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

Public Notice Date: 2/1/2023 Public Notice Number: ND-2023-004

Purpose of Public Notice

The Department intends to issue 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: 6/9/2023 Application Number: ND0027031

Applicant Name: SAFuels X Renewable Fuels Facility

Mailing Address: PO Box 299, Trenton, ND 58553

Telephone Number: 702.685.1118

Proposed Permit Expiration Date: 3/31/2028

Facility Description

This application is for a biofuels processing facility near Trenton, ND, designed to produce 100 million gallons per year of renewable fuels such as diesel and jet fuel from vegetable oil feedstock. The facility will continually discharge an average of 0.33 million gallons per day of treated process wastewater. All discharges are to the Missouri River, 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 March 06, 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. To request accommodations, contact Jennifer Skjod, Acting Non-discrimination Coordinator at 701-328-5226 or jskjod@nd.gov. TTY users may use Relay North Dakota at 711 or 1-800-366-6888.

FACT SHEET FOR NDPDES PERMIT ND0027031

SAFuels X Renewable Fuels

DATE OF THIS FACT SHEET – October 2022

INTRODUCTION

The Federal Clean Water Act (CWA, 1972, and later amendments in 1977, 1981, and 1987, etc.) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES), which the US Environmental Protection Agency (EPA) oversees. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality, 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 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 North Dakota Administrative Code (NDAC) 33.1-16 which was adopted under North Dakota Century Code (NDCC) chapter 61-28. In North Dakota, these permits are referred to as North Dakota Pollutant Discharge Elimination System (NDPDES) permits.

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

TABLE OF CONTENTS

BACKGROUND INFORMATION

Table 1 - General Facility Information

Applicant:	AIC Energy Corp dba SAFuels X Sustainable Aviation
Facility Name and Address:	SAFuels X (SAFX) Renewable Fuels Facility 14848 42nd St. NW Williston, ND 58801
Permit Number:	ND0027031
Permit Type:	Non-POTW, Issuance
Type of Treatment:	Mechanical
SIC Code:	2869 – Industrial Organic Chemicals, Not Elsewhere Classified
NAICS Code:	325199 – All Other Basic Organic Chemical Manufacturing
Discharge Location:	Missouri River, Class I Stream Latitude: 47.986944 Longitude: -103.963333
Hydrologic Code:	1011010101 – Lake Sakakawea

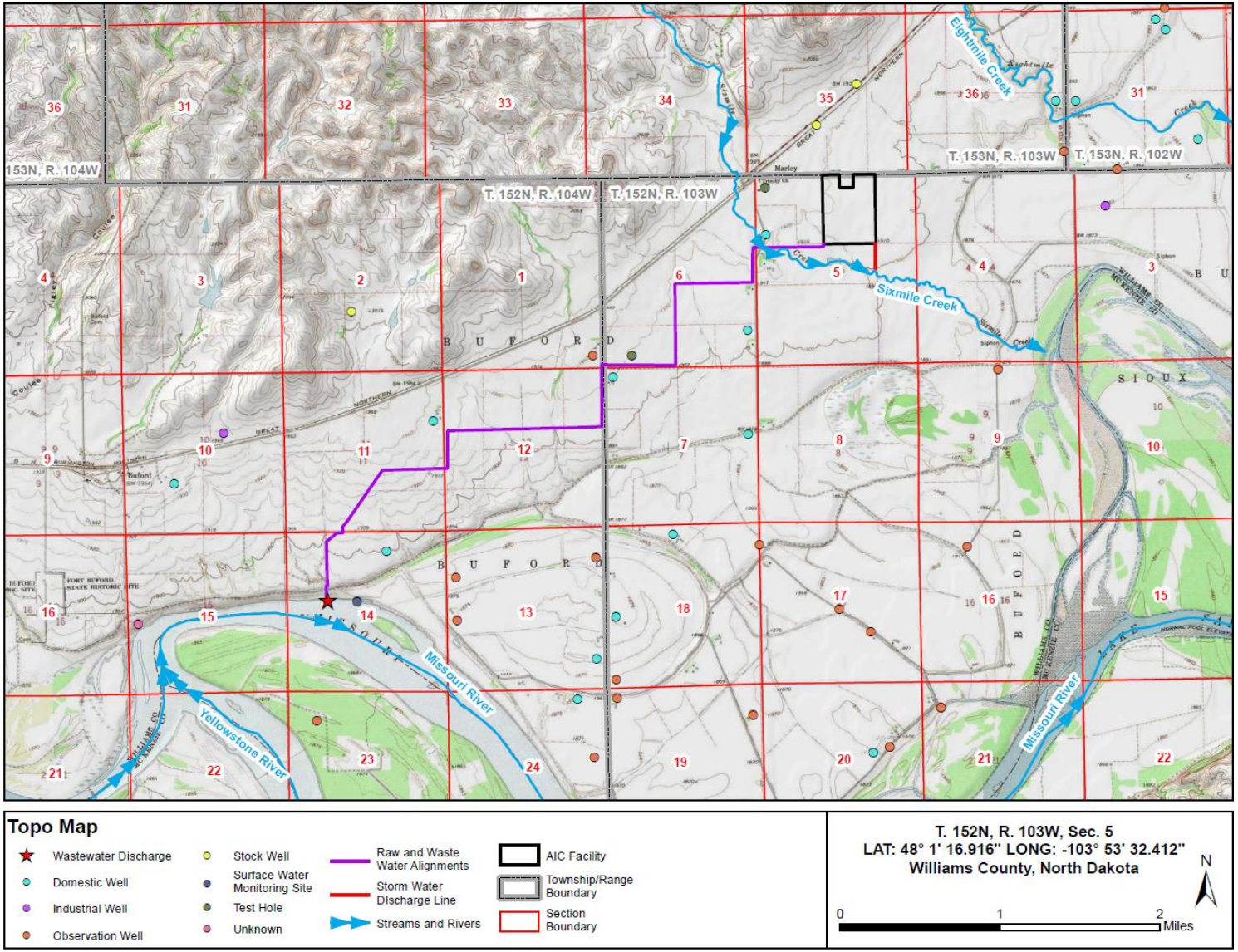

Figure 1 - SAFuels X Renewable Fuels Facility Topographic Map (Permit Application June 7, 2022)

Figure 2 - SAFuels X Renewable Fuels Facility Aerial Photo (Google Earth May 29, 2017)

FACILITY DESCRIPTION

SAFuels X (SAFX) is a renewable fuels facility located approximately two miles east of Buford, ND in an existing industrial park. Feedstock for the facility will be shipped to the site via rail through an adjacent rail port in Trenton, ND. The majority of the feedstock arriving at the facility will be pretreated. However, for feedstock that has not been pretreated, the facility will contain a pretreatment unit (PTU) to process the raw crude vegetable oils (initially soybean and/or canola oil). The subsequent hydrotreating unit then removes unwanted impurities by reacting with hydrogen, produced from the steam methane reformer, in the presence of a catalyst. The converted oil is then taken to an isomerization unit to enhance cold flow properties. The selected products are then isolated and separated from a fractionation column.

Treated wastewater is expected to be discharged to the Missouri River via a pipeline approximately five miles in length. This pipeline will be adjacent to the facilities raw water supply line. Treated wastewater will be discharged approximately 200 feet downstream of the water intake point.

Raw water will be withdrawn from the Missouri River and treated on site. Sludge generated during raw water treatment will be concentrated prior to disposal via on-site centrifuges. This material will then be taken to an approved landfill. The intake has been evaluated for 316(b) requirements and the department determined this intake does not qualify for coverage. Refer to CWA Section 316(b) of this factsheet for more details.

Treatment System

Incoming wastewater from the PTU enters the heat exchangers (HXR) and is mixed with a stream from the equalization (EQ) tank. The mixture is cooled by the HXR's plant wide cooling water. The wastewater and cooling water do not mix. Temperature in the EQ tank is maintained to promote bacterial growth in the wastewater treatment unit. The EQ tank also contains a course bubble diffuser system to provide agitation and to prevent the wastewater from becoming septic. The cooling and equalization section of the facility provide a buffer to the wastewater treatment unit and reduces large changes to the subsequent chemical and biological treatment systems.

Wastewater from the EQ tank enters the chemical dissolved air floatation (CDAF) where it is chemically conditioned to promote fats, oils, and grease (FOG) coagulation into flocs. The CDAF is capable of multiple chemical treatments to optimize the performance of the wastewater treatment unit. The first option for chemical treatment is acidulation, which is the process of lowering a solution's pH by dosing acid into it. Emulsified FOG is coagulated and settles at a pH of approximately 3.9. Acidulation minimizes chemical consumption and typically results in a high concentration and pure FOG float. The second option for treatment is chemical dosing if acidulation does not provide sufficient separation of the FOG. Coagulant and polymer are injected into the flocculators to enhance floc formation for separation in the CDAF. If pH adjustment is necessary, caustic or acid are used. A list of proposed chemicals is listed in **Appendix C**. Specific chemicals will be reviewed by the department once specific vendors have been selected.

After chemical injection, wastewater enters the flocculator that integrates microscopic air bubbles in the FOG floc. The floc rises to the surface where it is skimmed off into the float tank. The FOG floc is collected and disposed of following the facilities plan regarding solid waste.

FOG free wastewater from the CDAF is combined with wastewater from the steam methane reformer (HTCR) and hydro-processing units (RFU) in the lift tank. The lift tank performs the same function as the EQ tank. The pH of the lift tank is maintained to be neutral, and wastewater is then pumped into a sequential batch reactor (SBR).

The SBR is a self-contained activated sludge treatment system incorporating equalization, aeration, and clarification. Removal of nitrogen and phosphorus is accomplished by anaerobic/anoxic mixing during the fill and cycling of the aeration blowers during the reactor fill and reaction sequence steps. The aeration blowers operate in conduction with real-time continuous dissolved oxygen (DO) measurements to control the SBR to a determined DO level. The wastewater treatment system consists of two SBR units, which allows for the continuous operation of the system while each sequence of the SBR occurs. The floating decanter removes treated wastewater without removing activated sludge. The treated wastewater flows to a post-treatment EQ (PEQ) tank. Excess activated sludge generated during the treatment process is pumped to the aerobic digester and is treated using a similar aeration system as the SBR. However, the aerobic digester is a continuous operation. The activated sludge and water mixture is passed through a 2-phase decanter to separate the sludge for disposal. The solids generated are disposed of off-site and the wastewater is routed back to the lift station tank.

The PEQ tank provides storage and equalization of treated wastewater prior to discharge. A blower system provides aeration and agitation to reduce solids settling. A consistent stream of wastewater leaves the PEQ and enters the tertiary treatment (TT) tank for solids settling. The TT tank wastewater is pumped approximately five miles to an open pipe discharge into the Missouri River. Settled solids from the TT tank are routed back to the lift station tank. Compliance samples will be taken after the TT tank prior to leaving the facility site.

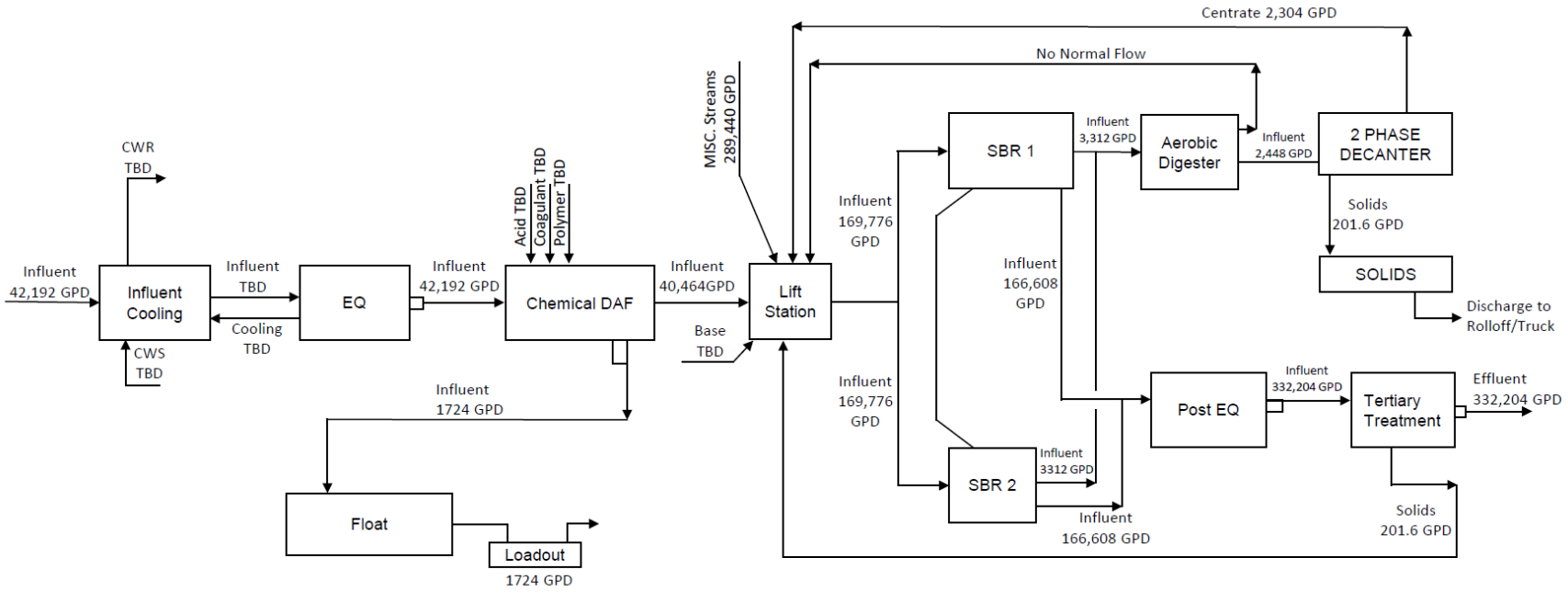

Figure 3 – SAFuels X Facility Flow Diagram of Treatment System (Permit Application June 7, 2022)

Outfall Description

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge location. Discharges at any location not authorized under a NDPDES permit is a violation of the 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 penalties as provided under the CWA. There is one active outfall for this facility as described below:

Outfall 001. Active. Final Outfall. Industrial Wastewater			
Latitude: 47.986944	Longitude: -103.963333	County: Williams	
Township: 152N	Range: 104W	Section: 14	QQ: BB
Receiving Stream: Missouri River		Classification: I	
Outfall Description: This is the final outfall for treated industrial wastewater from the wastewater treatment system at the facility. This outfall is located five (5) miles from the facility and approximately 200 feet downstream from the raw water intake structure. The compliance point is after the tertiary treatment tank prior to the effluent leaving the facility site.			

PERMIT STATUS

This is the first issuance of this permit. The department received EPA application Form 1 and 2D on June 7, 2022 with the signed copies received on June 9, 2022. The application was accepted as complete on November 8, 2022.

PROPOSED PERMIT LIMITS

The discharge of wastewater generated in the renewable fuels refining process for this facility is regulated under 40 CFR 414, Subpart F. The Code of Federal Regulations 40 CFR 414.64 require New Source Performance Standards (NSPS) calculations be done for 5-Day Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), and pH. This facility is subject to NSPS and must not exceed the quantity (mass) determined by multiplying the process wastewater flow times the concentrations in the following table:

Table 2 - New Source Performance Standards (NSPS) 40 CFR 414.64

Parameter	Daily Maximum	Maximum Monthly Average
BOD_5, mg/l	80	30
TSS, mg/l	149	46
pH, s.u.	Within the range of 6.0 to 9.0 at all times	

40 CFR 414.64 also addresses the discharge of toxic pollutants and established effluent guidelines for those pollutants in 40 CFR 414.91 using Best Available Technology (BAT) and NSPS. This facility is subject to 40 CFR 414.91 and must not exceed the quantity (mass) determined by multiplying the process wastewater flow times the concentrations in the following table:

Table 3 - Best Available Technology and New Source Performance Standards 40 CFR 414.91

Parameter	Daily Maximum	Maximum Monthly Average
Acenaphthene, µg/l	59	22
Acenaphthylene, µg/l	59	22
Acrylonitrile, µg/l	242	96
Anthracene, µg/l	59	22
Benzene, µg/l	136	37
Benzo(a)anthracene, µg/l	59	22
3,4-Benzofluoranthene, µg/l	61	23
Benzo(k)fluoranthene, µg/l	59	22
Benzo(a)pyrene, µg/l	61	23
Bis(2-ethylhexyl) phthalate, µg/l	279	103
Carbon Tetrachloride, µg/l	38	18
Chlorobenzene, µg/l	28	15
Chloroethane, µg/l	268	104
Chloroform, µg/l	46	21
2-Chlorophenol, µg/l	98	31
Chrysene, µg/l	59	22
Di-n-butyl phthalate, µg/l	57	27
1,2-Dichlorobenzene, µg/l	163	77
1,3-Dichlorobenzene, µg/l	44	31
1,4-Dichlorobenzene, µg/l	28	15
1,1-Dichloroethane, µg/l	59	22
1,2- Dichloroethane, µg/l	211	68
1,1-Dichloroethylene, µg/l	25	16
1,2-trans-Dichloroethylene, µg/l	54	21
2,4-Dichlorophenol, µg/l	112	39
1,2-Dichloropropane, µg/l	230	153
1,3-Dichloropropylene, µg/l	44	29
Diethyl phthalate, µg/l	203	81
2,4-Dimethylphenol, µg/l	36	18
Dimethyl phthalate, µg/l	47	19

Parameter	Daily Maximum	Maximum Monthly Average
4,6-Dinitro-o-cresol, µg/l	277	78
2,4-Dinitrophenol, µg/l	123	71
2,4-Dinitrotoluene, µg/l	285	113
2,6-Dinitrotoluene, µg/l	641	255
Ethylbenzene, µg/l	108	32
Fluoranthene, µg/l	68	25
Fluorene, µg/l	59	22
Hexachlorobenzene, µg/l	28	15
Hexachlorobutadiene, µg/l	49	20
Hexachloroethane, µg/l	54	21
Methyl Chloride, µg/l	190	86
Methylene Chloride, µg/l	89	40
Naphthalene, µg/l	59	22
Nitrobenzene, µg/l	68	27
2-Nitrophenol, µg/l	69	41
4-Nitrophenol, µg/l	124	72
Phenanthrene, µg/l	59	22
Phenol, µg/l	26	15
Pyrene, µg/l	67	25
Tetrachloroethylene, µg/l	56	22
Toluene, µg/l	80	26
Total Chromium, µg/l	2,770	1,110
Total Copper, µg/l	3,380	1,450
Total Cyanide, µg/l	1,200	420
Total Lead, µg/l	690	320
Total Nickel, µg/l	3,980	1,690
Total Zinc, µg/l	2,610	1,050
1,2,4-Trichlorobenzene, µg/l	140	68
1,1,1-Trichloroethane, µg/l	54	21
1,1,2- Trichloroethane, µg/l	54	21
Trichloroethylene, µg/l	54	21

Parameter	Daily Maximum	Maximum Monthly Average
Vinyl Chloride, µg/l	268	104

As required by NDAC 33.1-16-01-13(5), the department must include effluent limitations, if the water quality-based limitations are more stringent than the Effluent Limitation Guidelines (ELGs) and Standards (40 CFR 414.64 and 40 CFR 414.91).

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

Table 4 - Effluent Limitations for Outfall 001

	Effluent Limitations				
	Quantity [a]		Concentration		
Parameter	Maximum Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Biochemical Oxygen Demand (BOD_5)	82.57 lbs/day	220.18 lbs/day	25 mg/l	*	45 mg/l
Total Suspended Solids (TSS)	15.18 lbs/day	49.17 lbs/day	30 mg/l	*	45 mg/l
pH, s.u. [b]	Shall remain between 6.5 and 9.0				
Ammonia as N, mg/l [c]	Refer to Ammonia Table (**Table 5**)				
Temperature, °C [d]	*	*	*	*	29.44
Oil and Grease, Visual [e]	*	*	*	*	*
Oil and Grease, mg/l [e]	*	*	*	*	10
Total Residual Chlorine, mg/l [f, g]	*	*	0.011	*	0.019
Chemical Oxygen Demand (COD), mg/l	Monitor Only				
Total Organic Carbon (TOC), mg/l	Monitor Only				
Chloride	Monitor Only				
Sulfate, mg/l	Monitor Only				
Sulfide, mg/l	Monitor Only				
Nitrogen Total, mg/l	Monitor Only				
Phosphorus Total, mg/l	Monitor Only				
Metals [h]	*	*	*	*	*
Whole Effluent Toxicity (WET), TUa	Refer to Whole Effluent Toxicity (WET) Requirements				

	Effluent Limitations				
	Quantity [a]		Concentration		
Parameter	**Maximum Avg. Monthly Limit**	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Whole Effluent Toxicity (WET), TUc	Refer to Whole Effluent Toxicity (WET) Requirements				
Acenaphthene, lbs/day	0.06	0.16	*	*	*
Acenaphthylene, lbs/day	0.06	0.16	*	*	*
Acrylonitrile, lbs/day	0.26	0.67	*	*	*
Anthracene, lbs/day	0.06	0.16	*	*	*
Benzene, lbs/day	0.10	0.37	*	*	*
Benzo(a)anthracene, lbs/day	0.06	0.16	*	*	*
3,4-Benzofluoranthene, lbs/day	0.06	0.17	*	*	*
Benzo(k)fluoranthene, lbs/day	0.06	0.16	*	*	*
Benzo(a)pyrene, lbs/day	0.06	0.17	*	*	*
Bis(2-ethylhexyl) phthalate, lbs/day	0.28	0.77	*	*	*
Carbon Tetrachloride, lbs/day	0.05	0.10	*	*	*
Chlorobenzene, lbs/day	0.04	0.08	*	*	*
Chloroethane, lbs/day	0.29	0.74	*	*	*
Chloroform, lbs/day	0.06	0.13	*	*	*
2-Chlorophenol, lbs/day	0.09	0.27	*	*	*
Chrysene, lbs/day	0.06	0.16	*	*	*
Di-n-butyl phthalate, lbs/day	0.07	0.16	*	*	*
1,2-Dichlorobenzene, lbs/day	0.21	0.45	*	*	*
1,3-Dichlorobenzene, lbs/day	0.09	0.12	*	*	*
1,4-Dichlorobenzene, lbs/day	0.04	0.08	*	*	*
1,1-Dichloroethane, lbs/day	0.06	0.16	*	*	*

	Effluent Limitations				
	Quantity [a]		Concentration		
Parameter	**Maximum Avg. Monthly Limit**	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
1,2- Dichloroethane, lbs/day	0.19	0.58	*	*	*
1,1-Dichloroethylene, lbs/day	0.04	0.07	*	*	*
1,2-trans-Dichloroethylene, lbs/day	0.06	0.15	*	*	*
2,4-Dichlorophenol, lbs/day	0.11	0.31	*	*	*
1,2-Dichloropropane, lbs/day	0.42	0.63	*	*	*
1,3-Dichloropropylene, lbs/day	0.08	0.12	*	*	*
Diethyl phthalate, lbs/day	0.22	0.56	*	*	*
2,4-Dimethylphenol, lbs/day	0.05	0.10	*	*	*
Dimethyl phthalate, lbs/day	0.05	0.13	*	*	*
4,6-Dinitro-o-cresol, lbs/day	0.21	0.76	*	*	*
2,4-Dinitrophenol, lbs/day	0.20	0.34	*	*	*
2,4-Dinitrotoluene, lbs/day	0.31	0.78	*	*	*
2,6-Dinitrotoluene, lbs/day	0.70	1.76	*	*	*
Ethylbenzene, lbs/day	0.09	0.30	*	*	*
Fluoranthene, lbs/day	0.07	0.19	*	*	*
Fluorene, lbs/day	0.06	0.16	*	*	*
Hexachlorobenzene, lbs/day	0.04	0.08	*	*	*
Hexachlorobutadiene, lbs/day	0.06	0.13	*	*	*
Hexachloroethane, lbs/day	0.06	0.15	*	*	*
Methyl Chloride, lbs/day	0.24	0.52	*	*	*

	Effluent Limitations				
	Quantity [a]		Concentration		
Parameter	**Maximum Avg. Monthly Limit**	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Methylene Chloride, lbs/day	0.11	0.24	*	*	*
Naphthalene, lbs/day	0.06	0.16	*	*	*
Nitrobenzene, lbs/day	0.07	0.19	*	*	*
2-Nitrophenol, lbs/day	0.11	0.19	*	*	*
4-Nitrophenol, lbs/day	0.20	0.34	*	*	*
Phenanthrene, lbs/day	0.06	0.16	*	*	*
Phenol, lbs/day	0.04	0.07	*	*	*
Pyrene, lbs/day	0.07	0.18	*	*	*
Tetrachloroethylene, lbs/day	0.06	0.15	*	*	*
Toluene, lbs/day	0.07	0.22	*	*	*
Total Chromium, lbs/day	3.05	7.62	*	*	*
Total Copper, lbs/day	3.99	9.30	*	*	*
Total Cyanide, lbs/day	1.16	3.30	*	*	*
Total Lead, lbs/day	0.88	1.90	*	*	*
Total Nickel, lbs/day	4.65	10.95	*	*	*
Total Zinc, lbs/day	2.89	7.18	*	*	*
1,2,4-Trichlorobenzene, lbs/day	0.19	0.39	*	*	*
1,1,1-Trichloroethane, lbs/day	0.06	0.15	*	*	*
1,1,2-Trichloroethane, lbs/l	0.06	0.15	*	*	*
Trichloroethylene, lbs/day	0.06	0.15	*	*	*
Vinyl Chloride, lbs/day	0.29	0.74	*	*	*
Flow Effluent, MGD	Report Avg. Monthly Value	Report Max. Daily Value	*	*	*
Total Drain, MGAL	*	Report Monthly Total	*	*	*
Notes:					

		Effluent Limitations				
		Quantity [a]		Concentration		
	Parameter	Maximum Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.					
a.	Loading limits based on average design flow rate of 0.33 mgd. To calculate the loading limits, multiply the flow by the concentration by the conversion factor of 8.34. [(Flow (mgd) * Concentration (mg/l)) * 8.34 = Loading (lbs/day)]. See **Appendix D – Calculations**.					
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.	A discharge ammonia as N criterion will be dependent on temperature, river flow, discharge rate, river pH, and the effluent ammonia as N concentration. This determination shall be in accordance with the formula specified in the latest version of the state WQS. Permittee will use Missouri River parameters to calculate the real-time water quality standard for ammonia as N. This calculated limit will be compared to the facility effluent ammonia as N data, and if the effluent value is greater than the calculated limit, the permittee will report an exceedance on the DMR for that reporting period.					
d.	The maximum increase in river temperature, caused by a discharge, shall not be greater than 2.78 °C.					
e.	A daily visual check shall be performed. There shall be no discharge of oily wastes that produce a visible sheen on the surface of the receiving water. If present, a grab sample shall be analyzed for oil and grease to ensure compliance with the concentration limitation.					
f.	The minimum limit of analytical reliability for TRC is considered to be 0.05 mg/l. The analysis for TRC shall be conducted using reliable devices equivalent to EPA Method 4500-Cl G, Spectrophotometric, DPD. This method achieves a method detection limit of less than 0.05 mg/l. For purposes of this permit and reporting on the DMR form, analytical values less than 0.05 mg/l shall be considered in compliance with this permit.					
g.	In the calculation of average TRC concentrations, analytical results that are less than the method detection limit shall be considered the value of the detection limit for calculation purposes. If all analytical results used in the calculation are below the method detection limit, then the method detection limit shall be reported on the DMR; otherwise report the calculated average value.					
h.	The following parameters shall be sampled and analyzed for: Aluminum, Total Barium, Total Boron, Total Iron, Total Magnesium, Total Manganese, Total Hardness, Total as CaCO3					

	Effluent Limitations				
	Quantity [a]		Concentration		
Parameter	**Maximum Avg. Monthly Limit**	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
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 Table 2 of the North Dakota Water Quality Standards.					
Stipulations:					
The dates of discharge, frequency of analyses, total number of gallons discharged, discharge flow rate, and number of exceedances shall also be included on the Discharge Monitoring Report (DMR).					
Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum, and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.					
Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving the facility property or entering the receiving stream.					

Table 5 - Ammonia Effluent Limitation Requirements for Outfall 001

	Effluent Limitations		
Parameters	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Ammonia as N, mg/l [a]	†	*	‡
Missouri River Parameters			
Stream Flow, upstream (cfs) [b]	*	*	*
pH (s.u.), upstream [b]	*	*	*
Temperature, upstream (°C) [b]	*	*	*

*	This parameter is not limited. However, the department may impose limitations based on sample history to protect the receiving waters.
a.	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.
b.	Sample must be collected/recorded the same day as the ammonia sample. The maximum mixing factor is 10.0%.
†	Chronic Standard (Average Monthly Limit):

	Effluent Limitations		
Parameters	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
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 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: $$MIN\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right),$$ $$\left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)$$ where *Oncorhynchus* are present.			
Notes:			
Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.			

SELF-MONITORING REQUIREMENTS

Monitoring Requirements

The department requires monitoring, recording, and reporting (NDAC 33.1-16-01(21-23) and 40 CFR 122.41) to verify that the treatment process is functioning correctly and that the discharge complies with permit limits.

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

Table 6 - Self-Monitoring Requirements for Outfall 001

Parameter	Frequency	Sample Type [a, b, c]
Biochemical Oxygen Demand (BOD_5)	3/week	Composite
Total Suspended Solids (TSS)	3/week	Composite
pH, s.u.	3/week	Instantaneous

Parameter	**Frequency**	**Sample Type** [a, b, c]
Ammonia as N, mg/l	3/week	Composite
Temperature, °C	Continuous	Recorder
Oil and Grease, Visual [d]	Daily	Visual
Oil and Grease, mg/l [d]	Conditional	Grab
Total Residual Chlorine, mg/l	3/week	Grab
Chemical Oxygen Demand (COD), mg/l	Weekly	Composite
Total Organic Carbon (TOC), mg/l	Weekly	Composite
Chloride, mg/l	Weekly	Composite
Sulfate, mg/l	Weekly	Composite
Sulfide, mg/l	Weekly	Grab
Nitrogen Total, mg/l [e]	Monthly	Composite
Phosphorus Total, mg/l	Monthly	Composite
Metals [f]	Semiannually	Composite
Whole Effluent Toxicity (WET), TUa	Quarterly	Grab
Whole Effluent Toxicity (WET), TUc	Annually	4-Grab
Acenaphthene, lbs/day	Semiannually	Composite
Acenaphthylene, lbs/day	Semiannually	Composite
Acrylonitrile, lbs/day	Semiannually	Composite
Anthracene, lbs/day	Semiannually	Composite
Benzene, lbs/day	Semiannually	Composite
Benzo(a)anthracene, lbs/day	Semiannually	Composite
3,4-Benzofluoranthene, lbs/day	Semiannually	Composite
Benzo(k)fluoranthene, lbs/day	Semiannually	Composite
Benzo(a)pyrene, lbs/day	Semiannually	Composite
Bis(2-ethylhexyl) phthalate, lbs/day	Semiannually	Composite
Carbon Tetrachloride, lbs/day	Semiannually	Composite
Chlorobenzene, lbs/day	Semiannually	Composite
Chloroethane, lbs/day	Semiannually	Composite
Chloroform, lbs/day	Semiannually	Composite

Parameter	Frequency	Sample Type [a, b, c]
2-Chlorophenol, lbs/day	Semiannually	Composite
Chrysene, lbs/day	Semiannually	Composite
Di-n-butyl phthalate, lbs/day	Semiannually	Composite
1,2-Dichlorobenzene, lbs/day	Semiannually	Composite
1,3-Dichlorobenzene, lbs/day	Semiannually	Composite
1,4-Dichlorobenzene, lbs/day	Semiannually	Composite
1,1-Dichloroethane, lbs/day	Semiannually	Composite
1,2- Dichloroethane, lbs/day	Semiannually	Composite
1,1-Dichloroethylene, lbs/day	Semiannually	Composite
1,2-trans-Dichloroethylene, lbs/day	Semiannually	Composite
2,4-Dichlorophenol, lbs/day	Semiannually	Composite
1,2-Dichloropropane, lbs/day	Semiannually	Composite
1,3-Dichloropropylene, lbs/day	Semiannually	Composite
Diethyl phthalate, lbs/day	Semiannually	Composite
2,4-Dimethylphenol, lbs/day	Semiannually	Composite
Dimethyl phthalate, lbs/day	Semiannually	Composite
4,6-Dinitro-o-cresol, lbs/day	Semiannually	Composite
2,4-Dinitrophenol, lbs/day	Semiannually	Composite
2,4-Dinitrotoluene, lbs/day	Semiannually	Composite
2,6-Dinitrotoluene, lbs/day	Semiannually	Composite
Ethylbenzene, lbs/day	Semiannually	Composite
Fluoranthene, lbs/day	Semiannually	Composite
Fluorene, lbs/day	Semiannually	Composite
Hexachlorobenzene, lbs/day	Semiannually	Composite
Hexachlorobutadiene, lbs/day	Semiannually	Composite
Hexachloroethane, lbs/day	Semiannually	Composite
Methyl Chloride, lbs/day	Semiannually	Composite
Methylene Chloride, lbs/day	Semiannually	Composite
Naphthalene, lbs/day	Semiannually	Composite
Nitrobenzene, lbs/day	Semiannually	Composite

Parameter	Frequency	Sample Type [a, b, c]
2-Nitrophenol, lbs/day	Semiannually	Composite
4-Nitrophenol, lbs/day	Semiannually	Composite
Phenanthrene, lbs/day	Semiannually	Composite
Phenol, lbs/day	Semiannually	Grab
Pyrene, lbs/day	Semiannually	Composite
Tetrachloroethylene, lbs/day	Semiannually	Composite
Toluene, lbs/day	Semiannually	Composite
Total Chromium, lbs/day	Semiannually	Composite
Total Copper, lbs/day	Semiannually	Composite
Total Cyanide, lbs/day	Semiannually	Grab
Total Lead, lbs/day	Semiannually	Composite
Total Nickel, lbs/day	Semiannually	Composite
Total Zinc, lbs/day	Semiannually	Composite
1,2,4-Trichlorobenzene, lbs/day	Semiannually	Composite
1,1,1-Trichloroethane, lbs/day	Semiannually	Composite
1,1,2- Trichloroethane, lbs/day	Semiannually	Composite
Trichloroethylene, lbs/day	Semiannually	Composite
Vinyl Chloride, lbs/day	Semiannually	Composite
Flow Effluent, MGD	Daily	Instantaneous
Total Drain, MGAL	Monthly	Calculated
Missouri River Parameters – collect same days as effluent ammonia as N		
Stream Flow, upstream (cfs)	3/week	Usable Data Source
pH, upstream (s.u.)	3/week	Usable Data Source
Temperature, upstream (°C)	3/week	Usable Data Source

Notes:

a.	Refer to Appendix B for definitions unless otherwise specified.
b.	Composite samples must be representative of the quality of the discharge. A 24-hour composite sample proportioned according to flow is required where feasible. If unfeasible, the composite shall consist of a minimum of twelve (12) separate grab samples and proportioned as to flow. Sampling may be proportioned to flow by varying the time interval between each aliquot, or by varying the volume of each aliquot.
c.	"4-Grab" samples shall consist of four (4) discrete grab samples collected at intervals representative of a 24-hour sample period.

Parameter		Frequency	Sample Type [a, b, c]
d.	A daily visual check shall be performed. There shall be no discharge of oily wastes that produce a visible sheen on the surface of the receiving water. If present, a grab sample shall be analyzed for oil and grease to ensure compliance with the concentration limitation.		
e.	Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).		
f.	The following parameters shall be sampled and analyzed for: Aluminum, Total; Barium, Total; Boron, Total; Iron, Total Magnesium, Total; Manganese, Total; Hardness, Total as CaCO3		

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 water. 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 a individual waste load allocation or a waste load allocation developed during a basin-wide total maximum daily load (TMDL) study. TMDLs result from the scientific study of the water body and are developed in order to reduce pollution from all sources.

The Missouri River is classified as a Class I stream. The quality of 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 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.

The Missouri River segment that the facility discharges to is listed as all beneficial uses attained and is not listed in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads as impair nor does it have a TMDL.

Numerical Criteria for the Protection of Aquatic Life and Recreation

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

Numerical Criteria for the Protection of Human Health

The U.S. EPA has published numeric water quality criteria for the protection of human health that are applicable to dischargers. These criteria are designed to protect humans from

exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The water quality standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative Criteria

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

Antidegradation

The purpose of North Dakota's Antidegradation Policy (NDAC 33.1-16-02.1, (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 water quality standards contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (Appendix III). This policy address 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 dilutions allowances should 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

Biochemical Oxygen Demand (BOD_5)

The proposed concentration limitations of 25 mg/l monthly average and 45 mg/l daily maximum, with a sampling frequency of three (3) times per week is based on best professional judgement (BPJ) and other like permits. The proposed loading limitations of 82.57 lbs/day maximum monthly average and 220.18 lbs/day daily maximum with a sampling frequency of three (3) times per week is based on 40 CFR 414.64 and derived in accordance with criteria provided in **Appendix D,** Table 11.

Total Suspended Solids (TSS)

The proposed concentration limitations of 30 mg/l monthly average and 45 mg/l daily maximum, with a sampling frequency of three (3) times per week is based on BPJ and other like permits. The proposed loading limitations of 15.18 lbs/day maximum monthly average and 49.17 lbs/day daily maximum with a sampling frequency of three (3) times per week is based on 40 CFR 414.64 and derived in accordance with criteria provided in **Appendix D,** Table 11.

pH

The proposed limitations range of 6.5 s.u. to 9.0 s.u. for pH are based on the state water quality standards applicable to this receiving stream. In accordance with NDAC 33.1-16-02.1, the pH of Class I water bodies shall remain between 6.5 and 9.0. A limitation of a pH range of 6.0 s.u. to 9.0 s.u. is provided for in 40 CFR 414.64; however, this limitation is less stringent and thus will not be implemented.

Oil and Grease

The state water quality standards state that waters of the state must be free from oil and grease attributable to wastewater which causes a visible sheen or film upon the water. Using BPJ, the department has determined that a daily maximum limitation of 10 mg/l is appropriate for this type of facility if a visible sheen is detected. Comparable treatment systems throughout the state have a similar limitation. The department proposes a daily maximum limitation of 10 mg/l when a visible sheen is detected.

Ammonia as N

Ammonia presents both acute and chronic toxicity to aquatic life at variable levels depending on receiving stream conditions (pH and temperature). Federal Regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on toxic chemicals in effluent whenever this is a reasonable potential for these chemicals to exceed the surface water quality criteria. According to North Dakota Game and Fish, *Oncorhynchus* are present in the Missouri River, therefore all acute ammonia calculations will be performed using the equation located in the water quality standards for *Oncorhynchus* present.

For this permit issuance, the department proposes to include effluent limitations for ammonia as N based upon the calculations in the water quality standards for ammonia, with a sampling frequency of three (3) times per week based on BPJ and other like permits. A numeric ammonia as N limit will not be established for this permit issuance, however, ammonia as N limits will be calculated during discharge in compliance with the water quality standards to provide the facility with real-time ammonia limitations. The department and the facility will verify compliance with the acute and chronic standards through the use of an ammonia spreadsheet based on the water quality standards for ammonia as N. Receiving stream parameters of pH (s.u.) and temperature (°C) shall be measured three (3) times per week with the effluent ammonia as N (mg/l) tested three (3) times per week, with the receiving stream flow being recorded three (3) times per week.

The department proposes the following requirements for ammonia as N:

Table 7 - Ammonia Effluent Limitations and Monitoring Requirements for Outfall 001

	Effluent Limitations		
Parameters	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**
Ammonia as N, mg/l [a]	†	*	‡
Missouri River Parameters			
Stream Flow, upstream (cfs) [b]	*	*	*
pH (s.u.), upstream [b]	*	*	*
Temperature, upstream (°C) [b]	*	*	*

*	This parameter is not limited. However, the department may impose limitations based on sample history to protect the receiving waters.
a.	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.
b.	Sample must be collected/recorded the same day as the ammonia sample. The maximum mixing factor is 10.0%.
†	Chronic Standard (Average Monthly Limit):

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 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:

$$MIN\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right),$$
$$\left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)$$

where *Oncorhynchus* are present.

Notes:

Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.

Nutrients (Phosphorus and Nitrogen)

According to the North Dakota Nutrient Reduction Strategy for Surface Waters, SAFX will be classified as a Category I facility. The first step in implementing the nutrient reduction strategy for Category I facilities is to include effluent monitoring for Total Nitrogen and Total Phosphorus. Total Nitrogen is a combination of Nitrite, Nitrate, and Total Kjeldahl Nitrogen. This permit issuance will include monitoring for Total Nitrogen and Total Phosphorus to be consistent with other Category I facilities under the Nutrient Reduction Strategy.

Whole Effluent Toxicity (WET)

Acute Toxicity Testing

The department is proposing a TUa 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 substance 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." SAFX must meet WET limits at end-of-pipe.

The department is proposing the following requirements for acute WET testing:

Table 8 - Acute WET Requirements for Outfall 001

Outfall 001 WET tests on both species shall be performed at least once per calendar quarter on both species. This requirement may be reduced upon the city requesting a toxicity testing reduction – refer to the "**Reduced Monitoring For Toxicity Testing"** section in the permit**.** This reduction would be done by using an alternating species schedule.						
Acute WET Requirements for **Outfall 001**						
Implementation	Limitations Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Missouri River** [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 LC_{50} reported as TU_a					
Compliance Point	End-of-pipe					
Sample Frequency	Quarterly					
Sample Type	Grab					
Test Failure	Acute test failure (LC_{50}) is defined as lethality to 50% or more of the test organisms exposed to 100% effluent for *Ceriodaphnia dubia* 48-hour and *Pimephales promelas* 96-hour test. *The* 48-hour and 96-hour LC_{50} effluent value must be <1 TU_a to indicate a passing test. Any 48-hour or 96-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.
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 Toxicity Reduction Evaluation (TRE) (see permit) 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.	

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 is proposing monitoring for chronic toxicity with a sampling frequency of once per year. Test species shall consist of freshwater fleas, *Ceriodaphnia dubia* and fathead minnows, *Pimephales promelas*.

The department proposes the following requirements for chronic WET testing:

Table 9 - Chronic WET Requirements for Outfall 001

Chronic WET requirements for **Outfall 001**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Missouri River**					
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 at End-of-Pipe					
Sample Type	4-Grab					

Sample Frequency	Once per year
Test Acceptability	Test acceptability for *Ceriodaphnia dubia* chronic must have an 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 facility shall request their WET testing providers to report a TU_a for a 48-hour survival *Ceriodaphnia dubia* and for *Pimephales promelas* which can be derived from the chronic test. The reason for this is to develop a representative Acute-to-Chronic ratio (ACR) which is used for determining reasonable potential and/or permit limitations.

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-812-R-02-013 (Fourth Ed., October 2002).

CWA Section 316(b)

The department reviewed the CWA section 316(b) criteria, 40 CFR 125.81(a). Based on the application, the facility has a design intake flow less than two (2) million gallons per day and estimates that 20% of the intake water will be used specifically for cooling. Therefore, the facility is not subject to Section 316(b) of the CWA.

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 Toxic 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 permit application submitted to the department marked organic toxic pollutants

regulated to protect human health as "believed absent" (EPA Form 2D, Table D). However, the effluent limitation guideline (ELG) applicable to this facility (40 CFR 414.91) does include some of these toxics. These include:

- Acenaphthene
- Acrylonitrile
- Anthracene
- Benzene
- Benzo(a)anthracene
- 3,4-benzofluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- Bis(2-ethylhexyl)phthalate
- Carbon tetrachloride
- Chlorobenzene
- Chloroform
- 2-chlorophenol
- Chrysene
- Di-n-butyl phthalate
- 1,2-dichlorobenzene
- 1,3-dichlorobenzene
- 1,4-dichlorobenzene
- 1,2-dichloroethane
- 1,1-dichloroethylene
- 1,2-trans-dichloroethylene
- 2,4-dichlorophenol
- 1,2-dichloropropane
- 1,2-dichloropropylene
- Diethyl phthalate
- 2.4-dinitrophenol
- 2,4-dinitrotoluene
- Ethylbenzene
- Fluoranthene
- Fluorene
- Hexachlorobenzene
- Hexachlorobutadiene
- Hexachloroethane
- Methylene chloride
- Nitrobenzene
- Phenol
- Pyrene
- Tetrachloroethylene
- Toluene
- Lead
- 1,2,4-trichlorobenzene
- 1,1,1-trichloroethane
- 1,1,2-trichloroethane
- Trichloroethylene

The draft permit includes loading limits for these toxics. The state water quality standards include criteria to protect human health for the toxics listed above. At this time, the department does not have any discharge data for this facility, and therefore cannot conduct a reliable reasonable potential analysis to determine if the facility has the potential to exceed the human health criteria for these toxics. The department proposes to proceed with the loading limits based off the ELG for this permit issuance. Testing for these parameters should be done to sufficiently sensitive levels for future permit evaluation. The department will monitor discharges for impacts to human health during the life of the permit and evaluate data for the next permit reissuance.

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 436.5. The method for determining the total amount of water discharged shall provide results within ten (10) percent of the actual amount.

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 the 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 sludge. 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, aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to issue a NDPDES permit to **SAFuels X Renewal Fuels**. 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 placed a Public Notice of Draft on **February 1, 2023** in the **Williston Daily Herald** 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 people 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
918 East Divide Avenue, 4th Floor
Bismarck, ND 58501

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

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

Public Notice Date: 2/1/2023 Public Notice Number: ND-2023-004

Purpose of Public Notice
The Department intends to issue 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: 6/9/2023 Application Number: ND0027031

Applicant Name: SAFuels X Renewable Fuels Facility
Mailing Address: PO Box 299, Trenton, ND 58553
Telephone Number: 702.685.1118

Proposed Permit Expiration Date: 3/31/2028

Facility Description
This application is for a biofuels processing facility near Trenton, ND, designed to produce 100 million gallons per year of renewable fuels such as diesel and jet fuel from vegetable oil feedstock. The facility will continually discharge an average of 0.33 million gallons per day of treated process wastewater. All discharges are to the Missouri River, 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 March 06, 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. To request accommodations, contact Jennifer Skjod, Acting Non-discrimination Coordinator at 701-328-5226 or jskjod@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)

20. "**Acute Toxicity Test"** is a short-term test to determine the concentration of effluent or ambient waters that causes an adverse effect (usually death) on a group of test species during a short-term exposure (e.g., 24, 48, or 96 hours).

21. "**Chronic Toxicity Test"** is a short-term test, usually 96 hours or longer in duration, in which sub-lethal effects (e.g., significantly reduced growth, reproduction, disorientation, immobilization) are usually measured in addition to lethality.

22. "**Inhibition concentration, 25 Percent (IC25)"** is a point estimate of the toxicant concentration that would cause a 25-percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method).

23. "**Lethal Concentration, 50 Percent (LC_{50})**" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

24. "**No observed effect concentration (NOEC)**", is the highest tested concentration of an effluent or a toxicant that causes no observable adverse effect on the test species (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically different from the controls). NOEC is determined using hypothesis testing.

25. **"Toxic Unit (TU)"** is a measure of toxicity in an effluent as determined by the acute toxicity units (TUa) or chronic toxicity units (TUc) measured. The larger the TU, the greater the toxicity.

26. **"Toxic Unit – Acute (TU_a)"** is 100 times the reciprocal of the effluent concentration that causes 50 percent of the organisms to die in an acute toxicity test (TUa = 100/LC50) (see LC50).

27. **"Toxic Unit – Chronic (TU_c)"** is 100 times the reciprocal of the effluent concentration that causes no observable effect on the test organisms in a chronic toxicity test (TUc = 100/NOEC or 100/EC25 (see also: NOEC).

28. **"Toxicity Identification Evaluation (TIE)"** is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

29. **"Toxicity Reduction Evaluation (TRE)"** is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

30. **"Whole Effluent Toxicity (WET)"** is the total toxic effect of an effluent measured directly with a toxicity test.

APPENDIX C – CHEMICALS

Table 10 - Proposed Chemicals and Usage

Treatment Process	Proposed Chemical	Proposed Usage
Pre-Treatment Unit (PTU)	Citric Acid	107 lbs/hr
	NaOH	37 lbs/hr
	Enzyme	5 lbs/hr
	Filter Aid	262 lbs/hr
	Bleaching Earth	951 lbs/hr
Hydrotreater	DMDS	40 lbs/hr
	Amine – MDEA	12,100 lbs/hr start-up; 20 lbs/hr continuous
SMR/HTCR & Boiler	Phosphate (boiler water)	300 lbs/yr
	Amine (Morpholine)	40,000 lbs/yr
	Ammonia	20 lbs/hr
Wastewater Treatment Unit (WWTU)	Acid (citric or HCL)	As required
	Coagulant	As required
	Polymer	As required
	NaOH	As required
Facility Wide	Lube Oils/Grease	As required
	Corrosion Inhibitors	As required
Notes:		
The facility will provide Safety Data Sheets (SDSs) and concentration usage to the department once specific chemicals are selected. Once provided, chemical usage will be evaluated on a chemical-by-chemical basis, and additional effluent limitations or restrictions may be issued.		

APPENDIX D – CALCULATIONS

Loading calculations were calculated using the estimated design discharge flow of 0.33 MGD. Concentration limits are based off of 40 CFR 414.64 and 40 CFR 414.91. The calculations from concentrations to loading are in the below table:

Table 11 - Outfall 001 Loading Limit Calculations

		Concentration		Quantity	
Parameter [a]	**Average Design Flow (MGD)**	**Daily Maximum**	**Maximum Monthly Average**	**Daily Maximum** [b, c]	**Maximum Monthly Average** [b, c]
BOD_5, mg/l	0.33	80	30	220.18	82.57
TSS, mg/l	0.33	149	46	410.08	126.60
Acenaphthene	0.33	59	22	0.16	0.06
Acenaphthylene	0.33	59	22	0.16	0.06
Acrylonitrile	0.33	242	96	0.67	0.26
Anthracene	0.33	59	22	0.16	0.06
Benzene	0.33	136	37	0.37	0.10
Benzo(a)anthracene	0.33	59	22	0.16	0.06
3,4-Benzofluoranthene	0.33	61	23	0.17	0.06
Benzo(k)fluoranthene	0.33	59	22	0.16	0.06
Benzo(a)pyrene	0.33	61	23	0.17	0.06
Bis(2-ethylhexyl) phthalate	0.33	279	103	0.77	0.28
Carbon Tetrachloride	0.33	38	18	0.10	0.05
Chlorobenzene	0.33	28	15	0.08	0.04
Chloroethane	0.33	268	104	0.74	0.29
Chloroform	0.33	46	21	0.13	0.06
2-Chlorophenol	0.33	98	31	0.27	0.09
Chrysene	0.33	59	22	0.16	0.06
Di-n-butyl phthalate	0.33	57	27	0.16	0.07
1,2-Dichlorobenzene	0.33	163	77	0.45	0.21
1,3-Dichlorobenzene	0.33	44	31	0.12	0.09
1,4-Dichlorobenzene	0.33	28	15	0.08	0.04
1,1-Dichloroethane	0.33	59	22	0.16	0.06

		Concentration		Quantity	
Parameter [a]	**Average Design Flow (MGD)**	**Daily Maximum**	**Maximum Monthly Average**	**Daily Maximum** [b, c]	**Maximum Monthly Average** [b, c]
1,2- Dichloroethane	0.33	211	68	0.58	0.19
1,1-Dichloroethylene	0.33	25	16	0.07	0.04
1,2-trans-Dichloroethylene	0.33	54	21	0.15	0.06
2,4-Dichlorophenol	0.33	112	39	0.31	0.11
1,2-Dichloropropane	0.33	230	153	0.63	0.42
1,3-Dichloropropylene	0.33	44	29	0.12	0.08
Diethyl phthalate	0.33	203	81	0.56	0.22
2,4-Dimethylphenol	0.33	36	18	0.10	0.05
Dimethyl phthalate	0.33	47	19	0.13	0.05
4,6-Dinitro-o-cresol	0.33	277	78	0.76	0.21
2,4-Dinitrophenol	0.33	123	71	0.34	0.20
2,4-Dinitrotoluene	0.33	285	113	0.78	0.31
2,6-Dinitrotoluene	0.33	641	255	1.76	0.70
Ethylbenzene	0.33	108	32	0.30	0.09
Fluoranthene	0.33	68	25	0.19	0.07
Fluorene	0.33	59	22	0.16	0.06
Hexachlorobenzene	0.33	28	15	0.08	0.04
Hexachlorobutadiene	0.33	49	20	0.13	0.06
Hexachloroethane	0.33	54	21	0.15	0.06
Methyl Chloride	0.33	190	86	0.52	0.24
Methylene Chloride	0.33	89	40	0.24	0.11
Naphthalene	0.33	59	22	0.16	0.06
Nitrobenzene	0.33	68	27	0.19	0.07
2-Nitrophenol	0.33	69	41	0.19	0.11
4-Nitrophenol	0.33	124	72	0.34	0.20
Phenanthrene	0.33	59	22	0.16	0.06
Phenol	0.33	26	15	0.07	0.04
Pyrene	0.33	67	25	0.18	0.07

		Concentration		Quantity	
Parameter [a]	**Average Design Flow (MGD)**	**Daily Maximum**	**Maximum Monthly Average**	**Daily Maximum** [b, c]	**Maximum Monthly Average** [b, c]
Tetrachloroethylene	0.33	56	22	0.15	0.06
Toluene	0.33	80	26	0.22	0.07
Total Chromium	0.33	2,770	1,110	7.62	3.05
Total Copper	0.33	3,380	1,450	9.30	3.99
Total Cyanide	0.33	1,200	420	3.30	1.16
Total Lead	0.33	690	320	1.90	0.88
Total Nickel	0.33	3,980	1,690	10.95	4.65
Total Zinc	0.33	2,610	1,050	7.18	2.89
1,2,4-Trichlorobenzene	0.33	140	68	0.39	0.19
1,1,1-Trichloroethane	0.33	54	21	0.15	0.06
1,1,2- Trichloroethane	0.33	54	21	0.15	0.06
Trichloroethylene	0.33	54	21	0.15	0.06
Vinyl Chloride	0.33	268	104	0.74	0.29

Notes:

a.	All concentrations, except BOD_5 and TSS, are listed in micrograms per liter (µg/l).
b.	All concentrations, except BOD_5 and TSS, were converted from µg/l to mg/l in order to calculate loading.
c.	Loading limits were calculated by multiplying the flow by the concentration by the conversion factor of 8.34. [(Flow (mgd) * Concentration (mg/l)) * 8.34 = Loading (lbs/day)]

APPENDIX E – RESPONSE TO COMMENTS

Any comments received during the public comment period will be addressed here.

Permit No: ND0027031
Effective Date: April 1, 2023
Expiration Date: March, 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,

SAFules X Renewable Fuels
Buford, ND

is authorized to discharge from renewable fuels facility

to the Missouri River, a Class I stream

provided all the conditions of this permit are met.

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

March 31, 2028.

Signed this _____ day of _____, _____.

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

BP 2019.05.29

This page is intentionally left blank

TABLE OF CONTENTS

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)

20. "**Acute Toxicity Test"** is a short-term test to determine the concentration of effluent or ambient waters that causes an adverse effect (usually death) on a group of test species during a short-term exposure (e.g., 24, 48, or 96 hours).

21. "**Chronic Toxicity Test"** is a short-term test, usually 96 hours or longer in duration, in which sub-lethal effects (e.g., significantly reduced growth, reproduction, disorientation, immobilization) are usually measured in addition to lethality.

22. "**Inhibition concentration, 25 Percent (IC25)"** is a point estimate of the toxicant concentration that would cause a 25-percent reduction in a non-lethal biological measurement (e.g., reproduction or growth), calculated from a continuous model (i.e., Interpolation Method).

23. "**Lethal Concentration, 50 Percent (LC_{50})**" is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

24. "**No observed effect concentration (NOEC)**", is the highest tested concentration of an effluent or a toxicant that causes no observable adverse effect on the test species (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically different from the controls). NOEC is determined using hypothesis testing.

25. **"Toxic Unit (TU)"** is a measure of toxicity in an effluent as determined by the acute toxicity units (TUa) or chronic toxicity units (TUc) measured. The larger the TU, the greater the toxicity.

26. **"Toxic Unit – Acute (TU_a)"** is 100 times the reciprocal of the effluent concentration that causes 50 percent of the organisms to die in an acute toxicity test (TUa = 100/LC50) (see LC50).

27. **"Toxic Unit – Chronic (TU_c)"** is 100 times the reciprocal of the effluent concentration that causes no observable effect on the test organisms in a chronic toxicity test (TUc = 100/NOEC or 100/EC25 (see also: NOEC).

28. **"Toxicity Identification Evaluation (TIE)"** is a set of site-specific procedures used to identify the specific chemical(s) causing effluent toxicity.

29. **“Toxicity Reduction Evaluation (TRE)”** is a site-specific study conducted in a step-wise process to identify the causative agents of effluent toxicity, isolate the source of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity after the control measures are put in place.

30. **“Whole Effluent Toxicity (WET)”** is the total toxic effect of an effluent measured directly with a toxicity test.

OUTFALL DESCRIPTION

Outfall 001. Active. Final Outfall. Industrial Wastewater			
Latitude: 47.986944	Longitude: -103.963333	County: Williams	
Township: 152N	Range: 104W	Section: 14	QQ: BB
Receiving Stream: Missouri River		Classification: I	
Outfall Description: This is the final outfall for treated industrial wastewater from the wastewater treatment system at the facility. This outfall is located five (5) miles from the facility and approximately 200 feet downstream from the raw water intake structure. The compliance point is after the tertiary treatment tank prior to the effluent leaving the facility site.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Monthly	May 31, 2023
001W	Discharge Monitoring Report	Quarterly	July 31, 2023
001M	Discharge Monitoring Report	Semiannually	October 31, 2023
Application Renewal	NPDES Application Renewal	1/permit cycle	October 1, 2027

SPECIAL CONDITIONS

No special conditions have been determined at this time.

I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

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

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

B. Effluent Limitations and Monitoring

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

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**							
Parameter	**Effluent Limitations**					**Monitoring Requirements**	
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
Biochemical Oxygen Demand (BOD_5)	82.57 lbs/day	220.18 lbs.day	25 mg/l	*	45 mg/l	3/week	Composite
Total Suspended Solids (TSS)	15.18 lbs/day	49.17 lgs/day	30 mg/l	*	45 mg/l	3/week	Composite
pH, s.u. [d]	Shall remain between 6.5 and 9.0					3/week	Instant-aneous
Ammonia as N, mg/l [e]	Refer to Ammonia Table (**Table 2)**					3/week	Composite
Temperature, °C [f]	*	*	*	*	29.44	Continuous	Recorder
Oil and Grease, Visual [g]	*	*	*	*	*	Daily	Visual
Oil and Grease, mg/l [g]	*	*	*	*	10	Conditional	Grab
Total Residual Chlorine, mg/l [h, i]	*	*	0.011	*	0.019	3/week	Grab
Chemical Oxygen Demand (COD), mg/l	Monitor Only					Weekly	Composite
Total Organic Carbon (TOC), mg/l	Monitor Only					Weekly	Composite
Chloride, mg/l	Monitor Only					Weekly	Composite
Sulfate, mg/l	Monitor Only					Weekly	Composite
Sulfide, mg/l	Monitor Only					Weekly	Grab
Nitrogen Total, mg/l [j]	Monitor Only					Monthly	Composite
Phosphorus Total, mg/l	Monitor Only					Monthly	Composite
Metals [k]	*	*	*	*	*	Semiannually	Composite
Whole Effluent Toxicity (WET), TUa	Refer to Whole Effluent Toxicity (WET) Requirements (**Table 3)**					Quarterly	Grab
Whole Effluent Toxicity (WET), TUc	Refer to Whole Effluent Toxicity (WET) Requirements (**Table 4)**					Annually	4-Grab
Flow Effluent, MGD	Report Avg. Monthly Value	Report Max Daily Value	*	*	*	Daily	Instant-aneous

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**							
Parameter	**Effluent Limitations**					**Monitoring Requirements**	
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
Total Drain, MGAL	*	Report Monthly Total	*	*	*	Monthly	Calculated
Acenaphthene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Acenaphthylene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Acrylonitrile, lbs/day	0.26	0.67	*	*	*	Semiannually	Composite
Anthracene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Benzene, lbs/day	0.10	0.37	*	*	*	Semiannually	Composite
Benzo(a)anthracene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
3,4-Benzofluoranthene, lbs/day	0.06	0.17	*	*	*	Semiannually	Composite
Benzo(k)fluoranthene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Benzo(a)pyrene, lbs/day	0.06	0.17	*	*	*	Semiannually	Composite
Bis(2-ethylhexyl) phthalate, lbs/day	0.28	0.77	*	*	*	Semiannually	Composite
Carbon Tetrachloride, lbs/day	0.05	0.10	*	*	*	Semiannually	Composite
Chlorobenzene, lbs/day	0.04	0.08	*	*	*	Semiannually	Composite
Chloroethane, lbs/day	0.29	0.74	*	*	*	Semiannually	Composite
Chloroform, lbs/day	0.06	0.13	*	*	*	Semiannually	Composite
2-Chlorophenol, lbs/day	0.09	0.27	*	*	*	Semiannually	Composite
Chrysene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Di-n-butyl phthalate, lbs/day	0.07	0.16	*	*	*	Semiannually	Composite

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**							
Parameter	**Effluent Limitations**					**Monitoring Requirements**	
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
1,2-Dichlorobenzene, lbs/day	0.21	0.45	*	*	*	Semiannually	Composite
1,3-Dichlorobenzene, lbs/day	0.09	0.12	*	*	*	Semiannually	Composite
1,4-Dichlorobenzene, lbs/day	0.04	0.08	*	*	*	Semiannually	Composite
1,1-Dichloroethane, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
1,2- Dichloroethane, lbs/day	0.19	0.58	*	*	*	Semiannually	Composite
1,1-Dichloroethylene, lbs/day	0.04	0.07	*	*	*	Semiannually	Composite
1,2-trans-Dichloroethylene, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
2,4-Dichlorophenol, lbs/day	0.11	0.31	*	*	*	Semiannually	Composite
1,2-Dichloropropane, lbs/day	0.42	0.63	*	*	*	Semiannually	Composite
1,3-Dichloropropylene, lbs/day	0.08	0.12	*	*	*	Semiannually	Composite
Diethyl phthalate, lbs/day	0.22	0.56	*	*	*	Semiannually	Composite
2,4-Dimethylphenol, lbs/day	0.05	0.10	*	*	*	Semiannually	Composite
Dimethyl phthalate, lbs/day	0.05	0.13	*	*	*	Semiannually	Composite
4,6-Dinitro-o-cresol, lbs/day	0.21	0.76	*	*	*	Semiannually	Composite
2,4-Dinitrophenol, lbs/day	0.20	0.34	*	*	*	Semiannually	Composite
2,4-Dinitrotoluene, lbs/day	0.31	0.78	*	*	*	Semiannually	Composite
2,6-Dinitrotoluene, lbs/day	0.70	1.76	*	*	*	Semiannually	Composite
Ethylbenzene, lbs/day	0.09	0.30	*	*	*	Semiannually	Composite

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**							
Parameter	**Effluent Limitations**					**Monitoring Requirements**	
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
Fluoranthene, lbs/day	0.07	0.19	*	*	*	Semiannually	Composite
Fluorene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Hexachlorobenzene, lbs/day	0.04	0.08	*	*	*	Semiannually	Composite
Hexachlorobutadiene, lbs/day	0.06	0.13	*	*	*	Semiannually	Composite
Hexachloroethane, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
Methyl Chloride, lbs/day	0.24	0.52	*	*	*	Semiannually	Composite
Methylene Chloride, lbs/day	0.11	0.24	*	*	*	Semiannually	Composite
Naphthalene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Nitrobenzene, lbs/day	0.07	0.19	*	*	*	Semiannually	Composite
2-Nitrophenol, lbs/day	0.11	0.19	*	*	*	Semiannually	Composite
4-Nitrophenol, lbs/day	0.20	0.34	*	*	*	Semiannually	Composite
Phenanthrene, lbs/day	0.06	0.16	*	*	*	Semiannually	Composite
Phenol, lbs/day	0.04	0.07	*	*	*	Semiannually	Grab
Pyrene, lbs/day	0.07	0.18	*	*	*	Semiannually	Composite
Tetrachloroethylene, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
Toluene, lbs/day	0.07	0.22	*	*	*	Semiannually	Composite
Total Chromium, lbs/day	3.05	7.62	*	*	*	Semiannually	Composite
Total Copper, lbs/day	3.99	9.30	*	*	*	Semiannually	Composite
Total Cyanide, lbs/day	1.16	3.30	*	*	*	Semiannually	Grab

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**							
Parameter	**Effluent Limitations**					**Monitoring Requirements**	
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
Total Lead, lbs/day	0.88	1.90	*	*	*	Semiannually	Composite
Total Nickel, lbs/day	4.65	10.95	*	*	*	Semiannually	Composite
Total Zinc, lbs/day	2.89	7.18	*	*	*	Semiannually	Composite
1,2,4-Trichlorobenzene, lbs/day	0.19	0.39	*	*	*	Semiannually	Composite
1,1,1-Trichloroethane, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
1,1,2-Trichloroethane, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
Trichloroethylene, lbs/day	0.06	0.15	*	*	*	Semiannually	Composite
Vinyl Chloride, lbs/day	0.29	0.74	*	*	*	Semiannually	Composite

Notes:

*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.
a.	Loading limits are based on the average design flow rate of 0.33 mgd. To calculate the loading limits, multiply the flow by the concentration by the conversion factor of 8.34. [(Flow (mgd) * Concentration (mg/l)) * 8.34 = Loading (lbs/day)]
b.	Composite samples must be representative of the quality of the discharge. A 24-hour composite sample proportioned according to flow is required where feasible. If unfeasible, the composite shall consist of a minimum of twelve (12) separate grab samples and proportioned as to flow. Sampling may be proportioned to flow by varying the time interval between each aliquot, or by varying the volume of each aliquot.
c.	"4-Grab" samples shall consist of four (4) discrete grab samples collected at intervals representative of a 24-hour sample period.
d.	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 the permit.

Table 1: Effluent Limitations and Monitoring Requirements **Outfall 001**								
Parameter	**Effluent Limitations**					**Monitoring Requirements**		
	Quantity [a]		**Concentration**			**Sample Frequency**	**Sample Type [b, c]**	
	Maximum Avg. Monthly Limit	**Daily Maximum Limit**	**Avg. Monthly Limit**	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**	
e.	A discharge ammonia as N criterion will be dependent on temperature, river flow, discharge rate, river pH, and the effluent ammonia as N concentration. This determination shall be in accordance with the formula specified in the latest version of the state water quality standards. Permittee will use the Missouri River parameters to calculate the real-time water quality standard for ammonia as N. This calculated limit will be compared to the facility effluent ammonia as N data, and if the effluent value is greater than the calculated limit, the permittee will report an exceedance on the Discharge Monitoring Report (DMR) for that reporting period.							
f.	The maximum increase in river temperature, caused by a discharge, shall not be greater than 2.78 °C.							
g.	A daily visual check shall be performed. There shall be no discharge of oily wastes that produce a visible sheen on the surface of the receiving water. If present, a grab sample shall be analyzed for oil and grease to ensure compliance with the concentration limitation.							
h.	The minimum limit of analytical reliability for TRC is considered to be 0.05 mg/l. The analysis for TRC shall be conducted using reliable devices equivalent to EPA Method 4500-Cl G, Spectrophotometric, DPD. This method achieves a method detection limit of less than 0.05 mg/l. For purposes of this permit and reporting on the DMR form, analytical values less than 0.05 mg/l shall be considered in compliance with this permit.							
i.	In the calculation of average TRC concentrations, analytical results that are less than the method detection limit shall be considered the value of the detection limit for calculation purposes. If all analytical results used in the calculation are below the method detection limit, then the method detection limit shall be reported on the DMR; otherwise report the calculated average value.							
j.	Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).							
k.	The following parameters shall be sampled and analyzed for: Aluminum, Total Barium, Total Boron, Total Iron, Total Magnesium, Total Manganese, Total Hardness, Total as CaCO3 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 Table 2 of the North Dakota Water Quality Standards.							
Stipulations:								
The dates of discharge, frequency of analyses, total number of gallons discharged, discharge flow rate, and number of exceedances shall also be included on the DMR.								
Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum, and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.								
Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving the facility property or entering the receiving stream.								

Table 2: Ammonia Effluent Limitation Requirements for **Outfall 001**					
Parameters	**Effluent Limitations**			**Monitoring Requirements**	
	Avg. Monthly Limit	**Avg. Weekly Limit**	**Daily Maximum Limit**	**Sample Frequency**	**Sample Type**
Ammonia as N, mg/l [a]	†	*	‡	3/week	Composite
Missouri River Parameters – collect same days as effluent ammonia as N					
Stream Flow, upstream (cfs) [b]	*	*	*	3/week	Usable Data Source
pH (s.u.), upstream [b]	*	*	*	3/week	Usable Data Source
Temperature, upstream (°C) [b]	*	*	*	3/week	Usable Data Source

*	This parameter is not limited. However, the department may impose limitations based on sample history to protect the receiving waters.
a.	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.
b.	Sample must be collected/recorded the same day as the ammonia sample.
†	Chronic Standard (Average Monthly Limit):

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 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:

$$MIN\left(\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}\right),$$
$$\left(0.7249 \times \left(\frac{0.0114}{1+10^{7.204-pH}} + \frac{1.6181}{1+10^{pH-7.204}}\right) \times \left(23.12 \times 10^{0.036\times(20-T)}\right)\right)$$

where *Oncorhynchus* are present.

Notes:

Effluent from Outfall 001 will be regulated accordingly to avoid exceeding the water quality standard for ammonia as N at any time during the discharge period.

The maximum mixing factor is 10.0%.

C. Whole Effluent Toxicity (WET) Requirements BP 2021.01.26

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*.

Table 3: Acute WET requirements for **Outfall 001**

WET tests shall be performed on the first discharge made each calendar year, unless specifically waived by the department. Thereafter, tests shall be performed at least once every calendar quarter in which there is a discharge.

Toxicity is defined as:

Acute test failure is defined as lethality to 50% or more of the test organisms exposed to 100% effluent or >1.0 TUa for *Ceriodaphnia dubia* 48-hour and fathead minnow 96-hour test. The 48-hour and 96-hour effluent value must be <**1.0 TUa** to indicate a passing test. Any 48-hour or 96-hour effluent value of >**1.0 TUa** will constitute a failure. Tests in which the control survival is less than 90% are invalid and must be repeated.

Acute WET Requirements for **Outfall 001**

Implementation	Limitation Imposed					
Effluent Dilution	0%(Control)	12.5%	25%	50%	75%	100%
Dilution Water	**Missouri River** [a]					
Testing Type	Acute Toxicity					
Species and Test Type	*Ceriodaphnia dubia* - 48 Hour Acute - Static Renewal - 20°C					
	Fathead minnow - 96 Hour Acute - Static Renewal - 20°C					
Endpoint	Mortality LC_{50} reported as TU_a					
Compliance Point	**End-of-pipe**					
Sample Frequency	Quarterly. Samples from the discharge shall be collected during the first week of discharge each calendar year and at least once every 90 days thereafter. The sampling frequency does not need to coincide with calendar quarters.					
Sample Type	Grab					
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.					

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 toxicity occur in the second test, testing shall be conducted at a frequency of once a month and the implementation of a 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. Should there be no discharge during a specified sampling time frame; sampling shall be performed as soon as there is a discharge.

The permittee shall report the following results of each toxicity test on the DMR for that reporting period:

***Ceriodaphnia dubia* (Water Flea)**

Report the highest TU_a for *Ceriodaphnia dubia*, Parameter No. TSM3B. ***Pimphalas promelas*** **(Fathead Minnow)** Report the highest TU_a for *Pimephales promelas*, Parameter No. TSN6C.	
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

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*.

Table 4: Chronic WET requirements for **Outfall 001**						
Implementation	Monitoring Only					
Effluent Dilution	0%(Control)	6.25%	12.5%	25%	50%	100%
Dilution Water	**Missouri River**					
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 at End-of-Pipe					
Sample Type	4-Grab					
Sample Frequency	Once per year					
Test Acceptability	Test acceptability for *Ceriodaphnia dubia* chronic must have an 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. TTP6C. The facility shall request their WET testing providers to report a TU_a for a 48-hour survival *Ceriodaphnia dubia* and for *Pimephales promelas* which can be derived from the chronic test. The reason for this is to develop a representative Acute-to-Chronic ratio (ACR) which is used for determining reasonable potential and/or permit limitations.

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 revoked 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.

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

E. 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.
r of this permit shall not be affected thereby.