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

Public Notice Date: 11/15/2023 Public Notice Number: ND-2023-021

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: 7/5/2023 Application Number: ND0022870

Applicant Name: Fargo City Of

Mailing Address: 225 4th St N, Fargo, ND 58102

Telephone Number: 701.241.8565

Proposed Permit Expiration Date: 12/31/2028

Facility Description

The reapplication is for a combination mechanical treatment plant and six waste stabilization ponds which services the City of Fargo and surrounding cities. The treatment plant is located at 3400 North Broadway, Fargo, ND. The waste stabilization ponds are located in the E 1/2 of Section 10, and the W 1/2 of Section 11, of Township 140 North, Range 49 West. Any discharge would be to the Red River of the North, a Class I 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. 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 December 16, 2023 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.

The NDDEQ will consider every request for reasonable accommodation to provide an accessible meeting facility or other accommodation for people with disabilities, language interpretation for people with limited English proficiency (LEP), and translations of written material necessary to access programs and information. Language assistance services are available free of charge to you. To request accommodations, contact the NDDEQ Non-discrimination Coordinator at 701-328-5210 or deqEJ@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

Permit No: ND0022870
Effective Date: January 1, 2024
Expiration Date: December 31, 2028

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 Fargo
Fargo Publicly Owned Treatment Works (POTW)

is authorized to discharge from its wastewater treatment system

to the Red River of the North

provided all the conditions of this permit are met.

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

December 31, 2028.

Signed this _____ day of _____, _____.

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

BP 2019.05.29

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DEFINITIONS Standard Permit BP 2019.05.29

1. "**Act**" means the Clean Water Act.

2. "**Average monthly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

3. "**Average weekly discharge limitation**" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

4. "**Best management practices**" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.

5. "**Bypass**" means the intentional diversion of waste streams from any portion of a treatment facility.

6. "**Composite**" sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.

7. "**Daily discharge**" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

8. "**Department**" means the North Dakota Department of Environmental Quality, Division of Water Quality.

9. "**DMR**" means discharge monitoring report.

10. "**EPA**" means the United States Environmental Protection Agency.

11. "**Geometric mean**" means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

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

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

14. "**Maximum daily discharge limitation**" means the highest allowable "daily discharge."

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

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

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

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

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

DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06

20. "**Acute toxic unit"** ("TUa") is a measure of acute toxicity. TUa is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., 100/"LC50").

21. "**Chronic toxic unit"** ("TUc") is a measure of chronic toxicity. TUc is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/"IC25").

22. "**Inhibition concentration**", ("IC"), is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).

23. "**LC50**" means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.

24. "**No observed effect concentration**", ("NOEC"), is the highest concentration of toxicant (e.g., effluent) to which organisms are exposed in a chronic toxicity test [full life-cycle or partial life-cycle (short term) test], that causes no observable adverse effects on the test organisms (i.e., the highest concentration of effluent in which the values for the observed responses are not statistically significantly different from the controls).

OUTFALL DESCRIPTION

Outfall 007. Active. Final.			
Latitude: 46.955910	Longitude: -96.803606	County: Cass	
Township: 140N	Range: 49W	Section: 11	QQ: DCA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: Any discharge from this point is from Cell 5 to the Red River of the North, a Class I stream.			

Outfall 009. Active. Final.			
Latitude: 46.962931	Longitude: -96.849261	County: Cass	
Township: 140N	Range: 49W	Section: 10	QQ: AAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: Any discharge from this point is from Cell 3 to an open ditch and into County Drain No. 9, which flows to the Red River of the North, a Class I stream.			

Outfall 010. Active. Final.			
Latitude: 46.925287	Longitude: -96.78585	County: Cass	
Township: 140N	Range: 48W	Section: 19	QQ: CAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is a continuous discharge point from the mechanical treatment plant to the Red River of the North, a Class I stream.			

Outfall 011. Active. Final.			
Latitude: 46.925480	Longitude: -96.786467	County: Cass	
Township: 140N	Range: 48W	Section: 19	QQ: CAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is an intermittent discharge point from the mechanical treatment plant, through a stormwater vault to the Red River of the North, a Class I stream. This point is only used when the receiving stream is in flood stage.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Submittal Frequency	First Submittal Date
006A	Discharge Monitoring Report - Conventional Pollutants	1/Quarter	04/30/2024
007A and 009A	Discharge Monitoring Report - Conventional Pollutants	1/Month	02/29/2024
007W	Discharge Monitoring Report – Whole Effluent Toxicity	1/Quarter	04/30/2024
007M	Discharge Monitoring Report – Metals Analysis	Annually	01/31/2025
009W	Discharge Monitoring Report – Whole Effluent Toxicity	1/Quarter	04/30/2024
009M	Discharge Monitoring Report – Metals Analysis	Annually	01/31/2025
010A	Discharge Monitoring Report – Conventional Pollutants	Monthly	02/29/2024
010W	Discharge Monitoring Report – Whole Effluent Toxicity	Quarterly	04/30/2024
010M	Discharge Monitoring Report – Metals Analysis	Quarterly	04/30/2024
Pretreatment Report	Report	Annually	03/28/2025
Application Renewal	NPDES Application Renewal	1/permit cycle	July 31, 2028

SPECIAL CONDITIONS

Mercury Pollutant Minimization Plan

The permittee is required to complete and maintain a MPMP for review upon request by the department. A copy of the plan shall be provided to the department when updates occur. The purpose of the MPMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. Guidelines for developing a MPMP are below.

The Mercury Pollutant Minimization Plan shall be available for review upon request. If the plan is updated, a copy of the updated plan shall be provided to the department. At a minimum, the MMP must include the following:

a) A summary of mercury influent and effluent concentrations and biosolids monitoring data using the most recent five (5) years of monitoring data.

b) Identification of existing and potential sources of mercury concentrations and/or loading to the facility. The following sources should be considered: residential, institutional, municipal, and commercial (dental clinics, hospitals, medical clinics, nursing homes, schools, industries with potential for mercury contributions), stormwater inputs, ground water inflow and infiltration (I/I) inputs, and waste streams or sewer tributaries to the wastewater treatment facility.

c) An evaluation of past and present wastewater treatment facility operations to determine those operating procedures that maximize mercury removal.

d) A summary of mercury reduction activities implemented during the past five (5) years.

e) A plan to implement mercury management and reduction measures during the next five (5) years.

In addition to the sampling required in this permit, the permittee shall sample effluent from the total facility discharge station for dissolved mercury annually throughout the life of this permit. The sampling method is a concurrent grab sample. Dissolved mercury shall be analyzed using an EPA approved mercury analysis method outlined in 40 CFR 136. Samples shall be taken at any time during the calendar year and reported on the custom supplemental form provided by the department. A trip blank shall be analyzed for each sampling event. The custom supplemental form must be submitted with the DMR for the last month the reporting period it was collected.

Sanitary Sewer Overflows (SSOs)

Outfall 006 has been identified in this permit as an overflow outlet. This outfall is not a permitted outfall. Any discharge from outfall 006 is considered an un-authorized discharge which must be monitored for the parameters specified for outfall 006. All Sanitary Sewer Overflows (SSOs) must be reported to the department in accordance with 40 CFR 122.41(6), Part III(G) of the permit, and as specified under the Reporting, Record Keeping, and Public Notification for Unauthorized Sanitary Sewer Overflow section outlined below.

Outfall 006. Active. Overflow Outlet.			
Latitude: 46.96316	Longitude: -96.84369	County: Burleigh	
Township: 140N	Range: 49W	Section: 10	QQ: AA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is an emergency overflow point prior to the headworks/pretreatment building. This emergency overflow is from the wastewater treatment plant. Any discharge is to the Red River of the North, a Class I stream.			

If an un-permitted discharge occurs from outfall 006, the following parameters must be monitored and reported to the department on the DMR for outfall 006:

Table 12: Self-Monitoring Requirements for **Outfall 006**		
Effluent Parameter	**Frequency**	**Sample Type**
BOD_5, mg/l, effluent	Daily	Grab
TSS, mg/l, effluent	Daily	Grab
pH, S.U.	Daily	Grab
Oil and Grease Visual [a]	Daily	Visual
Oil & Grease, mg/l [a]	Conditional/Daily	Grab
Ammonia as N, mg/l	Daily	Grab
Escherichia coli (*E.coli*) geo mean, #/100ml	Daily	Grab
Total Flow, MGD	Daily	Instantaneous
Total Drain, MG	1/Quarter	Calculated
a/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.		

Reporting, Record Keeping, and Public Notification for Unauthorized Sanitary Sewer Overflows

1. Immediate Reporting

   A. The permittee shall report to the department any sanitary sewer overflow or any unauthorized sanitary sewer overflow that the permittee owns and/or operates. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. At a minimum, the report shall identify:

      i. The location of the overflow;

      ii. The receiving water (if there is one);

      iii. The duration of the overflow; and

      iv. The estimated volume of the overflow.

   B. An overflow is any spill, release, or diversion of municipal sewage, including:

      i. An overflow that results in a discharge to a water of the state; and

      ii. An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately-owned sewer or building lateral), even if that overflow does not reach waters of the state.

2. Written Reports

   A. The permittee shall also provide a written report to the department for any overflow identified under paragraph 1 of this section within five (5) days from the time the permittee becomes aware of the circumstances. The written report shall contain a description of:

      i. The location of the overflow;

ii. The receiving water (if applicable);

iii. An estimate of the overflow volume;

iv. A description of the sewer-system component that caused the release (e.g. manhole, constructed overflow pipe, pipe break, etc.);

v. The estimated date and time when the overflow began and stopped or will be stopped;

vi. The cause or suspected cause of the overflow;

vii. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;

viii. If possible, the number of persons who came into contact with wastewater from the overflow; and

ix. Steps taken or planned to mitigate the impact(s) from the overflow and a schedule of major milestones for those steps.

B. The department may waive the written report on a case-by-case basis for reports under paragraph A. of this section if the verbal report required under the special conditions, paragraph 1 has been received within twenty-four (24) hours.

3. Record Keeping

A. The permittee shall maintain all records in accordance with Part II(F) of this permit, including:

i. Any report submitted under paragraph 2 of the special conditions above, and

ii. Any report, including work orders that are associated with investigation of system problems related to an overflow that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow, or documents system performance.

4. Public Notice

The department may require the permittee to notify specified third parties of overflows that may endanger public health.

A. The permittee shall develop a plan which describes how notification, under various overflow (and unanticipated bypass and upset) scenarios, the public and other entities of overflows that may endanger public health.

i. The plan shall identify all reportable overflows and the specific information reported to each entity receiving notification.

B. The permittee shall immediately notify the public, public health agencies, and other affected entities (e.g. public water systems) of any sanitary sewer overflow that the permittee owns or has operational control which are identified in the plan required in paragraph A of this section.

5. Proper Operation and Maintenance

A. The permittee shall implement proper operation and maintenance of the collection system in accordance with Part III(B) and (I) of this permit. Upon request of the department, this may include the development and implementation of capacity, management, operation, and management (CMOM) programs.

Discharge Monitoring Report Quality Assurance/Quality Control Participation

This facility has been selected to take part in the annual Discharge Monitoring Report – Quality Assurance (DMR-QA) Study. This participation is a requirement as outlined in Section 308 of the Clean Water Act (CWA). EPA will mail you a copy of the annual DMR-QA Study notification letter. Additional information may be found by visiting the following website: https://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program#about Discontinuation from the DMR-QA Study may take place upon a written letter from the State DMR-QA Coordinator.

I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfall as specified to the following: **Red River of the North**.

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:

Effluent Limitations and Monitoring Requirements **Outfalls 007** and **009**							
Parameter	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration				
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biochemical Oxygen Demand (BOD_5), mg/l	*	*	25 mg/l	45 mg/l	*	1/Week	Composite
Total Suspended Solids (TSS), mg/l	*	*	30 mg/l	45 mg/l	*	1/Week	Composite
pH, S.U., a/	Shall remain between 6.5 to 9.0 S.U.					1/Week	Grab
Oil & Grease, Visual, b/	*	*	*	*	*	Daily	Visual
Oil & Grease, mg/l, b/	*	*	*	*	10 mg/l	Conditional/ Daily	Grab
Ammonia as N, mg/l	Refer to Ammonia Table					3/Week	Composite
Escherichia coli (*E.coli*) geo mean, #/100ml, c/	*	*	126	*	409	1/Week	Grab
Nitrogen, Total mg/l	*	*	*	*	*	1/Month	Composite
Phosphorus, Total mg/l	*	*	*	*	*	1/Week	Composite
Effluent Flow, MGD	Report Avg. Monthly Value	Report Max. Daily Value	*	*	*	Daily	Instantaneous
Total Drain, MGAL	*	Report monthly	*	*	*	1/Month	Calculated

Effluent Limitations and Monitoring Requirements **Outfalls 007** and **009**							
Parameter	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration				
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
		total					
Whole Effluent Toxicity (WET)	Refer to Part I(C)(1) of this permit					1/Quarter	Grab
Metals, µg/l (Influent and Effluent)	Refer to Part V(C) of this permit					1/Year	Composite

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 6.5 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.

b/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.

c/ *E. coli* limits shall be effective from April 1 through October 31.

Stipulations:

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.

Effluent Limitations and Monitoring Requirements **Outfalls 010** and **011**							
Parameter	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration				
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
BOD_5 (effluent), mg/l	*	*	25 mg/l	45 mg/l	*	3/Week	Composite
BOD_5 (influent), mg/l	*	*	*	*	*	1/Week	Composite
BOD_5 Percent Removal a/	*	*	≥ 85%	*	*	1/Week	Calculated
TSS (effluent), mg/l	*	*	30 mg/l	45 mg/l	*	3/Week	Composite
TSS (influent), mg/l	*	*	*	*	*	1/Week	Composite
TSS Percent Removal a/	*	*	≥ 85%	*	*	1/Week	Calculated
pH, S.U., b/	Shall remain between 6.5 to 9.0 S.U.					Daily	Grab
Oil & Grease, Visual, c/	*	*	*	*	*	Daily	Visual
Oil & Grease, mg/l, c/	*	*	*	*	10 mg/l	Conditional/ Daily	Grab
Temperature, Cº	*	*	*	*	*	Daily	Grab
Ammonia as N, mg/l	Refer to Ammonia Table					3/Week	Composite
Escherichia coli (*E.coli*) geo mean, #/100ml, d/	*	*	126	*	409	3/Week	Grab
Nitrogen, Total mg/l	*	*	*	*	*	1/Month	Composite
Phosphorus, Total mg/l	*	*	*	*	*	1/Week	Composite
Effluent Flow, MGD	Report Avg. Monthly Value	Report Max. Daily Value	*	*	*	Daily	Instantaneous
Total Drain, MGAL	*	Report monthly total	*	*	*	1/Month	Calculated
Whole Effluent Toxicity (WET), TU_a	Refer to Part I(C)(1) of this permit					1/Quarter	Grab
Whole Effluent Toxicity (WET), TU_c	Refer to Part I(C)(2) of this permit					1/Year	Grab
Metals, µg/l (Influent and Effluent)	Refer to Part V(C) of this permit					1/Quarter	Composite
Toxic Organics	Refer to Part V(C) of this permit					1/2 Years	Composite

Notes:

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

Effluent Limitations and Monitoring Requirements **Outfalls 010** and **011**							
Parameter	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration				
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type

a/ Calculated for each weekly influent sample, a corresponding effluent sample shall be taken on the same day as the influent sample. The percent removal shall be calculated using the following equation:

$$\%\, removal = \frac{Influent - Effluent}{Influent}$$

The average percent removal from each weekly calculation shall be determined and reported on the DMR.

b/ The pH, an instantaneous limitation, shall be between 6.5 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.

c/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.

d/ *E. coli* limits shall be effective from April 1 through October 31.

Stipulations:

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.

Ammonia Effluent Limitations and Monitoring Requirements **Outfall 007, 009, 010 and 011**.

	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡
Stream flow upstream, cfs 2/	*	*	*
Temperature upstream, ° C 2/, 3/	*	*	*
pH upstream, S.U. 2/, 3/	*	*	*

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

1/ Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.

2/ Sample must be collected/ recorded the same day as the ammonia sample. The upstream flow, temperature, and pH may be obtained from the USGS gauging station 0505400 at Fargo, North Dakota.

3/ If the upstream values are not collected then following minimum values base on the 90th percentile upstream USGS data are to be used: pH: 8.4 S.U., Temperature 24.0 ° C, and ammonia 0.14 mg/l. If the upstream flow is not available then, the 30B10 critical low flow of 131.24 cfs shall be used. The maximum mixing factor is 10.0%.

† Chronic Standard (Average Monthly Limit) [a]:
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 total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:

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

Receiving stream pH and temperature is used for the calculation.

‡ Acute Standard (Daily Maximum Limit)
The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed the numerical value given by the following formula:

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

where *Oncorhynchus* are absent.

Receiving stream pH and temperature is used for the calculation.

a. When discharges are 7 days or less, the 4-day average concentration limitation shall apply. When discharges are more than 7 days, the 30-day average concentration limitation shall apply.

Stipulations

The maximum mixing factor with receiving stream is 10.0%.

C. Whole Effluent Toxicity (WET) Requirements BP 2023.10.16

1. Acute Toxicity Testing

Acute toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms,* EPA-821-R-02-012 (Fifth Ed., October 2002). The permittee shall conduct an acute 48-hour static-renewal toxicity test using freshwater fleas, (*Ceriodaphnia dubia)* and an acute 96-hour static-renewal toxicity test using fathead minnows, (*Pimephales promelas)*.

Acute WET requirements for **Outfalls 007, 009, 010 and 011**						
Implementation	Limitations Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Red River of the North** [a]					
Testing Type	Acute Toxicity					
Species and Test Type	*Ceriodaphnia dubia* 48 Hour Acute Static Renewal 20ºC					
	Pimephales promelas 96 Hour Acute Static Renewal 20°C					
Endpoint	Mortality reported as TU_a					
Compliance Point	End of pipe					
Sample Frequency	1/Quarter					
Sample Type	Grab					
Maximum Daily Limit (MDL)	<1 TU_a					
Average Monthly Limit (AML)	<1 TU_a					
Test Failure	The 48-hour LC_{50} effluent value must be <1 TU_a to indicate a passing test. Any 48-hour LC_{50} effluent value >1 TU_a will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: Report the highest TU_a for *Ceriodaphnia dubia*, Parameter No. TSM3B. Report the highest TU_a for *Pimephales promelas*, Parameter No. TSN6C.					

The use of alternate testing procedures or methods shall be approved in advance by the department (including, but not limited to the use of EDTA, CO_2 overlay, chlorine removal from the effluent sample if the effluent is chlorinated, etc.).

If toxicity occurs in a routine test, an additional test shall be initiated within 14 days from the date of the initial toxicity findings. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge. Should toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a 5.Toxicity Reduction Evaluation (TRE) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit.

a. When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize moderately hard reconstituted water upon request and approval by the department.

2. Chronic Toxicity Testing

Chronic WET requirements for **Outfall 010**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Red River of the North**					
Species and Test Type	*Ceriodaphnia dubia* – 7-Day Chronic – Static Renewal – 25ºC					
	Fathead Minnow – 7-Day Chronic – Static Renewal – 25ºC					
Endpoint	Survival and Reproduction (*Ceriodaphnia dubia)* – IC25 reported as TUc					
	Larval Growth and Survival (Fathead Minnow) – IC25 reported as TUc					
Compliance Point	Monitoring Only					
Sample Frequency	Annual					
Test Acceptability	Test acceptability for *Daphnia dubia* chronic must have a 80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions, and 60% of surviving control females must produce three broods. If this condition is not satisfied, the test must be repeated. Test acceptability for *Pimephales promelas* chronic must have 80% or greater survival in controls and an average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. If this condition is not satisfied, the test must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: ***Pimephales promelas* (Fathead Minnow)** Report the highest TU_c for Fathead minnow, Parameter No. TTP3B ***Ceriodaphnia dubia* (Water Flea)** Report the highest TU_c for *Ceriodaphnia dubia*, Parameter No. TTB6C.					

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,* EPA-821-R-02-013 (Fourth Ed., October 2002). Test species shall consist of freshwater fleas, (*Ceriodaphnia dubia)* and fathead minnows, (*Pimephales promelas)*.

3. Reduced Monitoring For Toxicity Testing

a. Alternating Species

If the results of a minimum of four consecutive samples taken over at least a 12 month period indicate no toxicity, the permittee may request the Department for a test reduction. This reduction would only be testing one species per sampling frequency. If fathead minnows are used first then the next test would be *C. dubia* or vice versa and continue alternating. The department may approve or deny the request, based on the biomonitoring results and other available information. If the request is approved, the test procedures are to be the same as outlined in 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing.

This provision is restarts at the time of permit reissuance/renewal. Permittees may request alternating species after the conditions of this section are met under the reissued permit.

If toxicity occurs in any single species test the provision for alternating species shall be immediately revoked and 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing shall be followed in whole.

b. Monthly Testing

If the results of 5. Toxicity Reduction Evaluation (TRE) have been accepted by the department or a period of time has indicated no toxicity, the permittee may request the department to allow a reduction from monthly to quarterly toxicity testing for both species. The department may approve or deny the request, based on the bio-monitoring results and other available information. If the request is approved, the test procedures are to be the same as outlined in 1. Acute Toxicity Testing and/or 2. Chronic Toxicity Testing.

4. Reporting Requirements

Test results shall be submitted with the Discharge Monitoring Report (DMR) form for each reporting period. The format for the report shall be consistent with the above reference manual(s) as outlined in the section "Report Preparation and Test Review." Each lab generated report shall document the findings for each species reference toxicity testing chart.

5. Toxicity Reduction Evaluation (TRE)

If toxicity is detected, and it is determined by the department that a TRE is necessary, the permittee shall be so notified and shall initiate a TRE immediately thereafter. A TRE shall reference the latest revision of "*Technical Support Document for Water Quality-based Toxics Control,*" EPA/505/2-90-001 – PB91-127415 (March 1991). The purpose of the TRE will be to establish the cause of the toxicity, locate the source(s) of the toxicity, and control or provide treatment for the toxicity.

If the TRE establishes that the toxicity cannot be eliminated by the current treatment system, the permittee shall submit a proposed compliance plan to the department. The plan shall include the proposed approach to control toxicity and a proposed compliance schedule for achieving control. If the approach and schedule are acceptable to the department, this permit may be reopened and modified.

If the TRE shows that the toxicity is caused by a toxicant(s) that may be controlled with specific numerical limitations or proper discharge management as approved by the department, the permittee may:

Submit an alternative control program for compliance with the numerical requirements; or

If necessary, provide a modified biomonitoring protocol which compensates for the pollutant(s) being controlled numerically.

If acceptable to the department, this permit may be reopened and modified to incorporate any additional numerical limitations, a modified compliance schedule if judged necessary by the department, and/or a modified biomonitoring protocol.

Failure to conduct an adequate TRE, or failure to submit a plan or program as described above, or the submittal of a plan or program judged inadequate by the department, shall in no way relieve the permittee from maintaining compliance with the whole effluent toxicity requirements of this permit.

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.

V. INDUSTRIAL PRETREATMENT PROGRAM BP 2009.09.10
Contributing Industries and Pretreatment Program Requirements

A. Standard Requirements
Permittee shall operate an industrial pretreatment program in accordance with the following permit requirements developed pursuant to Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403), and the approved pretreatment program submitted by the permittee. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

1. Industrial user information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all Industrial Users are properly permitted and/or controlled. The records shall be maintained and updated as necessary;

2. The permittee shall sample and inspect each Significant Industrial User (SIU) at least once per calendar year (40 CFR Section 403.8(f)(2)(v)). This is in addition to any industrial self-monitoring activities. If the permittee performs sampling for any SIU, then the permittee shall perform any repeat sampling and analysis within 30 days of becoming aware of the violation (40 CFR Section 403.12(g)(2));

3. The permittee shall evaluate whether each SIU needs a plan to control sludge. SIUs must be evaluated within 1 year of being designated an SIU. Where needed, the permittee shall require the SIU to prepare or update, and then implement the plan. Where a slug prevention plan is required, the permittee shall ensure that the plan contains at least the minimum elements required in 40 CFR Section 403.8(f)(2)(vi). If required, the permittee shall incorporate slug control requirements into the control mechanism for the SIU. (40 CFR, Section 403.8(f)(1)(iii)(B)(6)).;

4. The permittee shall investigate instances of non-compliance with Pretreatment Standards and requirements indicated in reports and notices required under 40 CFR 403.12, or indicated by analysis, inspection, and surveillance activities.

5. The permittee shall enforce all applicable Pretreatment Standards and requirements and obtain remedies for noncompliance by any industrial user.

6. The permittee shall control, through the legal authority in the approved pretreatment program, the contribution to the Publicly Owned Treatment Works (POTW) by each industrial user to ensure compliance with applicable Pretreatment Standards and requirements. In the case of industrial users identified as significant under 40 CFR Section 403.3(v), this control shall be achieved through permit, order, or similar means and shall contain, at a minimum, the following conditions:

    a. Statement of duration (in no case more than five (5) years);

    b. Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator.

    c. Effluent limits based on applicable pretreatment standards, categorical pretreatment standards, local limits, and state and local law.

    d. Self-monitoring, sampling, reporting, notification and recordkeeping requirements, including an identification of the pollutants to be monitored, sampling location, sampling frequency, and sample type, based on the applicable general pretreatment standards in 40 CFR 403, categorical pretreatment standards, local limits, and state and local law.

    e. Statement of applicable civil and criminal penalties for violation of Pretreatment Standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond deadlines mandated by federal statute or regulation.

    f. Requirements to control Slug Discharges, if determined by the POTW to be necessary.

7. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program as required by 40 CFR Section 403.8(f)(3);

8. The approved program shall not be substantially modified by the permittee without the approval of the Approval Authority. Substantial and non-substantial modifications shall follow the procedures outlined in 40 CFR Section 403.18.

9. The permittee shall develop, implement, and maintain an enforcement response plan as required by 40 CFR Section 403.8(f)(5); and

10. The permittee shall notify all Industrial Users of the users' obligations to comply with applicable requirements under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA) as required by 40 CFR Section 403.8(f)(2)(iii).

B. Local Limits

The permittee shall establish and enforce specific local limits to implement the provisions of 40 CFR sections 403.5(a) and (b), as required by 40 CFR Section 403.5(c). The permittee shall continue to develop these limits as necessary and effectively enforce such limits.

In accordance with EPA policy and with the requirements of 40 CFR sections 403.8(f)(4) and 403.5(c), the permittee shall determine if technically based local limits are necessary to implement the general and specific prohibitions of 40 CFR sections 403.5(a) and (b).

This evaluation should be conducted in accordance with the latest revision of the *"EPA Region VIII Strategy for Developing Technically Based Local Limits"*, and after review of EPA's *"Local Limits Development Guidance"* **July 2004**. Where the permittee determines that revised or new local limits are necessary, the permittee shall submit the proposed local limits to the Approval Authority in an approvable form in accordance with 40 CFR Section 403.18.

C. Sampling and Reporting Requirements

The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table II and the toxic pollutants in Table III as follows:

	Minimum Frequency of Monitoring
Table II Priority Pollutants 40 CFR 122 Appendix D	**1/ 2 Years**
Table III Metals 40 CFR 122 Appendix D	**1/Quarter**

40 CFR 122 Appendix D Table III				
Antimony, Total	**Arsenic, Total**	**Beryllium, Total**	**Cadmium, Total**	**Chromium, Total**
Copper, Total	**Lead, Total**	**Mercury, Total**	**Nickel, Total**	**Selenium, Total**
Silver, Total	**Thallium, Total**	**Zinc, Total**	**Cyanide, Total**	**Phenols, Total**
Hardness, Total a/				

Notes:

a. A total hardness of the receiving stream needs to be determined every time the above parameters are tested. The hardness is used to calculate parameter criterion(s) according to the North Dakota State Water Quality Standards.

If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in Table V, or any other pollutant in a quantity or concentration known or suspected to adversely affect POTW operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed on both the influent and the effluent as follows:

	Minimum Frequency of Monitoring
Table V Other Toxics	**Conditional as specified above**

1. Along with the permittee's pretreatment annual report, the permittee will submit a list of compounds included in Table V that are suspected or known to be present in its influent wastewater. This determination shall be based on a review of the permittee's pretreatment program records. The state permitting authority and/or Approval Authority may review and comment on the list and the list may be revised if, in the opinion of the state permitting authority and/or Approval Authority, the list is incomplete. The permittee will perform the analysis on the influent for the revised list of compounds for which there are acceptable testing procedures as follows:

	Minimum Frequency of Monitoring
Revised List of Compounds	0/Year

2. Where the pollutants monitored in accordance with this section are reported as being above the method detection limit, the results for these pollutants shall be reported in the permittee's pretreatment annual report, if required by EPA.

D. Sludge Sampling and Reporting Requirements

The permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the permittee does not dispose of biosolids during the calendar year, the permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

1. The permittee shall review the pollutants in 40 CFR Part 122, Appendix D, tables II and V. If any of the pollutants in these tables were above detection in the influent samples during the previous 2 years or the last two analyses, whichever is greater, the permittee shall sample and analyze its sewage sludge for these pollutants. The permittee shall perform this evaluation and analysis at least once per year.

2. The permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.

3. The permittee shall report the results for these pollutants in the permittee's pretreatment annual report, if required by EPA.

E. Sample Analysis and Sampling Procedure

All analyses shall be in accordance with procedures established in 40 CFR Part 136. Where sampling methods are not specified, the influent and effluent samples collected shall be composite samples consisting of at least twelve (12) aliquots collected at approximately equal intervals over a representative 24-hour period and composited according to flow. Where automated composite sampling is inappropriate, at least four (4) grab samples shall be manually taken at equal intervals over a representative 24-hour period, and composited prior to analysis using approved methods; alternatively, the individual grab samples may be analyzed separately and the results from the respective grab samples mathematically combined based on flow (i.e., flow weighted) for the final result.

Additional Sampling Requirements

In addition, the following are identified as pollutants of concern by sampling and analysis of your influent, effluent and/or sludge during local limits development, other chemical monitoring, or through activities associated with or as a result of whole effluent toxicity testing. The following pollutants of concern shall be sampled and analyzed in the influent and effluent as follows:

Parameters	**Minimum Frequency of Monitoring**
No additional parameters have been identified at this time.	

F. Annual Reporting Requirements

The permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated Pretreatment Standards or requirements. This list is to be published annually in a newspaper of general circulation in the permittee's service area as required by 40 CFR Section 403.8(f)(2)(viii).

In addition, on or before March 28, the permittee shall submit a pretreatment program annual report to the Approval Authority and the state permitting authority that contains the information requested by EPA, or at a minimum the following information:

1. An updated list of all SIUs as defined at 40 CFR Section 403.3(v). For each SIU listed the following information shall be included:

   a. All applicable Standard Industrial Classification (SIC) codes and categorical determinations, as appropriate. In addition, a brief description of the industry and general activities;

   b. Permit status. Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);

   c. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported.

      Total number of SIUs inspected; and
      Total number of SIUs sampled.

2. For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed as defined at 40 CFR Section 403.8(f)(2)(viii)(A-H).

3. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan, as required in 40 CFR Section 403.8(f)(5).

4. A list of all SIUs whose authorization to discharge was terminated or revoked during the preceding twelve (12) month period and the reason for termination;

5. A report on any Interference, Pass Through, upset or NPDES permit violations known or suspected to be caused by non-domestic discharges of pollutant and actions taken by the permittee in response;

6. Verification of publication of industrial users in Significant Non-Compliance;

7. Identification of the specific locations, if any, designated by the permittee for receipt (discharge) of trucked or hauled waste, if modified;

8. Information as required by the Approval Authority or state permitting authority on the discharge to the POTW from the following activities:

   a. Ground water clean-up from underground storage tanks;
   b. Trucked or hauled waste; and,
   c. Ground water clean-up from RCRA or Superfund sites.

9. A description of all changes made during the previous calendar year to the permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.

10. The permittee shall evaluate actual pollutants loadings against the approved Maximum Allowable Headworks Loadings (MAHLs). Where the actual loading exceeds the MAHL, the permittee shall immediately begin a program to either revise the existing local limit and/or undertake such other studies as necessary to evaluate the cause(s) of the excursion. The permittee shall provide a summary of its intended action.

11. Other information that may be deemed necessary by the Approval Authority.

G. Pollutant Restrictions

The permittee shall prohibit the introduction of the following pollutants into the POTW:

1. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limit to, waste streams with a closed cup flashpoint of less than sixty (60) degrees Centigrade (140 degrees Fahrenheit) using the test methods specified in 40 CFR Section 261.21;

2. Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works are specifically designed to accommodate such discharges;

3. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW, or other interference with the operation of the POTW;

4. Any pollutant, including oxygen demanding pollutants (e.g., BOD), released in a discharge at a flow rate and/or pollutant concentration which will cause Interference with the POTW;

5. Heat in amounts which will inhibit biological activity in the POTW resulting in Interference but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds forty (40) degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits;

6. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through;

7. Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems;

8. Any trucked or hauled pollutants, except at discharge points designated by the POTW; and,

9. Any specific pollutant that exceeds a local limitation established by the POTW in accordance with the requirements of 40 CFR Section 403.5(c) and (d).

10. Any other pollutant which may cause Pass Through or Interference.

H. Notification Requirements

The permittee shall provide the pretreatment Approval Authority with adequate notice of any substantial change in the volume or character of pollutants being introduced into the treatment works by any SIU introducing pollutants into the treatment works at the time of application for the discharge permit. For the purposes of this section, "substantial change" shall mean a level of change which has a reasonable probability of affecting the permittee's ability to comply with its permit conditions or to cause a violation of stream standards applied to the receiving water.

Adequate notice shall include information on: (1) the quality and quantity of effluent to be introduced into the treatment works, and (2) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

I. Enforcement Actions

Section 309(f) of the Act provides that EPA may issue a notice to the POTW stating that a determination has been made that appropriate enforcement action must be taken against an industrial user for noncompliance with any Pretreatment Standards and requirements. The notice provides the POTW with thirty (30) days to commence such action. The issuance of such permit notice shall not be construed to limit the authority of the permit issuing authority or Approval Authority.

J. Enforcement Authority

The state permitting authority and/or the EPA retains, at all times, the right to take legal action against the industrial contributor for violations of a permit issued by the permittee, violations of any Pretreatment Standard or requirement, or for failure to discharge at an acceptable level under national standards issued by EPA under 40 CFR, chapter I, subchapter N. In those cases where a NPDES permit violation has occurred because of the failure of the permittee to properly develop and enforce Pretreatment Standards and requirements as necessary to protect the POTW, the state permitting authority and/or Approval Authority shall hold the permittee responsible and may take legal action against the permittee as well as the Indirect Discharger(s) contributing to the permit violation.

FACT SHEET FOR NDPDES PERMIT ND0022870

CITY OF FARGO
FARGO, ND

DATE OF THIS FACT SHEET – November 2023

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**.

TABLE OF CONTENTS

BACKGROUND INFORMATION

Table 1 – General Facility Information

Applicant:	City of Fargo
Facility Name and Address:	City of Fargo 3400 N Broadway
Permit Number:	ND0022870
Permit Type:	Major Municipality – Renewal
Type of Treatment:	Mechanical Treatment
SIC Code:	4952 – Sewerage Systems
Discharge Location:	Red River of the North
Hydrologic Code:	09020104 – Upper Red
Population Served:	172,540 (provided on application)

Figure 1: City of Fargo Mechanical Wastewater Treatment Plant Overview.

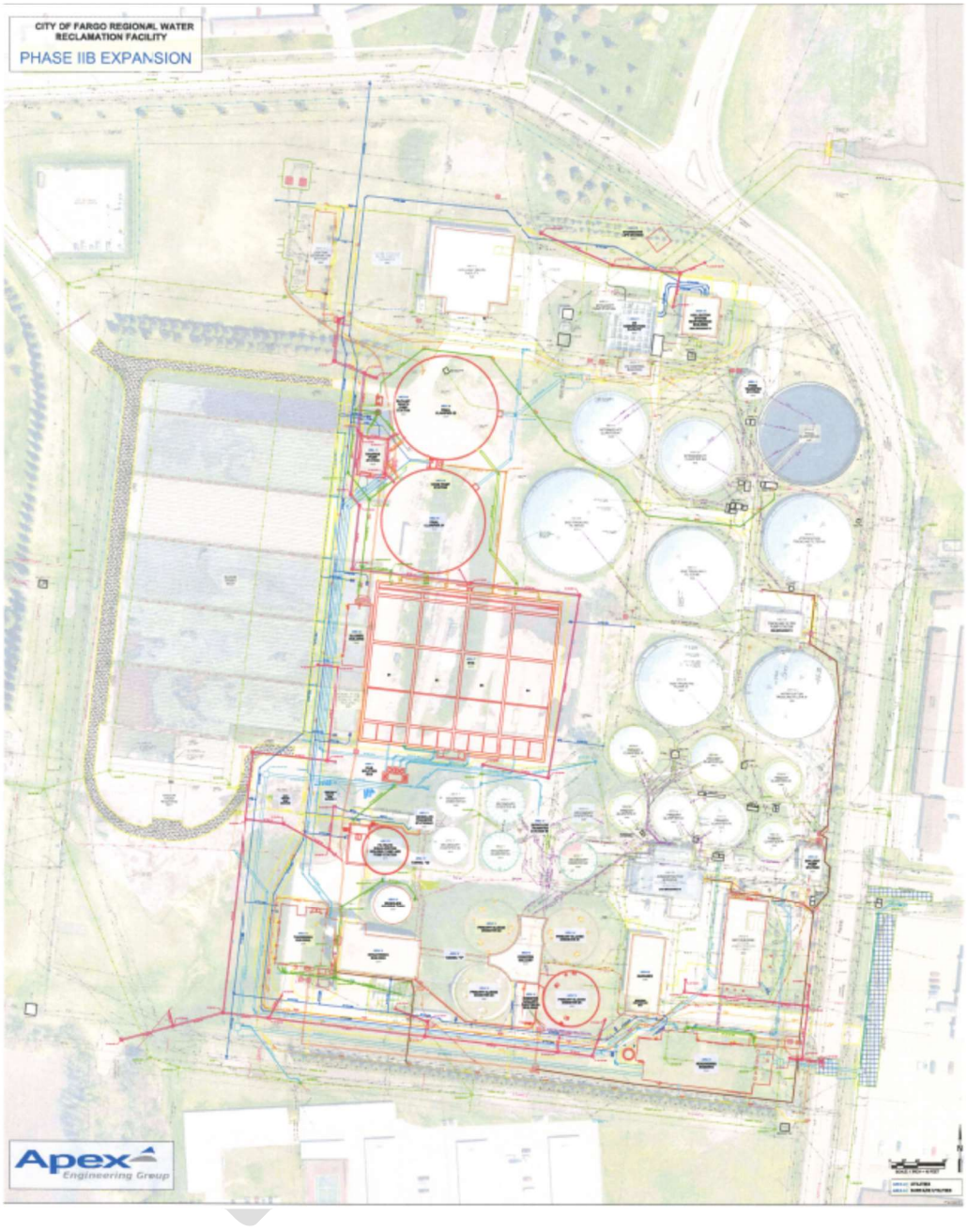


Figure 2: Location of Outfall 010 and 011.

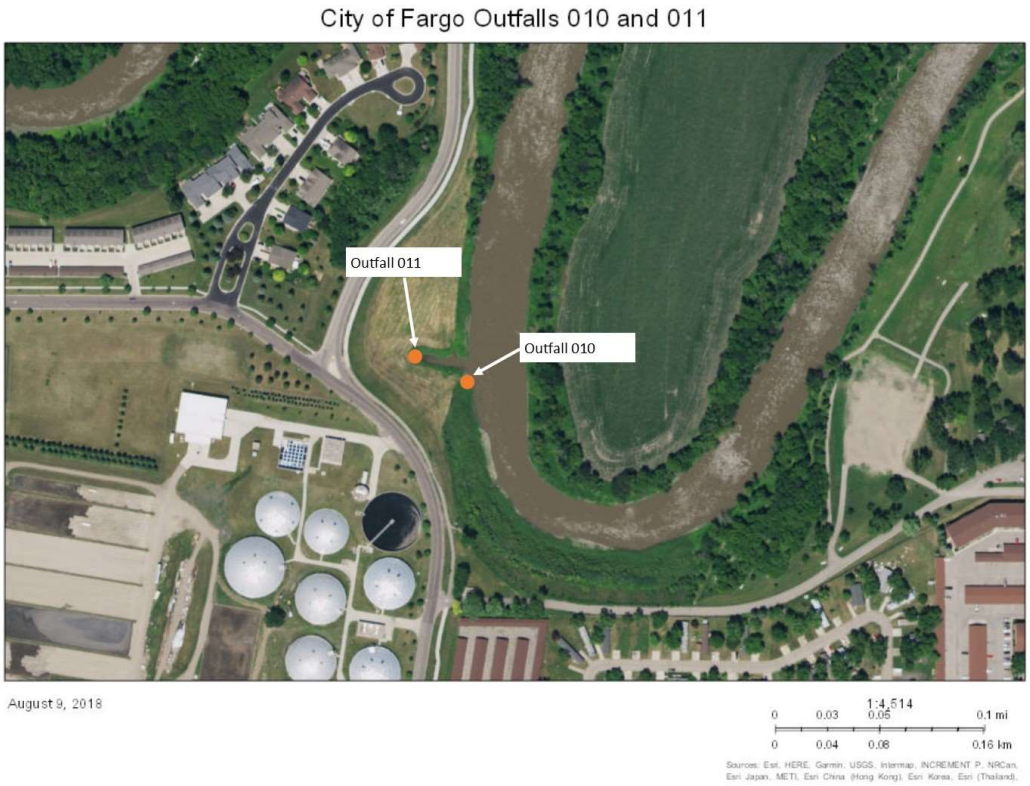


Figure 3: Overview of Storage Ponds.

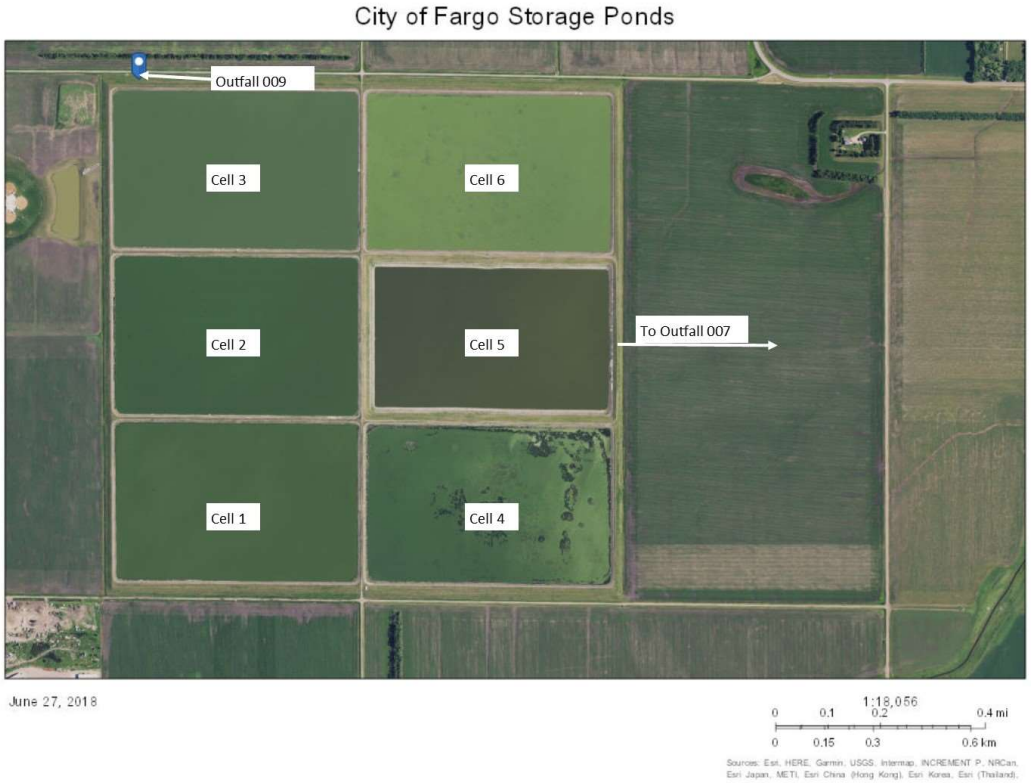
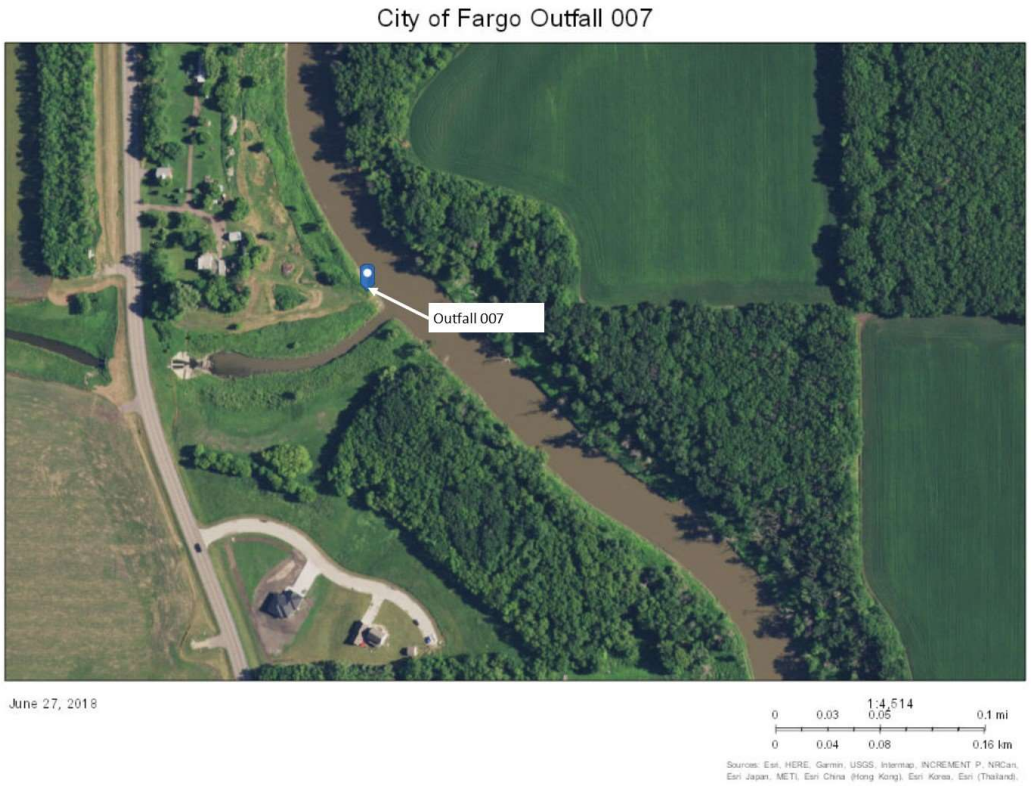


Figure 4: Location of Outfall 007.



FACILITY DESCRIPTION

History

The City of Fargo owns and operates a major municipal wastewater treatment plant which treats all wastewater generated from residential, commercial, and industrial entities in Fargo. In addition, the plant treats wastewater from surrounding communities: Reile's Acres, Highland Park, North River, Frontier, Prairie Rose, Briarwood, Oxbow, Southeast Cass Sewer District, Horace, Harwood, Lake Shur, Round Hill Subdivision, Wild Rice Estates and West Fargo.

Reclaimed wastewater is used to supply water to the Tharaldson Ethanol Plant and ND Soybean Processors located in Casselton, ND. Tharaldson Ethanol Plant utilizes an annual average of 1.1 MGD reclaimed water and ND Soybean Processors proposes to utilize an annual average of 820,800 gpd.

In 1985, EPA approved Fargo's Industrial Pretreatment Program in accordance with the procedures in 40 CFR 403.11. The North Dakota Department of Environmental Quality was delegated primacy for the Industrial Pretreatment Program on September 9, 2005.

The city requested a permit modification for pH for outfall 010 on December 31, 2015. The department approved the request for modification and the modification for a pH range of between 6.5-9.0 S.U. was effective on July 1, 2016.

The facility switched from utilizing chlorination to ultraviolet (UV) in the spring of 2020. As part of upgrades to the treatment facility, a new stormwater vault has been completed. The old stormwater vault was rehabbed and is now used for effluent during flooding conditions.

Treatment System
Wastewater treatment consists of pretreatment/odor control, primary clarification, trickling filters, nitrification filters, final clarification, and disinfection. Improvements to residual management (additional digesters, sludge drying beds, and belt presses) have given the city more flexibility in addressing sludge and wastewater treatment.

The mechanical wastewater plant is a trickling filter system with the capacity to treat an average daily flow of 15 million gallons per day (MGD) of domestic-strength sewage. The peak pumping capacity of the facility is 29 MGD. Treated wastewater from the plant is discharged continuously by gravity flow to the Red River during normal operations. When the river reaches flood stage, the treated wastewater is routed to a new effluent vault, which is discharged to the Red River through outfall 011.

As wastewater is routed through the mechanical portion of the plant, it goes initially through mechanical bar screening, vortex grit removal, odor control, and pre-aeration. The wastewater is then diverted to one of seven primary clarifiers; three (3) are 50-feet in diameter, two (2) are 60-feet in diameter and two (2) are 70-feet in diameter. The wastewater then goes to the biological trickling filters. One (1) of the filters is a 150-foot diameter rock-media filter, and the other two (2) are 125-foot diameter synthetic media filters. The wastewater then passes from one (1) of two (2) 110-foot diameter intermediate clarifiers to the two (2) 125-foot diameter nitrification trickling filters. From the nitrification filters, the wastewater passes through a 150-foot diameter final clarifier, then to the UV chamber, and it can either be routed directly to the Red River or pumped 2.5 miles north to the six (6) 90-acre stabilization ponds.

When wastewater does not meet permit effluent limitations, water is pumped from the plant to the city's six (6) 90-acre wastewater stabilization ponds where it is stored until it can be discharged to the Red River. Byproducts of the treatment process, primarily grit and biosolids, are de-watered and hauled to the city landfill for disposal.

Below is a flow chart of the current wastewater treatment plant provided as part of the permit application:

Figure 5: Flow chart for the City of Fargo WWTP.

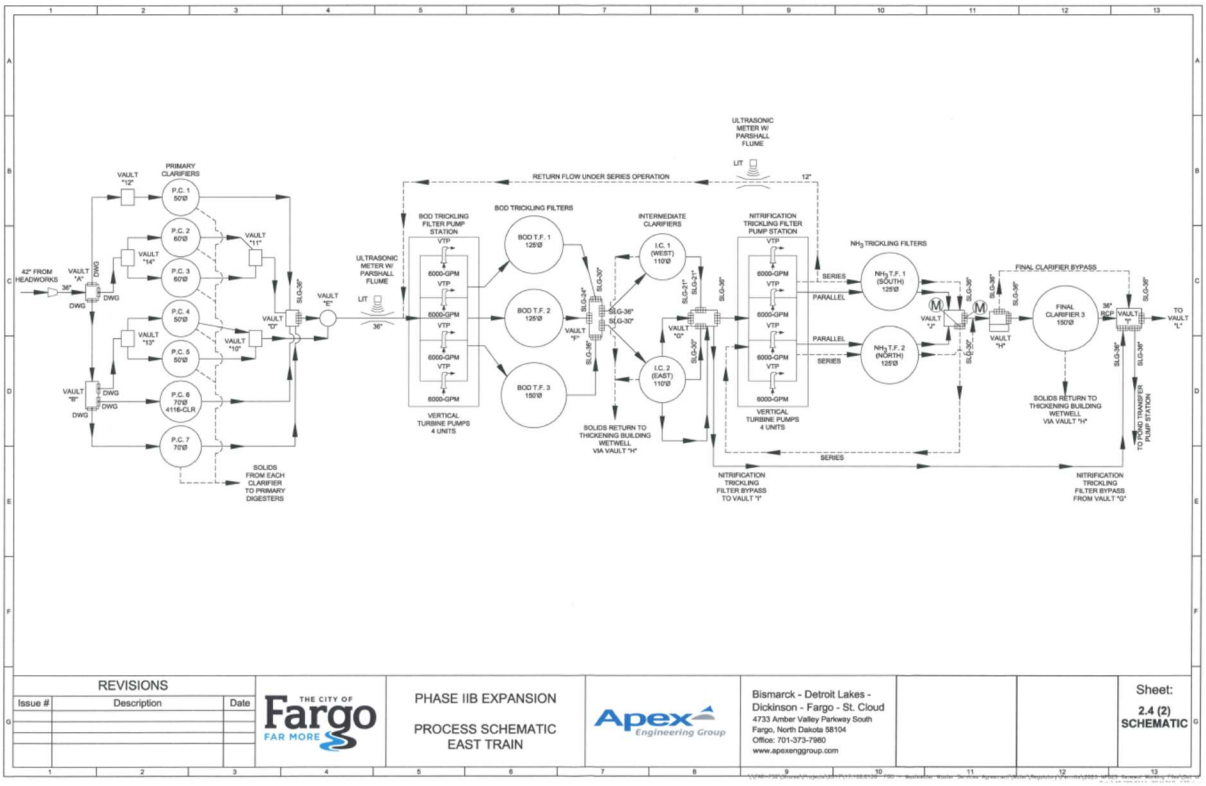
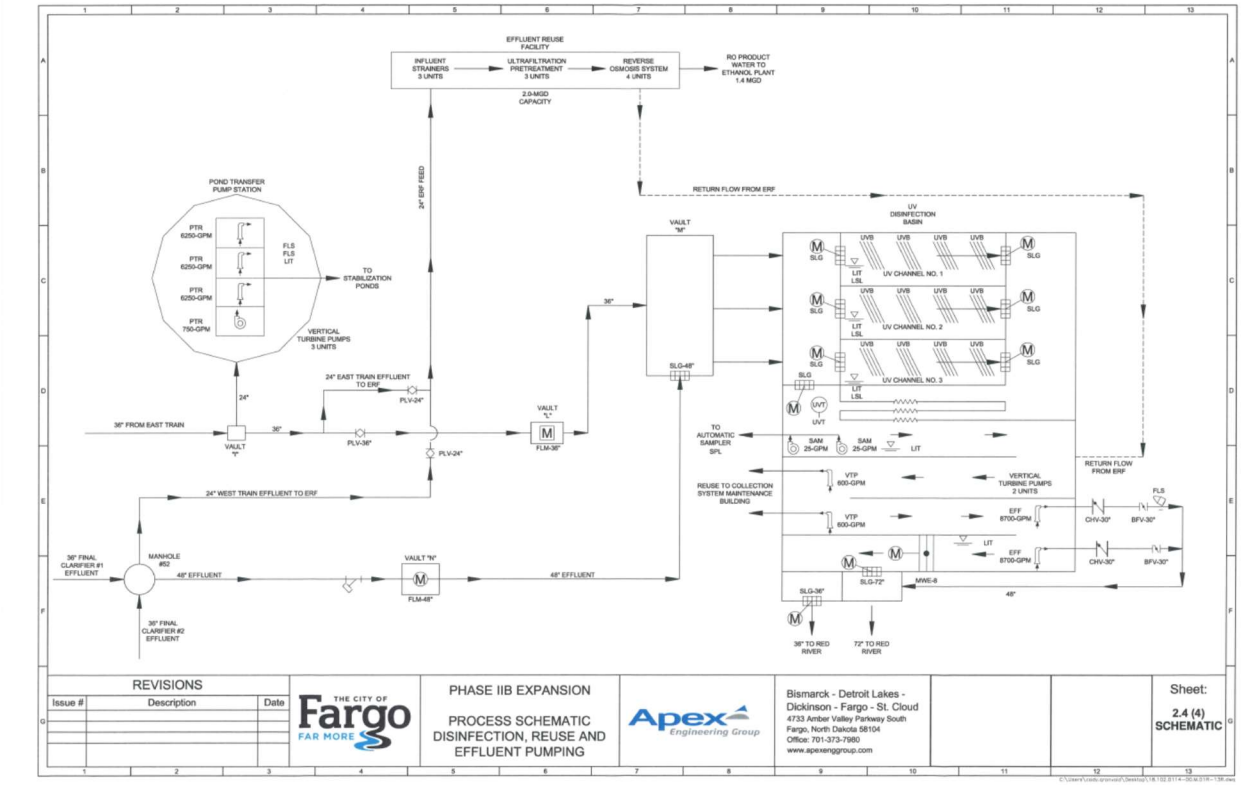


Figure 6: Continued flow chart for the City of Fargo WWTP.



Planned Updates
The facility is planning on increasing the existing capacity to 29 MGD average and 50 MGD peak hour. This expansion is necessary for the facility to handle the City of West Fargo's wastewater. Phase I construction on the expansion began August 1, 2018, and was completed August 1, 2022. Phase II construction activities began in May 2020 and are in progress. The table below outlines the expansions and tentative completion schedule.

Improvement	Begin Construction	End Construction	Begin Discharge	Attainment of Operational Level
Increase capacity to 50 MGD	05/18/2020	12/31/2025*	12/31/2023*	12/31/2025*
50 MGD Headworks Building	05/18/2020	12/31/2023	10/03/2023	06/01/2024*
IFAS Treatment Train	05/18/2020	06/01/2024*	12/31/2023*	06/01/2024*
Final Clarifiers	05/18/2020	06/01/2024*	12/31/2023*	06/01/2024*
Centrifuge Thickening	05/18/2020	06/01/2024*	12/31/2023*	06/01/2024*
New Primary Digester and Misc. Solids Improvements	05/18/2020	12/31/2024*	06/01/2024*	12/31/2025*
* Anticipated date				

Figure 7: Flow chart of headworks building being constructed.

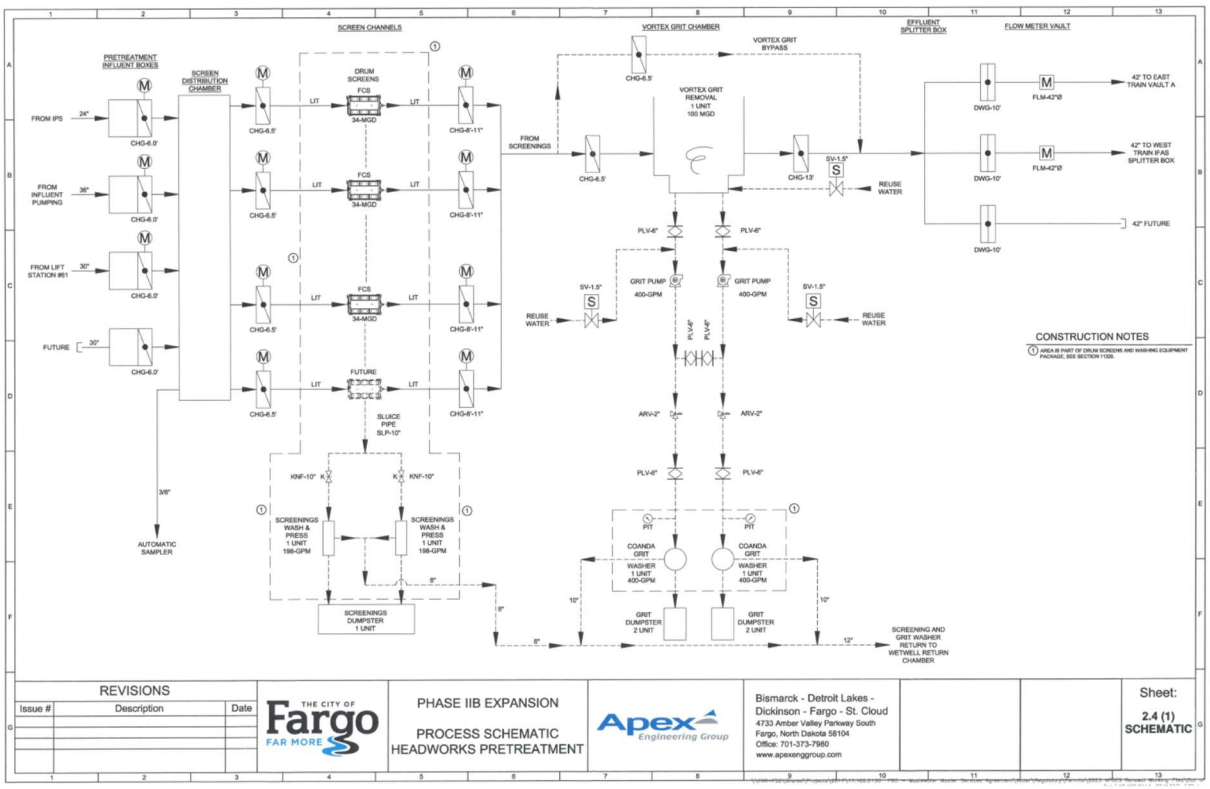
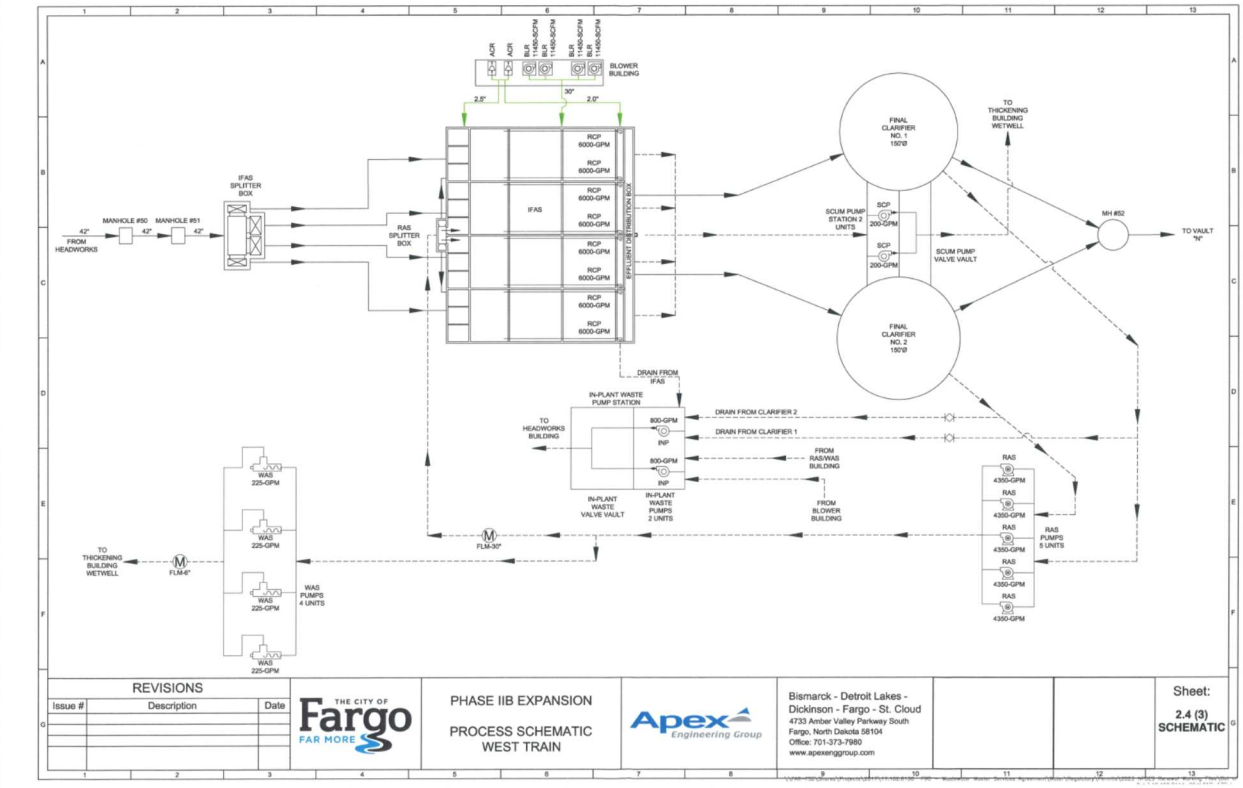


Figure 8: Flow chart of west treatment train being constructed.



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.

Outfall 007. Active. Final.			
Latitude: 46.955910	Longitude: -96.803606	County: Cass	
Township: 140N	Range: 49W	Section: 11	QQ: DCA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: Any discharge from this point is from Cell 5 to the Red River of the North, a Class I stream.			

Outfall 009. Active. Final.			
Latitude: 46.962931	Longitude: -96.849261	County: Cass	
Township: 140N	Range: 49W	Section: 10	QQ: AAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: Any discharge from this point is from Cell 3 to an open ditch and into County Drain No. 9, which flows to the Red River of the North, a Class I stream.			

Outfall 010. Active. Final.			
Latitude: 46.925287	Longitude: -96.78585	County: Cass	
Township: 140N	Range: 48W	Section: 19	QQ: CAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is a continuous gravity discharge point from the mechanical treatment plant to the Red River of the North, a Class I stream.			

Outfall 011. Active. Final.			
Latitude: 46.925480	Longitude: -96.786467	County: Cass	
Township: 140N	Range: 48W	Section: 19	QQ: CAA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is an intermittent discharge point from the mechanical treatment plant, through the effluent vault to the Red River of the North, a Class I stream. This point is only used when the receiving stream is in flood stage (approximately 18 feet).			

PERMIT STATUS

The department issued the previous permit for this facility on January 1, 2019. The previous permit placed limits on Biochemical Oxygen Demand (BOD_5), pH, Total Suspended Solids (TSS), *Escherichia coli* (*E. coli*), Oil and Grease, Ammonia as N, Total Residual Chlorine, and Whole Effluent Toxicity (WET).

The department has been in contact with the City of Fargo to obtain information to reissue the permit. The department received EPA applications Form 2A on July 03, 2023. The application was accepted by the department on August 01, 2023. Effluent sample data has been provided to the department through official laboratory reports, discharge monitoring reports and the permit application Form 2A.

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The department's assessment of compliance is based on review of the facility's Discharge Monitoring Report (DMR) forms and inspections conducted by the department. Ten (10) inspections of the facility were conducted from January 1, 2019, to July 31, 2023. The facility had effluent exceedances in: April, May, June, July, August, September, and October 2019; January, September, November, and December 2021; January, February, March, April, May, July, October, and November 2022; Januarys, February, and July 2023 (**Table 3**).

The City of Fargo is a continuous discharger. A summary of the data follows:

Table 2: City of Fargo DMR Data Summary from January 01, 2019 – July 31, 2023.

Dsch Pt	Location	Parameter	Ave Conc	Median	Range	Conc Units	Avg Load	Max Load	Load Median	Load Units
006A	Effluent	BOD_5	155*	155	115 – 155**	mg/L	N/A	N/A	N/A	N/A
006A	Effluent	Drain MG	N/A	N/A	N/A	N/A	N/A	3.879	NULL	Mgal
006A	Effluent	E Coli	241,960	241,960	241,960 – 241,960	Num/ 100 mL	N/A	N/A	N/A	N/A
006A	Effluent	Flow MG	N/A	N/A	N/A	N/A	3.879	3.879	3.879	MGD

006A	Effluent	NH3 as N	6.1	6.1	6.1 - 6.1	mg/L	N/A	N/A	N/A	N/A
006A	Effluent	O&G-Vis	N/A	N/A	N/A	N/A	N/A	0	N/A	Y=1; N=0
006A	Effluent	PH	N/A	N/A	7.46 - 7.46	S.U.	N/A	N/A	N/A	N/A
006A	Effluent	TSS	255*	255	255 – 255**	mg/l	N/A	N/A	N/A	N/A
007A	Effluent	BOD_5	10.99*	10.3	4.1 - 22.1**	mg/L	N/A	N/A	N/A	N/A
007A	Effluent	Drain MG	N/A	N/A	N/A	N/A	N/A	571.42	N/A	Mgal
007A	Effluent	E Coli Geo Mean	22.7	6.3	1.0 - 2419.6	Num/ 100 mL	N/A	N/A	N/A	N/A
007A	Effluent	Flow MG	N/A	N/A	N/A	N/A	16.614	23.120	17.790	MGD
007A	Effluent	NH3 as N	1.96	0.39	0.04 - 14.67	mg/L	N/A	N/A	N/A	N/A
007A	Effluent	Nitrogen, Total	7.37	4.92	2.68 - 28.00	mg/L	4,731 .556	69,078.55	807.92	lb/d
007A	Effluent	O&G-Vis	N/A	N/A	N/A	N/A	N/A	0	N/A	Y=1; N=0
007A	Effluent	PH	N/A	N/A	7.92 - 9.83	S.U.	N/A	N/A	N/A	N/A
007A	Effluent	Phosphorus Total	1.86	1.54	0.41 - 6.06	mg/L	1,666 .40	18,016.9	367.43	lb/d
007A	Effluent	TSS	25.7	21.6	5.5 - 71.3	mg/l	N/A	N/A	N/A	N/A
007A	Up Stream	Flow Rec Stream	N/A	N/A	N/A	N/A	3,878 .80	9,810	3,423.79	ft3/sec
007 M	Effluent	Antimony Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Arsenic Total ug/l	6	6	6 - 6	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Beryllium Total ug/l	< 2	<2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Cadmium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Chromium Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Copper Total ug/l	< 20	< 20	< 20	ug/L	N/A	N/A	N/A	N/A
007 M	Effluent	Cyanide, ug/l	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
007 M	Effluent	Lead Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Mercury Total ug/l	< 0.2	< 0.2	0.2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Nickel Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Phenols ug/l, total	< 19.2	< 19.2	< 19.2	ug/L	N/A	N/A	N/A	N/A

007 M	Effluent	Selenium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Silver ug/l	< 5	< 5	< 5	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Thallium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Effluent	Zinc Total ug/l	< 100	<100	< 100	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Antimony Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Arsenic Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Beryllium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Cadmium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Chromium Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Copper Total ug/l	34	34	34 - 34	ug/L	N/A	N/A	N/A	N/A
007 M	Influent	Cyanide, ug/l	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
007 M	Influent	Lead Total ug/l	3	3	3 - 3	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Mercury Total ug/l	< 0.2	< 0.2	< 0.2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Nickel Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Phenols ug/l, total	118	118	118	ug/L	N/A	N/A	N/A	N/A
007 M	Influent	Selenium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Silver ug/l	< 5	< 5	< 5	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Thallium Total ug/l	< 2	< 2	< 2	ug/l	N/A	N/A	N/A	N/A
007 M	Influent	Zinc Total ug/l	< 100	< 100	< 100	ug/l	N/A	N/A	N/A	N/A
007 W	Effluent	Toxic Unit Cerio	< 1. 0	< 1.0	< 1	TU a	N/A	N/A	N/A	N/A
007 W	Effluent	Toxic Unit Fathead	< 1.0	< 1.0	< 1	TU a	N/A	N/A	N/A	N/A
010A	Effluent	BOD_5	20.6*	18.7	9.4 - 51.1**	mg/L	N/A	N/A	N/A	N/A
010A	Effluent	$CBOD_5$	11.6**	11.3	8.3 - 23.1**	mg/l	N/A	N/A	N/A	N/A
010A	Effluent	Drain/Month	N/A	N/A	N/A	N/A	N/A	568.454	N/A	MGAL
010A	Effluent	E Coli Geo Mean	44.4	34.3	1.0 - 770.1	Num/100 mL	N/A	N/A	N/A	N/A
010A	Effluent	Flow MG	N/A	N/A	N/A	N/A	13.195	22.688	13.444	MGD

010A	Effluent	NH3 as N	1.36	0.62	0.04 - 17.2	mg/L	N/A	N/A	N/A	N/A
010A	Effluent	Nitrogen, Total	31	31.7	3.98 - 46.20	mg/L	3,448.1	5,887.9	3,591.4	lb/d
010A	Effluent	O&G-Vis	N/A	N/A	N/A	N/A	N/A	0	N/A	Y=1; N=0
010A	Effluent	PH	N/A	N/A	6.33 - 8.27	S.U.	N/A	N/A	N/A	N/A
010A	Effluent	Phosphorus Total	4.97	5.13	2.43 - 7.71	mg/L	540.328	7,713	552.6	lb/d
010A	Effluent	Temp C	15.5	14.5	0.3 - 22.2	deg C	N/A	N/A	N/A	N/A
010A	Effluent	TSS	24.04*	23.89	11.00 - 39.22**	mg/l	N/A	N/A	N/A	N/A
010A	Influent	BOD_5	260.8*	263.8	147.5 - 400.5**	mg/L	N/A	N/A	N/A	N/A
010A	Influent	TSS	285.02*	272.5	17.32 - 502.25**	mg/l	N/A	N/A	N/A	N/A
010A	Up Stream	Flow Rec Stream	N/A	N/A	N/A	N/A	1,540.8	12,000	698	ft3/sec
010M	Effluent	Antimony Total ug/l	< 10	< 10	< 10.0	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Arsenic Total ug/l	< 20	< 20	< 20.00	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Beryllium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Cadmium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Chromium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Copper Total ug/l	14.7	14.0	< 10.0 – 20.0	ug/L	N/A	N/A	N/A	N/A
010M	Effluent	Cyanide, ug/l	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
010M	Effluent	Lead Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Mercury Total ug/l	N/A	N/A	< 0.20 - < 20.0	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Nickel Total ug/l	N/A	N/A	< 20 - < 50	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Phenols ug/l, total	129.038	84.0	< 10 - 180.00	ug/L	N/A	N/A	N/A	N/A
010M	Effluent	Selenium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Silver ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Thallium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010M	Effluent	Tot Toxic Organics	25	0	0 - 50	mg/L	N/A	N/A	N/A	N/A
010M	Effluent	Zinc Total ug/l	43.75	10	28.00 - 62.00	ug/l	N/A	N/A	N/A	N/A

010 M	Influent	Antimony Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Arsenic Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Beryllium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Cadmium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Chromium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Copper Total ug/l	48.38	48.0	30 – 70	ug/L	N/A	N/A	N/A	N/A
010 M	Influent	Cyanide, ug/l	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
010 M	Influent	Lead Total ug/l	< 20	< 20	< 20	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Mercury Total ug/l	10.1	0.2	< .20 - < 20.0	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Nickel Total ug/l	N/A	N/A	< 20 - < 50	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Phenols ug/l, total	129.03	84	< 10 – 509	ug/L	N/A	N/A	N/A	N/A
010 M	Influent	Selenium Total ug/l	< 10	< 10	< 10 - 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Silver ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Thallium Total ug/l	< 10	< 10	< 10	ug/l	N/A	N/A	N/A	N/A
010 M	Influent	Zinc Total ug/l	127.36	125	100 – 160	ug/l	N/A	N/A	N/A	N/A
010 W	Effluent	Toxic Unit Cerio	< 1.0	< 1.0	< 1.0	TU a	N/A	N/A	N/A	N/A
010 W	Effluent	Toxic Unit Chronic Cerio	< 1.0	< 1.0	< 1.0	TU c	N/A	N/A	N/A	N/A
010 W	Effluent	Toxic Unit Chronic Fathead	< 1.0	< 1.0	< 1.0	TU c	N/A	N/A	N/A	N/A
010 W	Effluent	Toxic Unit Fathead	< 1.0	< 1.0	< 1.0	TU a	N/A	N/A	N/A	N/A
011A	Effluent	BOD_5	19.9*	17.7	8.7 - 48.5**	mg/L	N/A	N/A	N/A	N/A
011A	Effluent	$CBOD_5$	13.3**	11.7	7.44 - 42.7**	mg/l	N/A	N/A	N/A	N/A
011A	Effluent	Drain/Month	N/A	N/A	N/A	N/A	N/A	517.45	N/A	MGAL
011A	Effluent	E Coli Geo Mean	10,360.7	31	1.00 – 68,670.0	Num/100 mL	N/A	N/A	N/A	N/A
011A	Effluent	Flow MG	N/A	N/A	N/A	N/A	13.621	22.1	12.989	MGD
011A	Effluent	NH3 as N	2.30	0.36	0.05 - 12.35	mg/L	N/A	N/A	N/A	N/A

011A	Effluent	Nitrogen, Total	15.76	21.2	2.62 - 25.70	mg/L	1,942.396	4,295.1	2,437.38	lb/d
011A	Effluent	O&G-Vis	N/A	N/A	N/A	N/A	N/A	0	N/A	Y=1; N=0
011A	Effluent	PH	N/A	N/A	6.52 - 7.89	S.U.	N/A	N/A	N/A	N/A
011A	Effluent	Phosphorus Total	3.82	3.65	1.97 - 6.80	mg/L	448.65	671	458.9	lb/d
011A	Effluent	Temp C	13.4	12.5	9.5 - 20.3	deg C	N/A	N/A	N/A	N/A
011A	Effluent	TSS	21.8*	20.2	13.2 - 31.9**	mg/l	N/A	N/A	N/A	N/A
011A	Influent	BOD_5	215.6*	214	117.0 - 320.5**	mg/L	N/A	N/A	N/A	N/A
011A	Influent	TSS	266.2*	254.57	131.00 - 535.80***	mg/l	N/A	N/A	N/A	N/A
011A	Up Stream	Flow Rec Stream	N/A	N/A	N/A	N/A	5,344.953	12,400	4,555	ft3/sec
011M	Effluent	Antimony Total ug/l ***	N/A	< 2.0	< 2 - <10	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Arsenic Total ug/l ***	N/A	< 2.0	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Beryllium Total ug/l ***	N/A	< 10	< 2.0 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Cadmium Total ug/l ***	N/A	< 10	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Chromium Total ug/l ***	N/A	< 10	< 10 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Copper Total ug/l ***	14	12	10 - < 20	ug/L	N/A	N/A	N/A	N/A
011M	Effluent	Cyanide, ug/l ***	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
011M	Effluent	Lead Total ug/l ***	N/A	< 2	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Mercury Total ug/l ***	N/A	< 19.6	< 0.2 - < 20	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Nickel Total ug/l ***	28.3	< 20	15 - < 50	ug/l	N/A	N/A	N/A	N/A
011M	Effluent	Phenols ug/l, total ***	53.8	< 20	< 0 - 200	ug/L	N/A	N/A	N/A	N/A

011 M	Effluent	Selenium Total ug/l ***	N/A	< 3	< 2 - < 10	ug/l	N/A	N/A	N/A	N/A
011 M	Effluent	Silver ug/l ***	N/A	< 5	< 5 - < 10	ug/l	N/A	N/A	N/A	N/A
011 M	Effluent	Thallium Total ug/l ***	N/A	< 10	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Effluent	Zinc Total ug/l	48	32	< 20 - 100	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Antimony Total ug/l ***	N/A	< 2	< 2 - < 10	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Arsenic Total ug/l ***	N/A	< 2	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Beryllium Total ug/l ***	N/A	< 10	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Cadmium Total ug/l ***	N/A	< 10	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Chromium Total ug/l ***	N/A	< 10	< 10 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Copper Total ug/l	39.2	38	29 - 58	ug/L	N/A	N/A	N/A	N/A
011 M	Influent	Cyanide, ug/l ***	< 10	< 10	< 10	ug/L	N/A	N/A	N/A	N/A
011 M	Influent	Lead Total ug/l ***	N/A	< 20	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Mercury Total ug/l ***	37	< 20	< 0.2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Nickel Total ug/l ***	70	< 50	< 20 - 139	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Phenols ug/l, total ***	191.9	168	37 - 509	ug/L	N/A	N/A	N/A	N/A
011 M	Influent	Selenium Total ug/l ***	N/A	< 3	< 2 - <10	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Silver ug/l ***	N/A	< 5	< 5 - < 10	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Thallium Total ug/l ***	N/A	< 10	< 2 - < 20	ug/l	N/A	N/A	N/A	N/A
011 M	Influent	Zinc Total ug/l	119	119	< 100 - 133	ug/l	N/A	N/A	N/A	N/A

011 W	Effluent	Toxic Unit Cerio	< 1.0	< 1.0	< 1.0	TU a	N/A	N/A	N/A	N/A
011 W	Effluent	Toxic Unit Chronic Cerio	< 1.0	< 1.0	< 1.0	TU c	N/A	N/A	N/A	N/A
011 W	Effluent	Toxic Unit Chronic Fathead	< 1.0	< 1.0	< 1.0	TU c	N/A	N/A	N/A	N/A
011 W	Effluent	Toxic Unit Fathead	< 1.0	< 1.0	< 1.0	TU a	N/A	N/A	N/A	N/A

Summary of DMR Data Excursions

One-hundred-thirty-one (131) excursions were reported from January 1, 2019, through July 31, 2023 (**Table 3**). Five (5) exceedances met the technical review criteria (40 percent or greater above the effluent limitation for BOD_5 and TSS).

Table 3: Summary of DMR data excursions from 01/01/2019 – 07/31/2023.

Dsh Pt	Month	Parameter	Min Conc	Avg Conc	Max Conc	Units	Avg Load	Max Load	Units	Excee dances	TRC Exceeda nce
006 A	Jul-19	E Coli	241,960	241,960	241,960	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
007 A	Aug-19	E Coli Geo Mean	3.1	44.82	547.5	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
007 A	Oct-19	E Coli Geo Mean	14.6	91.15	2,419.6	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
007 A	May-19	PH	8.9	N/A	9.29	S.U.	N/A	N/A	S.U.	4	No
007 A	Jun-19	PH	8.24	N/A	9.13	S.U.	N/A	N/A	S.U.	1	No
007 A	Jul-19	PH	8.98	N/A	9.79	S.U.	N/A	N/A	S.U.	16	No
007 A	Aug-19	PH	9.6	N/A	9.83	S.U.	N/A	N/A	S.U.	16	No
007 A	Sep-19	PH	9.53	N/A	9.78	S.U.	N/A	N/A	S.U.	16	No
007 A	Oct-19	PH	8.87	N/A	9.5	S.U.	N/A	N/A	S.U.	10	No
007 A	Nov-19	PH	7.99	N/A	9.04	S.U.	N/A	N/A	S.U.	1	No
007 A	Jun-19	TSS	11.55	22.62	31.95	mg/l	N/A	N/A	mg/l	2	No
007 A	Aug-19	TSS	27.65	44.83	71.3	mg/l	N/A	N/A	mg/l	2	Yes
007 A	Sep-19	TSS	54.7	57.61	64.3	mg/l	N/A	N/A	mg/l	6	Yes
007 A	Oct-19	TSS	46.05	52.46	57.45	mg/l	N/A	N/A	mg/l	5	Yes

007 A	Nov-19	TSS	18.5	26.71	46.7	mg/l	N/A	N/A	mg/l	1	No
010 A	Jan-21	BOD5	19.5	30.48	33.83	mg/L	N/A	N/A	mg/L	1	No
010 A	Nov-21	BOD5	22.7	26.71	28.9	mg/L	N/A	N/A	mg/L	1	No
010 A	Dec-21	BOD5	24.1	28.78	35.7	mg/L	N/A	N/A	mg/L	1	No
010 A	Jan-22	BOD5	23.07	30	29.97	mg/L	N/A	N/A	mg/L	1	No
010 A	Feb-22	BOD5	30.1	38.32	51.1	mg/L	N/A	N/A	mg/L	2	Yes
010 A	Mar-22	BOD5	28.78	29.06	34.8	mg/L	N/A	N/A	mg/L	10	No
010 A	Oct-22	BOD5	19.5	25.14	25.73	mg/L	N/A	N/A	mg/L	1	No
010 A	Nov-22	BOD5	19.17	32.04	45	mg/L	N/A	N/A	mg/L	1	No
010 A	Jan-23	BOD5	27.53	35.18	38.43	mg/L	N/A	N/A	mg/L	1	Yes
010 A	Feb-23	BOD5	22.8	34.37	43.63	mg/L	N/A	N/A	mg/L	1	No
010 A	Sep-21	E Coli Geo Mean	25.6	67.4	770.1	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
010 A	Apr-22	E Coli Geo Mean	13.4	100.9	727	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
010 A	May-22	E Coli Geo Mean	22.8	68.7	547.5	Num/ 100 mL	N/A	N/A	Num/ 100 mL	1	No
010 A	Jul-23	PH	6.33	N/A	7.31	S.U.	N/A	N/A	S.U.	1	No
010 A	Feb-22	TSS	29.54	31.33	33.96	mg/l	N/A	N/A	mg/l	1	No
010 A	Mar-22	TSS	29.2	30.02	32.48	mg/l	N/A	N/A	mg/l	12	No
010 A	Jul-22	TSS	27.12	33.55	39.22	mg/l	N/A	N/A	mg/l	1	No
011 A	May-19	BOD5	28.9	28.9	28.9	mg/L	N/A	N/A	mg/L	1	No
011 A	Nov-19	BOD5	19.03	32.73	48.53	mg/L	N/A	N/A	mg/L	2	No
011 A	Apr-19	E Coli Geo Mean	2050	6212	10375	Num/ 100 mL	N/A	N/A	Num/ 100 mL	2	No
011 A	May-19	E Coli Geo Mean	18,045	18,693.4	19,365	Num/ 100 mL	N/A	N/A	Num/ 100 mL	2	No
011 A	Jul-19	E Coli Geo Mean	19,350	37,196	68,670	Num/ 100 mL	N/A	N/A	Num/ 100 mL	3	No

Sanitary Sewer Overflows (SSOs)

Overflows of untreated or partially treated sewage from a sanitary sewer collection system have been termed Sanitary Sewer Overflows (SSOs) by the EPA. According to department records there were twenty-three (23) SSO's from January 1, 2019, through July 31, 2023.

Below is a summary of bypasses/SSOs for the City of Fargo from January 1, 2019, through July 31, 2023:

Table 4: Summary of Bypasses/SSOs for the City of Fargo from 01/01/2019 to 07/31/2023.

Event Type	Location	Start Date	End Date
Bypass	Co Rd 20	4/5/2019	4/23/2019
Bypass	2nd ST & 1st AVE N, Fargo ND	3/26/2019	3/26/2019
Bypass	7th ave n and aggregate drive	8/22/2019	8/22/2019
Bypass	Outfall 006 (vault C)	7/9/2019	7/9/2019
Bypass	Co Rd 20, approx 400yds N, NW of prior event	4/25/2019	5/3/2019
Bypass	Lift Station 53	4/6/2020	-
Bypass	Lift Station 32; 5703 25th ST N	4/6/2020	4/7/2020
Bypass	Lift Station 34	4/6/2020	4/7/2020
Bypass	Lift Station 39/Aquarius DR & 79th AVE S	4/6/2020	4/7/2020
Bypass	Lift Station 39/Aquarius DR & 79th AVE S	8/14/2020	8/14/2020
Bypass	Lift Station 53; 44th AVE S & Drain 27	8/14/2020	8/14/2020
Bypass	Lift Station 57; Univ. Dr & 112 AVE S	8/14/2020	8/14/2020
Bypass	265 42nd ST S	11/5/2020	11/5/2020
Bypass	5242 44th AVE S	9/2/2021	9/3/2021
Bypass	260 42nd ST S, Fargo ND	10/5/2021	10/6/2021
Bypass	LS #7	5/9/2022	5/9/2022
Bypass	LS #62	5/9/2022	5/10/2022
Bypass	LS #53	5/9/2022	5/10/2022
Bypass	LS 34	5/9/2022	5/9/2022
Bypass	LS 39	5/9/2022	5/10/2022
Bypass	univ. Drive and County HWY 22	12/13/2022	12/13/2022
Bypass	Aqarius Drive & 79th AVE S	4/12/2023	4/14/2023
Bypass	LS 53 @ 44th AVE S and 53rd ST S	5/10/2023	5/10/2023

PROPOSED PERMIT LIMITS AND SELF MONITORING REQUIREMENTS

The City of Fargo is subject to the secondary treatment standards. Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 40 CFR 133 and NDAC Chapter 33.1-16-01-30. These regulations are performance standards that constitute all known, available, and reasonable methods of prevention, control, and treatment for municipal wastewater.

Table 5: 40 CFR 133 Technology-Based Effluent Limitations		
Parameter	**30-Day Average**	**7-Day Average**
BOD_5	30 mg/l	45 mg/l
$CBOD_5$	25 mg/l	40 mg/l
TSS	30 mg/l	45 mg/l
pH	Remain between 6.0 to 9.0	
Percent Removal	No less than 85% BOD5 and TSS	

NDAC Chapter 33.1-16-01-14(3)(c)(1) allows for adjustment of the secondary treatment criteria to reflect site specific considerations. A five-day biochemical oxygen demand limit of twenty-five (25) milligrams per liter (consecutive thirty-day average) may be applied in instances in which limits expressed in terms of secondary treatment standards would be impractical or deemed inappropriate to protect receiving waters.

Effluent Limitations

The department proposes the following effluent limitations for outfalls 007 and 009:

Table 6: Effluent Limitations and Monitoring Requirements for **Outfalls 007** and **009**				
	Effluent Limitations			
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Basis [a/]
BOD_5, mg/l	25 mg/l	45 mg/l	*	40 CFR 133.102(a)(4) NDAC 33.1-16-01-14(3) Previous Permit
TSS, mg/l	30 mg/l	45 mg/l	*	40 CFR 133.102(a)(4) NDAC 33.1-16-01-14(3) Previous Permit
pH, S.U. b/	Shall remain between 6.5 and 9.0 S.U.			NDAC 33.1-16-02.1 Previous Permit
Oil and Grease Visual, c/	*	*	*	NDAC 33.1-16-02.1 Previous Permit
Oil & Grease, mg/l, c/	*	*	10 mg/l	Previous Permit BPJ
Ammonia as N, mg/l	Refer to Ammonia Table (**Table 8**)			NDAC 33.1-16-02.1 Previous Permit
Escherichia coli (*E. coli*) geo mean, #/100ml, d/	126	*	409	NDAC 33.1-16-02.1 Previous Permit
Whole Effluent Toxicity (WET), TU_a	Refer to Whole Effluent Toxicity (WET) Requirements			40 CFR 122.44(d)(1)(iv-v) NDAC 33.1-16-02.1 Previous Permit
Notes:				
* This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
a/ The basis for the effluent limitations is given below:				

"Previous Permit" refers to limitations in the previous permit. The NDPDES regulations **40 CFR Part 122.44(l)(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.**

"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.

"BPJ" refers to best professional judgment.

b/ The pH, an instantaneous limitation, shall be between 6.5 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.

c/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.

d/ *E. coli* limits shall be effective from April 1 through October 31.

Table 7: Effluent Limitations and Monitoring Requirements for **Outfalls 010** and **011**

	Effluent Limitations			
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Basis [a/]
BOD_5, mg/l	25 mg/l	45 mg/l	*	40 CFR 133.102(a)(4) NDAC 33.1-16-01-14(3) Previous Permit
BOD_5 Percent Removal b/	≥ 85%	*	*	40 CFR 133.102(a)(4)
TSS, mg/l	30 mg/l	45 mg/l	*	40 CFR 133.102(a)(4) NDAC 33.1-16-01-14(3) Previous Permit
TSS Percent Removal b/	≥ 85%	*	*	40 CFR 133.102(a)(4)
pH, S.U. c/	Shall remain between 6.5 and 9.0 S.U.			NDAC 33.1-16-02.1 Previous Permit
Oil and Grease Visual, d/	*	*	*	NDAC 33.1-16-02.1 Previous Permit
Oil & Grease, mg/l, d/	*	*	10 mg/l	Previous Permit BPJ
Ammonia as N, mg/l	Refer to Ammonia Table (**Table 8**)			NDAC 33.1-16-02.1 Previous Permit
Escherichia coli (*E.coli*) geo mean, #/100ml, e/	126	*	409	NDAC 33.1-16-02.1 Previous Permit

Whole Effluent Toxicity (WET), TU_a	Refer to Whole Effluent Toxicity (WET) Requirements	40 CFR 122.44(d)(1)(iv-v) NDAC 33.1-16-02.1 Previous Permit

Notes:

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

a/ The basis for the effluent limitations is given below:

"Previous Permit" refers to limitations in the previous permit. The NDPDES regulations **40 CFR Part 122.44(l)(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.**

"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.

"BPJ" refers to best professional judgment.

b/ Calculated for each weekly influent sample, a corresponding effluent sample shall be taken on the same day as the influent sample. The percent removal shall be calculated using the following equation:

$$\%\, removal = \frac{Influent - Effluent}{Influent}$$

The average percent removal from each weekly calculation shall be determined and reported on the DMR.

c/ The pH, an instantaneous limitation, shall be between 6.5 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation of the conditions of this permit.

d/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.

e/ *E. coli* limits shall be effective from April 1 through October 31.

Table 8: Ammonia Effluent Limitations and Monitoring Requirements **Outfall 007, 009, 010 and 011**.

	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡
Stream flow upstream, cfs 2/	*	*	*
Temperature upstream, °C 2/, 3/	*	*	*

Table 8: Ammonia Effluent Limitations and Monitoring Requirements **Outfall 007, 009, 010 and 011**.

	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
pH upstream, S.U. 2/, 3/	*	*	*

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

1/ Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.

2/ Sample must be collected/ recorded the same day as the ammonia sample. The upstream flow, temperature, and pH may be obtained from the USGS gauging station 0505400 at Fargo, North Dakota.

3/ If the upstream values are not collected then following minimum values based on the 90th percentile upstream USGS data are to be used: pH: 8.4 S.U., Temperature 24.0 ° C, and ammonia 0.14 mg/l. If the upstream flow is not available then, the 30B10 critical low flow of 131.24 cfs shall be used. The maximum mixing factor is 10.0%.

† Chronic Standard (Average Monthly Limit) [a]
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 total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:

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

Receiving stream pH and temperature is used for the calculation.

‡ Acute Standard (Daily Maximum Limit)
The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed the numerical value given by the following formula:

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

where *Oncorhynchus* are absent.

Receiving stream pH and temperature is used for the calculation.

a. When discharges are 7 days or less, the 4-day average concentration limitation shall apply. When discharges are more than 7 days, the 30-day average concentration limitation shall apply.

Table 8: Ammonia Effluent Limitations and Monitoring Requirements **Outfall 007, 009, 010 and 011**.			
	Effluent Limitations		
Parameter	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Stipulations The maximum mixing factor with receiving stream is 10.0%.			

SELF-MONITORING REQUIREMENTS

All effluent samples shall be collected at a point following the treatment system and prior to entering the Red River of the North.

Table 9: Self-Monitoring Requirements for **Outfalls 007** and **009**		
Effluent Parameter	**Frequency**	**Sample Type**
BOD_5, mg/l	1/Week	Composite
TSS, mg/l	1/Week	Composite
pH, S.U.	1/Week	Grab
Oil and Grease Visual, a/	Daily	Visual
Oil & Grease, mg/l, a/	Conditional/Daily	Grab
Ammonia as N, mg/l	3/Week	Composite
Escherichia coli (*E. coli*) geo mean, #/100ml	1/Week	Grab
Temperature, ºC	1/Week	Grab
Total Nitrogen, mg/l	1/Month	Composite
Total Phosphorus, mg/l	1/Week	Composite
Ammonia as N, mg/l, upstream, b/	3/Week	Grab
Receiving Stream Flow, cfs, b/	3/Week	Instantaneous
Temperature, ºC, upstream, b/	3/Week	Instantaneous
pH, S.U., upstream	3/Week	Grab
Whole Effluent Toxicity (WET), TU_a	1/Quarter	Grab
Metals, µg/L, c/	1/Year	Composite
Total Flow, MGD	Daily	Instantaneous
Total Drain, MG	1/Month	Calculated
a/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.		
b/ If the upstream values are not collected then following minimum values base on the 90th percentile upstream USGS data are to be used: pH: 8.40 S.U., Temperature 24.0 °C, and ammonia 0.14 mg/l. If the upstream flow is not available then, the 30B10 critical low flow of 131.24 cfs shall be used. The maximum mixing factor is 10.0%.		
c/ Refer to Part V(C), Industrial Pretreatment Program, Sampling and Reporting Requirements of the permit.		

Table 10: Self-Monitoring Requirements for **Outfall 010** and **011**		
Effluent Parameter	**Frequency**	**Sample Type**
BOD_5, mg/l, effluent	3/Week	Composite
BOD_5, mg/l, influent	1/Week	Composite
BOD_5 Percent Removal	1/Week	Calculation
TSS, mg/l, effluent	3/Week	Composite
TSS, mg/l, influent	1/Week	Composite
TSS Percent Removal	1/Week	Calculation
pH, S.U.	Daily	Grab
Oil and Grease Visual, a/	Daily	Visual
Oil & Grease, mg/l, a/	Conditional/Daily	Grab
Temperature, Cº	Daily	Grab
Ammonia as N, mg/l, effluent	3/Week	Composite
Escherichia coli (*E. coli*) geo mean, #/100ml	3/Week	Grab
Total Nitrogen, mg/l	1/Month	Composite
Total Phosphorus, mg/l	1/Week	Composite
Ammonia as N, mg/l, upstream	3/Week	Grab
Receiving Stream Flow, cfs	3/Week	Instantaneous
Temperature, ºC, upstream	3/Week	Instantaneous
pH, S.U., upstream	3/Week	Grab
Whole Effluent Toxicity (WET), TU_a	1/Quarter	Grab
Whole Effluent Toxicity (WET), TU_c	1/Year	Grab
Metals, µg/L, b/	1/Quarter	Composite
Toxic Organics, b/	1/2 Years	Composite
Total Flow, MGD	Daily	Instantaneous
Total Drain, MG	1/Month	Calculated
a/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.		
b/ Refer to Part V(C), Industrial Pretreatment Program, Sampling and Reporting Requirements of the permit.		

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

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

The stream reaches of the receiving water body that the facility discharges to (ND-09020104-003-S_00 and ND-09020104-004-S_00) are listed as impaired under the North Dakota 2020-2022 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads. Both reaches are listed as not supporting fish consumption due to impairment by methylmercury. The TMDL priority is low for the stream reaches.

The department proposes to continue the permit requirement of implementing a mercury pollutant minimization plan.

The Red River of the North is classified as a Class I stream. The quality of the waters in this class shall be suitable for the propagation or protection, or both, of resident fish species and other aquatic biota and for swimming, boating, and other water recreation. The quality of the waters shall be suitable for irrigation, stock watering, and wildlife without injurious effects. After treatment consisting of coagulation, settling, filtration, and chlorination, or equivalent treatment processes, the water quality shall meet the bacteriological, physical, and chemical requirements of the department for municipal or domestic use.

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 Chapter 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

Outfall 007: Final discharge from Cell 5 to the Red River of the North.

Outfall 009: Final discharge from Cell 3 to County Drain No. 9, which flows to the Red River of the North.

Outfall 010: Final discharge from the chlorination basin to the Red River of the North during normal operations. This is a gravity fed line.

Outfall 011: Final discharge from the chlorination basin through the stormwater vault to the Red River of the North only when the Red River is in flood stage.

BOD_5
Outfall 007: The department has reviewed the BOD_5 data and sampling frequency. No exceedances occurred for this parameter. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 009: The department has reviewed the BOD_5 data and sampling frequency. No exceedances occurred for this parameter. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 010: The department has reviewed the BOD_5 data and sampling frequency. Twenty (20) exceedances occurred for this parameter. Two (2) exceedances met the TRC of 40% above the effluent limitation. The department proposes to continue with the 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of three (3) per week. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 011: The department has reviewed the BOD_5 data and sampling frequency. Three (3) exceedances occurred for this parameter. The department proposes to continue a 25 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of three (3) per week. The effluent from outfall 011 is the same effluent as outfall 010. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

$CBOD_5$
Outfall 010: The department has reviewed the $CBOD_5$ data and sampling frequency. The department proposes to remove monitoring for $CBOD_5$. The department has determined to no longer collect this data as the facility has not requested to switch to $CBOD_5$. The department has 10 years of $CBOD_5$ data. If the facility determines to request $CBOD_5$ in the future, the facility will need to provide any additional $CBOD_5$ data to the department.

Outfall 011: The department has reviewed the $CBOD_5$ data and sampling frequency. The department proposes to remove monitoring for $CBOD_5$. The department has determined to no longer collect this data as the facility has not requested to switch to $CBOD_5$. The department has 10 years of $CBOD_5$ data, and the facility has not yet requested to switch to $CBOD_5$. If the facility determines to request $CBOD_5$ in the future, the facility will need to provide any additional $CBOD_5$ data to the department.

TSS
Outfall 007: The department has reviewed the TSS data and sampling frequency. Sixteen (16) exceedances occurred for this parameter. Three (3) exceedances met the TRC criteria of 40% above the effluent limitation. The department proposes to continue with the 30 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 009: The department has reviewed the TSS data and sampling frequency. No exceedances occurred for this parameter. The department proposes to continue with the 30 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 010: The department has reviewed the TSS data and sampling frequency. Fourteen (14) exceedances occurred for this parameter. The department proposes to continue with the 30 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of three (3) per week. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 011: The department has reviewed the TSS data and sampling frequency. No exceedances occurred for this parameter. The department proposes a 30 mg/l (30-day arithmetic average) and 45 mg/l (average weekly limit) limitations with a sampling frequency of three (3) per week. The effluent from outfall 011 is the same effluent as outfall 010. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

pH
Outfall 007: The department has reviewed the pH data and sampling frequency. Sixty-four (64) exceedances occurred for this parameter. The department proposes a pH limitation of shall remain between 6.5 and 9.0 s.u. from between 7.0 and 9.0 s.u. and continue with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, which changed the WQS from a minimum pH of 7.0 s.u. to 6.5 s.u., which went into effect July 01, 2021, and BPJ.

Outfall 009: The department has reviewed the pH data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue with the limitation of shall

remain between 6.5 and 9.0 s.u. with a sampling frequency of weekly. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 010: The department has reviewed the pH data and sampling frequency. One (1) exceedance occurred for this parameter. The department proposes to continue with the limitation of shall remain between 6.5 and 9.0 s.u. with a sampling frequency of daily. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Outfall 011: The department has reviewed the pH data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue the limitation of shall remain between 6.5 and 9.0 s.u. with a sampling frequency of daily. The effluent from outfall 011 is the same effluent as outfall 010. This is based on 40 CFR 133.102, NDAC 33.1-16-01-14, and BPJ.

Oil and Grease, Visual
Outfall 007: The department has reviewed the Oil and Grease, visual data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue visual checks for sheen with a sampling frequency of daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 009: The department has reviewed the Oil and Grease, visual data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue visual checks for sheen with a sampling frequency of daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 010: The department has reviewed the Oil and Grease, visual data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue visual checks for sheen with a sampling frequency of daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 011: The department has reviewed the Oil and Grease, visual data and sampling frequency. The effluent from outfall 011 is the same effluent as outfall 010. The department proposes to continue visual checks for sheen with a sampling frequency of daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Oil and Grease, mg/l
Outfall 007: The department has reviewed the Oil and Grease data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue with a 10 mg/l (daily maximum) limitation when a sheen is present with a sampling frequency of conditional/daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 009: The department has reviewed the Oil and Grease data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue with a 10 mg/l (daily maximum) limitation when a sheen is present with a sampling frequency of conditional/daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 010: The department has reviewed the Oil and Grease data and sampling frequency. No excursions occurred for this parameter. The department proposes to continue with a 10 mg/l (daily maximum) limitation when a sheen is present with a sampling frequency of conditional/daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 011: The department has reviewed the Oil and Grease data and sampling frequency. The effluent from outfall 011 is the same effluent as outfall 010. The department proposes to continue with a 10 mg/l (daily maximum) limitation when a sheen is present with a sampling frequency of conditional/daily. This is based on NDAC 33.1-16-02.1 and BPJ.

Ammonia as N

Outfall 007: The department has conducted a reasonable potential analysis for ammonia as N. Based upon this analysis it was determined that there was reasonable potential to exceed the "North Dakota Standards of Quality for Waters of the State" for ammonia as N (**Appendix C**). The department has determined to include effluent limitations for ammonia as N with a sampling frequency of three (3) per week based upon NDAC 33.1-16-02.1 and BPJ.

Outfall 009: The department reviewed the ammonia data and sampling frequency. No ammonia data was available for this outfall. Though there is no information to conduct a reasonable potential, dischargers cannot violate or cause a violation of the water quality standards as permits only allow the discharge of pollutants specified in the permit. The department has determined to include effluent limitations for ammonia as N with a sampling frequency of three (3) per week based upon NDAC 33.1-16-02.1 and BPJ.

Outfall 010: The department has conducted a reasonable potential analysis for ammonia as N. Based upon this analysis it was determined that there is a reasonable potential to exceed the "North Dakota Standards of Quality for Waters of the State" for ammonia as N (**Appendix C**). The department has determined to include effluent limitations for ammonia as N with a sampling frequency of three (3) per week based upon the calculations in NDAC 33.1-16-02.1 for ammonia.

Outfall 011: The effluent from outfall 011 is the same effluent as outfall 010. The department has conducted a reasonable potential analysis for ammonia as N. Based upon this analysis it was determined that there is a reasonable potential to exceed the "North Dakota Standards of Quality for Waters of the State" for ammonia as N (**Appendix C**). The department has determined to include effluent limitations for ammonia as N with a sampling frequency of three (3) per week based upon the calculations in NDAC 33.1-16-02.1 for ammonia.

Refer to **Table 8** for the proposed Ammonia as N effluent limitations.

Escherichia coli

Outfall 007: The department has reviewed the *E. coli* data and sampling frequency. Two (2) exceedances for this parameter. The department proposes to continue with a 126 #/100ml (30-day arithmetic average) and 409 #/100ml (Daily maximum) limitations with sampling frequency of once per week. *Escherichia coli* limitations apply from April 1 through October 31. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 009: The department has reviewed the *E. coli* data and sampling frequency. There were no discharges from this outfall. The department proposes to continue with a 126 #/100ml (30-day arithmetic average) and 409 #/100ml (Daily maximum) limitations with sampling frequency of once per week. *Escherichia coli* limitations apply from April 1 through October 31. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 010: The department has reviewed the *E. coli* data and sampling frequency. There were three (3) exceedances for this parameter. The department proposes to continue with a 126 #/100ml (30-day arithmetic average) and 409 #/100ml (Daily maximum) limitations with sampling frequency of three (3) times per week. *Escherichia coli* limitations apply from April 1 through October 31. This is based on NDAC 33.1-16-02.1 and BPJ.

Outfall 011: The department has reviewed the *E. coli* data and sampling frequency. The effluent from outfall 011 is the same effluent as outfall 010. There were seven (7) exceedances for this parameter while discharging from this outfall. The department proposes to continue with a 126 #/100ml (30-day arithmetic average) and 409 #/100ml (Daily maximum) limitations with sampling frequency of three (3) times per week. *Escherichia coli* limitations apply from April 1 through October 31. This is based on NDAC 33.1-16-02.1 and BPJ.

Total Residual Chlorine
Outfall 010: The department has reviewed the total residual chlorine data and sampling frequency. No exceedances occurred for this parameter. The department proposes to remove this parameter as the chlorination basin has been converted to an Ultra-Violet (UV) disinfection system.

Outfall 011: The department has reviewed the total residual chlorine data and sampling frequency. The effluent from outfall 011 is the same effluent as outfall 010. The department proposes to remove this parameter as the chlorination basin has been converted to an Ultra-Violet (UV) disinfection system.

Metals
The department reviewed the metals data (**Appendix C**). No metals are expected to cause an excursion of the WQS. The department proposes to continue metals monitoring as required by the permittees approved pretreatment program.

Acute Whole Effluent Toxicity (WET)
Outfall 010 and 011: The department has reviewed the WET testing data and sampling frequency. The department conducted a reasonable potential analysis for WET. Based on this analysis, it was determined that there is reasonable potential to cause an excursion of the North Dakota Standards of Quality for Waters of the State for toxicity (**Appendix C**).

The data set consisted of 40 acute tests and indicated no occurrences of toxicity to *Ceriodaphnia dubia* (Water Flea) nor *Pimephales promelas* (Fathead Minnow).

The department is proposing to continue quarterly sampling for acute toxicity based on BPJ, permit data, and other like permits. The department is proposing to continue the sampling frequency of annual for chronic toxicity based on BPJ and permit data. On the effective date of the proposed permit, the permittee must test for both *Ceriodaphnia dubia* and *Pimephales promelas* until the conditions for alternating species have been met. The permittee may then request reduced sampling/alternating species.

Outfall 007: The department has reviewed the WET testing data and sampling frequency. The department conducted a reasonable potential analysis for WET. Based on this analysis, it was determined that there is reasonable potential to cause an excursion of the North Dakota Standards of Quality for Waters of the State for toxicity (**Appendix C**).

The department is proposing the following requirements for WET testing:

Table 10: WET requirements for **Outfalls 007, 009, 010 and 011**						
Implementation	Limitations Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Red River of the North** [a]					
Testing Type	Acute Toxicity					
Species and Test Type	*Ceriodaphnia dubia* 48 Hour Acute Static Renewal 20ºC					
	Pimephales promelas 96 Hour Acute Static Renewal 20°C					
Endpoint	Mortality reported as TU_a					
Compliance Point	End of pipe					
Sample Frequency	1/Quarter					
Sample Type	Grab					
Maximum Daily Limit (MDL)	<1 TU_a					
Average Monthly Limit (AML)	<1 TU_a					
Test Failure	The 48-hour LC_{50} effluent value must be <1 TU_a to indicate a passing test. Any 48-hour LC_{50} effluent value >1 TU_a will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: Report the highest TU_a for *Ceriodaphnia dubia*, Parameter No. TSM3B. Report the highest TU_a for *Pimephales promelas*, Parameter No. TSN6C.					
The use of alternate testing procedures or methods shall be approved in advance by the department (including, but not limited to the use of EDTA, CO2 overlay, chlorine removal from the effluent sample if the effluent is chlorinated, etc.). If toxicity occurs in a routine test, an additional test shall be initiated within 14 days from the date of the initial toxicity findings. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge. Should toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a 5.Toxicity Reduction Evaluation (TRE) shall be determined by the department. If no toxicity is found in the second test, testing shall occur as outlined in the permit. a. When dangerous conditions exist for personnel (i.e. thin ice, melting ice, flooding, etc.) the permittee may utilize moderately hard reconstituted water upon request and approval by the department.						

The department is proposing to continue with TU_a of less than 1 (<1) in order to meet the requirements of NDAC 33.1-16-02.1-08(a)(4), which states that "[a]ll waters of the state shall be:…Free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to humans, animals, plants, or resident aquatic biota. For surface water, this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits." This limit will need to be met at the end-of-pipe with no allowance for a zone of initial dilution (ZID), in accordance with NDAC 33.1-16-02.1, Appendix III, which

states: “Acute whole effluent toxicity (WET) limits shall be achieved at the end-of-pipe with no allowance for a ZID.”

Acute toxicity test requirements are set out in the latest revision of *"Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*," EPA-821-R-02-012 (Fifth Ed., October 2002).

Chronic Toxicity Testing
The department conducted a reasonable potential analysis for WET. Based on this analysis, it was determined that there is reasonable potential to exceed the chronic standard of 1.0 Toxic Units (TU_c) (**Appendix C**). Though there is reasonable potential for TU_c the department has determined to continue with chronic monitoring as all results were below method detection and the permit will continue with WET TU_a limitations as the Chronic Dilution Factor is < 10:1 and an In-Stream Waste Concentration (IWC) of 0.8% (**Appendix C**). In accordance with EPA guidance, either acute or chronic limitations may be applied when the IWC is between 0.1% and 1%. The permit currently contains acute toxicity effluent limitations. The department also calculated the equivalent TU_a utilizing the equation: $TU_a=(ACR)(TU_c)$, which determined an equivalent TU_a of <1.0. The acute WET effluent limitation would be protective of chronic toxicity. Therefore, the department has determined not to include chronic effluent limitations. The department is proposing to continue monitoring for chronic toxicity with a sampling frequency of once (1) per year.

Below are the testing requirements for chronic whole effluent testing.

Chronic WET requirements for **Outfall 010**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Red River of the North**					
Species and Test Type	*Ceriodaphnia dubia* – 7-Day Chronic – Static Renewal – 25ºC					
	Fathead Minnow – 7-Day Chronic – Static Renewal – 25ºC					
Endpoint	Survival and Reproduction (*Ceriodaphnia dubia)* – IC25 reported as TUc					
	Larval Growth and Survival (Fathead Minnow) – IC25 reported as TUc					
Compliance Point	Monitoring Only					
Sample Frequency	Annual					
Test Acceptability	Test acceptability for *Daphnia dubia* chronic must have a 80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions, and 60% of surviving control females must produce three broods. If this condition is not satisfied, the test must be repeated. Test acceptability for *Pimephales promelas* chronic must have 80% or greater survival in controls and an average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg. If this condition is not satisfied, the test must be repeated.					
Reporting Requirements	The permittee shall report the following results of each toxicity test on the DMR for that reporting period: ***Pimephales promelas* (Fathead Minnow)** Report the highest TU_c for Fathead minnow, Parameter No. TTP3B ***Ceriodaphnia dubia* (Water Flea)** Report the highest TU_c for *Ceriodaphnia dubia*, Parameter No. TTB6C.					

The chronic toxicity tests shall be conducted in general accordance with the procedures set out in the latest revision of "*Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms,*" EPA-821-R-02-013 (Fourth Ed., October 2002). Test species shall consist of freshwater fleas, *Ceriodaphnia dubia* and fathead minnows, *Pimephales promelas*.

Biosolids
Currently, the department does not have the authority to regulate biosolids. Therefore, you are required under the Direct Enforceability provisions 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.

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.

OTHER PERMIT CONDITIONS

Pretreatment
The department has been delegated authority to administer the Industrial Pretreatment Program in 2005. With the delegation of authority, the department issues wastewater discharge permits for significant industrial users to POTWs that have not been delegated authority to issue their own industrial wastewater discharge permits. The requirements for approved pretreatment programs are contained in 40 CFR 403.

The city of Fargo's pretreatment program was approved on June 15, 1985. With an approved pretreatment program, the permit shall contain general pretreatment language and requirements. In addition to the general limitations and requirements, the permittee shall sample and analyze the following:

Table 11: Additional sampling requirements.

	Minimum Frequency of Monitoring
Table II Priority Pollutants 40 CFR 122 Appendix D	1/2 Years
Table III Metals 40 CFR 122 Appendix D	1/Quarter

Table 12: Monitoring requirements from 40 CFR 122 Appendix D Table III

Antimony, Total	Arsenic, Total	Beryllium, Total	Cadmium, Total	Chromium, Total
Copper, Total	Lead, Total	Mercury, Total	Nickel, Total	Selenium, Total
Silver, Total	Thallium, Total	Zinc, Total	Cyanide, Total	Phenols, Total
Hardness, Total [a]				

Notes:

a. A total hardness of the receiving stream needs to be determined every time the above parameters are tested. The hardness is used to calculate parameter criterion(s) according to the North Dakota State Water Quality Standards.

Sanitary Sewer Overflows (SSOs)

Outfall 006 has been identified in this permit as an overflow outlet. This outfall is not a permitted outfall. Any discharge from outfall 006 is considered an un-authorized discharge which must be monitored for the parameters specified for outfall 006. One (1) discharge occurred from outfall 006 on July 09, 2019, and reported to the department on July 15, 2019.

All SSOs must be reported to the department in accordance with 40 CFR 122.41(6), Part III(G) of the permit, and as specified under the Reporting, Record Keeping, and Public Notification for Unauthorized Sanitary Sewer Overflow section outlined below.

Outfall 006. Active. Overflow Outlet.			
Latitude: 46.96316	Longitude: -96.84369	County: Burleigh	
Township: 140N	Range: 49W	Section: 10	QQ: AA
Receiving Stream: Red River of the North		Classification: Class I	
Outfall Description: This is an emergency overflow point prior to the headworks/pretreatment building. This emergency overflow is from the wastewater treatment plant. Any discharge is to the Red River of the North, a Class I stream.			

If an un-permitted discharge occurs from outfall 006, the following parameters must be monitored and reported to the department on the DMR for outfall 006:

Table 13: Self-Monitoring Requirements for **Outfall 006**		
Effluent Parameter	**Frequency**	**Sample Type**
BOD_5, mg/l, effluent	Daily	Grab
TSS, mg/l, effluent	Daily	Grab
pH, S.U.	Daily	Grab
Oil and Grease Visual [a]	Daily	Visual
Oil & Grease, mg/l [a]	Conditional/Daily	Grab
Ammonia as N, mg/l	Daily	Grab
Escherichia coli (*E. coli*) geo mean, #/100ml	Daily	Grab
Total Flow, MGD	Daily	Instantaneous
Total Drain, MG	1/Quarter	Calculated
a/ The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen or floating oil in the effluent or on the surface of the receiving water. The discharge shall be visibly inspected for sheen or floating oil. If present, grab samples shall be analyzed for oil and grease.		

<u>Reporting, Record Keeping, and Public Notification for Unauthorized Sanitary Sewer Overflow</u>

1. Immediate Reporting

   A. The permittee shall report to the department any sanitary sewer overflow or any unauthorized sanitary sewer overflow that the permittee owns and/or operates. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. At a minimum, the report shall identify:

i. The location of the overflow;

ii. The receiving water (if there is one);

iii. The duration of the overflow; and

iv. The estimated volume of the overflow.

B. An overflow is any spill, release, or diversion of municipal sewage, including:

i. An overflow that results in a discharge to a water of the state; and

ii. An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately-owned sewer or building lateral), even if that overflow does not reach waters of the state.

2. Written Reports

A. The permittee shall also provide a written report to the department for any overflow identified under paragraph 1 of this section within five (5) days from the time the permittee becomes aware of the circumstances. The written report shall contain a description of:

i. The location of the overflow;

ii. The receiving water (if applicable);

iii. An estimate of the overflow volume;

iv. A description of the sewer-system component that caused the release (e.g. manhole, constructed overflow pipe, pipe break, etc.);

v. The estimated date and time when the overflow began and stopped or will be stopped;

vi. The cause or suspected cause of the overflow;

vii. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;

viii. If possible, the number of persons who came into contact with wastewater from the overflow; and

ix. Steps taken or planned to mitigate the impact(s) from the overflow and a schedule of major milestones for those steps.

B. The department may waive the written report on a case-by-case basis for reports under paragraph A. of this section if the verbal report required under the special conditions, paragraph 1 has been received within twenty-four (24) hours.

3. Record Keeping

   A. The permittee shall maintain all records in accordance with Part II(F) of this permit, including:

      i. Any report submitted under paragraph 2 of the special conditions above, and

      ii. Any report, including work orders that are associated with investigation of system problems related to an overflow that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow, or documents system performance.

4. Public Notice

   The department may require the permittee to notify specified third parties of overflows that may endanger public health.

   A. The permittee shall develop a plan which describes how notification, under various overflow (and unanticipated bypass and upset) scenarios, the public and other entities of overflows that may endanger public health.

      i. The plan shall identify all reportable overflows and the specific information reported to each entity receiving notification.

   B. The permittee shall immediately notify the public, public health agencies, and other affected entities (e.g. public water systems) of any sanitary sewer overflow that the permittee owns or has operational control which are identified in the plan required in paragraph A of this section.

5. Proper Operation and Maintenance

   A. The permittee shall implement proper operation and maintenance of the collection system in accordance with Part III(B) and (I) of this permit. Upon request of the department, this may include the development and implementation of capacity, management, operation, and management (CMOM) programs.

Mercury Pollutant Minimization Plan
The receiving stream is listed as impaired for methylmercury. The department proposes to continue requiring the facility to implement a mercury pollutant minimization plan (MPMP).

The permittee is required to complete and maintain a MPMP for review upon request by the department. A copy of the plan shall be provided to the department when updates occur. The purpose of the MPMP is to evaluate collection and treatment systems to determine possible sources of mercury as well as potential mercury reduction options. Guidelines for developing a MPMP are below.

The MPMP shall be available for review upon request. If the plan is updated, a copy of the updated plan shall be provided to the department. At a minimum, the MPMP must include the following:

a) A summary of mercury influent and effluent concentrations and biosolids monitoring data using the most recent five (5) years of monitoring data.

b) Identification of existing and potential sources of mercury concentrations and/or loading to the facility. The following sources should be considered: residential, institutional, municipal, and commercial (dental clinics, hospitals, medical clinics, nursing homes, schools, industries with potential for mercury contributions), stormwater inputs, ground water inflow and infiltration (I/I) inputs, and waste streams or sewer tributaries to the wastewater treatment facility.

c) An evaluation of past and present wastewater treatment facility operations to determine those operating procedures that maximize mercury removal.

d) A summary of mercury reduction activities implemented during the past five (5) years.

e) A plan to implement mercury management and reduction measures during the next five (5) years.

In addition to the sampling required in this permit, the permittee shall sample effluent from the total facility discharge station for dissolved mercury annually throughout the life of this permit. The sampling method is a concurrent grab sample. Dissolved mercury shall be analyzed using an EPA approved mercury analysis method outlined in 40 CFR 136. Samples shall be taken at any time during the calendar year and reported on the custom supplemental form provided by the department. A trip blank shall be analyzed for each sampling event. The custom supplemental form must be submitted with the DMR for the last month the reporting period it was collected.

Discharge Monitoring Report Quality Assurance/Quality Control Participation

This facility has been selected to take part in the annual Discharge Monitoring Report – Quality Assurance (DMR-QA) Study. This participation is a requirement as outlined in Section 308 of the Clean Water Act (CWA). EPA is to mail you a copy of the annual DMR-QA Study notification letter. Additional information may be found by visiting the following website: https://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program#about Discontinuation from the DMR-QA Study may take place upon a written letter from the State DMR-QA Coordinator.

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 Fargo**. 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 **November 15, 2023,** in the **Fargo Forum** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

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

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

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

The primary author of this permit and fact sheet is Patrick Schuett.

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

Public Notice Date: 11/15/2023 Public Notice Number: ND-2023-021

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: 7/5/2023 Application Number: ND0022870

Applicant Name: Fargo City Of
Mailing Address: 225 4th St N, Fargo, ND 58102
Telephone Number: 701.241.8565

Proposed Permit Expiration Date: 12/31/2028

Facility Description
The reapplication is for a combination mechanical treatment plant and six waste stabilization ponds which services the City of Fargo and surrounding cities. The treatment plant is located at 3400 North Broadway, Fargo, ND. The waste stabilization ponds are located in the E 1/2 of Section 10, and the W 1/2 of Section 11, of Township 140 North, Range 49 West. Any discharge would be to the Red River of the North, a Class I 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. 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 December 16, 2023 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.

The NDDEQ will consider every request for reasonable accommodation to provide an accessible meeting facility or other accommodation for people with disabilities, language interpretation for people with limited English proficiency (LEP), and translations of written material necessary to access programs and information. Language assistance services are available free of charge to you. To request accommodations, contact the NDDEQ Non-discrimination Coordinator at 701-328-5210 or deqEJ@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

APPENDIX B – DEFINITIONS

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.

DEFINITIONS Whole Effluent Toxicity (WET) BP 2017.04.06

20. "**Acute toxic unit"** ("TUa") is a measure of acute toxicity. TUa is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end on the acute exposure period (i.e., 100/"LC50").

21. "**Chronic toxic unit"** ("TUc") is a measure of chronic toxicity. TUc is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/"IC25").

22. "**Inhibition concentration**", ("IC"), is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., Interpolation Method).

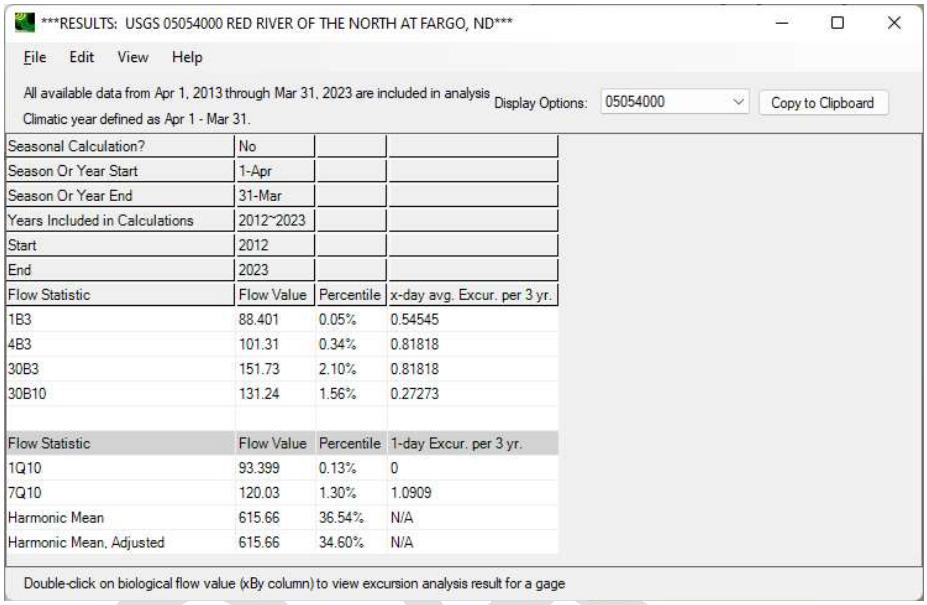
23. "**LC50**" means the concentration of toxicant (e.g., effluent) which is lethal to 50 percent of the organisms exposed in the time period prescribed by the test.

24. "**No observed effect concentration**", ("NOEC"), is the highest concentration of toxicant (e.g., effluent) to which organisms are exposed in a chronic toxicity test [full life-cycle or partial life-cycle (short term) test], that causes no observable adverse effects on the test organisms (i.e., the highest concentration of effluent in which the values for the observed responses are not statistically significantly different from the controls).

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

Critical Low Flow

The department obtained stream flow data from USGS site 05054000 from April 1, 2013, to March 31, 2023. Below are the critical low flows calculated using the USGS Hydrological Toolbox.



RESULTS: USGS 05054000 RED RIVER OF THE NORTH AT FARGO, ND

File Edit View Help

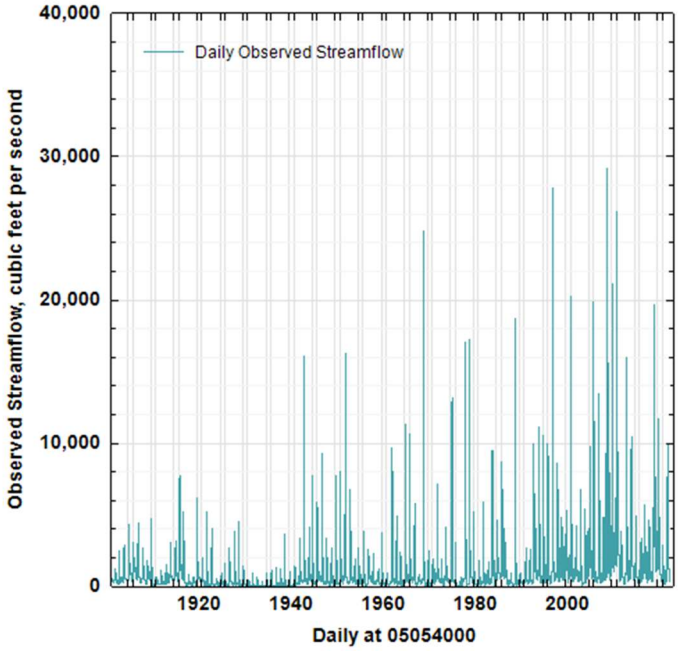
All available data from Apr 1, 2013 through Mar 31, 2023 are included in analysis
Climatic year defined as Apr 1 - Mar 31.

Display Options: 05054000 Copy to Clipboard

Seasonal Calculation?	No		
Season Or Year Start	1-Apr		
Season Or Year End	31-Mar		
Years Included in Calculations	2012~2023		
Start	2012		
End	2023		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	88.401	0.05%	0.54545
4B3	101.31	0.34%	0.81818
30B3	151.73	2.10%	0.81818
30B10	131.24	1.56%	0.27273
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
1Q10	93.399	0.13%	0
7Q10	120.03	1.30%	1.0909
Harmonic Mean	615.66	36.54%	N/A
Harmonic Mean, Adjusted	615.66	34.60%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

Below is a time-series graph of the stream flow at USGS site 05054000.



REASONABLE POTENTIAL

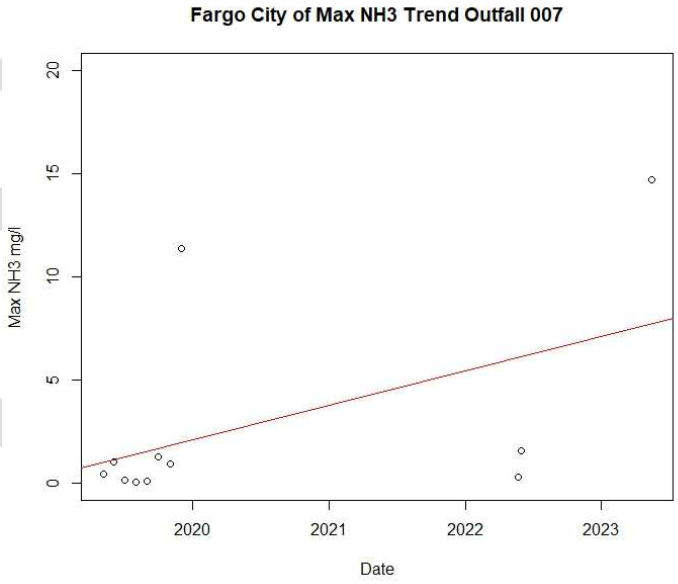
Ammonia

The department used the following criteria to determine the acute and chronic ammonia criterion for the reasonable potential analysis.

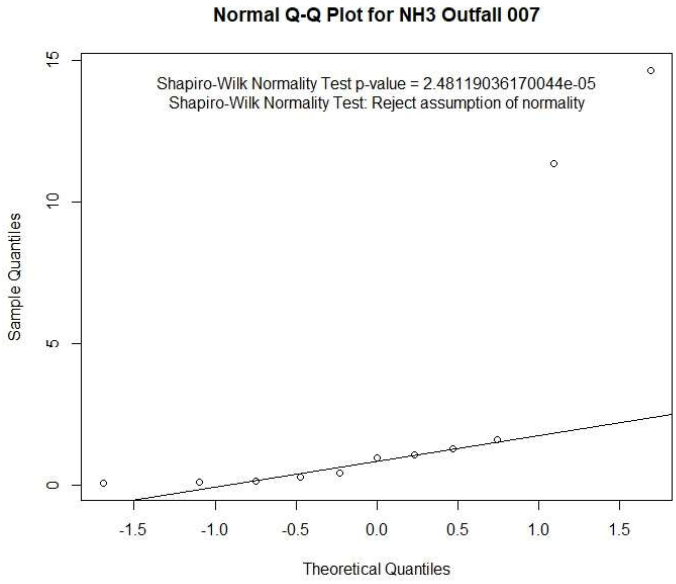
Flow Variable Calculated Effluent Ammonia Concentrations in mg/l						Estimated	
Discharger:	Fargo City of			Enter the upstream ammonia in mg/l:		90th %	0.14
Stream:	Red River of the North			Enter the receiving stream pH:		No	8.40
Enter receiving stream flow (CFS):				Enter the receiving stream temperature in Deg	75 F	Yes	24.00
Mixing Zone Percentage/CFS:		10%	0.0	Enter the effluent drain rate (MGD):		Yes	
Enter increments to calculate stream flow:				Enter increments to calculate drain rate:			0.1
					Mixing Zone Dilution Rate:		#DIV/0!
					Overall Dilution Rate:		#DIV/0!
Maximum allowable ammonia in mg/l							
Water Quality Standar		1.2943	Water Quality Standard:	0.7955	Water Quality Standard		0.3182

007:

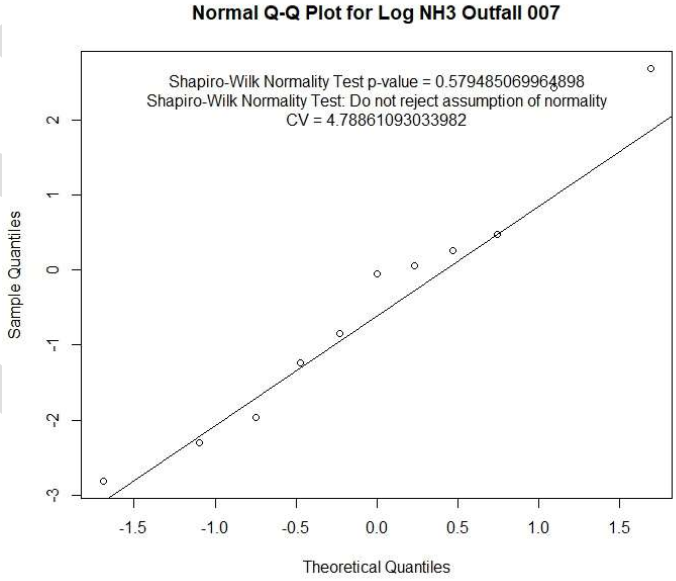
The department reviewed the ammonia data for outfall 007. Below is a plot of the maximum ammonia data.



The plot showed an increasing trend for the maximum ammonia. For calculating the Coefficient of Variance (CV), the department checked the normality of the maximum ammonia concentrations. Below is the q-q plot for the maximum ammonia concentrations and the Shapiro-Wilk Normality test results.



Due to the data not being normally distributed (rejecting the assumption of normality), the ammonia data was log transformed and tested for log normality. Below is the q-q plot for the log of the maximum ammonia data, the results from the Shapiro-Wilk Normality test, and the determined CV to be utilized in the Reasonable Potential Analysis.



Based on the Shapiro-Wilk Normality test having a p-value greater than 0.05, the assumption of normality is not rejected (using a 95% confidence interval).

The CV was calculated by utilizing the following equation:

$$\widehat{CV}(x) = \left[\exp\left(\hat{\sigma}_y^2\right) - 1\right]^{\frac{1}{2}}$$

where:

$$\hat{\sigma}_y^2 = estimated\ variance = \sum[(y_i - \hat{\mu})^2]\ /(k-1),$$

$$\widehat{\mu_y} = estimated\ mean = \sum(y_i)/k,$$

$$y_i = \ln(x_i), \text{ and}$$

$$k = sample\ size$$

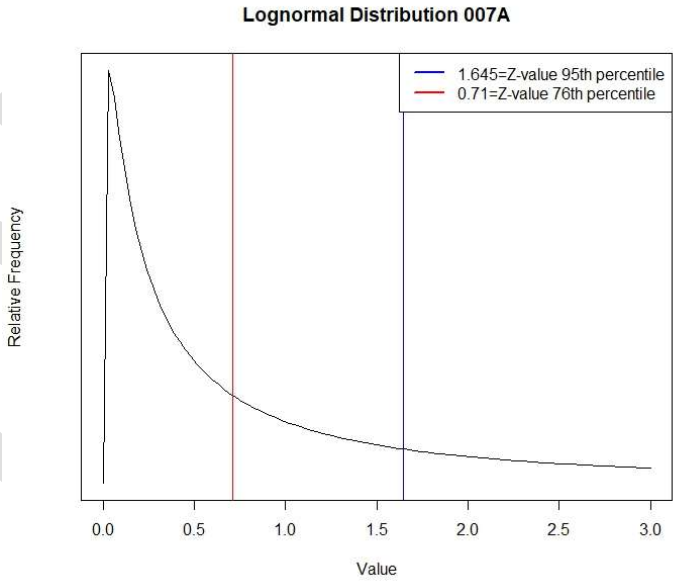
$$x = sample\ data$$

The reasonable potential determination for ammonia is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 4.8. The multiplying factor of 5.3 was calculated using the following equation from the TSD due to the high coefficient of variance (4.8) of the data:

$$P_n = (1 - 0.95)^{\frac{1}{11}}$$

$$P_n = 0.76$$

The maximum effluent concentration is greater than the 76th percentile. The z-critical value of 0.71 was determined for the 76th percentile.



$$\frac{C_{95}}{C_n} = \frac{\exp(Z_{95}\sigma\ - 0.5\sigma^2)}{\exp(Z_n\sigma\ - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = \frac{\exp(1.645\sigma - 0.5\sigma^2)}{\exp(0.71\sigma - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = 5.3$$

Where:

σ = Standard Deviation
$\sigma^2 = Variance$

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:	Fargo City of	Receiving Stream:	Red River of the North	
NDPDES Permit:	ND0022870	1Q10 Acute	93.4	cfs
Daily Maximum Flow (mgd):	23.12	1B3 Acute	88.4	cfs
Daily Average Flow (mgd):	17.79	7Q10 Chronic	120	cfs
Stream Design Mixing:	10.0%	30B10 Chronic	131.2	cfs
Statistical Multiplier:	5.3			
Upstream Concentration:	0.1400	mg/l	**Parameter:**	
Effluent Concetration (max):	14.6700	mg/l	**Ammonia**	

RWC $= \frac{(StatQeCe)+(Cs(pmf)Qs)}{Qe+(pmf)Qs}$ — **Outfall: 007**

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	23.12	mgd	Qs - 1Q10	60.34	mgd
Qe - Chronic	17.79	mgd	Qs - 1B3	57.11	mgd
Ce	14.6700	mg/l	Qs - 7Q10	77.52	mgd
Cs	0.1400	mg/l	Qs - 30B10	84.76	mgd
Stat	5.28				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	61.4559	mg/l	RWC - 7Q10	53.9917	mg/l
RWC - 1B3	62.1429	mg/l	RWC - 30B10	52.5083	mg/l

Criterion Maximum Concentration (CMC)		Criterion Continuous Concentration (CCC)	
Acute Criterion	1.29 mg/l	Chronic Criterion	0.3100 mg/l

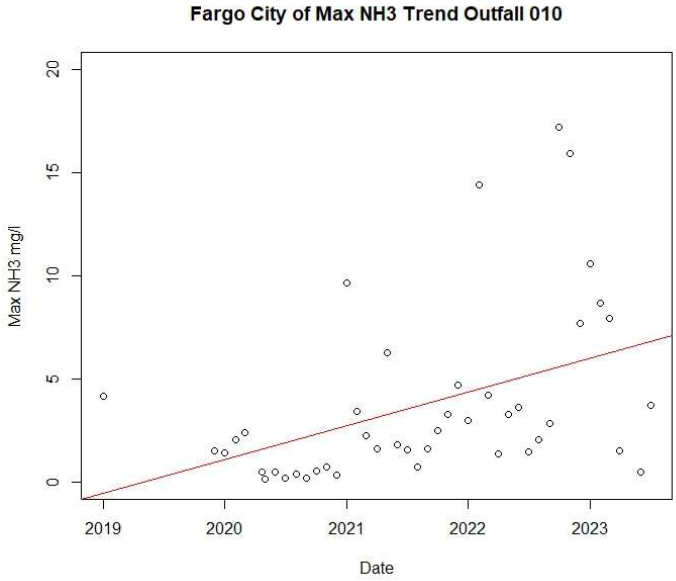
If the calculated RWC is greater than its respective criterion then there is RP and if RWC is less than the criterion then there is no RP.

CMC RP Present:		**CCC RP Present:**	
1Q10 Acute OR	**YES**	**7Q10 Chronic OR**	**YES**
1B3 Acute	**YES**	**30B10 Chronic**	**YES**

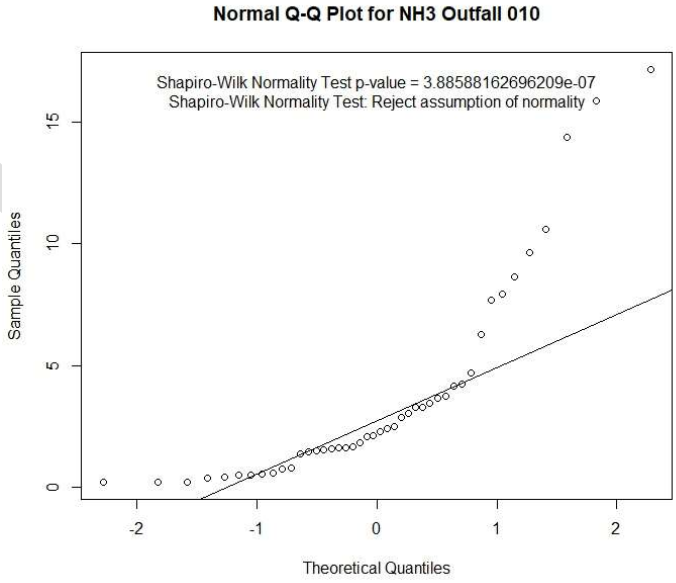
The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design and harmonic mean flows to determine Water Quality Based Effluent Limits (WQBELs) and Whole Effluent Toxicity (WET) limits.

The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

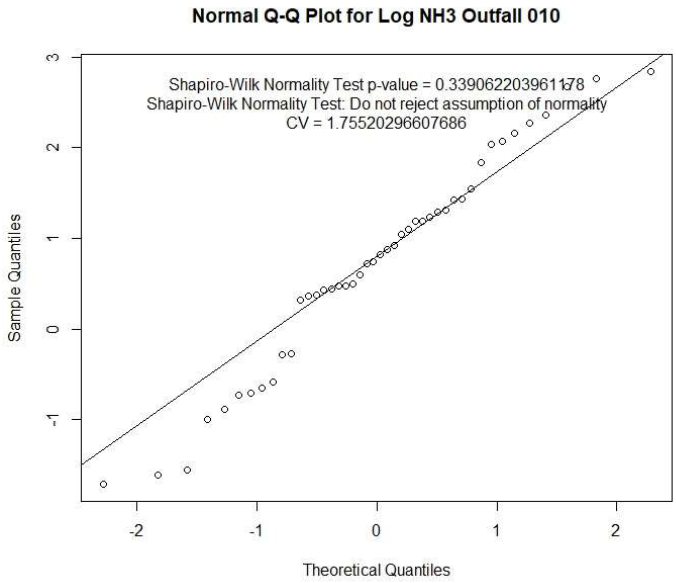
010:
The department reviewed the ammonia data for outfall 010. Below is a plot of the maximum ammonia data.



The plot shows an increasing trend for maximum ammonia. For calculating the Coefficient of Variance (CV), the department checked the normality of the maximum ammonia concentrations. Below is the q-q plot for the maximum ammonia concentrations and the Shapiro-Wilk Normality test results.



Due to the data not being normally distributed (rejecting the assumption of normality), the ammonia data was log transformed and tested for log normality. Below is the q-q plot for the log of the maximum ammonia data, the results from the Shapiro-Wilk Normality test, and the determined CV to be utilized in the Reasonable Potential Analysis.



Based on the Shapiro-Wilk Normality test having a p-value greater than 0.05, the assumption of normality is not rejected (using a 95% confidence interval).

The CV was calculated by utilizing the following equation:

$$\widehat{CV}(x) = \left[\exp\left(\hat{\sigma}_y^2\right) - 1\right]^{\frac{1}{2}}$$

where:

$$\hat{\sigma}_y^2 = estimated\ variance = \sum[(y_i - \hat{\mu})^2]\ /(k-1),$$

$$\widehat{\mu_y} = estimated\ mean = \sum(y_i)/k,$$

$$y_i = \ln(x_i), \text{ and}$$

$$k = sample\ size$$

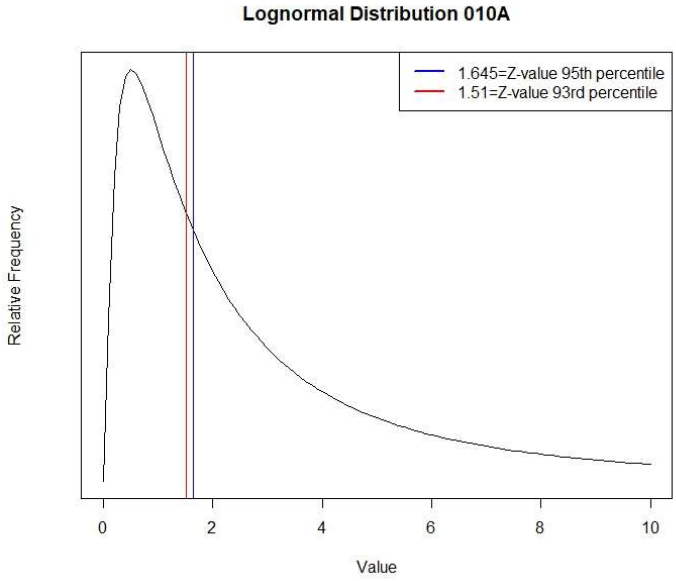
$$x = sample\ data$$

The reasonable potential determination for ammonia is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 1.8. The multiplying factor of 1.17 was calculated using the following equation from the TSD due to large sample size of 44 summarized data points (total of 508 samples):

$$P_n = (1 - 0.95)^{\frac{1}{44}}$$

$$P_n = 0.93$$

The maximum effluent concentration is greater than the 93rd percentile. The z-critical value of 1.51 was determined for the 93rd percentile.



$$\frac{C_{95}}{C_n} = \frac{\exp(Z_{95}\sigma - 0.5\sigma^2)}{\exp(Z_n\sigma - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = \frac{\exp(1.645\sigma - 0.5\sigma^2)}{\exp(1.51\sigma - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = 1.17$$

Where:

σ = Standard Deviation
$\sigma^2 = Variance$

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:	Fargo City of	Receiving Stream:	Red River of the North	
NDPDES Permit:	ND0022870	1Q10 Acute	93.4	cfs
Daily Maximum Flow (mgd):	22.69	1B3 Acute	88.4	cfs
Daily Average Flow (mgd):	13.50	7Q10 Chronic	120	cfs
Stream Design Mixing:	10.0%	30B10 Chronic	131.2	cfs
Statistical Multiplier:	1.2			
Upstream Concentration:	0.1400	mg/l	**Parameter:**	
Effluent Concetration (max):	17.2000	mg/l	**Ammonia**	

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

Outfall: 010

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	22.69	mgd	Qs - 1Q10	60.34	mgd
Qe - Chronic	13.50	mgd	Qs - 1B3	57.11	mgd
Ce	17.2000	mg/l	Qs - 7Q10	77.52	mgd
Cs	0.1400	mg/l	Qs - 30B10	84.76	mgd
Stat	1.17				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	15.9262	mg/l	RWC - 7Q10	12.8345	mg/l
RWC - 1B3	16.1057	mg/l	RWC - 30B10	12.4166	mg/l

Criterion Maximum Concentration (CMC)		Criterion Continuous Concentration (CCC)	
Acute Criterion	1.29 mg/l	Chronic Criterion	0.3100 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**	**30B10 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.

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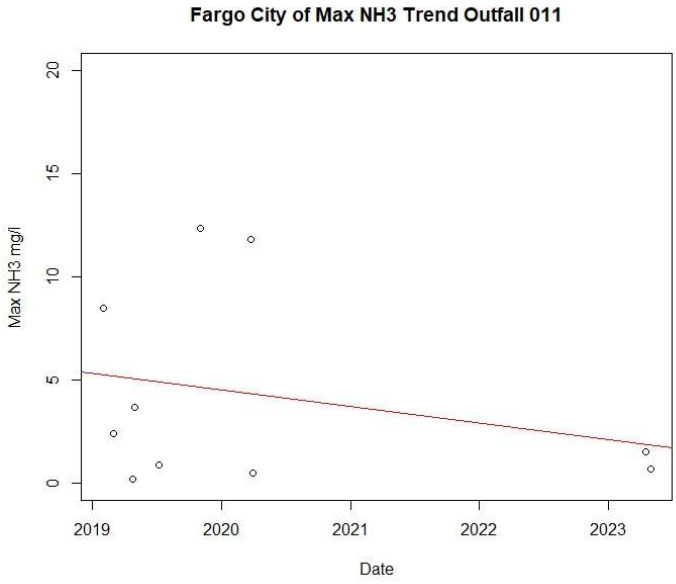
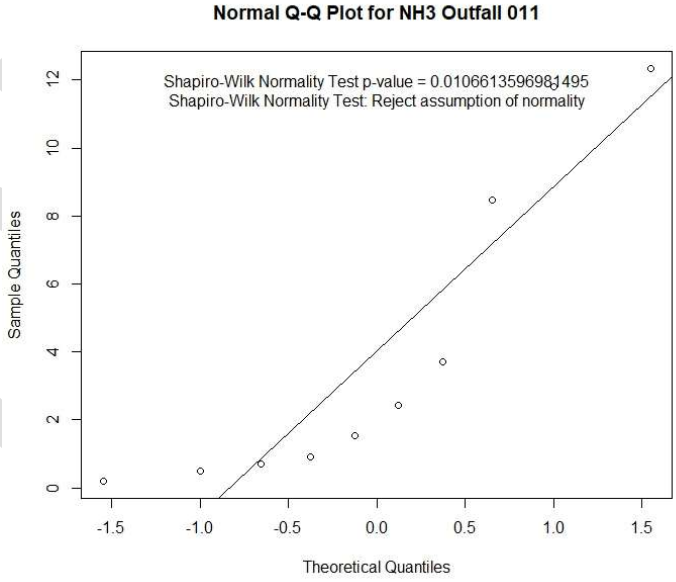
The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

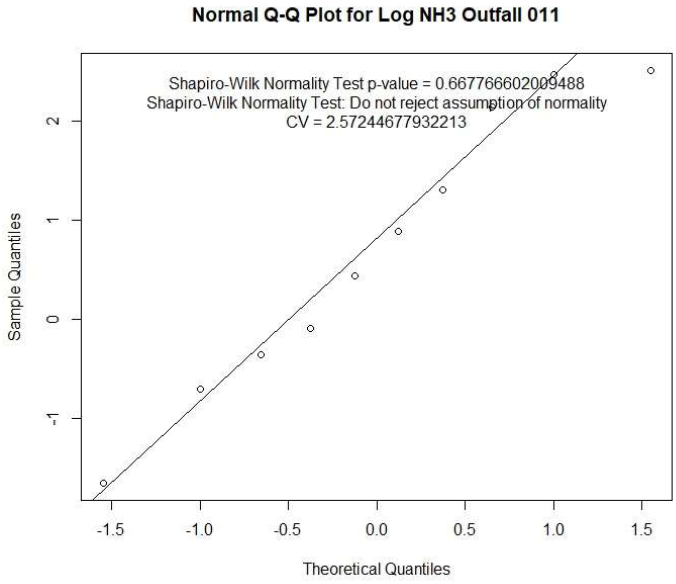
<u>011:</u>
The department reviewed the ammonia data for outfall 011. Below is a plot of the maximum ammonia data.



The plot shows a decreasing trend for maximum ammonia. For calculating the Coefficient of Variance (CV), the department checked the normality of the maximum ammonia concentrations. Below is the q-q plot for the maximum ammonia concentrations and the Shapiro-Wilk Normality test results.



Due to the data not being normally distributed (rejecting the assumption of normality), the ammonia data was log transformed and tested for log normality. Below is the q-q plot for the log of the maximum ammonia data, the results from the Shapiro-Wilk Normality test, and the determined CV to be utilized in the Reasonable Potential Analysis.



Based on the Shapiro-Wilk Normality test having a p-value greater than 0.05, the assumption of normality is not rejected (using a 95% confidence interval).

The CV was calculated by utilizing the following equation:

$$\widehat{CV}(x) = \left[\exp\left(\hat{\sigma}_y^2\right) - 1\right]^{\frac{1}{2}}$$

where:

$$\hat{\sigma}_y^2 = estimated\ variance = \sum[(y_i - \hat{\mu})^2]\ /(k-1),$$

$$\widehat{\mu_y} = estimated\ mean = \sum(y_i)/k,$$

$$y_i = \ln(x_i), \text{ and}$$

$$k = sample\ size$$

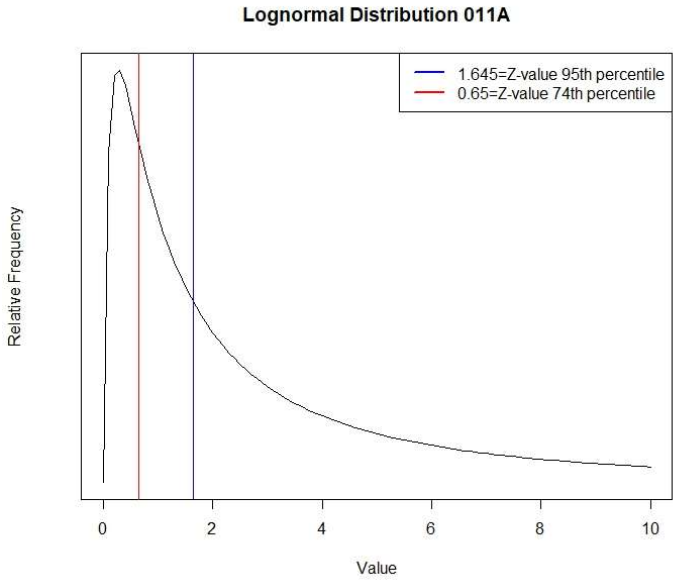
$$x = sample\ data$$

The reasonable potential determination for ammonia is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 2.6. The multiplying factor of 4.1 was calculated using the following equation from the TSD due to sample size of 10 summarized data points (total of 67 samples):

$$P_n = (1 - 0.95)^{\frac{1}{10}}$$

$$P_n = 0.74$$

The maximum effluent concentration is greater than the 74th percentile. The z-critical value of 0.65 was determined for the 74th percentile.



$$\frac{C_{95}}{C_n} = \frac{\exp(Z_{95}\sigma - 0.5\sigma^2)}{\exp(Z_n\sigma - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = \frac{\exp(1.645\sigma - 0.5\sigma^2)}{\exp(0.6547\sigma - 0.5\sigma^2)}$$

$$\frac{C_{95}}{C_n} = 4.14$$

Where:

σ = Standard Deviation
$\sigma^2 = Variance$

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:	Fargo City of	Receiving Stream:	Red River of the North	
NDPDES Permit:	ND0022870	1Q10 Acute	93.4	cfs
Daily Maximum Flow (mgd):	22.10	1B3 Acute	88.4	cfs
Daily Average Flow (mgd):	13.60	7Q10 Chronic	120	cfs
Stream Design Mixing:	10.0%	30B10 Chronic	131.2	cfs
Statistical Multiplier:	4.1			
Upstream Concentration:	0.1400	mg/l	Parameter:	
Effluent Concetration (max):	12.3500	mg/l	Ammonia	

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

Outfall: 011

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	22.10	mgd	Qs - 1Q10	60.34	mgd
Qe - Chronic	13.60	mgd	Qs - 1B3	57.11	mgd
Ce	12.3500	mg/l	Qs - 7Q10	77.52	mgd
Cs	0.1400	mg/l	Qs - 30B10	84.76	mgd
Stat	4.14				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	40.1937	mg/l	RWC - 7Q10	32.6171	mg/l
RWC - 1B3	40.6589	mg/l	RWC - 30B10	31.5526	mg/l

Criterion Maximum Concentration (CMC)		Criterion Continuous Concentration (CCC)	
Acute Criterion	1.29 mg/l	Chronic Criterion	0.3100 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**	**30B10 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.

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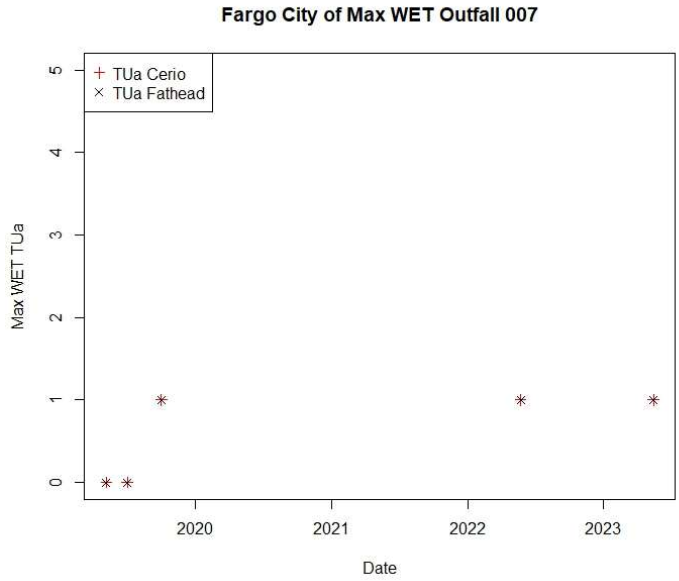
The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

Whole Effluent Toxicity (WET)

Outfall 007:
The department reviewed the WET data for outfall 007. Below is a plot of the maximum WET data.



All sample results were reported as below detect. The reasonable potential determination for WET is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was the default CV of 0.6, n = 6.

Whole Effluent Toxicity (WET)
Resonable Potential (RP)
Determination

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

Facility Name:	Fargo City of	Receiving Stream:	Red River of the North
NDPDES Permit:	ND0022870	1Q10 Acute	93.4 cfs
Effluent Flow (mgd):	23.120	1B3 Acute	88.4 cfs
Stream Design Mixing:	10.0%	7Q10 Chronic	120 cfs
WET TUa (max):	1.00	4B3 Chronic	101.3 cfs
ACR:			
Statistical Multiplier:	2.1		

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

Outfall: 007

RWC = Receiving water concentration, the resultant magnitude of toxicity in the receiving water after effluent discharge in TUs (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 Toxicity Unit (TU) reported. (Use 1 if no WET data is available.)
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)

Qe	23.120	mgd	Qs - Acute	60.336	mgd
Ce	1.00	TU	Qs - Acute 1B3	57.106	mgd
pmf	10.0%		Qs - Chronic	77.520	mgd
Stat	2.1		Qs - Chronic 4B3	65.440	mgd
ACR	0.00				

Acute RP			Chronic RP		
RWC - 1Q10	1.67	TUa	RWC - 7Q10	0.00	TUc
RWC - 1B3	1.68	TUa	RWC - 4B3	0.00	TUc

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	0.3	TUa	Chronic Criterion	1.0	TUc

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**	**NO**
1B3 Acute	**YES**	**4B3 Chronic**	**NO**

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design flows to determine Whole Effluent Toxicity (WET) limits for acute and chronic endpoints.

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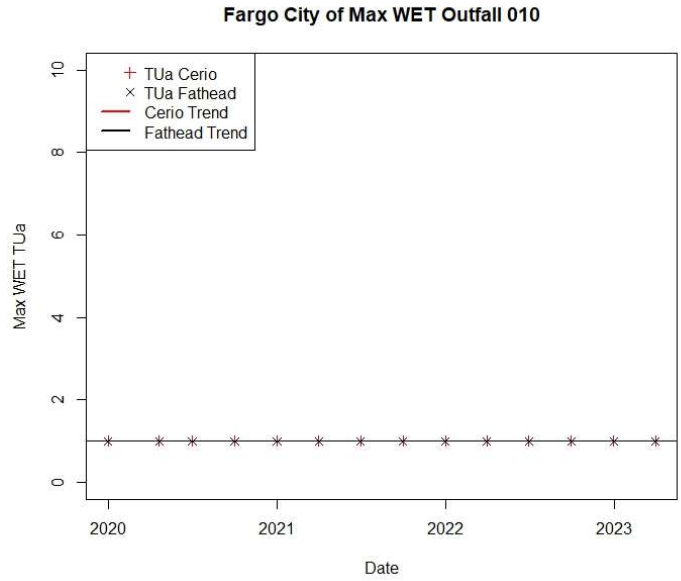
The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

<u>010:</u>

<u>Acute:</u>

The department reviewed the WET data for outfall 010. Below is a plot of the maximum WET data.



All results were below method detection level. Due to all results being below method detection, the department determined to utilize the default CV of 0.6 as a Normality test nor a CV cannot be calculated using censored data (below method detect). The reasonable potential determination for WET is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was the default CV of 0.6, n = 28.

Whole Effluent Toxicity (WET)
Resonable Potential (RP)
Determination

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

Facility Name:	Fargo City of	Receiving Stream:	Red River of the North
NDPDES Permit:	ND0022870	1Q10 Acute	93.4 cfs
Effluent Flow (mgd):	22.690	1B3 Acute	88.4 cfs
Stream Design Mixing:	10.0%	7Q10 Chronic	120 cfs
WET TUa (max):	1.00	4B3 Chronic	101.3 cfs
ACR:			
Statistical Multiplier:	1.4		

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

Outfall: 010

RWC = Receiving water concentration, the resultant magnitude of toxicity in the receiving water after effluent discharge in TUs (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 Toxicity Unit (TU) reported. (Use 1 if no WET data is available.)
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)

Qe	22.690	mgd	Qs - Acute	60.336	mgd
Ce	1.00	TU	Qs - Acute 1B3	57.106	mgd
pmf	10.0%		Qs - Chronic	77.520	mgd
Stat	1.4		Qs - Chronic 4B3	65.440	mgd
ACR	0.00				

Acute RP			Chronic RP		
RWC - 1Q10	1.11	TUa	RWC - 7Q10	0.00	TUc
RWC - 1B3	1.12	TUa	RWC - 4B3	0.00	TUc

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	0.3	TUa	Chronic Criterion	1.0	TUc

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**	**NO**
1B3 Acute	**YES**	**4B3 Chronic**	**NO**

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design flows to determine Whole Effluent Toxicity (WET) limits for acute and chronic endpoints.

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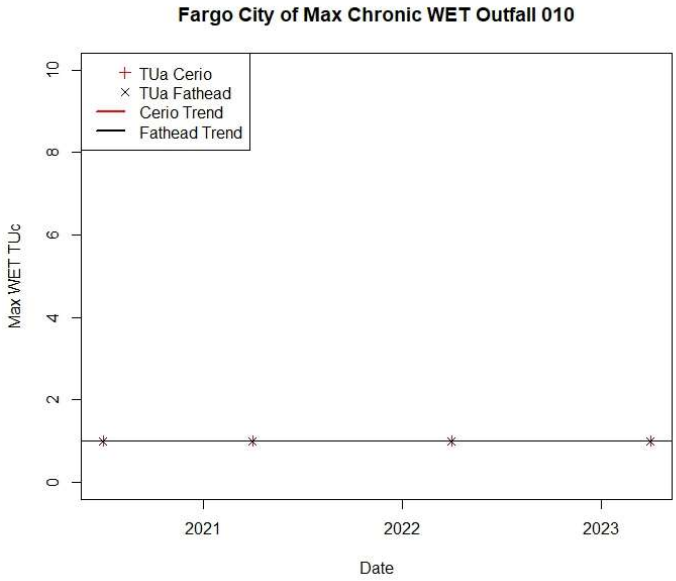
The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

Chronic:
The department reviewed the chronic WET data from 01/01/2014 – 07/31/2023 to increase the sample size. All samples were below method detection level. Below is a plot of the maximum Chronic WET data.



Due to all results being below method detection, the department determined to utilize the default CV of 0.6 as a Normality test nor a CV cannot be calculated using censored data (below method detect). The reasonable potential determination for WET is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was the default CV of 0.6, n = 46.

Whole Effluent Toxicity (WET) Reasonable Potential (RP) Determination

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

Facility Name:	Fargo City of	Receiving Stream:	Red River of the North	
NDPDES Permit:	ND0022870	1Q10 Acute	93.4	cfs
Effluent Flow (mgd):	22.690	1B3 Acute	88.4	cfs
Stream Design Mixing:	10.0%	7Q10 Chronic	120	cfs
WET TUc (max):	1.00	4B3 Chronic	101.3	cfs
ACR:				
Statistical Multiplier:	1.4			

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

Outfall: 10

RWC = Receiving water concentration, the resultant magnitude of toxicity in the receiving water after effluent discharge in TUs (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 Toxicity Unit (TU) reported. (Use 1 if no WET data is available.)
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)

Qe	22.690	mgd	Qs - Acute	60.336	mgd
Ce	1.00	TU	Qs - Acute 1B3	57.106	mgd
pmf	10.0%		Qs - Chronic	77.520	mgd
Stat	1.4		Qs - Chronic 4B3	65.440	mgd
ACR	0.00				

Acute RP			Chronic RP		
RWC - 1Q10	#DIV/0!	TU	RWC - 7Q10	1.0	TU
RWC - 1B3	#DIV/0!	TU	RWC - 4B3	1.1	TU

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	0.3	TUa	Chronic Criterion	1.0	TUc

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	**#DIV/0!**	**7Q10 Chronic OR**	**YES**
1B3 Acute	**#DIV/0!**	**4B3 Chronic**	**YES**

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design flows to determine Whole Effluent Toxicity (WET) limits for acute and chronic endpoints.

The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS. Though there is reasonable potential for TU_c the department has determined to continue with WET TU_c monitoring as all results were below method detection and the permit will continue with WET TU_a limitations as the Chronic Dilution Factor is < 10:1 and an In-Stream Waste Concentration (IWC) of 0.8%. The EPA recommends either acute or chronic testing when the IWC is between 0.1% and 1%. Below is the chronic dilution factor and IWC calculations:

$$Dilution\ Factor = \frac{Facility\ Average\ Discharge\ Rate + 1B3}{Facility\ Average\ Discharge\ Rate}$$

$$= \frac{20.88\ cfs + 104\ cfs}{20.88\ cfs}$$

$$= \frac{124.88\ cfs}{20.88\ cfs}$$

$$= 6$$

$$Dilution\ Factor = 6{:}1$$

$$IWC = \frac{Facility\ Average\ Discharge\ Rate}{Facility\ Average\ Discharge\ Rate + 1B3}$$

$$= \frac{20.88\ cfs}{20.88\ cfs + 104\ cfs}$$

$$= \frac{20.88\ cfs}{124.88\ cfs}$$

$$= 0.008$$

$$IWC = 0.8\%$$

The department also calculated the equivalent TU_a by calculating the Acute-to-Chronic (ACR) ratio of the data. The department then utilized the following equation from the TSD to determine the equivalent TU_a:

$$TU_a = (ACR)(TU_c)$$
$$TU_a = (1)(< 1)$$
$$TU_a =< 1$$

Where:

$$ACR = \frac{LC_{50}}{NOEC} = \frac{1}{1} = 1$$

And,

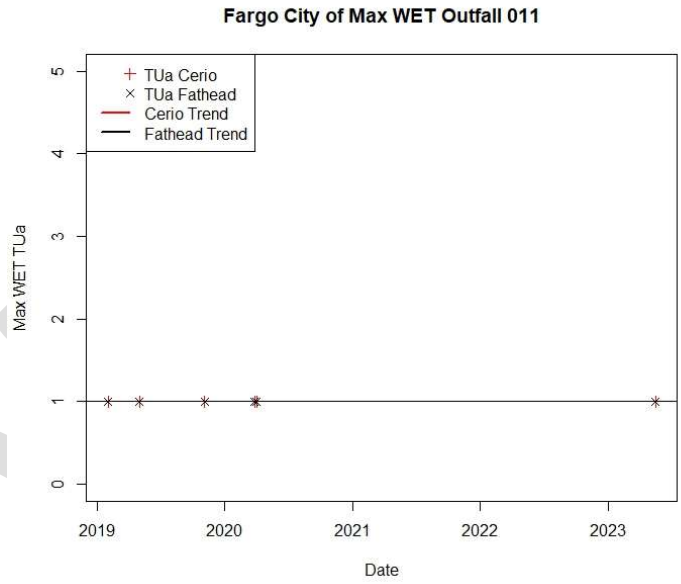
$$LC_{50} = \frac{100}{TU_a} = \frac{100}{1} = 1$$

And,

$$NOEC = \frac{100}{TU_c} = \frac{100}{1} = 1$$

Based on the calculation, the acute WET effluent limitation would be protective of chronic toxicity. Therefore, the department has determined not include chronic effluent limitations.

011:
The department reviewed the WET data for outfall 011. Below is a plot of the maximum WET data.



All results were below method detection level. Due to all results being below method detection, the department determined to utilize the default CV of 0.6 as a Normality test nor a CV cannot be calculated using censored data (below method detect). The reasonable potential determination for WET is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was the default CV of 0.6, n = 12.

Whole Effluent Toxicity (WET)
Resonable Potential (RP)
Determination

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

Facility Name:	Fargo City of	Receiving Stream:	Red River of the North
NDPDES Permit:	ND0022870	1Q10 Acute	93.4 cfs
Effluent Flow (mgd):	22.100	1B3 Acute	88.4 cfs
Stream Design Mixing:	10.0%	7Q10 Chronic	120 cfs
WET TUa (max):	1.00	4B3 Chronic	101.3 cfs
ACR:			
Statistical Multiplier:	1.6		

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

Outfall: 011

RWC = Receiving water concentration, the resultant magnitude of toxicity in the receiving water after effluent discharge in TUs (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 Toxicity Unit (TU) reported. (Use 1 if no WET data is available.)
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)

Qe	22.100	mgd	Qs - Acute	60.336	mgd
Ce	1.00	TU	Qs - Acute 1B3	57.106	mgd
pmf	10.0%		Qs - Chronic	77.520	mgd
Stat	1.6		Qs - Chronic 4B3	65.440	mgd
ACR	0.00				

Acute RP			Chronic RP		
RWC - 1Q10	1.26	TUa	RWC - 7Q10	0.00	TUc
RWC - 1B3	1.27	TUa	RWC - 4B3	0.00	TUc

Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	0.3	TUa	Chronic Criterion	1.0	TUc

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**	**NO**
1B3 Acute	**YES**	**4B3 Chronic**	**NO**

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design flows to determine Whole Effluent Toxicity (WET) limits for acute and chronic endpoints.

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The reasonable potential analysis shows that there is a reasonable potential for the discharge to cause an excursion of the WQS.

Metals Analysis
The department conducted a metals analysis utilizing the maximum concentration for the identified metals and compared them to the WQS. Parameters which were below method detection level were entered at the detection limit value.

The NDDEQ has developed the following tool to evaluate a single sample result to the North Dakota Standards of Quality for Waters of the State. A detailed explanation of the calculations and limits for the parameters listed can be found in ch 33.1-16-02.1-9, Table 1.

Parameters indicated as "HD-Hardness Dependent" are less toxic as the calcium carbonate hardness of the receiving stream increases. The calcium carbonate hardness of the effluent or the receiving stream is entered above. A hardness value in grains per gallon can also be entered.

Items in bold italic and underline indicate a parameter that needs further evaluation. Parameters listed above must be analyzed using an EPA approved method (40 CFR 136) that has a detection limit at or below the limits listed in 40 CFR 136 or the current version of the North Dakota Standards of Quality for Waters

Facility Name			Fargo City of				Print Date:			
Location			007				Below are the current or calculated acute, chronic and human health standards based on the data entered.			
Enter Grains/Gallon or					0					
Hardness - Total (CaCO3) mg/l					400					
Safety Factor(multiplier):										
Enter Concentration Values							µg/l	µg/l	µg/l	µg/l
Parameter		Detect	MDL/DL /RL	mg/l	µg/l	µg/l	Acute	Chronic	Human Health Class I ,IA,II	Human Health Class III
Antimony		<			2	**2**			5.6	640
Arsenic					6	**6**	340	150	10	
Beryllium		<			2	**2**			4	
Cadmium	HD	<			2	**2**	7.4	2.39	5.00	
Chromium - Total		<			20	**20**			100	
Chromium (III)	HD					0	5612	268		
Chromium (VI)						0	16	11		
Copper	HD	<			20	**20**	52	30.5	1000.0	
Lead	HD	<			2	**2**	477	18.6	15.0	
Mercury		<			0.2	0.2	1.7	0.88	***0.05***	***0.051***
Molybdenum - Total						0				
Nickel	HD	<			20	**20**	1516	168.5	100.0	4200
Selenium		<			2	**2**	20	5	50	
Silver	HD	<			5	**5**	41			
Thallium		<			2	**2**			***0.24***	***0.47***
Zinc	HD	<			100	**100**	388	387.8	7400.0	26000
Cyanide - Total		<			10	**10**	22	5.2	4	400
Phenols		<			19.2	**19.2**		300	4000	300000

Comments:
The maximum values reported for each parameter from discharges that occurred from January 01, 2019 -July 31, 2023 were used. Non-detects were entered at the detection limit value.

All parameters except for Arsenic were below method detection. No further analysis was conducted.

The NDDEQ has developed the following tool to evaluate a single sample result to the North Dakota Standards of Quality for Waters of the State. A detailed explanation of the calculations and limits for the parameters listed can be found in ch 33.1-16-02.1-9, Table 1.

Parameters indicated as "HD-Hardness Dependent" are less toxic as the calcium carbonate hardness of the receiving stream increases. The calcium carbonate hardness of the effluent or the receiving stream is entered above. A hardness value in grains per gallon can also be entered.

Items in bold italic and underline indicate a parameter that needs further evaluation. Parameters listed above must be analyzed using an EPA approved method (40 CFR 136) that has a detection limit at or below the limits listed in 40 CFR 136 or the current version of the North Dakota Standards of Quality for Waters

Facility Name			Fargo City of				Print Date:			
Location			010				Below are the current or calculated acute, chronic and human health standards based on the data entered.			
Enter Grains/Gallon or					0					
Hardness - Total (CaCO3) mg/l					400					
Safety Factor(multiplier):										
Enter Concentration Values							µg/l	µg/l	µg/l	µg/l
Parameter		Detect	MDL/DL /RL	mg/l	µg/l	µg/l	Acute	Chronic	Human Health Class I ,IA,II	Human Health Class III
Antimony		<			10	**10**			***5.6***	640
Arsenic		<			20	**20**	340	150	**10**	
Beryllium		<			10	**10**			***4***	
Cadmium	HD	<			10	**10**	***7.4***	***2.39***	***5.00***	
Chromium - Total		<			10	**10**			100	
Chromium (III)	HD					0	5612	268		
Chromium (VI)						0	16	11		
Copper	HD				20	**20**	52	30.5	1000.0	
Lead	HD	<			20	**20**	477	**18.6**	**15.0**	
Mercury		<			20	20	***1.7***	**0.88**	**0.05**	***0.051***
Molybdenum - Total						0				
Nickel	HD	<			50	**50**	1516	168.5	100.0	4200
Selenium		<			10	**10**	20	5	50	
Silver	HD	<			10	**10**	41			
Thallium		<			10	**10**			***0.24***	***0.47***
Zinc	HD				62	**62**	388	387.8	7400.0	26000
Cyanide - Total		<			10	**10**	22	5.2	4	400
Phenols		<			180	**180**		300	4000	300000

Comments:
The maximum values reported for each parameter from discharges that occurred from January 01, 2019 -July 31, 2023 were used. Non-detects were entered at the detection limit value.

All parameters except for Zinc and Copper were below method detection. No further analysis was conducted.

The NDDEQ has developed the following tool to evaluate a single sample result to the North Dakota Standards of Quality for Waters of the State. A detailed explanation of the calculations and limits for the parameters listed can be found in ch 33.1-16-02.1-9, Table 1.

Parameters indicated as "HD-Hardness Dependent" are less toxic as the calcium carbonate hardness of the receiving stream increases. The calcium carbonate hardness of the effluent or the receiving stream is entered above. A hardness value in grains per gallon can also be entered.

Items in bold italic and underline indicate a parameter that needs further evaluation. Parameters listed above must be analyzed using an EPA approved method (40 CFR 136) that has a detection limit at or below the limits listed in 40 CFR 136 or the current version of the North Dakota Standards of Quality for Waters

Facility Name			Fargo City of				Print Date:			
Location			011				Below are the current or calculated acute, chronic and human health standards based on the data entered.			
Enter Grains/Gallon or					0					
Hardness - Total (CaCO3) mg/l					400					
Safety Factor(multiplier):										
Enter Concentration Values							µg/l	µg/l	µg/l	µg/l
Parameter		Detect	MDL/DL /RL	mg/l	µg/l	µg/l	Acute	Chronic	Human Health Class I ,IA,II	Human Health Class III
Antimony		<			10	**10**			***5.6***	640
Arsenic		<			20	**20**	340	150	**10**	
Beryllium		<			20	**20**			***4***	
Cadmium	HD	<			20	**20**	***7.4***	***2.39***	***5.00***	
Chromium - Total		<			20	**20**			100	
Chromium (III)	HD					0	5612	268		
Chromium (VI)						0	16	11		
Copper	HD	<			20	**20**	52	30.5	1000.0	
Lead	HD	<			20	**20**	477	**18.6**	**15.0**	
Mercury		<			20	20	***1.7***	**0.88**	**0.05**	***0.051***
Molybdenum - Total						0				
Nickel	HD	<			50	**50**	1516	168.5	100.0	4200
Selenium		<			10	**10**	20	5	50	
Silver	HD	<			10	**10**	41			
Thallium		<			20	**20**			***0.24***	***0.47***
Zinc	HD				100	**100**	388	387.8	7400.0	26000
Cyanide - Total		<			10	**10**	22	5.2	4	400
Phenols					200	**200**		300	4000	300000

Comments:
The maximum values reported for each parameter from discharges that occurred from January 01, 2019 -July 31, 2023 were used. Non-detects were entered at the detection limit value.

All parameters except for Zinc were below method detection. No further analysis was conducted.

APPENDIX D – RESPONSE TO COMMENTS

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