

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

Public Notice Date: 8/8/2019

Public Notice Number: ND-2019-016

**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: 2/22/2019

Application Number: ND0026930

Applicant Name: Great River Energy-Coal Creek Station

Mailing Address: 2875 3rd St SW, Underwood, ND 58576-9759

Telephone Number: 701.442.3211

Proposed Permit Expiration Date: 9/30/2024

**Facility Description**

The application is for a 1,100 megawatt coal-fired electric generation facility located in Section 17, of Township 145N, Range 82W. Discharges consist of surface runoff. Any discharge is to Samuelson Slough and Saylor Slough from outfalls 001, 002, 003, and 005. The application includes the Missouri River cooling water intake structure for the plant.

**Tentative Determinations**

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

**Information Requests and Public Comments**

Copies of the application, draft permit, and related documents are available for review. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by September 09, 2019 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

Permit No: ND0026930  
Effective Date: October 1, 2019  
Expiration Date: September 30, 2024

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,

Great River Energy – Coal Creek Station  
Underwood, North Dakota

is authorized to discharge stormwater from its coal fired steam electric generating plant (Coal Creek Station)

to Samuelson Slough and Sayler Slough

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,  
September 30, 2024.

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

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

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## 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  $n^{\text{th}}$  root of a product of  $n$  factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. **"Grab"** for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.
13. **"Instantaneous"** for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. **"Maximum daily discharge limitation"** means the highest allowable "daily discharge."
15. **"Salmonid"** means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

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

#### **DEFINITIONS Cooling Water Intake**

20. **"Actual Intake Flow (AIF)"** means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years. After October 14, 2019, actual intake flow means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. Actual intake flow is measured at a location within the cooling water intake structure that the Director deems appropriate. The calculation of actual intake flow includes days of zero flow. AIF does not include flows associated with emergency and fire suppression capacity.
21. **"All life stages of fish and shellfish"** means eggs, larvae, juveniles, and adults. It does not include members of the infraclass Cirripedia in the sub phylum Crustacea (barnacles), green mussels (*Perna viridis*), or zebra mussels (*Dreissena polymorpha*). The Director may determine that all life stages of fish and shellfish does not include other specified nuisance species.
22. **"Closed-cycle recirculating system"** means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility, or a system designed to include certain impoundments. A closed-cycle recirculating system passes cooling water through the condenser and other components of the cooling system and reuses the water for cooling multiple times.
23. **"Contact cooling water"** means water used for cooling which comes into direct contact with any raw material, product, or byproduct.
24. **"Cooling water"** means water used for contact or non-contact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations on the facility's premises. Cooling water obtained from a public water system, reclaimed water from wastewater treatment facilities or desalination plants, treated effluent from a manufacturing facility, or cooling water that is used in a manufacturing process either before or after it is used for cooling as process water, is not considered cooling water for the purposes in § 125.91(a)(3).
25. **"Cooling water intake structure"** means the total physical structure and any associated constructed waterways used to withdraw cooling water from water of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to and including the intake pumps.

26. **“Design intake flow (DIF)”** means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody. The facility’s DIF may be adjusted to reflect permanent changes to the maximum capabilities of the cooling water intake system to withdraw cooling water, including pumps permanently removed from service, flow limit devices, and physical limitations of the piping. DIF does not include values associated with emergency and fire suppression capacity or redundant pumps (i.e. back-up pumps).
27. **“Entrainment”** means any life stages of fish and shellfish in the intake water flow entering and passing through a cooling water intake structure and into a cooling water system, including the condenser or heat exchanger. Entrainable organisms include any organisms potentially subject to entrainment. For purposes of this subpart, entrainment excludes those organisms that are collected or retained by a sieve with maximum opening dimension of 0.56 inches. Examples of sieves meeting this definition include but are not limited to a 3/8 inch square mesh, or a 1/2 by 1/4 inch mesh. A facility must use the same mesh size when counting entrainment as is used when counting impingement.
28. **“Entrainment mortality”** means death as a result of entrainment through the cooling water intake structure, or death as a result of exclusion from the cooling water intake structure by fine mesh screens or other protective devices intended to prevent the passage of entrainable organisms through the cooling water intake structure.
29. **“Entrapment”** means the condition where impingeable fish and shellfish lack the means to escape the cooling water intake. Entrapment includes but is not limited to: Organisms caught in the bucket of a traveling screen and unable to reach a fish return; organisms caught in the forebay of a cooling water intake system without any means of being returned to the source waterbody without experiencing mortality; or cooling water intake systems where the velocities in the intake pipes or in any channels leading to the forebay prevent organisms from being able to return to the source waterbody through the intake pipe or channel.
30. **“Existing facility”** means any facility that commenced construction as described in 40 CFR 122.29(b)(4) on or before January 17, 2002 (or July 17, 2006 for an offshore oil and gas extraction facility) and any modification of, or any addition of a unit at such a facility. A facility built adjacent to another facility would be a new facility while the original facility would remain as an existing facility for purposes of this subpart. A facility cannot both be an existing facility and a new facility as defined at § 125.83.
31. **“Flow reduction”** means any modification to a cooling water intake structure or its operation that serves to reduce the volume of cooling water withdrawn. Examples include, but are not limited to, variable speed pumps, seasonal flow reductions, wet cooling towers, dry cooling towers, hybrid cooling towers, unit closures, or substitution for withdrawals by reuse of effluent from a nearby facility.
32. **“Fragile species”** means those species of fish and shellfish that are least likely to survive any form of impingement. For purposes of this subpart, fragile species are defined as those with an impingement survival rate of less than 30 percent, including but not limited to alewife, American shad, Atlantic herring, Atlantic long-finned squid, Atlantic menhaden, bay anchovy, blueback herring, bluefish, butterfish, gizzard shad, grey snapper, hickory shad, menhaden, rainbow smelt, round herring, and silver anchovy.
33. **“Impingement”** means the entrapment of any life stages of fish and shellfish on the outer part of an intake structure or against a screening device during periods of intake water withdrawal. For purposes of this subpart, impingement includes those organisms collected or retained on a sieve with maximum distance in the opening of 0.56 inches, and excludes those organisms that pass through the sieve. Examples of sieves meeting this definition include but are not limited to a 3/8 inch square mesh, or a 1/2 by 1/4 inch mesh. This definition is intended to prevent the conversion of entrainable organisms to counts of impingement or impingement mortality. The owner or operator of a facility must use a sieve with the same mesh size when counting entrainment as is used when counting impingement.

34. **“Impingement mortality”** means death as a result of impingement. Impingement mortality also includes organisms removed from their natural ecosystem and lacking the ability to escape the cooling water intake system, and thus subject to inevitable mortality.
35. **“Independent supplier”** means an entity, other than the regulated facility, that owns and operates its own cooling water intake structure and directly withdraws water from waters of the United States. The supplier provides the cooling water to other facilities for their use, but may itself also use a portion of the water. An entity that provides potable water to residential populations (e.g., public water system) is not a supplier for purposes of this subpart.
36. **“Latent mortality”** means the delayed mortality of organisms that were initially alive upon being impinged or entrained but that do not survive the delayed effects of impingement and entrainment during an extended holding period. Delayed effects of impingement and entrainment include but are not limited to temperature change, physical stresses, and chemical stresses.
37. **“Minimize”** means to reduce to the smallest amount, extent, or degree reasonably possible.
38. **“Modified traveling screen”** means a traveling water screen that incorporates measures protective of fish and shellfish, including but not limited to: Screens with collection buckets or equivalent mechanisms designed to minimize turbulence to aquatic life; addition of a guard rail or barrier to prevent loss of fish from the collection system; replacement of screen panel materials with smooth woven mesh, drilled mesh, molded mesh, or similar materials that protect fish from descaling and other abrasive injury; continuous or near-continuous rotation of screens and operation of fish collection equipment to ensure any impinged organisms are recovered as soon as practical; a low pressure wash or gentle vacuum to remove fish prior to any high pressure spray to remove debris from the screens; and a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote predation or re-impingement of the fish, or require a large vertical drop. The Director may approve of fish being returned to water sources other than the original source water, taking into account any recommendations from the Services with respect to endangered or threatened species. Examples of *modified traveling screens* include, but are not limited to: Modified Ristroph screens with a fish handling and return system, dual flow screens with smooth mesh, and rotary screens with fish returns or vacuum returns.
39. **“Moribund”** means dying; close to death.
40. **“New unit”** means a new “standalone” unit at an existing facility where construction of the new unit begins after October 14, 2014 and that does not otherwise meet the definition of a new facility at § 125.83 or is not otherwise already subject to subpart I of this part. A stand-alone unit is a separate unit that is added to a facility for either the same general industrial operation or another purpose. A new unit may have its own dedicated cooling water intake structure, or the new unit may use an existing or modified cooling water intake structure.
41. **“Offshore velocity cap”** means a velocity cap located a minimum of 800 feet from the shoreline. A velocity cap is an open intake designed to change the direction of water withdrawal from vertical to horizontal, thereby creating horizontal velocity patterns that result in avoidance of the intake by fish and other aquatic organisms. For purposes of this subpart, the velocity cap must use bar screens or otherwise exclude marine mammals, sea turtles, and other large aquatic organisms.



42. **“Operational measure”** means a modification to any operation that serves to minimize impact to all life stages of fish and shellfish from the cooling water intake structure. Examples of *operational measures* include, but are not limited to, more frequent rotation of traveling screens, use of a low pressure wash to remove fish prior to any high pressure spray to remove debris, maintaining adequate volume of water in a fish return, and debris minimization measures such as air sparging of intake screens and/or other measures taken to maintain the design intake velocity.
43. **“Social benefits”** means the increase in social welfare that results from taking an action. Social benefits include private benefits and those benefits not taken into consideration by private decision makers in the actions they choose to take, including effects occurring in the future. Benefits valuation involves measuring the physical and biological effects on the environment from the actions taken. Benefits are generally treated one or more of three ways: A narrative containing a qualitative discussion of environmental effects, a quantified analysis expressed in physical or biological units, and a monetized benefits analysis in which dollar values are applied to quantified physical or biological units. The dollar values in a social benefits analysis are based on the principle of Willingness-to-pay (WTP), which captures monetary benefits by measuring what individuals are willing to forgo in order to enjoy a particular benefit. Willingness-to-pay for nonuse values can be measured using benefits transfer or a stated preference survey.
44. **“Social costs”** means costs estimated from the viewpoint of society, rather than individual stakeholders. Social cost represents the total burden imposed on the economy; it is the sum of all opportunity costs incurred associated with taking actions. These opportunity costs consist of the value lost to society of all the goods and services that will not be produced and consumed as a facility complies with permit requirements, and society reallocates resources away from other production activities and towards minimizing adverse environmental impacts.

## OUTFALL DESCRIPTION

Outfall 001. Active. Stormwater.			
Latitude: 47.387244	Longitude: -101.158448	County: McLean	
Township: 145N	Range: 82W	Section: 8	QQ: DC
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 79 acres of the site around the river water holding basin and the extended basin. Any discharge drains to Samuelson Slough.			

<b>Outfall 002. Active. Stormwater.</b>			
Latitude: 47.382273	Longitude: -101.148202	County: McLean	
Township: 145N	Range: 82W	Section: 17	QQ: BA
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 34 acres of the site around the lignite runoff basin (no stormwater from the lignite runoff basin is discharged). Any discharge drains to Samuelson Slough.			

<b>Outfall 003. Active. Stormwater.</b>			
Latitude: 47.373738		Longitude: -101.121067	
County: McLean			
Township: 145N		Range: 82W	
Section: 16		QQ: DD	
Receiving Stream: Sayler Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 297 acres of the site around the Section 16 landfill (no landfill contacted stormwater is discharged) and the south side of the industrial activity.			

Outfall 005. Active. Stormwater.			
Latitude: 47.419153	Longitude: -101.161474	County: McLean	
Township: 145N	Range: 82W	Section: 32	QQ: BC
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 65 acres around the Section 32 landfill. Stormwater which contacts the ash flows to the east and is retained onsite (no landfill contact stormwater is discharged). Any discharge is to Samuelson Slough.			

<b>Outfall 004. Inactive. Internal.</b>			
Latitude: 47.373571		Longitude: -101.142255	
County: McLean			
Township: 145N		Range: 82W	
Section: 16		QQ: CC	
Receiving Stream: Sayler Slough		Classification: Wetland	
Outfall Description: This is an internal outfall. All stormwater discharged from this point is discharged through outfall 003.			

## PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Monitoring Period	Submittal Frequency	First Submittal Date
003A	Discharge Monitoring Report	Semiannual	Semi-annual	April 30, 2020
005A	Discharge Monitoring Report	Semiannual	Semi-annual	April 30, 2020
Cooling Water Intake	Actual Intake Flow Report	Monthly	Quarterly	January 31, 2020
Cooling Water Intake	Annual Certification Statement	Annual	Annual	October 31, 2020
Application Renewal	EPA Form 1 & 2F	None	1/permit cycle	March 31, 2024

## SPECIAL CONDITIONS

No special conditions have been determined at this time.

### I. LIMITATIONS AND MONITORING REQUIREMENTS

#### A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls as specified to the following: **Samuelson Slough** and **Sayler Slough**.

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:

Effluent Limitations and Monitoring Requirements <b>Outfalls 001 and 002</b>
Discharge of stormwater runoff from the outfall shall utilize best management practices (BMPs) at all times.
Stipulations:
No fuel, lubricating oils, chemicals nor process wastewater shall be discharged through this point.
There shall be no discharge of floating solids or visible foam in other than trace amounts.
The department may specify additional discharge conditions or restrictions at any time to maintain water quality standards.
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.

Effluent Limitations and Monitoring Requirements <b>Outfall 003 and 005</b>							
	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration				
Parameter	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Total Suspended Solids (TSS) mg/l	*	*	*	*	*	Semi-annual	Grab
Oil and Grease, Visual 1/	*	Report Yes or No	*	*	*	Semi-annual	Visual
Oil and Grease mg/l 1/	*	*	*	*	*	Conditional / Semi-annual	Grab
pH	Benchmark of Between 6.0 to 9.0 s.u.					Semi-annual	Grab
Rainfall/precipitation, Inches 2/	*	Report Total Rainfall	*	*	*	Semi-annual	Rain Gauge
Rainfall Duration, hours 2/	*	Report Days	*	*	*	Semi-annual	Not Applicable
Dry Days Preceding Precipitation Event 2/	*	Report Days	*	*	*	Semi-annual	Not Applicable
*. This item is not limited or not applicable for the stated parameter. However, the department may impose limitations based on sample history and to protect the receiving waters.							
1/ If a visible sheen or floating oil is observed at the discharge point, an oil & grease sample shall be collected.							
2/ Must correspond to the storm event or snowmelt event which the sample was collected which causes a discharge.							
<p>Stipulations:</p> <p>The dates of discharge, frequency of analyses and number of exceedances shall also be included on the Discharge Monitoring Reports (DMR).</p> <p>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.</p> <p>There shall be no discharge of floating solids or visible foam in other than trace amounts.</p> <p>The department may specify additional discharge conditions or restrictions at any time to maintain water quality standards.</p>							

## II. CLEAN WATER ACT 316(b) FINAL RULES

### A. Cooling System Operation

The permittee operates a single intake structure subject to the 316(b) rules for existing cooling water intake structures (CWIS). The permittee is subject to the following provisions as they relate to cooling water operations:

1. Nothing in this permit authorizes take for the purpose of a facility's compliance with the Endangered Species Act.

2. The permittee shall visually inspect or remotely inspect the CWIS annually when the CWIS is in operation to ensure that the CWIS is being maintained and operated appropriately. If it is unsafe to conduct the inspection while the CWIS is in operation, it may be shut down for inspection for health and safety reasons.
3. The permittee shall operate a closed-cycle recirculating system to comply with the best technology available standard for impingement mortality.
4. The permittee shall operate a closed-cycle recirculating system to comply with the best technology available standard for entrainment.

## **B. Monitoring and Reporting**

1. The actual intake flow shall be monitored daily. Actual intake flow monitoring shall be representative of normal operating conditions. Actual intake flow monitoring shall be reported with discharge monitoring reports.
2. The permittee shall submit an annual certification statement and report regarding the operation of the cooling water system. Any substantial changes to the cooling water system or operations of the cooling water system shall be included in the annual report. If the information contained in the previous year's annual certification is still pertinent, it may be stated as such in a letter to the department. If anything at the facility has been substantially modified which impacts cooling water withdrawals or operation of the CWIS, a summary of the changes must be provided. In addition, any revisions to the information required in 40 CFR 122.21(r) must be submitted in the next permit application.
3. The permittee shall notify the department of any proposed substantial changes to the cooling water intake structure or operation of the cooling water intake which may affect the requirements of 316(b). Any substantial changes to the cooling water intake structure or operation of the cooling water intake shall be included with the annual certification statement and report.
4. All discharge monitoring reports, and annual certification statements and reports related to cooling water intake operation and closed-cycle recirculating system shall be retained until the subsequent permit is issued.
5. All the information submitted with the permit application used to satisfy the requirements of 40 CFR 122.21(r) shall be retained until the subsequent permit is issued.

## **C. Permit Application**

Any revisions related to the information requirements of 40 CFR 122.21(r) shall be included with the next permit application (refer to Part II(B)(3)).

## **D. Inspection and Entry**

The permittee shall allow the department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the cooling water withdrawals or operation of the cooling water intake structure and request information needed to determine permit compliance. This includes information needed to determine permit conditions and requirements, and any additional information recommended by the U.S. Fish and Wildlife Service upon review of the permittee's next permit application.

# **III. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2019.05.29**

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

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

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

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

**B. Test Procedures**

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

**C. Recording of Results**

Records of monitoring information shall include:

1. the date, exact place and time of sampling or measurements;
2. the name(s) of the individual(s) who performed the sampling or measurements;
3. the name of the laboratory;
4. the date(s) and time(s) analyses were performed;
5. the name(s) of the individual(s) who performed the analyses;
6. the analytical techniques or methods used; and
7. the results of such analyses.

**D. Additional Monitoring**

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

#### **E. Reporting of Monitoring Results**

1. Monitoring results shall be summarized and reported to the department using Discharge Monitoring Reports (DMRs). If no discharge occurs during a reporting period, "No Discharge" shall be reported. The permittee must submit DMRs electronically using the electronic information reporting system unless requirements in subsection 3 are met.
2. Prior to December 21, 2020, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2020, the permittee must report the following using the electronic reporting system:
  - a. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];
  - b. Municipal separate storm sewer system program reports;
  - c. Pretreatment program reports;
  - d. Sewer overflow/bypass event reports; and
  - e. Clean Water Act 316(b) annual reports
3. The permittee may seek a waiver from electronic reporting. To obtain a waiver, the permittee must complete and submit an Application for Temporary Electronic Reporting Waiver form (SFN 60992) to the department. The department will have 120 days to approve or deny the waiver request. Once the waiver is approved, the permittee may submit paper versions of monitoring data and reports to the department.
  - 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  
918 East Divide Ave  
Bismarck ND 58501-1947

#### **F. Records Retention**

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

#### IV. 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.

## **V. 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.

**FACT SHEET FOR NDPDES PERMIT  
ND0026930**

**GREAT RIVER ENERGY - COAL CREEK STATION  
UNDERWOOD, ND**

**DATE OF THIS FACT SHEET – July 2019**

**INTRODUCTION**

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

The following rules or regulations apply to NDPDES permits:

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

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

According to the NDAC, section 33.1-16-01-08, the NDPDES permit program, the NDDEQ must prepare a draft permit and accompanying fact sheet and make it available for a thirty-day public review period (NDAC chapter 33.1-16-01-07). The NDDEQ must also publish an announcement (public notice) telling people where they can obtain the draft permit and send their comments on the draft. For more details on preparing and filing comments about these documents, please see **Appendix A – Public Involvement Information**. After the Public Comment Period ends, the NDDEQ may make changes to the draft NDPDES permit. The NDDEQ will summarize the responses to comments and any changes to the permit in **Appendix D – Response to Comments**.

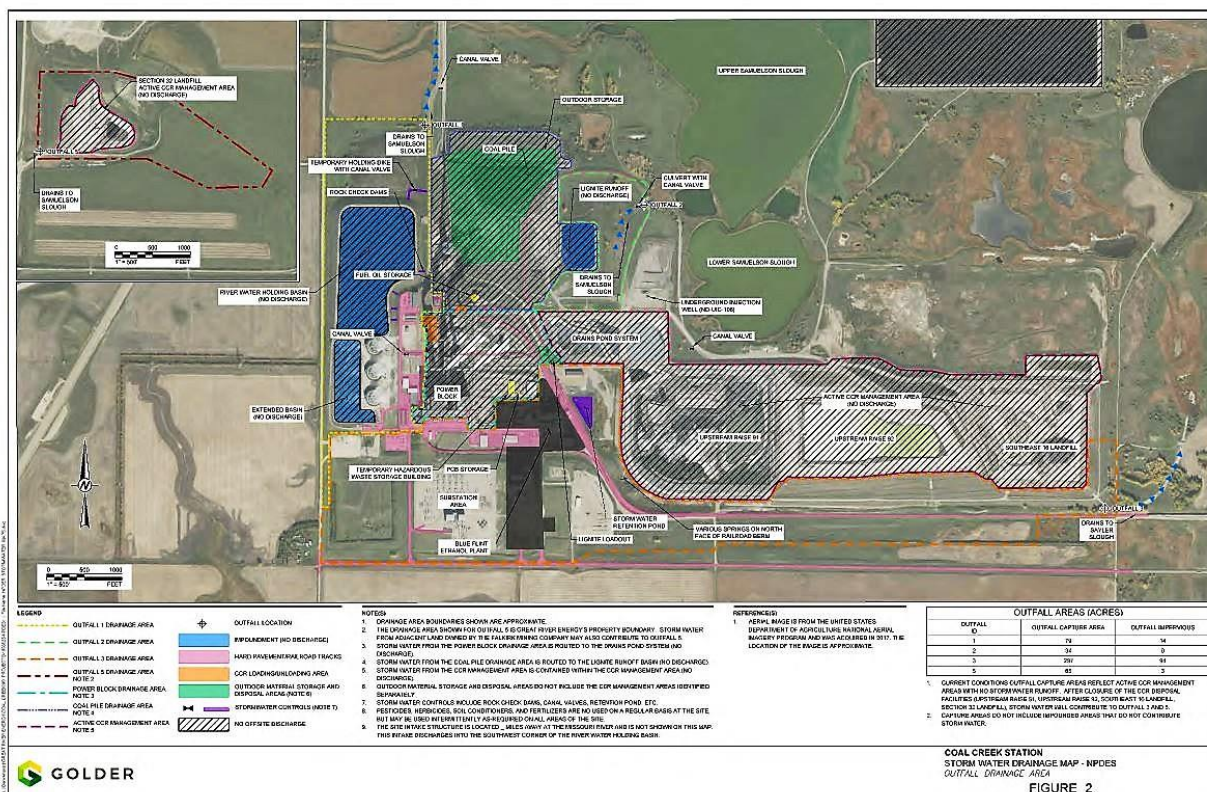
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## BACKGROUND INFORMATION

Table 1: General Facility Information	
Applicant:	Great River Energy – Coal Creek Station
Facility Name and Address:	Coal Creek Station 2875 Third Street SW Underwood, ND 58576
Permit Number:	ND0026930
Permit Type:	Non-POTW, Issuance
Type of Treatment:	None
SIC Code:	4911
Discharge Location:	Samuelson Slough, Wetland Sayler Slough, Wetland
Intake Structure Location:	Latitude: 47.280769 Longitude: -101.183814
Hydrologic Code:	10130101, Painted Woods-Square Butte

Figure 1: Overview of Coal Creek Station.



## FACILITY DESCRIPTION

### History

The Coal Creek Station is a 1,100-megawatt coal-fired electric generation facility which is owned and operated by Great River Energy. Blue Flint Ethanol is also on-site. Blue Flint Ethanol obtains water from Coal Creek and discharges wastewater back into Coal Creek's wastewater system. Coal Creek also provides a portion of water to the Falkirk Mine.

Coal Creek is a zero liquid discharge facility. A series of onsite ponds and an underground injection well are located on-site for the management of water. Evaporation ponds at the facility provide water storage capacity for the plant and remove excess water inventory through evaporation. Any excess wastewater is injected into a Class I underground injection well. The facility currently has an industrial stormwater permit (NDR050041).

With the finalization of the Clean Water Act Section 316(b) rule, facilities which are designed to have an intake flow of greater than 2 million gallons per day (mgd) from waters of the United states and twenty-five percent (25%) or more of the water the facility withdraws on an actual intake flow basis is used exclusively for cooling purposes and are a point source is subject to the requirements. Coal Creek Station has a design intake flow of 25.7 mgd, with an actual intake flow of 18 mgd. Blue Flint Ethanol utilizes water for cooling purposes while Falkirk utilizes water for potable water. Coal Creek utilizes approximately eight-seven percent (87%) of the water withdrawn for cooling purposes. Based upon the design water intake flow, eighty-seven percent (87%) of the intake water being utilized for cooling purposes and the facility being designated as a point source under the NDPDES permit number NDR050041, the facility is subject to the Section 316(b) regulations. To incorporate the Section 316(b) regulations into the facility's permit, it will need to be switched to an individual permit.

### Outfall Description

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

Outfall 001. Active. Stormwater.			
Latitude: 47.387244		Longitude: -101.158448	
County: McLean			
Township: 145N		Range: 82W	
Section: 8		QQ: DC	
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 79 acres of the site around the river water holding basin and the extended basin. Any discharge drains to Samuelson Slough.			

Outfall 002. Active. Stormwater.			
Latitude: 47.382273		Longitude: -101.148202	
County: McLean			
Township: 145N		Range: 82W	
Section: 17		QQ: BA	
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 34 acres of the site around the lignite runoff basin (no stormwater from the lignite runoff basin is discharged). Any discharge drains to Samuelson Slough.			

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<b>Outfall 003. Active. Stormwater.</b>			
Latitude: 47.373738		Longitude: -101.121067	
County: McLean			
Township: 145N		Range: 82W	
Section: 16		QQ: DD	
Receiving Stream: Saylor Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 297 acres of the site around the Section 16 landfill (no landfill contacted stormwater is discharged) and the south side of the industrial activity.			

<b>Outfall 005. Active. Stormwater.</b>			
Latitude: 47.419153		Longitude: -101.161474	
County: McLean			
Township: 145N		Range: 82W	
Section: 32		QQ: BC	
Receiving Stream: Upper Samuelson Slough		Classification: Wetland	
Outfall Description: This outfall drains approximately 65 acres around the Section 32 landfill. Stormwater which contacts the ash flows to the east and is retained onsite (no landfill contact stormwater is discharged). Any discharge is to Samuelson Slough.			

<b>Outfall 004. Inactive. Internal Stormwater.</b>			
Latitude: 47.373571		Longitude: -101.142255	
County: McLean			
Township: 145N		Range: 82W	
Section: 16		QQ: CC	
Receiving Stream: Saylor Slough		Classification: Wetland	
Outfall Description: This is an internal outfall. All stormwater discharged from this point is discharged through outfall 003.			

### PERMIT STATUS

This is the first issuance of this permit. The facility is currently covered under the Stormwater Industrial Master General Permit (NDR050041). The current NDR050041 permit has benchmarks for Oil and Grease, pH and Total Suspended Solids (TSS).

### SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The department's assessment of compliance is based on review of the facility's Discharge Monitoring Report (DMR) forms and inspections conducted by the department. According to department records, no inspections have been conducted at the facility for the current NDR050041 permit. According to department records the facility has had no effluent limitation exceedances and is compliant with the NDR050000 permit.

Coal Creek is an intermittent discharger. A summary of the DMR data from NDR050041 follows:



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<b>Table 2: Coal Creek Station NDR050041 DMR Data Summary from 01/01/2012-12/31/2017</b>								
<b>Disch Pt</b>	<b>Location</b>	<b>Parameter</b>	<b>Ave Conc</b>	<b>Range</b>	<b>Units</b>	<b>Ave Load</b>	<b>Max Load</b>	<b>Max Load Units</b>
001A	Effluent	Iron Total	N/A	58.3 Max	mg/l	N/A	N/A	N/A
001A	Effluent	Oil & Grease	N/A	12.9 Max	mg/l	N/A	N/A	N/A
001A	Effluent	Oil and Grease Visual	N/A	N/A	N/A	N/A	0	Y=1;N=0
001A	Effluent	pH	N/A	6.2 - 8.6	S.U.	N/A	N/A	N/A
002A	Effluent	Iron Total	N/A	5.49 Max	mg/l	N/A	N/A	N/A
002A	Effluent	Oil & Grease	N/A	1.4 Max	mg/l	N/A	N/A	N/A
002A	Effluent	Oil and Grease Visual	N/A	N/A	N/A	N/A	0	Y=1;N=0
002A	Effluent	pH	N/A	7.5 - 7.8	S.U.	N/A	N/A	N/A
003A	Effluent	Arsenic Total	N/A	0.011 Max	mg/l	N/A	N/A	N/A
003A	Effluent	Chlorides	N/A	60.1 Max	mg/l	N/A	N/A	N/A
003A	Effluent	Iron Total	N/A	13.8 Max	mg/l	N/A	N/A	N/A
003A	Effluent	Oil & Grease	N/A	1.4 Max	mg/l	N/A	N/A	N/A
003A	Effluent	Oil and Grease Visual	N/A	N/A	N/A	N/A	0	Y=1;N=0
003A	Effluent	pH	N/A	6.6 - 8.2	S.U.	N/A	N/A	N/A
003A	Effluent	Total Suspended Solids	N/A	279 Max	mg/l	N/A	N/A	N/A
005A	Effluent	Arsenic Total	N/A	0.0032 Max	mg/l	N/A	N/A	N/A
005A	Effluent	Chlorides	N/A	7 Max	mg/l	N/A	N/A	N/A
005A	Effluent	Iron Total	N/A	10.6 Max	mg/l	N/A	N/A	N/A
005A	Effluent	Oil & Grease	N/A	3.8 Max	mg/l	N/A	N/A	N/A
005A	Effluent	Oil and Grease Visual	N/A	N/A	N/A	N/A	0	Y=1;N=0
005A	Effluent	pH	N/A	7.2 - 7.8	S.U.	N/A	N/A	N/A
005A	Effluent	Total Suspended Solids	N/A	528 Max	mg/l	N/A	N/A	N/A

### Summary of DMR Data Excursions

According to department records, the facility has had no effluent limitation exceedances from January 01, 2012 through December 31, 2017.

### PROPOSED PERMIT LIMITATIONS AND SELF MONITORING REQUIREMENTS

The discharge of wastewater generated in the steam electric power generating process is regulated under 40 CFR 423. The Code of Federal Regulations 40 CFR 423 require that Best Practicable Control Technology (BPT) and Best Available Technology (BAT) calculations be performed for different waste streams associated with steam electric power generation. All process wastewater associated with steam electric power generation at this facility is not discharged to a surface water of the state but is deep well injected into a Class I injection well.

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Class I injection wells are regulated by the department's underground injection control program. The facility's injection well has a permit number of ND-UIC-106. The Code of Federal Regulations 40 CFR 423.12 does include effluent limitations for coal pile runoff, which the department has determined the facility is not subject to the effluent limitations due to the facility not discharging coal pile runoff.

The facility also has an active non-hazardous waste landfill on location. The Code of Federal Regulation 40 CFR 445 regulates wastewater discharges from landfills. Upon review of 40 CFR 445.1(e), these regulations are not applicable to the facility. The facility also does not discharge any landfill contact stormwater. As per 40 CFR 445.1(e),

“this part does not apply to discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill only receives wastes generated by the industrial or commercial operation directly associated with the landfill.”

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 Guidelines and Standards (40 CFR 423).

### **Effluent Limitations**

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

Table 3: Effluent Limitations and Monitoring Requirements <b>Outfalls 001 and 002</b>
Discharge of stormwater runoff from the outfall shall utilize best management practices (BMPs) at all times.
Stipulations:  No fuel, lubricating oils, chemicals nor process wastewater shall be discharged through this point.  There shall be no discharge of floating solids or visible foam in other than trace amounts.  The department may specify additional discharge conditions or restrictions at any time to maintain water quality standards.  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.

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Table 4: Effluent Limitations and Monitoring Requirements <b>Outfalls 003 and 005</b>					
	Effluent Limitations				
	Quantity		Concentration		
Parameter	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Total Suspended Solids (TSS), mg/l	*	*	*	*	*
Oil and Grease, Visual 1/	*	Report Yes or No	*	*	*
Oil and Grease, mg/l 1/	*	*	*	*	*
pH	Benchmark of Between 6.0 to 9.0 s.u.				
Rainfall/precipitation, Inches 2/	*	Report Total Rainfall	*	*	*
Rainfall Duration, Hours 2/	*	Report Days	*	*	*
Dry Days Preceding Precipitation Event 2/	*	Report Days	*	*	*
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.					
1/ If a visible sheen or floating oil is observed at the discharge point, an oil & grease sample shall be collected.					
2/ Must correspond to the storm event or snowmelt event which the sample was collected which causes a discharge.					
<b>Stipulations:</b>  The dates of discharge, frequency of analyses, storm event information, and number of exceedances shall also be included on the Discharge Monitoring Reports (DMR).  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.  There shall be no discharge of floating solids or visible foam in other than trace amounts.  The department may specify additional discharge conditions or restrictions at any time to maintain water quality standards.					

### SELF-MONITORING REQUIREMENTS

All effluent samples shall be collected at a point following the addition of all stormwater runoff and prior to entering Samuelson Slough or Sayler Slough.

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Table 5: Self-Monitoring Requirements for Outfalls 003 and 005		
Effluent Parameter	Frequency	Sample Type
TSS, mg/L	Semi-Annual	Grab
Oil and Grease, Visual	Semi-Annual	Visual
Oil and Grease, mg/L	Conditional/Semi-Annual	Grab
pH	Semi-Annual	Grab
Rainfall/precipitation, Inches	Semi-Annual	Rain Gauge
Rainfall Duration, Days	Semi-Annual	Not Applicable
Dry Days Preceding Precipitation Event	Semi-Annual	Not Applicable

Table 6: Self-Monitoring Requirements for CWIS		
Effluent Parameter	Frequency	Sample Type
Actual Intake Flow, MGD	Daily	Calculated

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

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

Currently, the receiving water body that the facility discharges is not listed as impaired under Section 303(d) 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 waters (NDAC Chapter 33.1-16-02.1). They specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. The department uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

#### **Numerical Criteria for the Protection of Human Health**

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

#### **Narrative Criteria**

Narrative water quality criteria (NDAC Chapter 33.1-16-02.1-08) limit concentrations of pollutants from exceeding applicable standards of the receiving waters. The department

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adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

### **Antidegradation**

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

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

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

### **Mixing Zones**

The department's WQS contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (Appendix III). This policy addresses how mixing and dilution of point source discharges with receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point source discharges. Depending upon site-specific mixing patterns and environmental concerns, some pollutants/criteria may be allowed a mixing zone or dilution while others may not. In all cases, mixing zone and dilution allowances shall be limited, as necessary, to protect the integrity of the receiving water's ecosystem and designated uses.

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

**Outfall 001:** Outfall 001 is located north of the River Water Storage Pond in the northwest portion of the industrial site. This outfall drains approximately 79 acres of the site. Stormwater draining to this outfall travels north through a grass swale that contains articulated concrete blocks, check dams, and two canal valves to control erosion and slow the water velocity. This point must be managed utilizing best management practices at all times.

**Outfall 002:** Outfall 002 is located north of the Drains Pond Transfer Pumphouse and east of the Lignite Runoff Basin. This outfall drains approximately 34 acres. Much of this outfall's drainage area is vegetated. All water discharges through a heavily vegetated ditch with a canal valve prior to entering Upper Samuelson Slough. This point must be managed utilizing best management practices at all times.

**Outfall 003:** Outfall 003 is located southeast of the Section 16 Landfill on the east side of the legal drainage system, draining the south side of the industrial site. This outfall drains approximately 297 acres of the site. Stormwater is conveyed by grass swales to the outfall. Stormwater draining to this outfall travels through a vegetated drainage system that contains articulated concrete blocks and check dams to control erosion and slow the water velocity.

**Outfall 005:** Outfall 005 is located southwest of the Section 32 Landfill on the east side of the county road. This outfall drains approximately 65 acres and is the only outfall draining the Section 32 Landfill. Stormwater that contacts the ash flows towards the facilities contact water pond and is retained onsite. Stormwater runoff from the remainder of the site travels across vegetated areas and a grass swale prior to discharging.

### **Total Suspended Solids (TSS)**

Outfall 003: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes monitoring for this parameter with a sampling frequency of semi-annual.

This is based on BPJ, based on other similar permits.

Outfall 005: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes monitoring for this parameter with a sampling frequency of semi-annual.

This is based on BPJ, based on other similar permits.

### **pH**

Outfall 003: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes to continue a pH benchmark of shall remain between 6.0 and 9.0 S.U. with a sampling frequency of semi-annual.

This is based on BPJ based on other similar permits (NDR050000) and NDAC 33.1-16-02.1.

Outfall 005: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes to continue a pH benchmark of shall remain between 6.0 and 9.0 S.U. with a sampling frequency of semi-annual.

This is based on BPJ based on other similar permits (NDR050000) and NDAC 33.1-16-02.1.

### **Oil and Grease**

Outfall 003: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes monitoring for oil and grease if a visible sheen is present with a sampling frequency of conditional/semiannual.

This is based on NDAC 33.1-16-02.1.

Outfall 005: The department has reviewed the data for this parameter. No excursions occurred for this parameter. The department proposes monitoring for oil and grease if a visible sheen is present with a sampling frequency of conditional/semiannual.

This is based on NDAC 33.1-16-02.1.

### **Human Health**

The department determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health. The department will re-evaluate this discharge for impacts to human health at the next permit reissuance.

### Test Procedures

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

## COOLING WATER INTAKE STRUCTURE

### Cooling Water Intake Structure

CWIS. Active. Cooling Water Intake Structure			
Latitude: 47.280769		Longitude: -101.183814	
County: McLean			
Township: 144N		Range: 83W	
Section: 22		QQ: DB	
Source Stream: Missouri River		Classification: Class I Stream	
Intake Description: Intake structure which supplies cooling water at Coal Creek Station with a design intake flow of 25.7 MGD and an actual flow of 18 MGD under normal operation.			

The facility is subject to the CWA section 316(b) requirements. Coal Creek Station has a design intake flow of 25.7 mgd, with an actual intake flow of 18 mgd. Blue Flint Ethanol utilizes water for cooling purposes while Falkirk utilizes water for potable water. Coal Creek utilizes approximately eight-seven percent (87%) of the water withdrawn for cooling purposes. Section 316(b) requires facilities to implement appropriate technology(ies) to minimize impingement and entrainment of aquatic species at the cooling water intake structure (CWIS).

The CWIS at the facility consists of seven half cylinder screen arrays with 0.219-inch slot openings. Each screen array has a height (radius) of 16.75 inches and length of 104.38 inches. The screened area of the screen arrays is approximately 23 square feet. Approximately 75.2 percent of this screened area is open area.

The screens are arrayed on two (2) supply water pipes that extend approximately 50 feet into the river. Each screen is attached to the circulating water pumps with a pipe that extends upward a short distance and completes a 180-degree bend. This connecting pipe provides some debris and ice protection for the screens.

The screens are connected to a pump house located approximately 225 feet to the northwest. This building houses three (3) cooling water pumps. Water from the pump house is supplied to the facility by an approximately 6.7-mile-long pipeline.

The screens on the CWIS are located on two headers. Under normal operating conditions, two smaller pumps (capacity of 4,250 gpm). The intake can withdraw from both headers. This occurs when the larger pump (capacity 9,350 gpm) and one smaller pump withdraw through all seven (7) intake screens. In this configuration, the intake is withdrawing at the maximum rate of 12,550 gpm. The three (3) intake pumps are not operated simultaneously.

The cooling water intake structure is cleaned by back flushing. Each screen is back flushed approximately 15 minutes once per week. During back flushing, the intake pumps are shut

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down and static head is used to backflush water through screens. The screens are also cleaned and inspected by divers twice per year.

Cooling water pumps are operated to maintain the appropriate water balance at Coal Creek Station. Under normal operating conditions that involves withdrawing water on a continuous basis. The CWIS is operated year-round to maintain the facility water balance.

### **Threatened and Endangered (T&E) Species**

There is one listed aquatic T&E species listed in the Garrison reach, the Pallid Sturgeon. The Pallid Sturgeon is known to occur in the Missouri River, but is likely to be rarely found in the Garrison Reach. Though low numbers of adult Pallid Sturgeon are believed to reside in the Garrison Reach, there has been no record of their impingement at any of the cooling water intakes located in the reach.

There is a potential for the occurrence of non-aquatic T&E species. The Garrison Reach is listed as critical habitat for the piping plover, which is a bird which nests on sand bars and along shorelines. Other T&E species include: Least tern, Red knot, Sprague's pipit, Whooping crane, Dakota Skipper, Black-footed ferret, Gray wolf, and the Northern long-eared bat. It is very unlikely that these terrestrial T&E species would be affected by the CWIS.

The final 316(b) rule identifies fourteen (14) aquatic species which are considered to be fragile species in that they have a survival rate of less than thirty (30) percent (%). Of the fourteen (14) species, only two species are present in the Garrison Reach. The two (2) species are rainbow smelt and gizzard shad. These two (2) species are likely to be present near the CWIS.

### **U.S. Fish and Wildlife Service Review**

On July 26, 2018, the department provided a copy of the permit application to the U.S. Fish and Wildlife Service, North Dakota Field Office for a sixty (60) day review. On August 17, 2018, the U.S. Fish and Wildlife Service completed the review of the application. The application was found to be consistent with the Programmatic Biological Opinion on the U.S. Environmental Protection Agency's Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act. It was determined that the permit would have no more than minor detrimental effects on federally-listed species and critical habitat. The U.S. Fish and Wildlife Service determine that no further considerations were necessary.

### **Impingement and Entrainment**

The facility utilizes multiple measures to reduce impingement and entrainment. The facility operates using a closed-cycle cooling system. This reduces the volume of water which the facility needs to withdraw from the river. The facility utilizes 345,000 gpm of water for cooling. Approximately 7,000 gpm of the water withdrawn is used for the cooling system; 6,414 gpm of the water evaporates and must be replaced, and another 640 gpm is blow down. The facility recycles/re-uses water for other processes, which reduces the volume of water withdrawn. Overall the percent reduction in water withdrawal is approximately 98%.

The facility also has intake screens that have been sized so that the maximum intake velocity is less than 0.5 fps. It has been shown that most fish can avoid impingement on intake screens with velocities lower than 0.5 fps (79 FR 48336).



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### **Permit Requirements**

The facility meets the requirements of 40 CFR 125 Subpart J in two (2) ways. The facility operates a closed-cycle system, which meets the requirements of 125.94(c)(1), and the facility has a design through screen velocity of less than 0.5 fps, which meets the requirements of 40 CFR 125.94(c)(2).

The facility must continue to operate a closed-cycle system as required by 40 CFR 125.94(c)(1) and the BTA entrainment requirements of 40 CFR 125.94(d). The proposed permit requires monitoring of the actual intake flow of the CWIS daily. Monitoring must be representative of normal operating conditions (40 CFR 125.96(a)). The actual intake flow shall be reported on the discharge monitoring report.

The facility must visually inspect or remotely inspect the CWIS annually when the CWIS is in operation to ensure that the CWIS is being maintained and operated appropriately as required by 40 CFR 126.96(e). If it is unsafe to conduct the inspection while the CWIS is in operation, it may be shut down for inspection for health and safety reasons.

The facility shall allow the department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the cooling water withdrawals or operation of the cooling water intake structure and request information needed to determine permit compliance. This includes information needed to determine permit conditions and requirements, and any additional information recommended by the U.S. Fish and Wildlife Service upon review of the permittee's next permit application.

The facility must submit an annual certification statement and report regarding the operation of the cooling water system. Any substantial changes to the CWIS or operation of the CWIS shall be included in the annual report. If the information contained in the previous year's annual certification is still pertinent, it may be stated as such in a letter to the department. If anything at the facility has been substantially modified which impacts cooling water withdrawals or operation of the CWIS, a summary of the changes must be provided. In addition, any revisions to the information required in 40 CFR 122.21(r) must be submitted in the next permit application. This is required by 40 CFR 125.97(c).

Records of all submissions that are part of the permit reporting requirements of this permit must be retained until the subsequent permit is issued. The proposed permit shall contain the following language as required by 40 CFR 125.98(b)(1): "Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act."

### **OTHER PERMIT CONDITIONS**

No other permit conditions are proposed.

### **PERMIT ISSUANCE PROCEDURES**

#### **Permit Modifications**

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

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

**Proposed Permit Issuance**

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

DRAFT

## **APPENDIX A – PUBLIC INVOLVEMENT INFORMATION**

The department proposes to reissue a permit to **Great River Energy - Coal Creek Station**. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and the department's reasons for requiring permit conditions.

The department will place a Public Notice of Draft on **August 08, 2019** in the **McLean County Journal** and the **Underwood News** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- Tells 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, 4<sup>th</sup> Floor  
Bismarck, ND 58501

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

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

Public Notice Date: 8/8/2019

Public Notice Number: ND-2019-016

**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: 2/22/2019

Application Number: ND0026930

Applicant Name: Great River Energy-Coal Creek Station

Mailing Address: 2875 3rd St SW, Underwood, ND 58576-9759

Telephone Number: 701.442.3211

Proposed Permit Expiration Date: 9/30/2024

**Facility Description**

The application is for a 1,100 megawatt coal-fired electric generation facility located in Section 17, of Township 145N, Range 82W. Discharges consist of surface runoff. Any discharge is to Samuelson Slough and Saylor Slough from outfalls 001, 002, 003, and 005. The application includes the Missouri River cooling water intake structure for the plant.

**Tentative Determinations**

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

**Information Requests and Public Comments**

Copies of the application, draft permit, and related documents are available for review. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by September 09, 2019 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

## APPENDIX B – 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  $n^{\text{th}}$  root of a product of  $n$  factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. “**Grab**” for monitoring requirements, means a single “dip and take” sample collected at a representative point in the discharge stream.

13. “**Instantaneous**” for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. “**Maximum daily discharge limitation**” means the highest allowable “daily discharge.”
15. “**Salmonid**” means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.
16. “**Sanitary Sewer Overflows (SSO)**” means untreated or partially treated sewage overflows from a sanitary sewer collection system.
17. “**Severe property damage**” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
18. “**Total drain**” means the total volume of effluent discharged.
19. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

#### **DEFINITIONS Cooling Water Intake**

20. “**Actual Intake Flow (AIF)**” means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past three years. After October 14, 2019, actual intake flow means the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. Actual intake flow is measured at a location within the cooling water intake structure that the Director deems appropriate. The calculation of actual intake flow includes days of zero flow. AIF does not include flows associated with emergency and fire suppression capacity.
21. “**All life stages of fish and shellfish**” means eggs, larvae, juveniles, and adults. It does not include members of the infraclass Cirripedia in the sub phylum Crustacea (barnacles), green mussels (*Perna viridis*), or zebra mussels (*Dreissena polymorpha*). The Director may determine that all life stages of fish and shellfish does not include other specified nuisance species.
22. “**Closed-cycle recirculating system**” means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility, or a system designed to include certain impoundments. A closed-cycle recirculating system passes cooling water through the condenser and other components of the cooling system and reuses the water for cooling multiple times.

23. **“Contact cooling water”** means water used for cooling which comes into direct contact with any raw material, product, or byproduct.
24. **“Cooling water”** means water used for contact or non-contact cooling, including water used for equipment cooling, evaporative cooling tower makeup, and dilution of effluent heat content. The intended use of the cooling water is to absorb waste heat rejected from the process or processes used, or from auxiliary operations on the facility’s premises. Cooling water obtained from a public water system, reclaimed water from wastewater treatment facilities or desalination plants, treated effluent from a manufacturing facility, or cooling water that is used in a manufacturing process either before or after it is used for cooling as process water, is not considered cooling water for the purposes in § 125.91(a)(3).
25. **“Cooling water intake structure”** means the total physical structure and any associated constructed waterways used to withdraw cooling water from water of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to and including the intake pumps.
26. **“Design intake flow (DIF)”** means the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody. The facility’s DIF may be adjusted to reflect permanent changes to the maximum capabilities of the cooling water intake system to withdraw cooling water, including pumps permanently removed from service, flow limit devices, and physical limitations of the piping. DIF does not include values associated with emergency and fire suppression capacity or redundant pumps (i.e. back-up pumps).
27. **“Entrainment”** means any life stages of fish and shellfish in the intake water flow entering and passing through a cooling water intake structure and into a cooling water system, including the condenser or heat exchanger. Entrainable organisms include any organisms potentially subject to entrainment. For purposes of this subpart, entrainment excludes those organisms that are collected or retained by a sieve with maximum opening dimension of 0.56 inches. Examples of sieves meeting this definition include but are not limited to a 3/8 inch square mesh, or a 1/2 by 1/4 inch mesh. A facility must use the same mesh size when counting entrainment as is used when counting impingement.
28. **“Entrainment mortality”** means death as a result of entrainment through the cooling water intake structure, or death as a result of exclusion from the cooling water intake structure by fine mesh screens or other protective devices intended to prevent the passage of entrainable organisms through the cooling water intake structure.
29. **“Entrapment”** means the condition where impingeable fish and shellfish lack the means to escape the cooling water intake. Entrapment includes but is not limited to: Organisms caught in the bucket of a traveling screen and unable to reach a fish return; organisms caught in the forebay of a cooling water intake system without any means of being returned to the source waterbody without experiencing mortality; or cooling water intake systems where the velocities in the intake pipes or in any channels leading to the forebay prevent organisms from being able to return to the source waterbody through the intake pipe or channel.

30. **“Existing facility”** means any facility that commenced construction as described in 40 CFR 122.29(b)(4) on or before January 17, 2002 (or July 17, 2006 for an offshore oil and gas extraction facility) and any modification of, or any addition of a unit at such a facility. A facility built adjacent to another facility would be a new facility while the original facility would remain as an existing facility for purposes of this subpart. A facility cannot both be an existing facility and a new facility as defined at § 125.83.
31. **“Flow reduction”** means any modification to a cooling water intake structure or its operation that serves to reduce the volume of cooling water withdrawn. Examples include, but are not limited to, variable speed pumps, seasonal flow reductions, wet cooling towers, dry cooling towers, hybrid cooling towers, unit closures, or substitution for withdrawals by reuse of effluent from a nearby facility.
32. **“Fragile species”** means those species of fish and shellfish that are least likely to survive any form of impingement. For purposes of this subpart, fragile species are defined as those with an impingement survival rate of less than 30 percent, including but not limited to alewife, American shad, Atlantic herring, Atlantic long-finned squid, Atlantic menhaden, bay anchovy, blueback herring, bluefish, butterfly, gizzard shad, grey snapper, hickory shad, menhaden, rainbow smelt, round herring, and silver anchovy.
33. **“Impingement”** means the entrapment of any life stages of fish and shellfish on the outer part of an intake structure or against a screening device during periods of intake water withdrawal. For purposes of this subpart, impingement includes those organisms collected or retained on a sieve with maximum distance in the opening of 0.56 inches, and excludes those organisms that pass through the sieve. Examples of sieves meeting this definition include but are not limited to a 3/8 inch square mesh, or a 1/2 by 1/4 inch mesh. This definition is intended to prevent the conversion of entrainable organisms to counts of impingement or impingement mortality. The owner or operator of a facility must use a sieve with the same mesh size when counting entrainment as is used when counting impingement.
34. **“Impingement mortality”** means death as a result of impingement. Impingement mortality also includes organisms removed from their natural ecosystem and lacking the ability to escape the cooling water intake system, and thus subject to inevitable mortality.
35. **“Independent supplier”** means an entity, other than the regulated facility, that owns and operates its own cooling water intake structure and directly withdraws water from waters of the United States. The supplier provides the cooling water to other facilities for their use, but may itself also use a portion of the water. An entity that provides potable water to residential populations (e.g., public water system) is not a supplier for purposes of this subpart.
36. **“Latent mortality”** means the delayed mortality of organisms that were initially alive upon being impinged or entrained but that do not survive the delayed effects of impingement and entrainment during an extended holding period. Delayed effects of impingement and entrainment include but are not limited to temperature change, physical stresses, and chemical stresses.
37. **“Minimize”** means to reduce to the smallest amount, extent, or degree reasonably possible.



38. **“Modified traveling screen”** means a traveling water screen that incorporates measures protective of fish and shellfish, including but not limited to: Screens with collection buckets or equivalent mechanisms designed to minimize turbulence to aquatic life; addition of a guard rail or barrier to prevent loss of fish from the collection system; replacement of screen panel materials with smooth woven mesh, drilled mesh, molded mesh, or similar materials that protect fish from descaling and other abrasive injury; continuous or near-continuous rotation of screens and operation of fish collection equipment to ensure any impinged organisms are recovered as soon as practical; a low pressure wash or gentle vacuum to remove fish prior to any high pressure spray to remove debris from the screens; and a fish handling and return system with sufficient water flow to return the fish directly to the source water in a manner that does not promote predation or re-impingement of the fish, or require a large vertical drop. The Director may approve of fish being returned to water sources other than the original source water, taking into account any recommendations from the Services with respect to endangered or threatened species. Examples of *modified traveling screens* include but are not limited to: Modified Ristroph screens with a fish handling and return system, dual flow screens with smooth mesh, and rotary screens with fish returns or vacuum returns.
39. **“Moribund”** means dying; close to death.
40. **“New unit”** means a new “standalone” unit at an existing facility where construction of the new unit begins after October 14, 2014 and that does not otherwise meet the definition of a new facility at § 125.83 or is not otherwise already subject to subpart I of this part. A stand-alone unit is a separate unit that is added to a facility for either the same general industrial operation or another purpose. A new unit may have its own dedicated cooling water intake structure, or the new unit may use an existing or modified cooling water intake structure.
41. **“Offshore velocity cap”** means a velocity cap located a minimum of 800 feet from the shoreline. A velocity cap is an open intake designed to change the direction of water withdrawal from vertical to horizontal, thereby creating horizontal velocity patterns that result in avoidance of the intake by fish and other aquatic organisms. For purposes of this subpart, the velocity cap must use bar screens or otherwise exclude marine mammals, sea turtles, and other large aquatic organisms.
42. **“Operational measure”** means a modification to any operation that serves to minimize impact to all life stages of fish and shellfish from the cooling water intake structure. Examples of *operational measures* include, but are not limited to, more frequent rotation of traveling screens, use of a low pressure wash to remove fish prior to any high pressure spray to remove debris, maintaining adequate volume of water in a fish return, and debris minimization measures such as air sparging of intake screens and/or other measures taken to maintain the design intake velocity.
43. **“Social benefits”** means the increase in social welfare that results from taking an action. Social benefits include private benefits and those benefits not taken into consideration by private decision makers in the actions they choose to take, including effects occurring in the future. Benefits valuation involves measuring the physical and biological effects on the environment from the actions taken. Benefits are generally treated one or more of three ways: A narrative containing a qualitative discussion of environmental effects, a quantified analysis expressed in physical or biological units, and a monetized benefits analysis in which dollar values are applied to quantified physical or biological units. The dollar values in

a social benefits analysis are based on the principle of willingness to-pay (WTP), which captures monetary benefits by measuring what individuals are willing to forgo in order to enjoy a particular benefit. Willingness to-pay for nonuse values can be measured using benefits transfer or a stated preference survey.

44. **“Social costs”** means costs estimated from the viewpoint of society, rather than individual stakeholders. Social cost represents the total burden imposed on the economy; it is the sum of all opportunity costs incurred associated with taking actions. These opportunity costs consist of the value lost to society of all the goods and services that will not be produced and consumed as a facility complies with permit requirements, and society reallocates resources away from other production activities and towards minimizing adverse environmental impacts.

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### **APPENDIX C – DATA AND TECHNICAL CALCULATIONS**

No technical calculations were performed in developing this permit. All effluent limitations are based on 40 CFR 125 Subpart J, NDAC 33.1-16-02.1 and other similar permits issued by the department (BPJ).

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#### **APPENDIX D – RESPONSE TO COMMENTS**

Response to comments received during the public notice/comment period will be placed here.