

**North Dakota Department of Health Public Notice**  
**Reissue of an NDPDES Permit**

Public Notice Date: 4/14/2016

Public Notice Number: ND-2016-016

**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: 11/9/2015

Application Number: ND0022799

Applicant Name: Medora City Of

Mailing Address: PO Box 418A, Medora, ND 58645-0418

Telephone Number: 701.623.4828

Proposed Permit Expiration Date: 6/30/2021

**Facility Description**

The reapplication is for four waste stabilization ponds which service the City of Medora. The discharge facility is located in the SE1/4 of the NE1/4, Section 27, Township 140 North, Range 102 West and the NE1/4 of the SW 1/4, Section 26, Township 140 North, Range 102 West. Any discharge would be to an unnamed drainage which flows into the Little Missouri River, or directly to the Little Missouri River, a Class II stream.

**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. Comments or requests should be directed to the ND Dept of Health, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by May 15, 2016 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  
ND0022799**

**CITY OF MEDORA  
MEDORA, ND**

**DATE OF THIS FACT SHEET – FEBRUARY 29, 2016**

**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 Health (NDDH) 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 33-16 (North Dakota Administrative Code) which was promulgated pursuant to NDCC chapter 61-28 (North Dakota Century Code). The NDDH 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 33-16-01),
- Standards of Quality for Waters of the State (NDAC chapter 33-16-02.1).

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 NDAC, section 33-16-01-08, the NDPDES permit program, the NDDH must prepare a draft permit and accompanying fact sheet and make it available for a thirty-day public review period (NDAC chapter 33-16-01-07). The NDDH must also publish an announcement (public notice) telling people where they can obtain the draft permit and send their comments on the draft. For more details on preparing and filing comments about these documents, please see **Appendix A – Public Involvement Information**. After the Public Comment Period ends, the NDDH may make changes to the draft NDPDES permit. The NDDH will summarize the responses to comments and any changes to the permit in **Appendix D – Response to Comments**.

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**BACKGROUND INFORMATION****Table 1 – General Facility Information**

Applicant:	City of Medora
Facility Name and Address:	City of Medora PO Box 418-A Medora, ND 58645
Permit Number:	ND0022799
Permit Type:	Minor Municipality – Renewal
Type of Treatment:	Waste Stabilization Ponds
SIC Code:	4952
Discharge Location:	Outfall 001: Little Missouri River, Class II Stream Latitude: 46.912395 Longitude: -103.528915  Outfall 002: Unnamed Drainage to Little Missouri River, Class III Stream Latitude: 46.908886 Longitude: -103.517742
Hydrologic Code:	10110203 – Middle Little Missouri
Population:	112 permanent, 1070 average

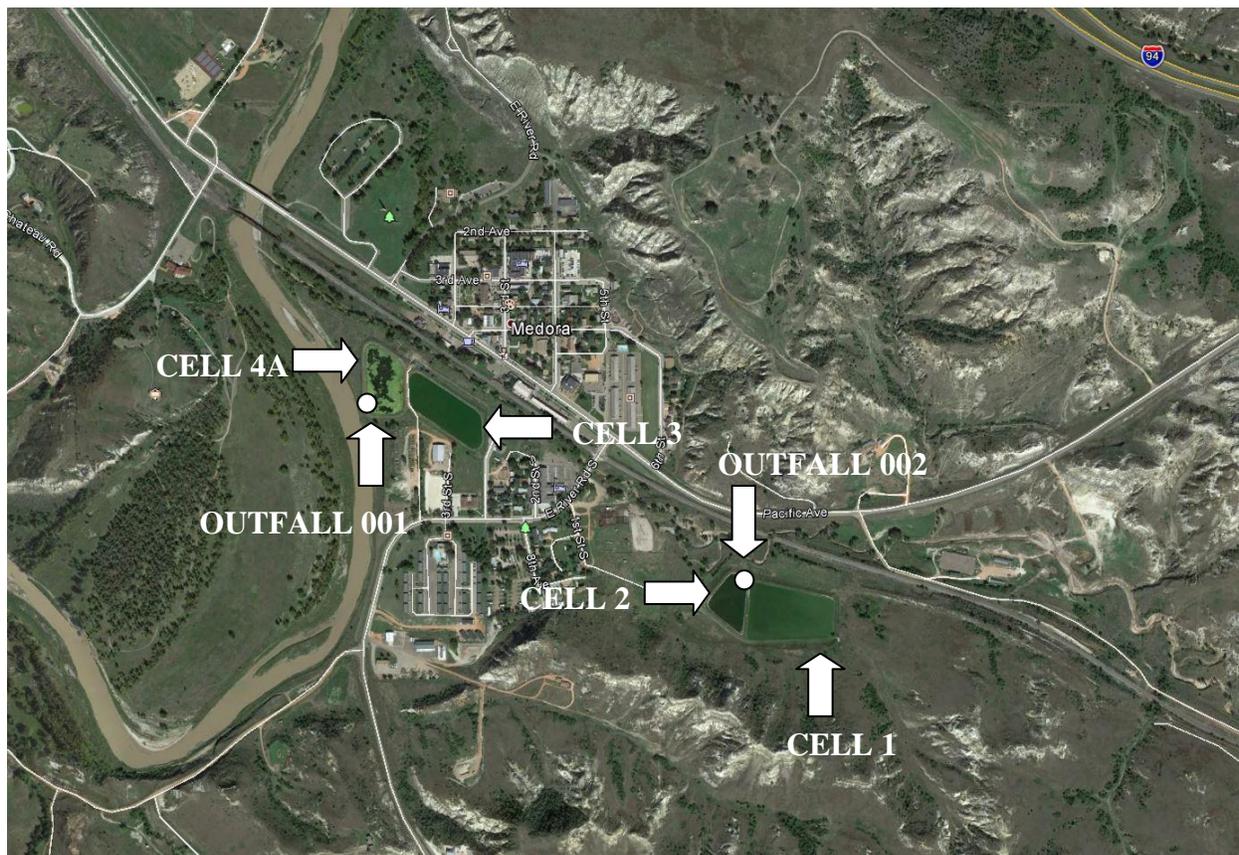


Figure 1 – Aerial Photograph of the City of Medora – Medora, ND (Google Earth 9/7/2014)

### FACILITY DESCRIPTION

Medora's Publicly Owned Treatment Works (POTW) treats wastewater in a four-cell waste stabilization pond system. Per the 2010 U.S. Census, the city of Medora has a permanent population of 112 people. The city of Medora is located near Theodore Roosevelt National Park and, during the months of May through August, the city has an additional temporary population of 300 to 400 people. In addition, during this period, the city hosts approximately 2,000 to 3,000 people per day due to the city being a large tourist attraction.

The City of Medora utilizes four waste stabilization ponds for the treatment of sewage. Cell 1 is located to the southeast of the city and has a surface area of 4.89 acres. Cell 1 has two aerators installed in it. Cell 2 is located to the west of Cell 1 and has a surface area of 1.94 acres. Cell 2 has one aerator installed in it. The aerators are powered using solar power which is supplemented by electricity. Cells 1 and 2 are primarily used during the summer at the height of the tourist season and the majority of the time are operated independently of Cells 3 and 4A. Cell 3 is located south of the city and has a surface area of 3.36 acres. Cell 3 has one aerator installed in it which is solar powered only. Cell 4A is located to the west of Cell 3 and has a surface area of 2.82 acres. Cells 3 and 4A are primarily used during the winter for the permanent residents.

**HISTORY**

In 1996, the City of Medora constructed a separate discharge structure for Cells 1 and 2. This allowed the City the option of discharging Cells 1 and 2 through this structure, or routing the water back through Cells 3 and 4A. The discharge point enters an unnamed drainage ditch and travels approximately one and a half miles before entering the Little Missouri River approximately 800 yards downstream of the original discharge point.

In 2000, the City of Medora constructed a concrete dike on the southeast corner of Cell 1. This structure was installed to divert excess storm water runoff away from Cell 1.

In 2004, the City of Medora completed an upgrade to their wastewater treatment facility. The biosolids from Cells 4 and 5 were removed and land applied according to the rules in 40 CFR Part 503. The connecting dike between the cells was removed, the outside dikes were built up and the clay lining was re-compacted to meet department standards. Cells 4 and 5 were deactivated, and the newly combined cell, Cell 4A was created.

**OUTFALL DESCRIPTION**

Discharges at any location not authorized under a NDPDES permit is a violation of the Clean Water Act (CWA) and could subject the person(s) responsible for such discharge to penalties under section 309 of the CWA. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within the specified timeframe outlined in this permit could subject such person(s) to criminal penalties as provided under the CWA.

<b>Outfall 001. Active. Final.</b>			
Latitude: 46.912395	Longitude: -103.528915	County: Billings	
Township: 140N	Range: 102W	Section: 27	QQ: AD
Receiving Stream: Little Missouri River		Classification: Class II	
Outfall Description: The treated effluent flows from the waste stabilization ponds, primarily from Cells 3 and 4A, to the Little Missouri River, a Class II stream. This system utilizes a discharge termed a "Controlled Discharge" and is deemed to be non-continuous.			

<b>Outfall 002. Active. Final.</b>			
Latitude: 46.908886	Longitude: -103.517742	County: Billings	
Township: 140N	Range: 102W	Section: 26	QQ: AC
Receiving Stream: Unnamed Drainage to the Little Missouri River		Classification: Class III	
Outfall Description: The treated effluent flows from the waste stabilization ponds, only from Cells 1 and 2, down an unnamed drainage ditch to the Little Missouri River, a Class II stream. This system utilizes a discharge termed a "Controlled Discharge" and is deemed to be non-continuous.			

**PERMIT STATUS**

The department issued the previous permit for this facility on July 1, 2011. The previous permit placed limits on Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids (TSS), pH, Ammonia as N, and Fecal Coliform which was replaced with *Escherichia coli* (*E. coli*).

**SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED**

Department staff last conducted a non-sampling compliance inspection on June 10, 2014. The department's assessment of compliance is based on a review of the facility's Discharge Monitoring Reports (DMRs) and physical inspections were conducted by department staff. No defects were noted at the time of the last inspection, with the facility found to be in compliance.

**Past Discharge Data**

The facility was first permitted on January 1, 1965. According to department records, this facility has discharged nine times during the previous permit cycle. The last reported discharge took place on September 5, 2015 and ran until September 10, 2015. The concentration of pollutants in the discharges was reported on DMR forms. The effluent is characterized in Table 2.

**Table 2 – City of Medora Discharge Data (As of February 26, 2016)**

Parameter	Units	Range	Average	Permit Limit	Number of Exceedences	TRC Exceedence
BOD <sub>5</sub>	mg/l	6-23	11.1	25	0	0
TSS	mg/l	5-60	20.8	30	2	1
pH	SU	7.69-9.6	N/A	6.0 to 9.5	2	0
<i>E. coli</i>	# per 100 ml	3-21	12	126	0	0
NH <sub>3</sub> as N		0.1-5.42	2.25	N/A	N/A	N/A
Drain	Mgal	2.06-8.98	4.79	N/A	N/A	N/A
Notes:						
The <i>E. coli</i> limitation replaced a fecal coliform limitation during the previous permit cycle.						

**PROPOSED PERMIT LIMITS****EFFLUENT LIMITATIONS**

The following limitations are based on promulgated guidelines as outlined in the Code of Federal Regulations (40 CFR), the North Dakota Administrative Code (NDAC), the North Dakota Standards of Quality for Waters of the State (WQS) and Best Professional Judgment (BPJ), as determined by the North Dakota Department of Health. The effluent limitations applied to each lagoon cell discharge reflect secondary treatment standards outlined in 40 CFR Part 133.102 and NDAC 33-16-14(3)(1).

Prior to discharging, a review of pre-discharge parameters must be made with the department. Sampling shall be performed before discharge and weekly during discharge. The effluent limitations and the basis for the limitations are provided in Tables 3 and 4.

**Table 3 – Effluent Limitation Basis – Outfall 001 and Outfall 002**

Effluent Parameter	30-Day Average	7-Day Average	Daily Maximum	Basis <sup>a</sup>
BOD <sub>5</sub> (mg/l) <sup>d</sup>	25	45	*	Previous Permit 40 CFR 133.102(a) NDAC 33-16-01-14(3)(c)(1)

Effluent Parameter	30-Day Average	7-Day Average	Daily Maximum	Basis <sup>a</sup>
Total Suspended Solids (TSS), (mg/l) <sup>d</sup>	30	45	*	Previous Permit 40 CFR 133.102(b)
pH (SU) <sup>d</sup>	Shall remain between 6.0 to 9.0			WQS NDAC 33-16-01-14(3)(c)(3)
<i>Escherichia coli</i> ( <i>E.coli</i> ) (#/100 ml) <sup>b, d</sup>	126	*	409	WQS
Ammonia as N (mg/l) <sup>c, d</sup>	Refer to Ammonia Table (Table 4)			WQS
There shall be no discharge of floating solids or visible foam in other than trace amounts, nor a discharge which causes a visible sheen in the receiving waters from oil and grease.				Previous Permit WQS BPJ
<b>Notes:</b>				
<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 for the effluent limitations is given below:</p> <p>“Previous Permit” refers to limitations in the previous permit. The NDPDES regulations <b>40 CFR Part 122.44(1)(1) Reissued Permits</b> 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 <b>40 CFR Part 122.62</b>.</p> <p>“WQS” refers to effluent limitations based on the State of North Dakota’s “Standards of Quality for Waters of the State”, NDAC Chapter 33-16-02.1.</p> <p>“BPJ” refers to best professional judgment.</p> <p>b. The limitation for <i>E.coli</i> shall be in effect for discharges which may occur from April 1 through October 31.</p> <p>c. This parameter limit will be dependent on pH of the receiving stream or effluent and the effluent ammonia concentration in mg/l determined in accordance to the formula specified in the latest revision of the State Water Quality Standards.</p> <p>Permittee must use one of the two options to comply with the ammonia as N limitation:</p> <ul style="list-style-type: none"> <li>Option 1: Applicable (Temperature, pH, Ammonia as N, and receiving-stream flow) receiving water parameters are collected to calculate (refer to formula in Table 4) the real-time water quality standard for ammonia – this option allows 10% of the receiving water flow for dilution. This calculated limit will be compared to facility effluent data on ammonia and if the effluent value is greater than the calculated limit, the permittee will report a violation.</li> <li>Option 2: Permittee collects ammonia as N and temperature samples from the</li> </ul>				

Effluent Parameter	30-Day Average	7-Day Average	Daily Maximum	Basis <sup>a</sup>
discharge point prior to discharge leaving the site and complies with ammonia as N limit at the end-of-pipe forgoing any receiving water dilution.				
d. The limitations for BOD5, TSS, <i>E.coli</i> , and Ammonia as N are based on the average of all samples taken to monitor the discharge from a cell. If only one sample is collected, that value shall be used as the average. The limitation for pH applies to each sample taken.				

**Table 4 – Ammonia as N Effluent Limitations Calculations (Chapter 33-16-02.1)**

<p><b>Chronic Standard (Average Monthly Limit)</b></p> <p>The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:</p> $\frac{(0.0577)}{(1+10^{7.688-pH})} + \frac{2.487}{1+10^{pH-7.688}} \bullet CV;$ <p style="text-align: center;">where CV = 2.85, when T ≤ 14°C; or CV = 1.45 * 10<sup>0.028*(25-T)</sup>, when T &gt; 14°C. Receiving stream pH is used for the calculation</p>				
<p><b>Acute Standard (Daily Maximum Limit)</b></p> <p>The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:</p> $\frac{(0.411)}{(1+10^{7.204-pH})} + \frac{58.4}{1+10^{pH-7.204}}$ <p>where salmonids are absent; or</p> $\frac{(0.275)}{(1+10^{7.204-pH})} + \frac{39.0}{1+10^{pH-7.204}}$ <p>where salmonids are present.</p>				
<p><b>Notes:</b></p> <p>For the above calculations, the permittee receives ten percent of stream flow for dilution (refer to Option 1 in Table 3) at the time of discharge based on the flow of the receiving stream. In-stream concentration will be calculated on the mass-balance basis using the following formula:</p> <p>In-stream concentration= (Q<sub>u</sub>*C<sub>u</sub> + Q<sub>e</sub>*C<sub>e</sub>)/( Q<sub>u</sub>+ Q<sub>e</sub>) where                      Q<sub>u</sub> = 10% of the receiving stream flow parameter                      C<sub>u</sub> = Receiving stream ammonia parameter</p>				

$Q_e$  = Effluent flow parameter  
 $C_e$  = Ammonia as N parameter

Outfall discharge will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge.

### SELF-MONITORING REQUIREMENTS

All effluent shall be sampled at a point leaving Outfall 001 or Outfall 002 but prior to entering waters of the state.

**Table 5 – Self-Monitoring Requirements – Outfall 001 and Outfall 002**

Effluent Parameter	Frequency	Sample Type <sup>a</sup>
BOD <sub>5</sub> (mg/l)	1/week <sup>b</sup>	Grab
TSS (mg/l)	1/week <sup>b</sup>	Grab
pH (SU)	1/week <sup>b</sup>	Grab
<i>E.coli</i> (#/100 ml) <sup>c</sup>	1/week <sup>b</sup>	Grab
Total Drain (MG)	per event	Calculated
<b>Ammonia as N (Option 1) – Receiving water parameters – collected same days as compliance sample. <sup>d</sup></b>		
Flow (cfs)	1/week	Grab
pH (SU)	1/week	Grab
Temperature (°C)	1/week	Grab
Ammonia as N (mg/l)	1/week	Grab
<b>Ammonia as N (Option 2) – Effluent water parameters – collected sample days as effluent sample. <sup>d</sup></b>		
Temperature (°C)	1/week	Grab
<b>Notes:</b>		
a. Refer to Appendix B for definitions		
b. Sampling shall consist of one (1) grab sample to be taken and analyzed prior to any discharge. This analysis shall be reported to the department and used for the first week of discharge. In addition, one (1) grab sample of the action discharge shall be taken and analyzed on a weekly basis for the duration of the discharge.		
c. The limitation for <i>E.coli</i> shall be in effect for discharges which may occur from April 1 through October 31.		
d. Permittee must use one of two options to comply with the Ammonia as N limitation.		

### TECHNOLOGY-BASED EFFLUENT LIMITS

Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 40 CFR 133 and in NDAC Chapter 33-16-01-30. These regulations are performance standards that constitute all known, available, and reasonable methods of prevention, control, and treatment for municipal wastewater.

NDAC Chapter 33-16-01-30 incorporates by reference 40 CFR 133 which list the following technology-based effluent limits for BOD<sub>5</sub>, TSS, and pH:

**Table 6 – Technology-based Limits**

Parameter	30-Day Average	7-Day Average
BOD <sub>5</sub>	30 mg/l	45 mg/l
TSS	30 mg/l	45 mg/l
pH	Remain between 6.0 to 9.0	--
Percent Removal	85% BOD <sub>5</sub> and TSS	--

### **SURFACE WATER QUALITY-BASED EFFLUENT LIMITS**

The North Dakota State Water Quality Standards (NDAC Chapter 33-16-02.1) 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 section of the Little Missouri River that the facility discharges into is listed in the North Dakota 2014 Integrated Section 305(d) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads. This segment’s (Little Missouri River, from its confluence with Deep Creek, downstream to its confluence with Andrews Creek; located in Billings and Slope Counties) designated use is recreation but is currently not being supported. The impairment listed for this segment is *Escherichia coli*. The segment is listed as a low priority. Since the facility has an *E. coli* limit and there is no TMDL developed for this section, the department is proposing no further restricted limitations during this reissuance 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 Chapter 33-16-02.1). 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 Chapter 33-16-02.1-08) 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 33-16-02(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 33-16-02.1 (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**

### **BOD<sub>5</sub>**

According to department records, this facility has discharged during the previous permit cycle. No permit limitation exceedence occurred. The department recommends the previous limit be maintained and adding the technology based effluent limit of 45 mg/l as a 7-day average based on 40 CFR 133 and best professional judgment.

### **TSS**

According to department records, this facility has discharged during the previous permit cycle. Two permit limitation exceedences occurred for this parameter with one exceeding the Technical Review Criteria (TRC). A determination was made to continue with the permit limits of 30 mg/l (30 day arithmetic average) with a sampling frequency of once per week based on

the previous permit and 40 CFR 133 as well as including the technology based effluent limit of 45 mg/l as a 7-day average.

## **pH**

According to department records, this facility has discharged during the previous permit cycle. Two permit limitation exceedences occurred. The department proposes to change the current permit limit from 6.0 to 9.5 to 6.0 to 9.0 based on the North Dakota Standards of Water Quality and best professional judgment.

The previous pH limit was based on a study completed in 1998 by Lee Jacobson of the Health Department which related poor lagoon performance in the western part of the state to the municipal water supply. Based on the results of the study, and provisions in the secondary treatment rule (40 CFR 133.103(c)), the previous permit contained a pH range of 6.0 to 9.5. The city changed its water supply to the southwest pipeline (Lake Sakakawea) after the study was conducted. During the previous permit cycle, the average pH was 8.8, which is within the proposed range.

According to NDAC Chapter 33-16-01-14(3)(c)(3) "The pH of natural ground waters and surface waters in some parts of the state are basic, and the stabilization process of wastewater treatment in lagoon systems can result in more alkaline (increased pH) water. Discharges from waste treatment facilities may exceed the upper pH limit of 9.0 provided in the secondary treatment standard due to these uncontrollable properties. Approval to discharge may be granted, providing the pH of the receiving water is not violated."

## ***E. coli***

According to department records, this facility has discharged during the previous permit cycle. No permit limitation exceedence occurred. The previous permit included a limit for fecal coliform at 200 (# per 100 ml). The fecal coliform limitation and sampling was replaced during the previous permit term with equivalent *E. coli* requirements. This standard shall apply only during the recreation season of May 1 to Septemeber 30. The department shall extend the standard from April 1 to October 31. The department extends this period to ensure the recreational season is covered. The department recommends the previous limit be maintained based upon NDAC 33-16-02.1.

## **Ammonia as N**

According to department records, this facility has discharged during the previous permit cycle. No permit limitation exceedence occurred. The department proposes to maintain the current permit limit for this parameter based on NDAC 33-16-02.1.

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.

A numeric ammonia limit will not be established in the permit at this time; however, the permittee will have two (2) options to choose from to comply with the ammonia as N water quality standard.

- Option one (1): discharge limits will be calculated at the time of discharge in compliance with the State Water Quality Standard for Ammonia to provide the permittee with real-time ammonia limitations.
- Option two (2): the permittee will sample the ammonia as N from the system and comply with state water quality standard at the end-of-pipe – forgoing any receiving water dilution.

Upon choosing option 1, the department and the permittee will verify compliance with the state water quality standard through the use of an ammonia spreadsheet. Any ammonia as N effluent values exceeding the applicable ammonia as N calculation shall be reported on the DMR submitted to the department. It is the intent of the department to ensure that state water quality standards are not violated, and the permittee optimizes the efficiency of its treatment facility.

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.

## **MONITORING REQUIREMENTS**

The department requires monitoring, recording, and reporting (NDAC Chapter 33-16-01-(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.

The permittee must notify the department prior to any discharge. Approximately two weeks prior to a planned discharge, a representative pre-discharge grab sample must be collected from the settling basin and analyzed for the parameters listed in Table 3. The pre-discharge sample results must be provided when notifying the department of a planned discharge.

The permittee shall collect one grab sample of the discharge every calendar week and have it analyzed while discharging.

**BIOSOLIDS**

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

**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**

**BENEFICIAL REUSES**

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 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 criteria in Table 6.

**Table 6 – Irrigation Reuse Criteria**

Parameter	Discharge Limitations	Monitoring Frequency	
	Daily Max	Measurement	Sample Type

		Frequency	
BOD <sub>5</sub> (mg/l)	30.0	1 per 14 days	Grab
TSS (mg/l)	45.0	1 per 14 days	Grab
<i>E. Coli</i> (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 Table 3 and Table 5.

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.

### 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 Table 7. 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.

**Table 7 – Construction Reuse Criteria**

Parameter	Limitations (Maximum)	Measurement Frequency	Sample Type
BOD <sub>5</sub> (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
<i>E. Coli</i>	126	Weekly	Grab

(number/100 ml)			
-----------------	--	--	--

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:

- Worker and public contact with treated wastewater should be minimized.
- 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.
- Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.
- 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.

### **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.

### **Other Uses as Approved**

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

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## APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to reissue a permit to the **City of Medora**. 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 **April 14, 2016** in the **Dickinson Press** 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 Health  
Division of Water Quality  
918 East Divide Avenue, 4<sup>th</sup> Floor  
Bismarck, ND 58501

The primary author of this permit and fact sheet is Sarah Waldron.

**North Dakota Department of Health Public Notice  
Reissue of an NDPDES Permit**

Public Notice Date: 4/14/2016

Public Notice Number: ND-2016-016

**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: 11/9/2015

Application Number: ND0022799

Applicant Name: Medora City Of

Mailing Address: PO Box 418A, Medora, ND 58645-0418

Telephone Number: 701.623.4828

Proposed Permit Expiration Date: 6/30/2021

**Facility Description**

The reapplication is for four waste stabilization ponds which service the City of Medora. The discharge facility is located in the SE1/4 of the NE1/4, Section 27, Township 140 North, Range 102 West and the NE1/4 of the SW 1/4, Section 26, Township 140 North, Range 102 West. Any discharge would be to an unnamed drainage which flows into the Little Missouri River, or directly to the Little Missouri River, a Class II stream.

**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. Comments or requests should be directed to the ND Dept of Health, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by May 15, 2016 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 2013.12.31

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 Health, Division of Water Quality.
9. “**DMR**” means discharge monitoring report.
10. “**EPA**” means the United States Environmental Protection Agency.
11. “**Geometric mean**” means the  $n^{\text{th}}$  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**

Critical low flow limitations were not utilized in this permit renewal.

DFLOW 1B3 (ACUTE)	0 CFS	DFLOW 1Q10 (ACUTE)	0 CFS
DFLOW 4B3 (CHRONIC)	0 CFS	DFLOW 7Q10 (CHRONIC)	0 CFS
DFLOW 30B10 (AMMONIA)	0 CFS		

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**APPENDIX D – RESPONSE TO COMMENTS**

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

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Permit No: ND0022799  
Effective Date: July 1, 2016  
Expiration Date: June 30, 2021

AUTHORIZATION TO DISCHARGE UNDER THE  
NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33-16-01 of the North Dakota Department of Health rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

the City of Medora

is authorized to discharge from its waste stabilization ponds

to the Little Missouri 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, 2121.

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

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

BP 2014.06.12

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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.
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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.

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**OUTFALL DESCRIPTION**

**Outfall 001** – Active. Final Outfall. Any discharge flows from the waste stabilization ponds to the Little Missouri River, a Class II stream. The location of this outfall point is latitude 46.9123954772, longitude - 103.5289154052 located in Billings County. This discharge point primarily discharges treated effluent from Cells 3 and 4A, but has the capability to discharge treated effluent from all four treatment cells.

**Outfall 002** – Active. Final Outfall. Any discharge flows from the waste stabilization ponds to the Little Missouri River, a Class II stream. The location of this outfall point is latitude 46.908886, longitude - 103.517742, located in Billings County. This discharge point allows the city the option to discharge Cells 1 and 2. The discharge point enters an unnamed drainage ditch and travels approximately one and a half miles before entering the Little Missouri River approximately 800 yards downstream of Outfall 001.

**PERMIT SUBMITTALS SUMMARY**

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Semi-Annual	January 31, 2017
002A	Discharge Monitoring Report	Semi-Annual	January 31, 2017
Application Renewal	NPDES Application Renewal	1/permit cycle	December 31, 2020

**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: **Little Missouri River, a Class II Stream.**

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**

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

Table 1: Effluent Limitations and Monitoring Requirements <b>Outfall 001 and Outfall 002</b>					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biological Oxygen Demand (BOD5)	25 mg/l	45 mg/l	*	1/week	Grab
Total Suspended Solids (TSS)	30 mg/l	45 mg/l	*	1/week	Grab
pH <sup>a</sup>	Shall remain between 6.0 to 9.0 s.u.			1/week	Grab
Escherichia coli ( <i>E. coli</i> ) <sup>b</sup>	126/100 ml	*	409/100 ml	1/week	Grab
Total Ammonia as N, mg/l <sup>c</sup>	Refer to Table 2			1/week	Grab
Total Flow, mgal	*	*	Report Monthly Total	1/month	Calculated
<b>Ammonia as N (Option 1) – Receiving water parameters – collected same day as compliance sample.<sup>c</sup></b>					
Flow (cfs)	*	Report	*	1/week	Grab
pH (s.u.)	*	Report	*	1/week	Grab
Temperature (°C)	*	Report	*	1/week	Grab
Ammonia as N (mg/l)	*	Report	*	1/week	Grab
<b>Ammonia as N (Option 2) – Effluent Water Parameters – collected same days as effluent sample.<sup>c</sup></b>					
Temperature (°C)	*	Report	*	1/week	Grab

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001 and Outfall 002**

Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type

Notes:

- \*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.
  - a. The pH, an instantaneous limitation, shall be between 6.0 (s.u.) and 9.0 (s.u.).
  - b. The limitation for *E. coli* shall be in effect for discharges which may occur from April 1 through October 31.
  - c. Permittee must use one of two options to comply with the ammonia as N limitation:
    - Option 1 – Applicable (Temperature, pH, Ammonia as N, and receiving-stream flow) receiving water parameters are collected to calculate (refer to formula below) the real time water quality standard for ammonia – this option allows 10% of the receiving water flow for dilution. This calculated limit will be compared to facility effluent data on ammonia and if the effluent value is greater than the calculated limit, the permittee will report a violation.
    - Option 2 – Permittee collects ammonia as N and temperature samples from the lagoon cell to be discharged and complies with the ammonia as N limit at the end-of-pipe forgoing any receiving water dilution.

Stipulations:

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 BOD<sub>5</sub>, 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 the duration of the discharge.

The discharge shall not contain, in sufficient amounts to be unsightly or deleterious, any floating debris, oil, scum, and other floating materials attributable to municipal wastewater options.

All representative samples shall be taken prior to leaving the wastewater stabilization pond system or entering the receiving stream.

The limitations for BOD<sub>5</sub>, TSS and *E. coli* are based on the average of all samples taken to monitor the discharge from a cell. If only one sample is collected, that one value shall be used as the average. The limitation for pH applies to each sample taken. 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 did not cause the pH to exceed the permitted range of 6.0 – 9.0 s.u. All discharges shall be made in such a manner to minimize any possible adverse impacts on the receiving stream and downstream landowners.

The start and end dates of the discharge shall also 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. All samples and measurements taken shall be representative of the discharge.

Table 1: Effluent Limitations and Monitoring Requirements <b>Outfall 001 and Outfall 002</b>					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
The department may require the permittee to provide additional sampling and monitoring as deemed necessary to assure adequate operation of the treatment system and the water quality standards are met during the discharge period.					

Table 2: Ammonia as N Effluent Limitations Calculations (Chapter 33-16-02.1)
<p><b>Chronic Standard (Average Monthly Limit)</b></p> <p>The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:</p> $\frac{(0.0577)}{(1+10^{7.688-pH})} + \frac{2.487}{1+10^{pH-7.688}} \bullet CV;$ <p>where CV = 2.85, when T ≤ 14°C; or CV = 1.45 * 10<sup>0.028*(25-T)</sup>, when T &gt; 14°C. Receiving stream pH is used for the calculation</p>

<p><b>Acute Standard (Daily Maximum Limit)</b></p> <p>The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:</p> $\frac{(0.411)}{(1+10^{7.204-pH})} + \frac{58.4}{1+10^{pH-7.204}}$ <p>where salmonids are absent; or</p> $\frac{(0.275)}{(1+10^{7.204-pH})} + \frac{39.0}{1+10^{pH-7.204}}$ <p>Where salmonids are present.</p>
--

Note – For the above calculations, the permittee receives ten percent of stream flow for dilution (refer to Option 1) at time of discharge based on the flow of the receiving stream. In- stream concentration will be calculated on a mass-balance basis using the following formula:

In-stream concentration= (Q<sub>u</sub>\*C<sub>u</sub> + Q<sub>e</sub>\*C<sub>e</sub>)/( Q<sub>u</sub>+ Q<sub>e</sub>) where  
 Q<sub>u</sub> = 10% of the receiving stream flow parameter  
 C<sub>u</sub> = Receiving stream ammonia parameter  
 Q<sub>e</sub> = Effluent flow parameter  
 C<sub>e</sub> = Ammonia as N parameter

Outfall discharge will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.

## II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2015.12.30

### 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. Prior to December 21, 2016, the permittee may elect to submit DMRs, electronically, using the electronic reporting system. Beginning December 21, 2016, the permittee must submit DMRs using the electronic reporting system.
2. Beginning December 21, 2020, 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. The waiver from electronic reporting will expire upon the expiration date of this permit and may not be transferred to a new party. Any request to renew the electronic reporting waiver should be made six months prior to the expiration date of this permit.

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 Health  
Division of Water Quality  
918 East Divide Ave  
Bismarck ND 58501-1947

#### **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:

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

**V. 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	
		Measurement Frequency	Sample Type
	Daily Max		
BOD <sub>5</sub> (mg/l)	30.0	1 per 14 days	Grab
TSS (mg/l)	45.0	1 per 14 days	Grab
<i>E. Coli</i> (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
BOD <sub>5</sub> (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
<i>E. Coli</i> (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.