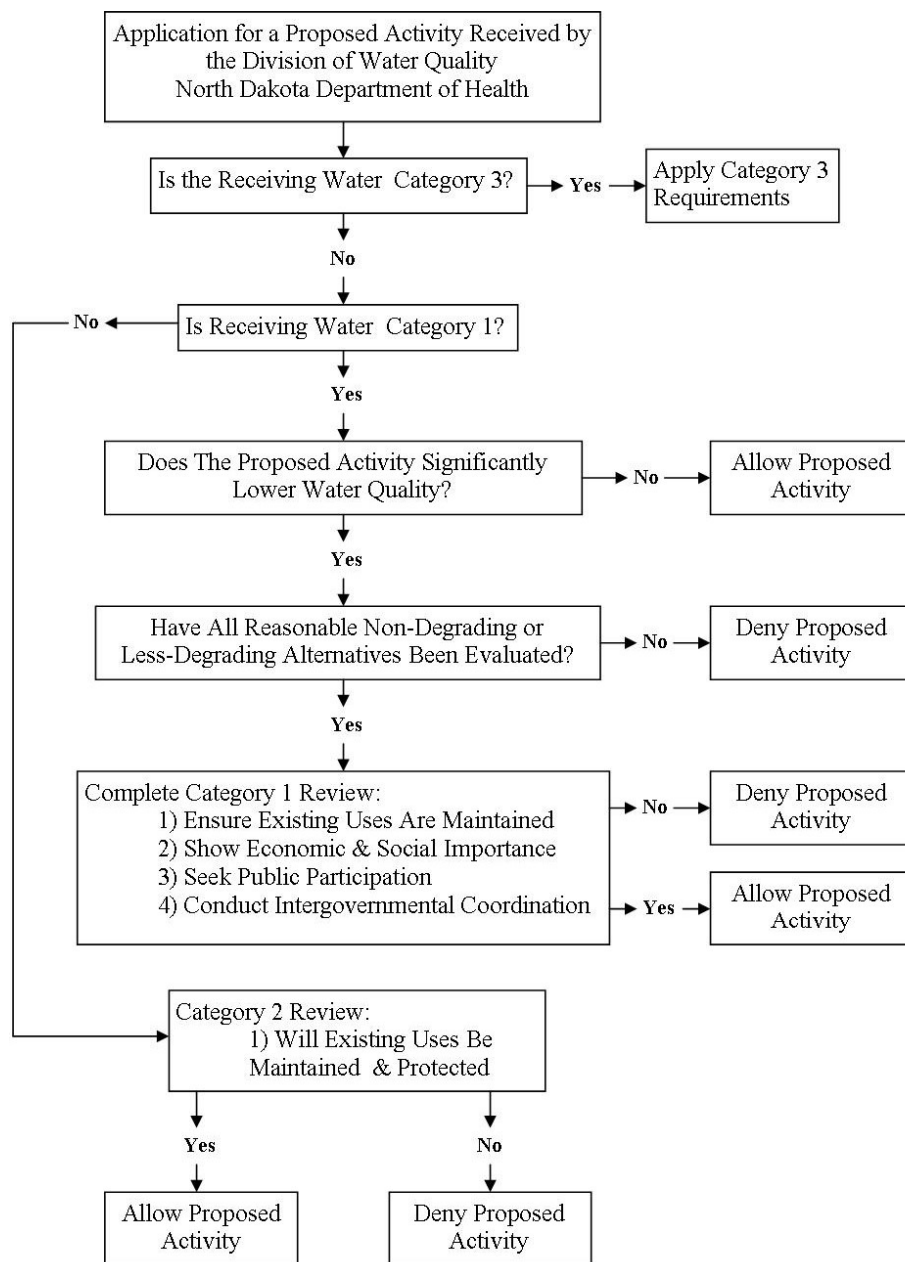
NO

PROVIDE A BASIS FOR THE CONCLUSION: All existing uses protected and maintained. No other reasonable Alternative available. Important socially and economically. Conservative assumptions used in developing discharge Permit limits. According to CORMIX Model, complete mixing will occur well within mixing zone (just under 2 stream widths of the allowable 10).

SIGNATURE(S):____/PETE_WAX/____/SARAH_STARR/____/MARTY_HAROLDSON/____

DATE: 2/17/2017

North Dakota Antidegradation Procedure



Permit No: ND0026824
Effective Date: July 1, 2022
Expiration Date: June 30, 2027

AUTHORIZATION TO DISCHARGE UNDER THE
NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33.1-16-01 of the North Dakota Department of Environmental Quality rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

Beulah City of
Water Treatment Plant

is authorized to discharge from the Beulah Water Treatment Plant

to the Knife River, a Class II stream

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,
June 30, 2027.

Signed this _____ day of _____, _____.

Karl H. Rockeman, P.E.
Director
Division of Water Quality

BP 2019.05.29

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DEFINITIONS Standard Permit BP 2019.05.29

1. “**Act**” means the Clean Water Act.
2. “**Average monthly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. “**Average weekly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. “**Best management practices**” (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. “**Bypass**” means the intentional diversion of waste streams from any portion of a treatment facility.
6. “**Composite**” sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. “**Daily discharge**” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. “**Department**” means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. “**DMR**” means discharge monitoring report.
10. “**EPA**” means the United States Environmental Protection Agency.
11. “**Geometric mean**” means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. “**Grab**” for monitoring requirements, means a single “dip and take” sample collected at a representative point in the discharge stream.
13. “**Instantaneous**” for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. “**Maximum daily discharge limitation**” means the highest allowable “daily discharge.”

15. “**Salmonid**” means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.
16. “**Sanitary Sewer Overflows (SSO)**” means untreated or partially treated sewage overflows from a sanitary sewer collection system.
17. “**Severe property damage**” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
18. “**Total drain**” means the total volume of effluent discharged.
19. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

OUTFALL DESCRIPTION

Outfall 001. Active. Final Outfall.					
Latitude: 47.25528		Longitude: -101.77417		County: Cass	
Township: 144 North		Range: 88 West		Section: 36	
				QQ: BA	
Receiving Stream: Knife River				Classification: Class II	
Outfall Description: The discharge will be conveyed via an 8-inch gravity pipeline from the WTP to the Knife River, a Class II water body. The outfall will be a submerged pipe/diffuser in the stream bed. All discharge water is RO concentrate water.					

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	1/Quarter	October 31, 2022
Application Renewal	NPDES Application Renewal	1/permit cycle	December 31, 2026

SPECIAL CONDITIONS

Water Treatment Additive Information

To ensure selection and management of chemicals used in this facility minimize the potential for harmful effects in the discharge, the permittee may be required to provide, upon request, the following information on chemical additives. The information on the chemical additives shall include the following usage and discharge information:

- Material Safety Data Sheet (MSDS);
- The proposed water additive discharge concentration;
- The discharge frequency (i.e., number of hours per day and number of days per year);
- The monitoring point from which the product is to be discharged;
- The type of removal treatment, if any, that the water additive receives prior to discharge;
- Product function (i.e., microbiocide, flocculant, etc.);
- A 48-hour LC_{50} or EC_{50} for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp. or *Simocephalus* sp.); and
- The results for a toxicity test for one other North American freshwater aquatic species (other than a planktonic crustacean).

I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls as specified to the following: **Knife River, a Class II stream.**

This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

B. Effluent Limitations and Monitoring

The permittee must limit and monitor all discharges as specified below:

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Effluent Limitations and Monitoring Requirements Outfall 001				
Parameter	Effluent Limitations		Monitoring Requirements	
	Avg. Monthly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Total Suspended Solids, mg/l	*	90	1/Month	Grab
pH, SU	Shall remain between 6.0 to 9.0 SU		1/Month	Instantaneous
Conductivity, umho/cm	*	*	3/Week or Continuous	Grab or Recorder
Total Sulfate, mg/l	*	*	1/Month	Grab
Total Chloride, mg/l	*	*	1/Month	Grab
Dissolved Oxygen (DO), mg/l	*	5 minimum	1/Month	Grab
General Chemistry ^a	*	*	1/Month	Grab
Arsenic, mg/l	*	*	1/Month	Grab
Effluent Flow, mgd ^b	*	Report Max. Daily Value	1/Day	Instantaneous
Receiving Stream Flow, CFS	*	*	1/Day	USGS Gauge 06340500
Total Flow, mgal	Report Total Discharged		1/Quarter	Calculated

Notes:

*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.

a. The analysis shall include the following parameters:
Calcium Iron Magnesium

b. Flow shall be restricted when the Knife River is below 5 cfs. Any discharge taking place when the Knife River is below 5 cfs shall either be routed to the Beulah sanitary sewer system (after contacting Beulah POTW) or the facility may contact the department for a modified discharge rate.

Stipulations:

1. The permitting authority must be notified, in advance, of any facility expansions, additions, or modifications to increase the amount of discharge in accordance with part III(C) "Planned Changes". The increase in any effluent limitation is considered a major permit modification. Major modifications require the issuance of a public notice inviting public comment.

Upstream Self-Monitoring Requirements for Outfall 001		
Effluent Parameter	Frequency	Sample Type ^a
Total Sulfate, mg/l	1/Month ^b	Grab
Notes:		
a. Refer to Appendix B for definitions.		
b. Sampling for these parameters shall be taking at the following location. When discharging from Outfall 001, the up-stream sample shall be collected from the Knife River at the Highway 49 Bridge, 0.5 miles upstream from Outfall 001.		
Stipulations:		
1. When dangerous conditions exist for personnel (e.g., thin ice, melting ice, flooding, etc.), the scheduled river sampling may be suspended until conditions are suitable.		

II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2021.09.09

A. Representative Sampling (Routine and Non-Routine Discharges)

All samples and measurements taken shall be representative of the monitored discharge.

In order to ensure that the effluent limits set forth in this permit are not violated at times other than when routine samples are taken, the permittee must collect additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The permittee must analyze the additional samples for those parameters limited under **Part I Effluent Limitations and Monitoring** requirements of this permit that are likely to be affected by the discharge.

The permittee must collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the outfall. The samples must be analyzed in accordance with B. Test Procedures. The permittee must report all additional monitoring in accordance with D. Additional Monitoring.

B. Test Procedures

The collection and transportation of all samples shall conform with EPA preservation techniques and holding times found in 40 CFR 136. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified in this permit or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

C. Recording of Results

Records of monitoring information shall include:

1. the date, exact place and time of sampling or measurements;
2. the name(s) of the individual(s) who performed the sampling or measurements;
3. the name of the laboratory;
4. the date(s) and time(s) analyses were performed;
5. the name(s) of the individual(s) who performed the analyses;

6. the analytical techniques or methods used; and
7. the results of such analyses.

D. Additional Monitoring

If the discharge is monitored more frequently than this permit requires, all additional results, if in compliance with B. Test Procedures, shall be included in the summary on the Discharge Monitoring Report.

E. Reporting of Monitoring Results

1. Monitoring results shall be summarized and reported to the department using Discharge Monitoring Reports (DMRs). If no discharge occurs during a reporting period, "No Discharge" shall be reported. The permittee must submit DMRs electronically using the electronic information reporting system unless requirements in subsection 3 are met.
2. Prior to December 21, 2025, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2025, the permittee must report the following using the electronic reporting system:
 - a. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];
 - b. Municipal separate storm sewer system program reports;
 - c. Pretreatment program reports;
 - d. Sewer overflow/bypass event reports; and
 - e. Clean Water Act 316(b) annual reports
3. The permittee may seek a waiver from electronic reporting. To obtain a waiver, the permittee must complete and submit an Application for Temporary Electronic Reporting Waiver form (SFN 60992) to the department. The department will have 120 days to approve or deny the waiver request. Once the waiver is approved, the permittee may submit paper versions of monitoring data and reports to the department.
 - a. One of the following criteria must be met in order to obtain a waiver. The department reserves the right to deny any waiver request, even if they meet one of the criteria below.
 1. No internet access,
 2. No computer access,
 3. Annual DMRs (upon approval of the department),
 4. Employee turnover (3-month periods only), or
 5. Short duration permits (upon approval of the department)

All reports must be postmarked by the last day of the month following the end of each reporting period. All original documents and reports required herein shall be signed and submitted to the department at the following address:

ND Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck ND 58503-1324

F. Records Retention

All records and information (including calibration and maintenance) required by this permit shall be kept for at least three years or longer if requested by the department or EPA.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

B. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

C. Planned Changes

The department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

D. Duty to Provide Information

The permittee shall furnish to the department, within a reasonable time, any information which the department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

E. Signatory Requirements

All applications, reports, or information submitted to the department shall be signed and certified.

All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

All reports required by the permit and other information requested by the department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

The authorization is made in writing by a person described above and submitted to the department; and

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization under E. Signatory Requirements is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

F. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:
 - a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;
 - b. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or
 - c. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.
2. A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and
 - d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

Reports shall be submitted to the address in Part II.E. Reporting of Monitoring Results. The department may waive the written report on a case by case basis if the oral report has been received within 24 hours by the department at 701.328.5210 as identified above.

All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in this subsection.

G. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to any of the following provisions in this section.
2. Bypass exceeding limitations-notification requirements.
 - a. Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of bypass.
 - b. Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required under F. Twenty-four Hour Notice of Noncompliance Reporting.
3. Prohibition of Bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - c. The permittee submitted notices as required under the 1. Anticipated Bypass subsection of this section.

The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed above.

H. Upset Conditions

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and the permittee can identify its cause(s);
2. The permitted facility was, at the time being, properly operated;
3. The permittee submitted notice of the upset as required under F. Twenty-four Hour Notice of Noncompliance Reporting and
4. The permittee complied with any remedial measures required under I. Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

J. Removed Materials

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state. The permit issuing authority shall be contacted prior to the disposal of any sewage sludges. At that time, concentration limitations and/or self-monitoring requirements may be established.

K. Duty to Reapply

Any request to have this permit renewed should be made six months prior to its expiration date.

IV. GENERAL PROVISIONS

A. Inspection and Entry

The permittee shall allow department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the wastewater treatment facilities and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

B. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

C. Transfers

This permit is not transferable except upon the filing of a Statement of Acceptance by the new party and subsequent department approval. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the department of the possible change.

D. New Limitations or Prohibitions

The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

E. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G. State Laws

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

H. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

J. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit.