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

Public Notice Date: 5/23/2022 Public Notice Number: ND-2022-009

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: 10/11/2021 Application Number: ND0020079

Applicant Name: Kenmare City of

Mailing Address: PO Box 816, Kenmare, ND 58746

Telephone Number: 701.385.4232

Proposed Permit Expiration Date: 6/30/2027

Facility Description

The reapplication is for a 3-cell waste stabilization pond system which services the city of Kenmare. The discharge facility is located in the SW1/4, NW1/4, and NW1/4, SW1/4, Section 21, Township 160 North, Range 88 West. Any discharge would be to Middle Des Lacs Lake.

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 FWPCAA 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 22, 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
ND0020079

CITY OF KENMARE
KENMARE, ND

DATE OF THIS FACT SHEET – 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 chapter 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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BACKGROUND INFORMATION

Table 1 – General Facility Information

Applicant:	City of Kenmare
Facility Name and Address:	City of Kenmare PO Box 816 Kenmare, ND 58746
Permit Number:	ND0020079
Permit Type:	Minor Municipality - Renewal
Type of Treatment:	Waste Stabilization Pond with Aeration
SIC Code:	4952
NAICS Code:	221320
Discharge Location:	Outfall 001: Middle Des Lacs Lake, Class II Stream Latitude: 48.65436 Longitude: -102.05759
Hydrologic Code:	09010002 – Des Lacs
Population:	1,096

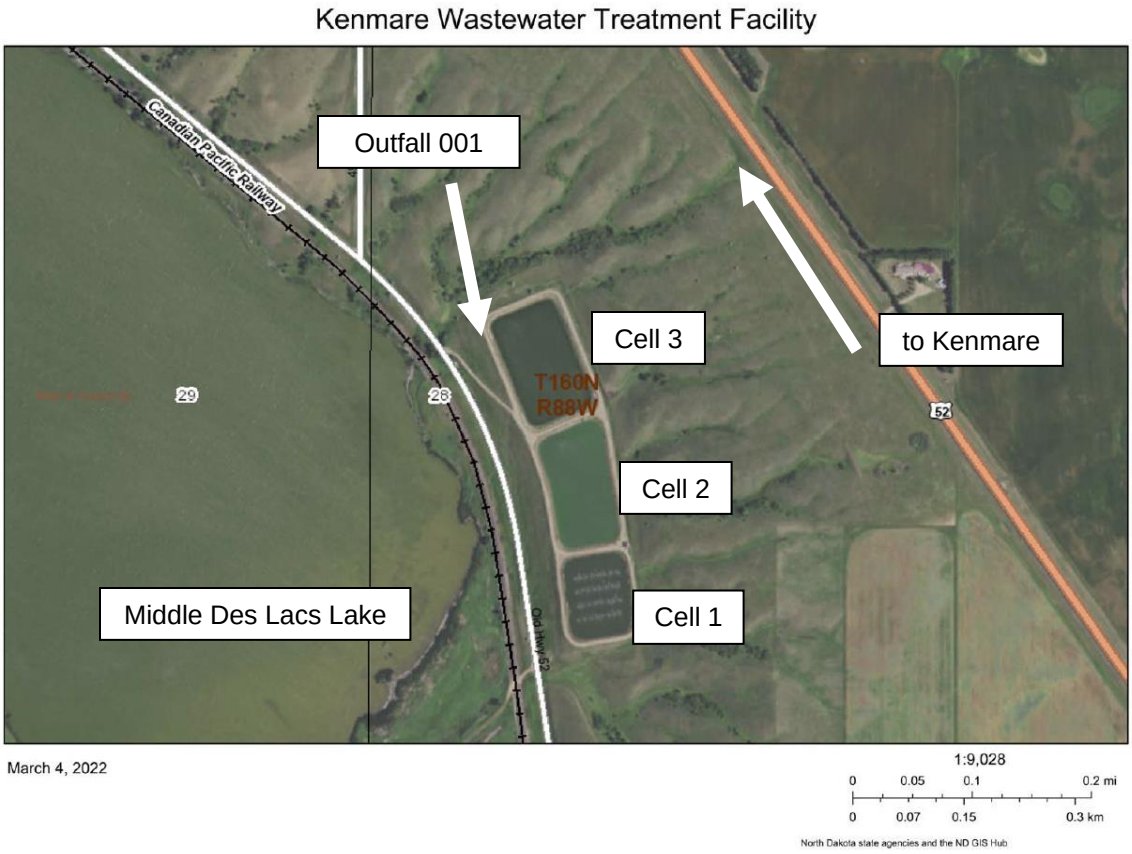


Figure 1 – Aerial Photograph of the City of Kenmare Wastewater Treatment Facility, Kenmare, ND (North Dakota Geographic Information System, Map Generated March 2022)

FACILITY DESCRIPTION

The City of Kenmare Publicly Owned Treatment Works (POTW) consists of a three cell waste stabilization pond system. The facility is located in the SW1/4 of the NW1/4 and the NW1/4 of the SW1/4 of Section 21, Township 160 North, Range 88 West in Ward County. Any discharge would be to the unnamed tributary to the Middle Des Lacs Lake (a part of the Des Lacs River system).

History

The three-cell system began operation in December of 1985. Due to land constraints, the third cell was constructed at a ten foot operating depth to obtain adequate storage capacity. During the 1991 permit reissuance, the department determined the facility was eligible for a total suspended solids (TSS) limitation equivalent to secondary treatment. The determination was based on the age of the facility at the time (6 years) and land constraints.

From July 1996 to April 1997, the facility was covered under general permit NDG120000. However, because the facility was issued a TSS limitation equivalent to secondary treatment in the 1991 permit, the facility was not eligible for coverage under the general permit. The facility

was then issued an individual permit in April of 1997. Because the facility had difficulty meeting permit limitations – particularly for five-day biochemical oxygen demand (BOD_5) – the department included a requirement to develop a compliance schedule to achieve secondary treatment standards in the 1997 permit.

Between 1997 and 2002, several corrective measures were completed relating to excessive inflow and infiltration (I/I) that the city had been experiencing. Select areas of the town were identified with excessive I/I. This resulted in repairs to the collection system, replacement of manholes and covers, removal of stormwater inflow points, and other minor sewer repairs. In addition, studies were performed on the quality and quantity of the wastewater for the city, and different flow patterns and treatment options were experimented with at the wastewater treatment facility.

Quality and quantity issues still existed when the permit was reissued in 2002. Results of an engineering study recommended additional improvements to the lagoon cells. It was recommended that cells one and two be raised two feet to provide additional storage. The city planned on installing electricity out to the lagoon cells to power aeration equipment in the cells.

The facility began using solar powered water circulators in each cell in 1999. From 2007 to 2015, the facility operated the water circulators in different cells. Other items that were completed before June of 2002 included:

- Extension of electric service to the lagoons
- Construction of transfer pump stations between cells 1 & 2, and cells 2 & 3
- Conversion of the existing water circulators to run for 24 hours by the addition of an electric motor to each unit
- Raising cells 1 and 2 by two feet

In 2005, the city initiated a street improvement project that replaced manhole casings and covers to help reduce I/I problems. The city also moved the water circulator from cell 3 to cell 1. This left cell 1 with two aerators and cell 2 with one.

Despite this, the facility continued to have difficulty meeting permit limitations. Between 2002 and 2007, no significant improvement in reducing BOD_5, TSS, and ammonia had taken place. Because of this, the department included a requirement to develop a compliance schedule in the 2007 permit. A compliance schedule was never finalized.

A compliance schedule was included in the 2012 permit. The compliance schedule required the city to complete an infrastructure assessment and treatment needs. In 2015 the facility changed how wastewater was treated in the waste stabilization pond system:

- The cell treatment order was reversed so that influent enters cell 3 and effluent is discharged from cell 1
- Forced aeration was installed in cell 1 (formerly cell 3)
- Cell 1 was raised to 12 feet
- Cells 2 and 3 were raised to 13 feet
- Approximately 30 inches of biosolids were removed from cell 3 (formerly cell 1)
- Operation of the water circulators was discontinued

The naming of the cells before and after the operational change as well as the cell size are provided in Table 2.

Table 2 – Historical Cell Name

Cell Name (Current)	Cell Name (Historical)	Cell Size (Acres)
Cell 1 (A)	Cell 3	2.61
Cell 2 (B)	Cell 2	3.89
Cell 3 (C)	Cell 1	4.40

Treatment Processes

Raw domestic wastewater (sewage) is sent to cell 1 to facilitate the breakdown of organic matter. From there the wastewater is transferred to cell 2 where detention time is used to continue the wastewater treatment process. Cell 3 is used as a polishing cell for wastewater treatment.

Outfall Description

There is one active discharge outfall associated with the facility. The description of the outfall is provided below:

Outfall 001. Active. Final.			
Latitude: 48.65436	Longitude: -102.05759	County: Ward	
Township: 160N	Range: 88W	Section: 21	QQ: CB
Receiving Stream: Middle Des Lacs Lake		Classification: Class II Stream	
Outfall Description: The treated effluent discharges to an unnamed tributary of the Middle Des Lacs Lake, which is part of Des Lacs River system, a class II stream.			

PERMIT STATUS

The department issued the previous permit for this facility on July 1, 2017. The current permit has monitoring requirements for BOD_5, TSS, pH, *E. coli*, ammonia as nitrogen, and temperature.

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The Division of Municipal Facilities and Division of Water Quality each conducted one routine, non-sampling compliance inspection since June 1, 2017. For the purposes of the permit renewal, the department's assessment of compliance is based on review of the facility's Discharge Monitoring Reports (DMRs) and inspections conducted by department staff.

Past Discharge Data

The concentration of pollutants in the discharge was reported on discharge monitoring report forms. According to department records, the city of Kenmare discharged 6 times between June 2017 and March 2022. The effluent is characterized as shown in Table 3.

Table 3 – City of Kenmare (2012-2017)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Effluent – Outfall 001					
BOD_5	mg/L	4 – 17	7.75	25 30-day avg 45 7-day avg	0 0
TSS	mg/L	5 – 16	7.42	45 30-day avg 65 7-day avg	0 0
pH	S.U.	8.07 – 8.73	NA	6.0 to 9.0	0
E. Coli	#/100 mL	1 – 6	1.64 (geometric mean)	126 30-day avg 409 Daily max	0 0
Ammonia as N	mg/L	0.1 – 7.71	3.08	NA	NA
Temperature	˚C	20	20	N/A	N/A
Flow	MGD	1.03-1.92	1.36	NA	NA
Drain	MG	7.2-11.5	8.5	NA	NA

PROPOSED EFFLUENT LIMITATIONS

The discharge of wastewater generated by a municipal wastewater treatment facility (WWTF) is regulated by secondary treatment limitations as well as state rules. Secondary treatment limitations may be found in Title 40 of the Code of Federal Regulations, Part 133 (or 40 CFR 133) and in NDAC section 33.1-16-01-30. These regulations describe the minimum level of effluent quality attainable by secondary treatment of municipal wastewater in terms of BOD_5, TSS, and pH. The regulations also include requirements to remove at least 85 percent of the BOD_5 and TSS found in the influent to the WWTF or provide treatment equivalent to secondary treatment under certain circumstances. NDAC section 33.1-16-01-14 also establishes effluent limitations for municipal wastes.

Limitations also may be generated using Best Professional Judgment (BPJ) in the absence of a federal standard to ensure reasonable control technologies are used to prevent potential harmful effects of the discharge. In addition, the department also must consider and include limitations necessary to protect water quality standards applicable to the receiving waters.

Limitations based on numeric nutrient criteria are not being included in the proposed permit. Nutrient criteria have yet to be developed for the state of North Dakota. Currently the North Dakota State Water Quality Standards (NDAC Chapter 33.1-16-02.1) or WQS contain a

narrative standard stating that surface waters must be free from nutrients in concentrations or loadings that cause objectionable growth of vegetation, algae, or other impairments.

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

Table 4: Comparison of Effluent Limits of Outfall 001

Effluent Parameter	**30-Day Average**	**7-Day Average**	**Daily Maximum**	**Basis [a]**
BOD_5 [b]	25 mg/L	45 mg/L	N/A	NDAC 33.1-16-01-14(3)(c)(1); 40 CFR 133.102(a)(2)
TSS [c]	45 mg/L	65 mg/L	N/A	40 CFR 133.105(b); BPJ
pH [d]	Between 6.0 and 9.0 s.u.			40 CFR 133.102(c); WQS
E. coli [e] (number/100 mL)	126	N/A	409	WQS
Ammonia as N	Refer to the Ammonia Table (Table 5)			WQS
BMPs are to be utilized so that there shall be no discharge of floating debris, oil, scum and other floating materials in sufficient amounts to be unsightly or deleterious, or oily wastes that produce a visible sheen on the surface of the receiving water.				WQS

Notes:

a. The basis of the effluent limitations is given below:

"Previous Permit" refers to limitations in the previous permit. The NPDES regulations **40 CFR Part 122.44(1)(1) Reissued permits** require that when a permit is renewed or reissued, interim limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit was issued have materially and substantially changed since the previous permit was issued and would constitute cause for permit modification or revocation and reissuance under **40 CFR Part 122.62**.

"BPJ" refers to best professional judgment.

"WQS" refers to effluent limitations based on the State of North Dakota's "Standards of Quality for Waters of the State", NDAC Chapter 33.1-16-02.1.

b. The limits for BOD_5 are based on 40 CFR 133.102(a)(2) "Secondary Treatment Standards," and NDAC Chapter 33.1-16-01-14(3)(c)(1)

c. The limits for TSS are based on 40 CFR 133.105(b), "Treatment Equivalent to Secondary Treatment, " and BPJ

Table 4: Comparison of Effluent Limits of Outfall 001

d. The limits for pH are based on 40 CFR 133.102(c), "Secondary Treatment Standards" and WQS
e. This limitation shall be effective from April 1 through October 31. Averages for *E. coli* shall be determined as a geometric mean.
N/A Not Applicable

Table 5: Ammonia Effluent Limitations and Monitoring Requirements – Outfall 001

	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡

The permittee must comply with the average monthly and daily maximum limitations for ammonia as N at the outfall. The permittee collects ammonia as N, temperature, and pH samples from the lagoon cell to be discharged and complies with the average monthly limitation and daily maximum limitation for ammonia at the end-of-pipe forgoing any receiving water mixing zone.

Temperature and pH samples are collected from the lagoon cell and used to calculate the average monthly limitation and daily maximum limitation for ammonia (refer to the average monthly and daily maximum limitation formulas below). The calculated limitations are then compared to the result of the ammonia as N sample(s).

The permittee will report an exceedance of the monthly limitation when the average of the results of the ammonia as N samples collected throughout the month of the discharge is greater than the calculated average monthly limitation; otherwise, the permittee will not report an exceedance.

The permittee will report the total number of exceedances of the daily limitation during the month of the discharge. For the purposes of this permit, an exceedance is counted when an ammonia as N result is greater than the calculated daily maximum for that sampling period (i.e., weekly).

† Average Monthly Limitation
The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed the numerical value given by the following formula and the highest 4-day average concentration of ammonia within the 30-day period does not exceed 2.5 times the numerical value given by the following formula

Parameter	Effluent Limitations		
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
$0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028 \times (20-MAX(T,7))}\right)$ Effluent pH and temperature (T) are used for the calculation ‡ Daily Maximum Limit The concentration of total ammonia (expressed as N in mg/L) does not exceed the numerical value given by the following formula where Oncorhynchus are absent $0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times MIN\left(51.93, 23.12 \times 10^{0.036 \times (20-T)}\right)$ Effluent pH and temperature (T) are used for the calculation			
Stipulations Limitation shall be met at end of pipe.			

SELF-MONITORING REQUIREMENTS

All effluent shall be sampled prior to leaving facility property or entering waters of the state.

Table 6: Self-Monitoring Requirements

Effluent Parameter	Frequency	Sample Type [a]
BOD_5	1/Week [b]	Grab
TSS	1/Week [b]	Grab
Ammonia as N	1/Week [b]	Grab
E. coli [c]	1/Week [b]	Grab
pH	1/Week [b]	Grab
Flow [d]	1/Week	Calculated
Drain [d]	1/Event	Calculated
Temperature [e]	1/Week	Instantaneous
Notes:		
a. Refer to Appendix B for definitions.		
b. Sampling shall consist of one grab sample collected and analyzed prior to any discharge. This analysis shall be reported to the department and used for the first week of the discharge. In addition, one grab sample of the actual discharge shall be taken and analyzed on a weekly basis for the duration of the discharge.		

Table 6: Self-Monitoring Requirements

Effluent Parameter	Frequency	Sample Type [a]
c. The monitoring requirements for *E. coli* shall be in effect for discharges that occur from April 1 through October 31.		
d. The total amount of water discharged shall be determined either by using a flow-measuring device or by recording the water level drop in the pond.		
e. Shall be measure the same day as the effluent sample is collected. Temperature shall be measured in the field.		
The beginning and ending dates of the discharge shall be recorded.		

SECONDARY TREATMENT EFFLUENT LIMITS

Federal and state regulations define secondary treatment limitations for municipal wastewater treatment facilities. These effluent limitations are given in 40 CFR 133 and in NDAC Section 33.1-16-01-30. These regulations describe the minimum level of effluent quality attainable by secondary treatment of municipal wastewater in terms of BOD_5, TSS, and pH. NDAC Section 33.1-16-01-30 incorporates by reference 40 CFR 133 which list the following secondary treatment limits for BOD_5, TSS, and pH:

Table 7: Secondary Treatment Limits

Parameter	30-Day Average	7-Day Average
BOD_5	30 mg/L	45 mg/L
TSS*	45 mg/L	65 mg/L
pH	Remain between 6.0 to 9.0	
Percent Removal	85% BOD_5 and 65% TSS*	
*Treatment equivalent to secondary treatment		

Percent Removal

The department acknowledges that 40 CFR 133.102 requires the 30-day average percent removal of BOD_5 and TSS be no less than 85%. Representative rates are determined from influent and effluent samples being collected at approximately the same time and from consistent waste streams. Lagoon systems often have variable hydraulic residence times that exceed 30 days; therefore, influent and effluent samples would not be representative of the same wastewater. The department has determined not to include the percent removal requirements in the proposed limit based on the infeasibility of determining this rate.

BOD

The department has reviewed the BOD5 data from June 2017 to March 2022. No exceedances occurred for this parameter during the current permit. The department proposes to continue with 25 mg/l as an average monthly limit, and 45 mg/l as an average weekly limit, with a sampling frequency of weekly. The department recommends the previous permit limit be maintained.

TSS

The current permit contains effluent limitations equivalent to secondary treatment standards for TSS. This determination is based on past performance of the treatment works through proper operation and maintenance.

Secondary treatment standards described in 40 CFR 133.102 must be achieved except as provided in § 133.105. This section (§ 133.105) describes the minimum level of effluent quality for facilities eligible for treatment equivalent to secondary treatment. **Facilities eligible for treatment equivalent to secondary treatment** are those facilities whose biochemical oxygen demand (BOD) and suspended solid (SS) effluent concentrations – consistently achievable through proper operation and maintenance – exceed the minimum level of effluent quality in §133.102 and whose treatment works provides **significant biological treatment**.

For BOD and SS, **effluent concentrations consistently achievable through proper operation and maintenance** (§§133.101(f)) are the 95th-percentile value of the 30-day average concentrations achieved by the treatment works in a period of at least two years – excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions. Consistently achievable effluent concentrations also include a 7-day average equal to 1.5 times the 95th-percentile value of the 30-day average.

Effluent TSS data collected from June 2017 to March 2022 was reviewed. During that time frame, six (6) discharges occurred. The department determined the 30-day average 95th percentile to be 13.75 mg/l and the 7-day average calculation (1.5 X 13.75) to be 20.625 mg/l (**Appendix C**). These values do not exceed the 30-day average value of 30 mg/L found in §§133.102(b)(1) and the 7-day average value of 45 mg/L found in §§133.102(b)(2).

Based on the above information the facility meets the requirements for treatment equivalent to secondary treatment. The department proposes to continue the TSS limitations equivalent to secondary treatment as provided in §§133.105(b). The proposed limitations are 45 mg/L for a 30-day average and 65 mg/L for a 7-day average, with a sample frequency of weekly. The department will re-evaluate whether the facility can be allowed the equivalent limitations during the next permit renewal.

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 to reduce pollution from all sources.

The Des Lacs River is listed as a class II stream in the Standards of Quality for Waters of the State (NDAC 33.1-16-02.1). The quality of water in class II streams must be suitable for the propagation and/or protection of resident fish species and other aquatic biota, and for

swimming, boating, and other water recreation. The quality also must be suitable for irrigation, stock watering, and wildlife without injurious effects. The quality must be able to meet the bacteriological, physical, and chemical requirements for municipal or domestic use after treatment. Streams in this classification may be intermittent in nature which makes these waters limited in value for beneficial uses such as municipal water, fish life, irrigation, bathing, or swimming.

The segment of the Des Lacs River is not listed as impaired in the department's 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List). There currently are no TMDLs for the segment of the Des Lacs River.

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 Chapter 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 Section 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 Chapter 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.

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

Mixing Zones

The department's WQS contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (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.

EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA

E. coli

Based on the WQS, the department has determined that an *E. coli* limitation of 126 organisms per 100 mL as a monthly geometric mean and 409 organisms per 100 mL as a daily maximum is appropriate for this type of facility. The standard only applies during the recreation season from May 1 through September 30. The limitation in the permit is meant to cover the period one month before and one month after the recreation season to protect the recreational usage of the Middle Des Lacs Lake.

The department has reviewed the *E. coli* data and sampling frequency, and no exceedances occurred for this parameter during the current permit. The department proposes to continue with a limit of 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum limit, with a sampling frequency of weekly.

Ammonia as Nitrogen

The department considers the potential for contaminants (ammonia, metals, and organic chemicals) commonly associated with domestic waste facilities to compromise a water quality standard. The most prominent parameter of concern with domestic waste discharges and the treatment of other organic-type waste is ammonia. Ammonia is generated during the decay or the process of stabilizing organic materials that commonly occur during domestic wastewater treatment.

Ammonia presents both acute and chronic toxicity to aquatic life at variable levels depending on in-stream conditions (pH, temperature, and ammonia). Federal regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. The department conducted a reasonable potential analysis for this parameter and determined that there was reasonable potential to cause an excursion of the WQS (Appendix C).

The department proposes that using the 4-day chronic standard over the 30-day average standard is appropriate for determining compliance. This facility usually discharges for less than seven days and is a controlled discharger and thus a 30-day average was deemed impracticable.

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 re-evaluate this discharge for impacts to human health at the next permit reissuance.

Biosolids

Currently the department does not have the authority to regulate biosolids. Therefore, the permittee is required under the Direct Enforceability provision of 40 CFR §503.3(b) to meet the applicable requirements of the regulation.

MONITORING REQUIREMENTS

The department requires monitoring, recording, and reporting (NDAC Sections 33.1-16-01-(21 through 23) and 40 CFR 122.41) to verify that the treatment process is functioning correctly and that 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 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 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

Beneficial Reuse

The proposed permit will continue to contain conditions for the beneficial reuse of wastewater for irrigation, as well as add conditions for use in construction, and oil and gas production. Wastewater that has met secondary or tertiary treatment standards may be beneficially reused in lieu of discharging.

Irrigation

Only wastewater that has received secondary or tertiary treatment may be used for irrigation provided the water is suitable for irrigation. Wastewater used for irrigation must be applied at a rate which allows complete infiltration and not result in ponding or runoff from the irrigated area. Agricultural land may be irrigated provided the crop is not used for human consumption. Forage crops used for livestock consumption or pastures irrigated with wastewater cannot be harvested

or grazed within 30 days of a wastewater application. Public properties may be irrigated provided the treated wastewater meets the criteria in Table 7.

Table 8 – Irrigation Reuse Criteria

Parameter	Discharge Limitations	Monitoring Frequency	
	Daily Max	Measurement Frequency	Sample Type
BOD_5 (mg/L)	30	1 per 14 days	Grab
TSS (mg/L)	45	1 per 14 days	Grab
E. Coli (number/100 mL)	126	Weekly	Grab

Irrigation must take place during hours when the public does not have access to the area being irrigated. Signs must be posted during irrigation and after irrigation is complete if the public has constant access to an area. Worker and public contact should be minimized. Where frequent contact is likely, a higher level of disinfection should be provided such as achieving *E. coli* counts less than 14 colonies per 100 mL. Application should be avoided within 100 feet of areas which have unlimited access (i.e., yards) or within 300 feet of potable water supply wells.

Runoff that occurs from irrigated areas must be monitored at the frequencies and with the types of measurements described in Table 3 and Table 5. The permittee must keep records indicating the location and usage, the dates, the amount, and total flow of irrigation water. In addition, monitoring records must include results from collected samples.

Construction

Treated domestic wastewater may be used for construction purposes such as soil compaction, dust suppression and washing aggregate, provided the following conditions are met. The wastewater must at a minimum receive secondary treatment.

Prior to using wastewater, a sample must be tested and meet the criteria in Table 8. In addition, the test results for *E. coli* must be provided to the department prior to use. Sample results up to two weeks old are valid.

Table 9 – Construction Reuse Criteria

Parameter	Limitations (Maximum)	Measurement Frequency	Sample Type
BOD_5 (mg/L)	30	Monthly	Grab
TSS (mg/L)	100	Monthly	Grab
E. Coli (number/100 mL)	126	Weekly	Grab

Chlorination is desirable where available when frequent worker contact with treated wastewater is likely or when the public may have constant access to areas where wastewater is being used. Maintaining a chlorine residual of at least 0.1 mg/L is recommended.

While conventional methods for treating domestic wastewater are generally effective in reducing infectious agents (bacteria, viruses, parasites) to acceptable levels, direct reuse of treated wastewater can pose a health concern. Additional precautions include:

- Minimize worker and public contact with treated wastewater.
- Provide a higher level of disinfection where frequent worker contact is likely such as achieving *E. coli* counts less than 14/100 mL.
- Ensure treated wastewater quality is suitable for construction purposes.
- Apply treated wastewater in a manner that does not result in runoff or ponding.

Runoff from application areas must be monitored in accordance with Tables 3 and 5. Monitoring records must include the location of the application area and usage, dates of application, amount of wastewater used, total flow, and sample results.

Oil and Gas Production (including Hydraulic Fracturing)

The specific user of the wastewater for oil and gas production may determine the specific treatment requirements for receiving the wastewater.

The facility must keep monitoring records that include the specific user, amount of wastewater used, total flow, and sample results.

Other Uses as Approved

The permittee must consult with the department before beneficially reusing wastewater for purposes not identified in the permit.

PERMIT ISSUANCE PROCEDURES

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.

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 reissue a permit to the **city of Kenmare**. 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 23, 2022** in the **Kenmare News** 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
Bismarck, ND 58503

The primary author of this permit and fact sheet is Julianna Kari.

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

Public Notice Date: 5/23/2022 Public Notice Number: ND-2022-009

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: 10/11/2021 Application Number: ND0020079

Applicant Name: Kenmare City of

Mailing Address: PO Box 816, Kenmare, ND 58746

Telephone Number: 701.385.4232

Proposed Permit Expiration Date: 6/30/2027

Facility Description

The reapplication is for a 3-cell waste stabilization pond system which services the city of Kenmare. The discharge facility is located in the SW1/4, NW1/4, and NW1/4, SW1/4, Section 21, Township 160 North, Range 88 West. Any discharge would be to Middle Des Lacs Lake.

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 FWPCAA 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 22, 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.

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

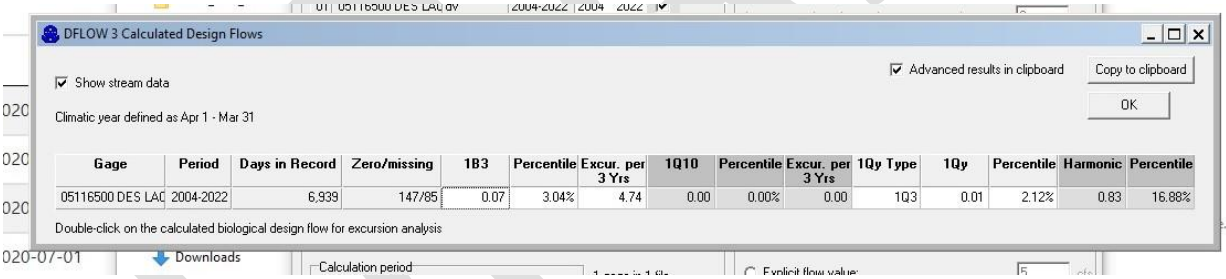
EQUIVALENT TO SECONDARY TREATMENT LIMITATIONS DETERMINATION

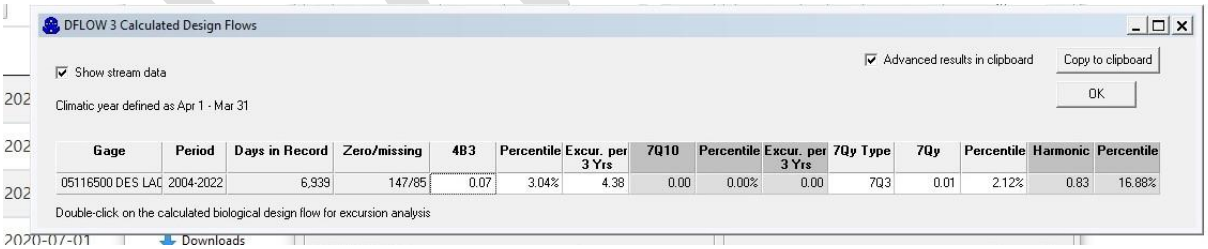
The department determined that the 95th percentile of the TSS DMR data from 06/01/2018 to 06/30/2021. There was 6 data points for the 3-year period. Below is the calculation that was performed using an Excel spreadsheet.

TSS		95th	7-day
7		13.75	20.625
5			
5			
16			
5			
6.5			

DFLOW

USGS gage station 05116500 on the Des Lacs River was used to determine critical low flows using DFLOW. Data used for these calculations ranged from 05/04/2002 to 05/04/2022.





REASONABLE POTENTIAL ANALYSIS

The department utilized available data from department station IDs 384150, 386021 and 386022 on the Des Lacs River from 05/21/1997 to 07/1/2020. The 90th percentile of the receiving stream temperature, pH, and ammonia were used to determine the 1-hour acute and 4-day chronic ammonia water quality standard.

Flow Variable Calculated Effluent Ammonia Concentrations in mg/l						Estimated	
Discharger:	Kenmare			Enter the upstream ammonia in mg/l:		90th %	0.80
Stream:	Des Lacs River			Enter the receiving stream pH:		No	9.16
Enter receiving stream flow (CFS):			0	Enter the receiving stream temperature in Deg C:	50 F	Yes	10.00
Mixing Zone Percentage/CFS:		10%	0.0	Enter the effluent drain rate (MGD):		Yes	1.35
Enter increments to calculate stream flow:			0.1	Enter increments to calculate drain rate:			0.1
					Mixing Zone Dilution Rate:		1.0
					Overall Dilution Rate:		1.0
Maximum allowable ammonia in mg/l							
Water Quality Standard:		1.0972	Water Quality Standard:	0.5966	Water Quality Standard:		0.2386

The department determined the 1-hour acute WQS to be 1.10 and the 4-day chronic standard to be 0.60. These values were utilized for the acute and chronic WQS in the reasonable potential analysis.

AMMONIA

The reasonable potential determination for ammonia is provided below. The determination is conducted using the Technical Support Document for Water Quality-based Toxics Control EPA/505/2-90-001, March 1991 (TSD; March 1991). The department used data from DMRs submitted to the department from 06/01/2018 to 06/30/2021. The coefficient of variation was the default of 0.6 and n = 6.

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:	Kenmare		Receiving Stream:	Des Lacs River
NDPDES Permit:	ND0020079		1Q10 Acute	0 cfs
Daily Maximum Flow (mgd):	1.92		1B3 Acute	0.07 cfs
Daily Average Flow (mgd):	1.36		7Q10 Chronic	0 cfs
Stream Design Mixing:	10.0%		4B3 Chronic	0.07 cfs
Statistical Multiplier:	2.1			
Upstream Concentration:	0.8000	mg/l		**Parameter:**
Effluent Concetration (max):	7.7100	mg/l		**Ammonia**

$$RWC = \frac{(StatQeCe)+(Cs(pmf)Qs)}{Qe+(pmf)Qs}$$

Outfall: 001

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	1.92	mgd	Qs - 1Q10	0.00	mgd
Qe - Chronic	1.36	mgd	Qs - 1B3	0.05	mgd
Ce	7.7100	mg/l	Qs - 7Q10	0.00	mgd
Cs	0.8000	mg/l	Qs - 4B3	0.05	mgd
Stat	2.10				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	16.1910	mg/l	RWC - 7Q10	16.1910	mg/l
RWC - 1B3	16.1548	mg/l	RWC - 4B3	16.1400	mg/l

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	1.1	mg/l	Chronic Criterion	0.6000	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:		**CCC RP Present:**	
1Q10 Acute OR	**YES**	**7Q10 Chronic OR**	**YES**
1B3 Acute	**YES**	**4B3 Chronic**	**YES**

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.

Page 1 of 4

The analysis shows that there is reasonable potential for the discharge to cause an exceedance in the WQS for ammonia. Due to the critical low flow being approximately 0 cfs. The department has determined that the ammonia limitation shall be met at end of pipe.

APPENDIX D – RESPONSE TO COMMENTS

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

DRAFT

Permit No: ND0020079
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,

the City of Kenmare

is authorized to discharge from its wastewater stabilization ponds

to Middle Des Lacs Lake

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,

June 30, 2022.

Signed this _____ day of _____, _____.

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

BP 2019.05.29

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TABLE OF CONTENTS

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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.			
Latitude: 48.65436	Longitude: -102.05759	County: Ward	
Township: 160N	Range: 88W	Section: 21	QQ: CB
Receiving Stream: Middle Des Lacs Lake		Classification: Class II Stream	
Outfall Description: The treated effluent discharges to an unnamed tributary of the Middle Des Lacs Lake, which is part of Des Lacs River system, a class II stream.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Monitoring Period	Submittal Frequency	First Submittal Date
001A	Discharge Monitoring Report	Semi-Annual	Semi-Annual	January 31, 2023
Application Renewal	NPDES Application Renewal	None	1/permit cycle	December 31, 2026

SPECIAL CONDITIONS

No special conditions have been determined at this time.

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: **Middle Des Lacs Lake**.

No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process has been completed the permittee shall comply with the limitations of this permit.

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:

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**

Parameter	Effluent Limitations			Monitoring Requirements	
	30-Day Average	7-Day Average	Daily Maximum	Sample Frequency	Sample Type
Biological Oxygen Demand (BOD5), mg/L	25	45	N/A	1/week	Grab
Total Suspended Solids (TSS), mg/L	45	65	N/A	1/week	Grab
pH [a]	Shall remain between 6.0 to 9.0 s.u.			1/week	Instantaneous
E. coli, #/100 ml [b]	126	N/A	409	1/week	Grab
Ammonia as N, mg/L	Refer to Ammonia table below			1/week	Grab
Temperature, °C	Report			1/week	Instantaneous
Total Flow, Mgal	N/A	N/A	N/A	1/event	Calculated

Notes:

N/A Not Applicable

a. The department may allow discharges when the pH is outside the stated range if it suspects that the variation is due to natural biologic processes, and the discharger confirms that chemicals were not added to the cell or contributions from industrial sources do not cause the pH to be outside the range 6.0 to 9.0 s.u.

b. The limitation for *E. coli* shall be in effect for discharges that occur from April 1 through October 31.

Stipulations:

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**
A pre-discharge sample must be analyzed and reported to the department prior to the start of any discharge. A grab sample shall be tested for BOD5, TSS, pH, *E. coli*, and Ammonia as N and shall represent the first week discharge sample. An additional grab sample of the actual discharge shall be taken and analyzed on a weekly basis for each additional week of the discharge.
The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.
All discharges shall be made in such a manner to minimize any possible adverse impacts on the receiving stream and downstream landowners.
Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving facility property or entering the receiving stream.
The beginning and ending dates of the discharge shall be recorded.
The total amount of water discharged shall be determined either by using a flow-measuring device or by recording the water level drop in the pond.

Ammonia Effluent Limitations **Outfall 001**			
	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡

The permittee must comply with the average monthly and daily maximum limitations for ammonia as N at the outfall. The permittee collects ammonia as N, temperature, and pH samples from the lagoon cell to be discharged and complies with the average monthly limitation and daily maximum limitation for ammonia at the end-of-pipe forgoing any receiving water mixing zone.

Temperature and pH samples are collected from the lagoon cell and used to calculate the average monthly limitation and daily maximum limitation for ammonia (refer to the average monthly and daily maximum limitation formulas below). The calculated limitations are then compared to the result of the ammonia as N sample(s).

The permittee will report an exceedance of the monthly limitation when the average of the results of the ammonia as N samples collected throughout the month of the discharge is greater than the calculated average monthly limitation; otherwise, the permittee will not report an exceedance.

The permittee will report the total number of exceedances of the daily limitation during the month of the discharge. For the purposes of this permit, an exceedance is counted when an ammonia as N result is greater than the calculated daily maximum for that sampling period (i.e., weekly).

† Average Monthly Limitation
The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed the numerical value given by the following formula and the highest 4-day average concentration of ammonia within the 30-day period does not exceed 2.5 times the numerical value given by the following formula

$$0.8876 \times \left(\frac{0.0278}{1+10^{7.688-pH}} + \frac{1.1994}{1+10^{pH-7.688}}\right) \times \left(2.126 \times 10^{0.028 \times (20 - MAX(T,7))}\right)$$

Effluent pH and temperature (T) are used for the calculation

Ammonia Effluent Limitations **Outfall 001**			
	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit

‡ Daily Maximum Limit
The concentration of total ammonia (expressed as N in mg/L) does not exceed the numerical value given by the following formula where Oncorhynchus are absent

$$0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times MIN\left(51.93, 23.12 \times 10^{0.036 \times (20-T)}\right)$$

Effluent pH and temperature (T) are used for the calculation

Stipulations

The effluent limitation shall be met at end-of-pipe.

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 shall not be affected thereby.

VI. BENEFICIAL REUSES BP 2015.09.03

A. Irrigation

Only wastewater that has received secondary or tertiary treatment may be used for irrigation provided soil and water compatibility testing confirms the water is suitable for irrigation. Wastewater used for irrigation shall be applied at a rate which would allow complete infiltration and not result in ponding or runoff from the irrigated area.

Agricultural land may be irrigated provided the crop is not used for human consumption. Forage crops used for livestock consumption or pastures irrigated with wastewater shall not be harvested or grazed within 30 days of a wastewater application.

Public properties such as golf courses or parks may be irrigated provided the treated wastewater meets the following quality criteria.

Parameter	Discharge Limitations	Monitoring Frequency	
	Daily Max	Measurement Frequency	Sample Type
BOD_5 (mg/l)	30.0	1 per 14 days	Grab
TSS (mg/l)	45.0	1 per 14 days	Grab
E. Coli (number/100 ml)	126	Weekly	Grab

Whenever possible, irrigation shall take place during hours when the public does not have access to the area being irrigated. If the public has constant access to an area, signs must be posted in visible areas during irrigation and for two hours after irrigation is completed. The signs must advise people that the water could pose a health concern and to avoid the irrigated area.

Worker and public contact with treated wastewater should be minimized. Where frequent contact is likely, a higher level of disinfection should be provided such as achieving *E. coli* counts less than 14 colonies per 100 ml.

Avoid application within 100 feet of areas which have unlimited access (i.e., yards) or within 300 feet of potable water supply wells.

Runoff that occurs from irrigated areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage (e.g., park or agricultural) of the land being irrigated, the dates irrigation occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

B. Construction

Treated domestic wastewater may be used for construction purposes such as soil compaction, dust suppression and washing aggregate, provided the following conditions are met.

The wastewater intended for use in construction, must at a minimum, receive secondary treatment.

Prior to using treated wastewater a sample from the prospective source must be tested and meet the criteria set below. In addition the test results for *E. coli* must be provided to the department prior to use. Results from samples up to two (2) weeks old will be considered valid. The water quality limitations and minimum sampling frequencies recommended for wastewater used in construction are provided in the following table.

Parameter	Limitations (Maximum)	Measurement Frequency	Sample Type
BOD5 (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
E. Coli (number/100 ml)	126	Weekly	Grab

In some systems chlorination is available. Chlorination is particularly desirable when frequent worker contact with the treated wastewater is likely or when the public may have constant access to areas where the wastewater is being used. Maintaining a chlorine residual of at least 0.1 mg/l is recommended.

While the conventional methods for treating domestic wastewater are generally effective in reducing infectious agents (bacteria, viruses, parasites) to acceptable levels, direct reuse of treated wastewater can pose a health concern. Additional precautions to consider are:

1. Worker and public contact with treated wastewater should be minimized.

2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.

3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.

4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

Runoff that occurs from application areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage of the land where application occurs, the dates application occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

C. Oil and Gas Production (including Hydraulic Fracturing)

The specific user of the wastewater may determine the specific treatment requirements for receiving wastewater.

The permittee shall maintain monitoring records indicating the specific user, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

D. Other Uses as Approved

The permittee must consult with the department before beneficially reusing wastewater for purposes not identified in this permit.