

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

Public Notice Date: 7/24/2019

Public Notice Number: ND-2019-012

**Purpose of Public Notice**

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

**Permit Information**

Application Date: 3/11/2019

Application Number: ND0026654

Applicant Name: Pioneer Generating Station

Mailing Address: 1717 E Interstate Ave, Bismarck, ND 58503

Telephone Number: 701.557.5495

Proposed Permit Expiration Date: 9/30/2024

**Facility Description**

The application is for a natural gas fired electric power generating station located in Township 155 North, Range 102 West, Section 20, in Williams County. Discharges consist of site runoff and cooling tower blowdown that is discharged from Outfall 001 to and unnamed tributary of Painted Woods Creek, a Class III stream.

**Tentative Determinations**

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

**Information Requests and Public Comments**

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

All comments received by August 25, 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: ND0026654  
Effective Date: October 01, 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,

Basin Electric Power Cooperative – Pioneer Generating Station  
Bismarck, North Dakota

is authorized to discharge from its gas fired electric generating plant (Pioneer Generating Station) located near Williston, North Dakota

to the unnamed tributary of Painted Woods Creek

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 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.

DRAFT

**OUTFALL DESCRIPTION**

<b>Outfall 001. Active. Final Outfall. Sedimentation Pond. Industrial Wastewater.</b>			
Latitude: 48.233527	Longitude: -103.950951	County: McKenzie	
Township: 155 N	Range: 103 W	Section: 20	QQ: AA
Receiving Stream: Unnamed tributary to Lonesome Creek		Classification: Class III Stream	
Outfall Description: This point is the final discharge point for the sedimentation pond. Any discharge is to an unnamed tributary to Painted Woods Creek.			

**PERMIT SUBMITTALS SUMMARY**

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Quarterly	01/31/2020
Application Renewal	EPA Form 1 & 2C	1/permit cycle	03/31/2024

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**I. LIMITATIONS AND MONITORING REQUIREMENTS**

**A. Discharge Authorization**

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfall as specified to the following: **Unnamed tributary of Painted Woods Creek**

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>Outfall 001</b>							
Parameter	Effluent Limitations					Monitoring Requirements	
	Quantity		Concentration			Sample Frequency	Sample Type
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit		
TSS, mg/l	*	*	30 mg/l	*	100 mg/l	Weekly	Grab
pH 1/	Shall Remain Between 6.0 to 9.0 S.U.					Weekly	Grab
Oil and Grease, visual 2/	*	Report Yes or No	*	*	*	Weekly	Grab
Oil and Grease, mg/l 2/	*	*	15 mg/l	*	20 mg/l	Conditional/Daily	Grab
Sulfate, mg/l	*	*	*	*	*	Weekly	Grab
Chloride, mg/l	*	*	*	*	*	Weekly	Grab
Sodium, % total cations, mEq/l	*	*	*	*	*	Weekly	Grab
Flow Effluent, MGD	Report Avg. Quarterly Value	Report Max. Daily Value	*	*	*	Daily	Calculated
Total Drain, MGAL	*	Report Quarterly Total	*	*	*	Quarterly	Calculated

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

1/ The pH, an instantaneous limitation, shall be between 6.0 S.U. and 9.0 S.U. Any single analysis and or measurement beyond this limitation shall be considered a violation of the conditions of this permit.

2/ If an oil sheen or floating oil is observed in the discharge, a grab sample shall be immediately taken, analyzed and reported. The sample shall not exceed the effluent limitations above.

**Stipulations:**

The dates of discharge, frequency of analyses, total number of gallons discharged, discharge flow rates, 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.

## II. 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.

### III. COMPLIANCE RESPONSIBILITIES

#### A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

#### B. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

#### C. Planned Changes

The department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

#### D. Duty to Provide Information

The permittee shall furnish to the department, within a reasonable time, any information which the department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

#### E. Signatory Requirements

All applications, reports, or information submitted to the department shall be signed and certified.

All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

All reports required by the permit and other information requested by the department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

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

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization under E. Signatory Requirements is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are

significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**F. Twenty-four Hour Notice of Noncompliance Reporting**

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:
  - a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;
  - b. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or
  - c. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.
2. A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. The written submission shall contain:
  - a. A description of the noncompliance and its cause;
  - b. The period of noncompliance, including exact dates and times;
  - c. The estimated time noncompliance is expected to continue if it has not been corrected; and
  - d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

Reports shall be submitted to the address in Part II.E. Reporting of Monitoring Results. The department may waive the written report on a case by case basis if the oral report has been received within 24 hours by the department at 701.328.5210 as identified above.

All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in this subsection.

**G. Bypass of Treatment Facilities**

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to any of the following provisions in this section.
2. Bypass exceeding limitations-notification requirements.
  - a. Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of bypass.
  - b. Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required under F. Twenty-four Hour Notice of Noncompliance Reporting.
3. Prohibition of Bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment

downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

- c. The permittee submitted notices as required under the 1. Anticipated Bypass subsection of this section.

The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed above.

#### **H. Upset Conditions**

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and the permittee can identify its cause(s);
2. The permitted facility was, at the time being, properly operated;
3. The permittee submitted notice of the upset as required under F. Twenty-four Hour Notice of Noncompliance Reporting and
4. The permittee complied with any remedial measures required under I. Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

#### **I. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

#### **J. Removed Materials**

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state. The permit issuing authority shall be contacted prior to the disposal of any sewage sludges. At that time, concentration limitations and/or self-monitoring requirements may be established.

#### **K. Duty to Reapply**

Any request to have this permit renewed should be made six months prior to its expiration date.

#### **IV. GENERAL PROVISIONS**

##### **A. Inspection and Entry**

The permittee shall allow department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the wastewater treatment facilities and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

##### **B. Availability of Reports**

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

##### **C. Transfers**

This permit is not transferable except upon the filing of a Statement of Acceptance by the new party and subsequent department approval. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the department of the possible change.

##### **D. New Limitations or Prohibitions**

The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

##### **E. Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

##### **F. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

##### **G. State Laws**

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

##### **H. Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

##### **I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

##### **J. Severability**

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

**FACT SHEET FOR NDPDES PERMIT  
ND0026654**

**PERMIT ISSUANCE**

**BASIN ELECTRIC POWER COOPERATIVE - PIONEER GENERATING STATION**

**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 Department uses North Dakota Pollutant Discharge Elimination System (NDPDES) as its permitting title.

The following rules or regulations apply to NDPDES permits:

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

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

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

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**BACKGROUND INFORMATION**

**Table 1: General Facility Information**

Applicant:	Basin Electric Power Cooperative
Facility Name and Address:	Pioneer Generating Station 5639 151 Avenue NW Williston, ND 58801
Facility Location:	SE ¼ NE ¼ Sec. 20, Twp. 155 N, Range 103 W, Williams County
Permit Number:	ND0026654
Permit Type:	Minor Industrial
Type of Treatment:	Sedimentation Pond
SIC Code:	4911-Electric Services
Discharge Location:	Outfall 001: Latitude: 48.233527 Longitude: -103.950951
Hydrologic Code:	10110101 – Lake Sakakawea
Receiving Waters:	Unnamed tributary to Painted Woods Creek, a Class III Stream

**Figure 1:**Pioneer Generation Station Overview.

Basin Electric Cooperative - Pioneer Generating Station





## **FACILITY DESCRIPTION**

Pioneer Generating Station is an electrical generation facility comprised of three 45-megawatt natural gas-fired simple-cycle combustion turbines (total of 135 megawatts) and 12 natural gas-fired RICE engines with a capability of generating an additional 111 megawatts. The facility has the capability to generate a total of 246 megawatts from the 15 total units. The units use dry low-nitrogen oxide (NO<sub>x</sub>) burner technology along with an anhydrous ammonia-based selective catalytic reduction (SCR) system for NO<sub>x</sub> control.

Potable water is supplied to the facility from the local rural water distribution system. The potable water is further treated by a portable demineralization trailer. Demineralized water is injected into the turbines for NO<sub>x</sub> control. A mixture of demineralized and potable water (evaporative cooling or spray mist water) is used to cool turbine air inlet temperatures during hot weather operation. The demineralizer trailer is provided by an outside contractor, and when required, the demineralizer trailer is regenerated off site.

Evaporative cooling water is pumped to the top of the evaporative cooling system and as the water trickles down through media, some of the water is evaporated. The evaporated water does not contain any minerals, resulting in an overall increase in the concentration of minerals as the water returns to the sump. New make-up water is added to the sump to replace water lost through evaporation. Over time, minerals become concentrated in the sump water. When the evaporative cooling water reaches a conductivity level of 1,500 microhos/cm, the blow down system is purged until a lower conductivity level of 1,200 microhos/cm is reached. The purged water is routed to the sedimentation pond and discharged as necessary. No process wastewater is generated by the RICEs and the mechanical facilities are completely enclosed.

Plant site storm water runoff is diverted to an on-site pond and co-mingled with the evaporative cooling tower blow down and overflow. The sedimentation pond is designed to hold runoff from a 25-year, 24-hour rainfall event from the simple cycle combustion engine area (Phase I and II).

Stormwater from the Phase III addition (the addition of 12 natural gas fired RICE engines) is routed to a second stormwater pond which is approximately 0.9 acres. The pond is sized to accommodate runoff from a 25-year, 24-hour rainfall event. This pond is discharged from a point on the west side of the facility, to the Muddy Creek watershed. This discharge has been reviewed by the department and was determined that it is not a regulated discharge.

### **History**

Unit 1 began operation in December of 2013, while Units 2 and 3 went into operation in late-2014. These units will utilize an evaporative cooling system during the hot months to reduce the turbine air inlet temperatures.

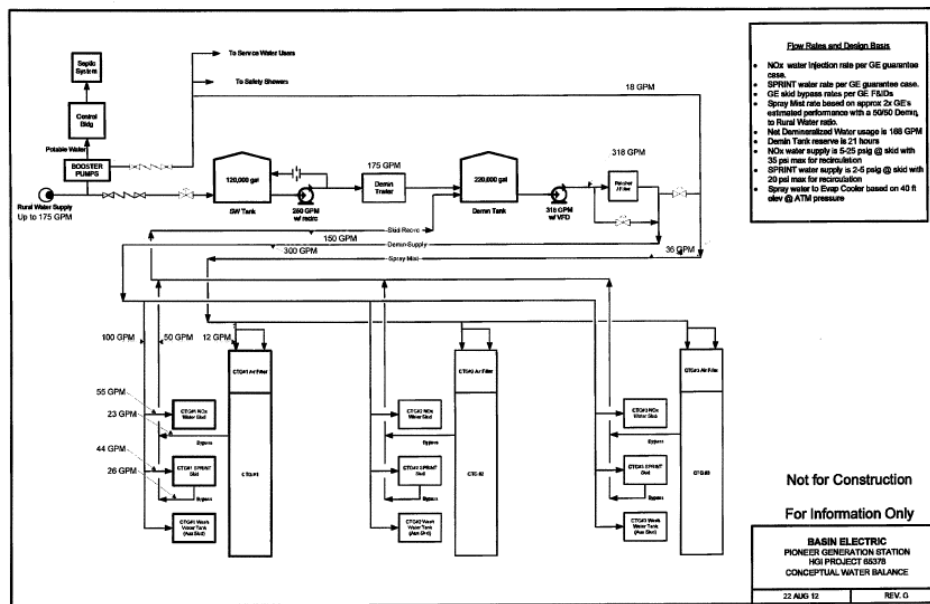
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**Treatment System**

Stormwater runoff, evaporative cooling tower blow down and overflow is routed to a sedimentation pond. The design capacity is approximately 34,304 cubic feet, at a 3-foot water depth. The pond is also sized to accommodate 2 feet of sediment accumulation and to have 2 feet of freeboard, so the total capacity is roughly twice the design capacity. The sedimentation pond is designed to hold runoff from a 25-year, 24-hour rainfall event from the entire site. The pond has one outlet, which is an 18-inch diameter pipe controlled by a valve on the west side of the pond. In the northwest corner of the pond there is a riprap lined spillway used for overflow in case of emergency.

Below is the water balance provided to the department in the permit application:



**Outfall Description**

<b>Outfall 001. Active. Final Outfall. Sedimentation Pond. Industrial Wastewater.</b>			
Latitude: 48.233527	Longitude: -103.950951	County: McKenzie	
Township: 155 N	Range: 103 W	Section: 20	QQ: AA
Receiving Stream: Unnamed tributary to Lonesome Creek		Classification: Class III Stream	
Outfall Description: This point is the final discharge point for the sedimentation pond. Any discharge is through in 18" diameter pipe to an unnamed tributary to Painted Woods Creek.			

**PERMIT STATUS**

The department issued the previous permit for the facility on October 1, 2014. The previous permit had effluent limitations on the following parameters: Total Suspended Solids (TSS), pH, and Oil and Grease.

The department has been in contact with Basin Electric Cooperative to obtain information to reissue their permit. The department received EPA applications Form 1, and Form 2C, on March 11, 2019. The application was accepted by the department March 18, 2019. Effluent sample data has been provided to the department through official laboratory reports, discharge monitoring reports, and the permit application Form 2C.

**SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED**

The department's assessment of the compliance is based on review of the facility's Discharge Monitoring Report (DMR) forms and inspections conducted by the department. No inspections have occurred at this facility. Thirteen (13) discharges have occurred at the facility from October 1, 2014 to December 31, 2018. The facility had effluent limitation exceedances in May 2015, July 2018, and October 2018 (**Table 3**). The facility did not have effluent exceedances November 2018 through December 2018.

The facility is an intermittent discharger. A summary of the data follows:

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Table 2: Summary of DMR data from 04/01/2014 – 12/31/2018.

Disch Pt	Location	Parameter	Ave Conc	Range	Units	Ave Load	Max Load	Max Load Units
001A	Effluent	Chlorides	18.35	2.6 – 16.3	mg/l	N/A	N/A	N/A
001A	Effluent	Discharge Flow in Million Gals	N/A	N/A	N/A	0.06	0.47	MGD
001A	Effluent	Drain in Million Gallons	N/A	N/A	N/A	N/A	93,600	Mgal
001A	Effluent	Oil & Grease	0.00	0 - 0	mg/l	0.00	0	#/Day
001A	Effluent	Oil and Grease Visual	N/A	N/A	N/A	N/A	0	Y=1; N=0
001A	Effluent	pH	N/A	6.3 - 10	S.U.	N/A	N/A	N/A
001A	Effluent	Sodium	57.63	19.8 - 99.1	mg/L	N/A	N/A	N/A
001A	Effluent	Sulfates	123.33	40.6 - 222	mg/l	48.39	450.777	#/Day
001A	Effluent	Total Suspended Solids	4.77	1 - 20	mg/l	0.95	5.2	#/Day

**Summary of DMR Data Excursions**

Three (3) excursions occurred from October 1, 2014 through December 31, 2018 for the facility. No exceedances were 40 percent or greater above the limit.

Table 3: DMR exceedances from 10/01/2014 – 12/31/2018.

Disch Pt	Location	Month	Parameter	Min Conc	Avg Conc	Max Conc	Units Conc	Excursions	TRC Exceedance
001A	Effluent	5/1/2015	PH	9.6		9.6	S.U.	1	0
001A	Effluent	7/1/2018	PH	9.6		9.6	S.U.	1	0
001A	Effluent	10/1/2018	PH	10		10	S.U.	1	0

**PROPOSED PERMIT LIMITS AND SELF MONOTRING REQUIREMENTS**

Discharge of wastewater generated by gas turbine electric power generation are not regulated by the Federal Limitations Guidelines and Standards. Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating point source category were reviewed to determine appropriate limitations. Using Best Professional Judgment (BPJ), the department determined the Steam Electric Generating limitation guidelines and standards are appropriate for this facility due to the similarities of the low volume waste sources.

The effluent limitation guidelines published for the steam electric power generating point source category are found in 40 CFR Part 423. Section § 423.15 identifies standards for New Source Performance Standards (NSPS) for new point sources. The applicable effluent guidelines are summarized in the table below:

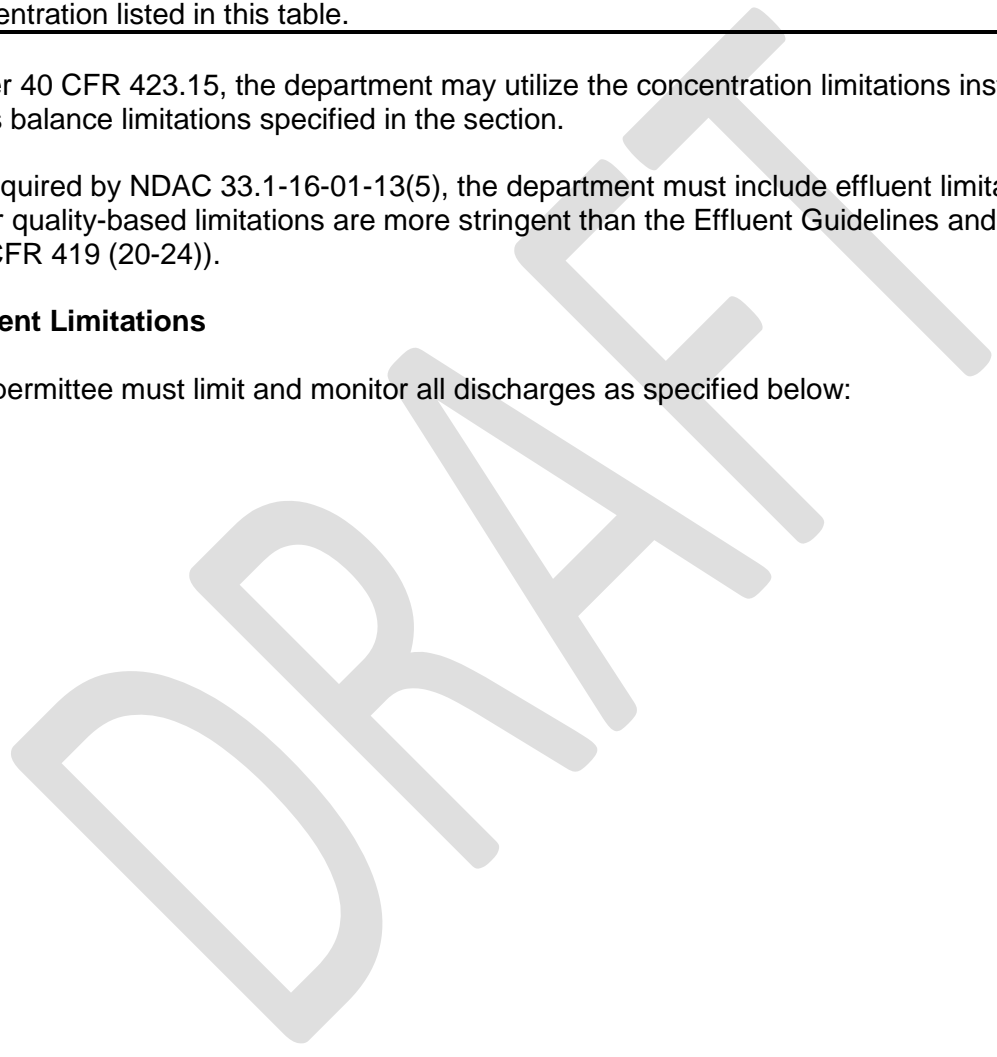
Table 4: Best Practicable Technology 40 CFR 423.15: Low Volume Wastes		
Parameter	Federal Requirements	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
The quantity of pollutants discharge from low volume flow waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in this table.		

Under 40 CFR 423.15, the department may utilize the concentration limitations instead of any mass balance limitations specified in the section.

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 419 (20-24)).

**Effluent Limitations**

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



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Table 5: Effluent Limitations and Monitoring Requirements <b>Outfall 001</b>					
Parameter	Effluent Limitations				
	Quantity		Concentration		
	Avg. Monthly Limit	Daily Maximum Limit	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
TSS, mg/l	*	*	30 mg/l	*	100 mg/l
pH 1/	Shall Remain Between 6.0 to 9.0 S.U.				
Oil and Grease, visual 2/	*	Report Yes or No	*	*	*
Oil and Grease, mg/l 2/	*	*	15 mg/l	*	20 mg/l
Flow Effluent, MGD	Report Avg. Quarterly Value	Report Max. Daily Value	*	*	*
Total Drain, MGAL	*	Report Quarterly Total	*	*	*
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.					
1/ The pH, an instantaneous limitation, shall be between 6.0 S.U. and 9.0 S.U. Any single analysis and or measurement beyond this limitation shall be considered a violation of the conditions of this permit.					
2/ If an oil sheen or floating oil is observed in the discharge, a grab sample shall be immediately taken, analyzed and reported. The sample shall not exceed the effluent limitations above.					
<p>Stipulations:</p> <p>The dates of discharge, frequency of analyses, total number of gallons discharged, discharge flow rates, 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>					

**SELF-MONITORING REQUIREMENTS**

All effluent samples shall be collected at a point following the addition of all waste streams and prior to entering the unnamed tributary to Painted Woods Creek.

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<b>Effluent Parameter</b>	<b>Frequency</b>	<b>Sample Type</b>
TSS, mg/L	Weekly	Grab
pH	Weekly	Grab
Oil and Grease, visual	Weekly	Visual
Oil and Grease, mg/l	Conditional/Daily	Grab
Sulfate, mg/l	Weekly	Grab
Chloride, mg/l	Weekly	Grab
Sodium, % total cations, mEq/l	Weekly	Grab
Flow Effluent, MGD	Daily	Calculated
Total Drain, MGAL	Quarterly	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 stream reach of the unnamed tributary to Painted Woods Creek that the facility discharges to is listed as all beneficial uses attained and 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 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**

### **TSS**

The department has reviewed the TSS data and sampling frequency. No exceedances have occurred for this parameter. The department proposes to continue with the effluent limitation of 30 mg/l (monthly average) and 100 mg/l (daily maximum) with a sampling frequency of weekly.

This is based upon 40 CFR 423.15 and the previous permit.

### **pH**

The department has reviewed the pH data and sampling frequency. Three (3) exceedances have occurred for this parameter (**Table 3**). The department proposes to continue with the effluent limitation of shall remain between 6.0 and 9.0 S.U. with a sampling frequency of weekly.

This is based upon NDAC 33.1-16-02.1, 40 CFR 423.15, and the previous permit.

### **Oil & Grease, visual**

The department has reviewed the oil and grease visual data and sampling frequency. No exceedances have occurred for this parameter. The department proposes to remove the department notification if a sheen is present and replace it with reporting on the DMR. A sample for oil and grease, mg/l shall be taken if a sheen is present on the discharge wastewater.



This is based upon NDAC 33.1-16-02.1 and BPJ.

#### **Oil & Grease, mg/l**

The department has reviewed the oil and grease data and sampling frequency. No exceedances have occurred for this parameter. The department proposes to continue with the effluent limitations of 15 mg/l (monthly average) and 20 mg/l (daily maximum) with a sampling frequency of conditional/daily. Sampling only needs to occur if a visible sheen is present.

This is based upon NDAC 33.1-16-02.1, 40 CFR 423.15, and the previous permit.

#### **Sulfate**

The department has reviewed the sulfate data and sampling frequency. No exceedances have occurred for this parameter. The department conducted a reasonable potential analysis for this parameter (**Appendix C**). It was determined that there is no reasonable potential for the discharge to cause an excursion of the WQS.

The department proposes to continue with effluent monitoring for sulfate with a sampling frequency of weekly.

This is based upon NDAC 33.1-16-02.1 and the previous permit.

#### **Chloride**

The department has reviewed the chloride data and sampling frequency. No exceedances have occurred for this parameter. The department conducted a reasonable potential analysis for this parameter (**Appendix C**). It was determined that there is no reasonable potential for the discharge to cause an excursion of the WQS.

The department proposes to continue with effluent monitoring for chloride with a sampling frequency of weekly.

This is based upon NDAC 33.1-16-02.1 and the previous permit.

#### **Sodium**

The department has reviewed the sodium data and sampling frequency. No exceedances have occurred for this parameter. The department proposes to continue monitoring for this parameter but switch the units to percent of total cations as mEq/l in order to match the WQS. The department proposes to continue with a monitoring frequency of weekly.

This is based on 33.1-16-02.1 and the previous permit.

#### **Human Health**

North Dakota's water quality standards include numeric human health-based criteria that the Department must consider when writing NDPDES permits. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria. The department determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health. The department will re-evaluate this discharge for impacts to human health at the next permit reissuance.

**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 or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

**OTHER PERMIT CONDITIONS**

No other permit conditions are proposed for the facility.

**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.

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.

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

The department proposes to issue a permit to the **Basin Electric Power Cooperative – Pioneer Generating 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 **July 24, 2019** in the **Williston Herald** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- 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  
Reissue of an NDPDES Permit**

Public Notice Date: 7/24/2019

Public Notice Number: ND-2019-012

**Purpose of Public Notice**

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

**Permit Information**

Application Date: 3/11/2019

Application Number: ND0026654

Applicant Name: Pioneer Generating Station

Mailing Address: 1717 E Interstate Ave, Bismarck, ND 58503

Telephone Number: 701.557.5495

Proposed Permit Expiration Date: 9/30/2024

**Facility Description**

The application is for a natural gas fired electric power generating station located in Township 155 North, Range 102 West, Section 20, in Williams County. Discharges consist of site runoff and cooling tower blowdown that is discharged from Outfall 001 to and unnamed tributary of Painted Woods Creek, a Class III stream.

**Tentative Determinations**

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

**Information Requests and Public Comments**

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

All comments received by August 25, 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 – GLOSSARY

### DEFINITIONS Standard Permit BP 2019.05.29

1. “**Act**” means the Clean Water Act.
2. “**Average monthly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. “**Average weekly discharge limitation**” means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. “**Best management practices**” (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. “**Bypass**” means the intentional diversion of waste streams from any portion of a treatment facility.
6. “**Composite**” sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. “**Daily discharge**” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. “**Department**” means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. “**DMR**” means discharge monitoring report.
10. “**EPA**” means the United States Environmental Protection Agency.
11. “**Geometric mean**” means the  $n^{\text{th}}$  root of a product of  $n$  factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.

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

**APPENDIX C – DATA AND TECHNICAL CALCULATIONS**

No flow data was available to calculate the critical low flows for reasonable potential determinations as the facility discharges to the headwaters of the receiving stream. All reasonable potential determinations were made at end-of-pipe.

**Sulfate**

The reasonable potential determination for sulfate is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 0.4.

**Receiving Water Concentration (RWC)  
 Reasonable Potential (RP)  
 Determination**

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

Facility Name:	Pioneer Generating	Receiving Stream:	Unnamed Tributary
NDPDES Permit:	ND0026654	1Q10 Acute	0 cfs
Daily Maximum Flow (mgd):	0.47	1B3 Acute	0 cfs
Daily Average Flow (mgd):	0.06	7Q10 Chronic	0 cfs
Stream Design Mixing:	0.0%	4B3 Chronic	0 cfs
Statistical Multiplier:	1.4		
Upstream Concentration:	0.0000 mg/l		Parameter:
Effluent Concentration (max):	222.0000 mg/l		Sulfate
			Outfall:
RWC	$\frac{(StatQeCe)+(Cs(pmf)Qs)}{Qe+(pmf)Qs}$		001

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)  
 Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)  
 Qe = Effluent Design Flow  
 Ce = Highest effluent concentration reported.  
 pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.  
 Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)  
 Cs = Background concentration of the receiving water.

Qe - Acute	0.47	mgd	Qs - 1Q10	0.00	mgd
Qe - Chronic	0.06	mgd	Qs - 1B3	0.00	mgd
Ce	222.0000	mg/l	Qs - 7Q10	0.00	mgd
Cs	0.0000	mg/l	Qs - 4B3	0.00	mgd
Stat	1.40				
pmf	0.0%				

Acute RP		Chronic RP	
RWC - 1Q10	310.8000 mg/l	RWC - 7Q10	310.8000 mg/l
RWC - 1B3	310.8000 mg/l	RWC - 4B3	310.8000 mg/l
Criterion Maximum Concentration (CMC)		Criterion Continuous Concentration (CCC)	
Acute Criterion	N/A mg/l	Chronic Criterion	750.0000 mg/l

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

CMC RP Present:		CCC RP Present:	
1Q10 Acute OR	NO	7Q10 Chronic OR	NO
1B3 Acute	NO	4B3 Chronic	NO

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

FACT SHEET FOR NDPDES PERMIT ND0026654  
 BASIN ELECTRIC POWER COOPERATIVE - PIONEER GENERATING STATION  
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**Chloride**

The reasonable potential determination for chloride is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The coefficient of variation used was 0.4.

**Receiving Water Concentration (RWC)  
 Reasonable Potential (RP)  
 Determination**

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

Facility Name:	Pioneer Generating	Receiving Stream:	Unnamed Tributary
NDPDES Permit:	ND0026654	1Q10 Acute	0 cfs
Daily Maximum Flow (mgd):	0.47	1B3 Acute	0 cfs
Daily Average Flow (mgd):	0.06	7Q10 Chronic	0 cfs
Stream Design Mixing:	0.0%	4B3 Chronic	0 cfs
Statistical Multiplier:	1.4		
Upstream Concentration:	0.0000	mg/l	Parameter:
Effluent Concentration (max):	16.3000	mg/l	Chloride
			Outfall:
RWC	$\frac{(StatQeCe)+(Cs(pmf)Qs)}{Qe+(pmf)Qs}$		001

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)

Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)

Qe = Effluent Design Flow

Ce = Highest effluent concentration reported.

pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.

Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)

Cs = Background concentration of the receiving water.

Qe - Acute	0.47	mgd	Qs - 1Q10	0.00	mgd
Qe - Chronic	0.06	mgd	Qs - 1B3	0.00	mgd
Ce	16.3000	mg/l	Qs - 7Q10	0.00	mgd
Cs	0.0000	mg/l	Qs - 4B3	0.00	mgd
Stat	1.40				
pmf	0.0%				

Acute RP		Chronic RP	
RWC - 1Q10	22.8200 mg/l	RWC - 7Q10	22.8200 mg/l
RWC - 1B3	22.8200 mg/l	RWC - 4B3	22.8200 mg/l

Criterion Maximum Concentration (CMC)	Criterion Continuous Concentration (CCC)		
Acute Criterion	N/A mg/l	Chronic Criterion	250.0000 mg/l

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

CMC RP Present:		CCC RP Present:	
1Q10 Acute OR	NO	7Q10 Chronic OR	NO
1B3 Acute	NO	4B3 Chronic	NO

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



**APPENDIX D – RESPONSE TO COMMENTS**

Comments received during the comment period to be placed here.

DRAFT