

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

Public Notice Date: 11/18/2021

Public Notice Number: ND-2021-036

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: 6/30/2021

Application Number: ND0025232

Applicant Name: Basin Electric Power Lolds

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

Telephone Number: 701.557.5495

Proposed Permit Expiration Date: 12/31/2026

Facility Description

The reapplication is for a 660 megawatt, lignite coal-fired steam electric power generating plant located in the NW 1/4, Section 22, Township 144 North, Range 84 West and the associated ash landfill located in Sections 31 and 32, Township 144 North, Range 84 West. Discharges from the plant consist of once-through cooling water, wastewater, and stormwater to the Missouri River adjacent to the plant, and stormwater runoff from the closed areas of the ash landfill to Alderin Creek adjacent to the landfill. The reapplication includes the Missouri River cooling water intake 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. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by December 17, 2021 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.

DRAFT

Permit No: ND0025232
Effective Date: January 1, 2022
Expiration Date: December 31, 2026

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
Leland Olds Station

is authorized to discharge from Leland Olds Station power plant

to the Missouri River and Alderin Creek

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,
December 31, 2026.

Signed this _____ day of _____, _____.

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

BP 2019.05.29

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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^{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 Industry Specific

See 40 CFR 423.11

See 40 CFR 125.92

OUTFALL DESCRIPTION

Outfall 001. Active. Final Outfall. Once through cooling water.			
Latitude: 47.28582	Longitude: -101.31888	County: Mercer	
Township: 144N	Range: 84W	Section: 15	QQ: CC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of once-through cooling water from Unit No. 1 and effluent from Outfall 003. Outfall 001 has a design flow of 134 MGD. Discharges are to the Missouri River.			

Outfall 002. Active. Final Outfall. Once through cooling water.			
Latitude: 47.28587		Longitude: -101.31926	
County: Mercer			
Township: 144N		Range: 84W	
Section: 15		QQ: CC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of once-through cooling water from Unit No. 2 and effluent from Outfall 003. Outfall 002 has a design flow of 271 MGD. Discharges are to the Missouri River.			

Outfall 003. Active. Internal Point. Clarifier.			
Latitude: 47.28073		Longitude: -101.31670	
County: Mercer			
Township: 144N		Range: 84W	
Section: 22		QQ: AC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of low volume wastes. This is an interior point that mixes with Outfall 001 and/or Outfall 002.			

Outfall 009. Active. Final Outfall. Screen washings and intake maintenance dewatering.			
Latitude: 47.28574		Longitude: -101.32047	
County: Mercer			
Township: 144N		Range: 84W	
Section: 15		QQ: CC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: An intermittent discharge of Unit Nos. 1 and 2 intake screen washings. The discharge also includes dewatering of the intake structure clear wells during maintenance. The discharge is located in the northeast corner of the intake building. Any discharge is to the Missouri River.			

Outfall 011. Active. Final Outfall. Settling pond for ash landfill site.			
Latitude: 47.24771		Longitude: -101.35322	
County: Mercer			
Township: 144N		Range: 84W	
Section: 32		QQ: CA	
Receiving Stream: Alderin Creek		Classification: Class III	
Outfall Description: Discharges consist of runoff water from the exterior portions of the ash landfill and construction associated with landfill expansion. Any discharge is to Alderin Creek.			

Outfall 012. Active. Final Outfall. Settling pond for ash landfill site.			
Latitude: 47.24254	Longitude: -101.36146	County: Mercer	
Township: 144N	Range: 84W	Section: 32	QQ: CC
Receiving Stream: Alderin Creek		Classification: Class III	
Outfall Description: Discharges consist of runoff water from the exterior portions of the ash landfill and construction associated with landfill expansion. Any discharge is to Alderin Creek.			

Outfall 013. Active. Final Outfall. Site Runoff.			
Latitude: 47.28563	Longitude: -101.32124	County: Mercer	
Township: 144N	Range: 84W	Section: 15	QQ: CC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: The settling pond is for managing stormwater runoff from the west plant area, Units 1 and 2 roof drains, and Glenharold Mine office/shop complex (Outfall 028). Any discharge enters the Missouri River to the west of the cooling water intakes.			

Outfall 014. Active. Final Outfall. Site Runoff.			
Latitude: 47.28110		Longitude: -101.31646	
County: Mercer			
Township: 144N		Range: 84W	
Section: 22		QQ: BC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of coal pile runoff, plant site runoff, and low volume wastes. Any discharge flows through an open ditch before entering the Missouri River northeast of the facility.			

Outfall 028. Active. Internal Point. Settling Pond.			
Latitude: 47.27715		Longitude: -101.32689	
County: Mercer			
Township: 144N		Range: 84W	
Section: 21		QQ: DB	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This is an internal discharge consisting of runoff from the former Glenharold Mine office/shop complex located in the NW1/4, SE1/4, Section 21, T144N, R84W. Any discharge is to settling pond 013.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Monitoring Period	Submittal Frequency	First Submittal Date
001A	Discharge Monitoring Report	Monthly	Quarterly	April 30, 2022
002A	Discharge Monitoring Report	Monthly	Quarterly	April 30, 2022
003A	Discharge Monitoring Report	Monthly	Quarterly	April 30, 2022
011A	Discharge Monitoring Report	Quarterly	Quarterly	April 30, 2022
012A	Discharge Monitoring Report	Quarterly	Quarterly	April 30, 2022
013A	Discharge Monitoring Report	Quarterly	Quarterly	April 30, 2022
014A	Discharge Monitoring Report	Monthly	Quarterly	April 30, 2022
Cooling Water Intake	Actual Intake Flow Report	Monthly	Quarterly	April 30, 2022
Cooling Water Intake	Annual Certification Statement	Annual	Annual	January 31, 2022
Application Renewal	EPA Form 1 & 2C 316(b) Application	Not applicable	1/permit cycle	June 30, 2026

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: **Missouri River** and **Alderin Creek**.

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

B. Effluent Limitations and Monitoring

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

Table 1: Effluent Limitations and Monitoring Requirements Outfall 001 and 002				
Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
Temperature, °C (°F) ^a	*	37.2 (99)	Continuous	Recorder
pH, S.U.	Shall remain between 6.5 to 9.0		1/Week	Instantaneous
Flow, mgd	Report Average Monthly Value	Report Maximum Daily Value	1/Day	Instantaneous
Total Flow, mgal	Report Monthly Total		1/Month	Calculated
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
N/A Not Applicable				
a. For the purpose of reporting excursions above the temperature limit, a single test will be considered to include the rise and fall of temperature or multiple peaks occurring in a one (1) hour period.				
Stipulations:				
There shall be no discharge of floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.				
There shall be no batch discharges resulting from intermittent intake cleaning.				
The discharge shall consist only of uncontaminated cooling water and low volume waste.				
There shall be no discharge of polychlorinated biphenyl compounds.				
Samples taken in compliance with the monitoring requirements specified in this permit shall be taken prior to leaving company property or entering the receiving stream. Temperature shall be measured by continuous recorder at the outfall of the condenser water box outlet.				

Table 2: Effluent Limitations and Monitoring Requirements Outfall 003				
Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
Total Suspended Solids, mg/L	30	100	1/Week	Grab
Oil & Grease mg/l	15	20	1/Month	Grab
pH	*		1/Week	Instantaneous
Flow, mgd	Report Average Monthly Value	Report Maximum Daily Value	1/Week	Instantaneous
Total Flow, mgal	N/A	Report Monthly Total	1/Month	Calculated
Nitrogen, Total, mg/L ^a	Average for the Month	Monitor Only	1/Month	Grab
Nitrogen, Total, lb/day ^a	Average for the Month	Monitor Only	1/Month	Calculated
Phosphorus, Total, mg/L	Average for the Month	Monitor Only	1/Month	Grab
Phosphorus, Total, lb/day	Average for the Month	Monitor Only	1/Month	Calculated
Chlorides, mg/L	N/A	N/A	1/Year	Grab
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
N/A Not Applicable				
a. Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).				
Stipulations:				
There shall be no discharge of domestic wastewater.				
There shall be no discharge of floating solids or visible foam in other than trace amounts.				
There shall be no discharge of polychlorinated biphenyl compounds.				
There shall be no discharge of industrial chemicals used for plant operation or maintenance without prior department permission.				

Table 4: Effluent Limitations and Monitoring Requirements **Outfall 009**

Stipulations:

Best Management Practices (BMPs) shall be utilized at all times.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

The quality of water shall be the best which is presently attainable.

There shall be no change in operation that will deteriorate the quality of the discharge.

No fuel, lubricating oils, chemicals, or process water shall be discharged.

Any clear well dewatering shall be done in a manner which, to the extent possible, directs the pumped water to the adjacent clear well for intake into the plant.

There shall be no discharge of polychlorinated biphenyl compounds.

Table 5: Effluent Limitations and Monitoring Requirements Outfall 011 & 012				
Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
Total Suspended Solids, mg/L ^a	*	70	1/Week	Grab
pH, S.U.	6.0 to 9.0		1/Week	Instantaneous
Flow, mgd	Report Average Monthly Value	Report Maximum Daily Value	1/Day	Calculated
Total Drain, mgal	N/A	Report Monthly Total	1/Quarter	Calculated
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
N/A Not Applicable				
a. If the facility is designed, constructed, operated, and maintained to treat the runoff from a 10-year, 24-hour precipitation event, the daily maximum limitation for total suspended solids shall be waived for any discharge overflow caused by a rainfall in excess of 3.2 inches in a 24-hour period. The permittee shall have the burden of proof that all of these conditions have been met. The precipitation shall be monitored by gauge and recorded daily by the permittee.				
Stipulations:				
<p>The settling ponds and other erosion control features of the facility must be operated and maintained in accordance with Best Management Practices (BMPs).</p> <p>The ponds shall not be used to discharge water which has come into contact with ash.</p> <p><u>Conditions for Construction Phase of Landfill Expansion:</u></p> <p>The department must be notified prior to the start of new construction on the ash disposal site. A landfill expansion phase is considered to be the period beginning with the start of construction of a new disposal cell and lasting through the close of construction and reestablishment of BMPs. Construction does not include capping and similar earthmoving activities associated with the day-to-day operation of the landfill. The department may extend or reinstate the requirements listed below should significant erosion be evident at the site.</p> <p>The dewatering samples must be taken prior to the discharge leaving company property or entering any receiving streams.</p> <p>There shall be no discharge of polychlorinated biphenyl compounds.</p> <p>Upon completing a landfill construction phase, any dewatering information shall be submitted to the department as an attachment to the Discharge Monitoring Report for the respective monitoring period. The attachment must include sample results, dates of discharges, frequency of analyses, total number of gallons discharged, and discharge flow rates.</p>				

Table 6: Effluent Limitations and Monitoring Requirements Outfall 013				
Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
Total Suspended Solids, mg/L	*	*	1/Quarter	Grab
Oil & Grease, mg/L ^a	*	*	1/Quarter	Visual/Grab
pH, S.U.	*		1/Quarter	Instantaneous
Flow, mgd	Report Average Monthly Value	Report Maximum Daily Value	1/Day	Calculated
Total Drain, mgal	N/A	Report Monthly Total	1/Quarter	Calculated
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
N/A Not Applicable				
a. The discharge shall not have a visible sheen or floating oil. If detected, the department shall be notified, and a grab sample shall be analyzed.				
Stipulations:				
<p>The quality of the discharge shall be the best attainable through the use of BMPs. The pond and discharge structure shall be inspected regularly and maintained appropriately to ensure that the structure and discharge do not deteriorate.</p> <p>There shall be no discharge of floating solids or visible foam in other than trace amounts.</p> <p>No fuel, lubricating oils, chemicals, or process wastewaters shall be discharged.</p> <p>There shall be no discharge of polychlorinated biphenyl compounds.</p> <p>Samples shall be taken prior to the discharge water leaving company property or entering any receiving streams. Dates of discharges, frequency of monitoring, estimate of the total number of gallons discharged, and estimated average discharge flow rate shall also be included on the Discharge Monitoring Reports.</p>				

Table 2: Effluent Limitations and Monitoring Requirements Outfall 014				
Parameter	Effluent Limitations		Monitoring Requirements	
	Average Monthly Limit	Maximum Daily Limit	Sample Frequency	Sample Type
Total Suspended Solids, mg/L ^a	30	50	1/Week	Grab
Oil & Grease, mg/L	15	20	1/Month	Grab
pH, S.U.	Shall remain between 6.5 to 9.0		1/Week	Instantaneous
Flow, mgd	Report Average Monthly Value	Report Maximum Daily Value	1/Week	Calculated
Total Flow, mgal	N/A	Report Monthly Total	1/Month	Calculated
Nitrogen, Total, mg/L ^b	Average for the Month	Monitor Only	1/Month	Grab
Nitrogen, Total, lb/day ^b	Average for the Month	Monitor Only	1/Month	Calculated
Phosphorus, Total, mg/L	Average for the Month	Monitor Only	1/Month	Grab
Phosphorus, Total, lb/day	Average for the Month	Monitor Only	1/Month	Calculated
Notes:				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
N/A Not Applicable				
a. If the facility is designed, constructed, operated, and maintained to treat the runoff from a 10-year, 24-hour precipitation event, this limitation shall be waived for any discharge overflow caused by a rainfall in excess of 2.99 inches (or equivalent snowmelt) in 24 hours. The permittee shall have the burden of proof that all of these conditions have been met. The precipitation shall be monitored by gauge and recorded daily by the permittee.				
b. Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).				
Stipulations:				
There shall be no discharge of floating solids or visible foam in other than trace amounts.				
There shall be no discharge of polychlorinated biphenyl compounds.				

Table 7: Effluent Limitations and Monitoring Requirements **Stormwater Run-off**

Applicable to:

- Runoff from the ash landfill haul road corridor
- The equipment storage and other support areas at on the plant site
- The surplus and salvage property yard including the settling pond (Outfall 028)

The stormwater discharges from the support areas shall be limited and monitored by the permittee as specified below:

The quality of the stormwater discharge shall be the best attainable through the implementation of Best Management Practices (BMPs).

No fuel, lubricating oils, chemicals or process wastewater shall be discharged.

There shall be no discharge of polychlorinated biphenyl compounds.

Spill prevention and response procedures must be employed to minimize the potential for spilled material to discharge with stormwater. A Spill Prevention Control and Countermeasure (SPCC) Plan developed to satisfy 40 CFR 112 also serves as a stormwater pollution prevention measure.

Any areas that do not drain to a pond shall be operated and maintained to minimize, to the extent reasonably practicable, stormwater contact with raw materials, intermediate products, finished products, byproducts, or waste materials. Good housekeeping practices should be employed to keep these areas clean and orderly. No fuel, lubricating oils, chemicals or process wastewater shall be discharged.

The haul road to the ash landfill site must be inspected at least annually. The haul road and drainage ditches shall be inspected for evidence of material spillage, erosion, sedimentation, and deterioration or ineffectiveness of structural controls. If necessary, the stormwater pollution prevention practices shall be revised based on the observations noted during the inspection. The inspection records for the haul road corridor, and any other areas of support activity, shall be kept on-site and available for review for at least three (3) years.

The retention pond and transfer equipment for Outfall 028 must be inspected regularly and maintained appropriately to ensure that the structure, including inlet and outlets, do not deteriorate.

There shall be no discharge of polychlorinated biphenyl compounds.

II. CLEAN WATER ACT 316(b) FINAL RULES

A. Cooling System Operation

The permittee operates a single intake structure along the Missouri River 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 maintain the ability to remotely monitor the CWIS during the period the CWIS is in operation. The permittee shall employ remote monitoring devices to ensure that the technologies operated to comply with the impingement and entrainment standards are maintained and operated to function as designed. Weekly visual inspections of the onshore portion of the CWIS shall be conducted when remote monitoring devices are not in operation.
3. The permittee shall operate at a *de minimis* rate of impingement to comply with the best technology available standard for impingement mortality.
4. The permittee shall operate at a *de minimis* rate of entrainment to comply with the best technology available standard for entrainment. Under 40 CFR 125.94(d), the department has determined operating at a *de minimis* rate of entrainment is the site-specific best technology available standard for the maximum reduction in entrainment warranted for the permittee.

B. Monitoring and Reporting

1. The actual intake flow of the Missouri River CWIS shall be monitored daily. Actual intake flow monitoring shall be representative of normal operating conditions. Actual intake flow monitoring shall include measuring the cooling water withdrawal from the Missouri River. Actual intake flow monitoring shall be reported with discharge monitoring reports.
2. The permittee shall submit an annual certification statement and report regarding the operations of any unit that involves cooling water withdrawals or operation of the Missouri River CWIS. If the facility has modified the operation of any unit at the facility that impacts cooling water withdrawals or operation of the Missouri River CWIS, the facility shall provide a summary of those changes in the annual report. If the information contained in the previous year's annual certification is still pertinent, the permittee shall state as such in the annual certification statement. The annual certification statement shall be signed by the responsible corporate officer as defined in 40 CFR 122.22. Any revision to the information required by 40 CFR 122.21(r) shall be submitted with the next permit application.
3. The permittee shall notify the department of any proposed changes to the Missouri River cooling water intake structure or operation of the Missouri River cooling water intake. Any 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 shall be retained until the subsequent permit is issued.
5. All 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.
6. All records supporting the department's determination that the CWIS operates at a *de minimis*

rate shall be retained until the subsequent permit is issued.

C. Permit Application

Any revisions related to the requirements of 40 CFR 122.21(r) shall be included with the next permit application.

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 2021.09.09

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

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

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

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

B. Test Procedures

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

C. Recording of Results

Records of monitoring information shall include:

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

D. Additional Monitoring

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

E. Reporting of Monitoring Results

1. Monitoring results shall be summarized and reported to the department using Discharge Monitoring Reports (DMRs). If no discharge occurs during a reporting period, "No Discharge" shall be reported. The permittee must submit DMRs electronically using the electronic information reporting system unless requirements in subsection 3 are met.

2. Prior to December 21, 2025, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2025, the permittee must report the following using the electronic reporting system:
 - a. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];
 - b. Municipal separate storm sewer system program reports;
 - c. Pretreatment program reports;
 - d. Sewer overflow/bypass event reports; and
 - e. Clean Water Act 316(b) annual reports
3. The permittee may seek a waiver from electronic reporting. To obtain a waiver, the permittee must complete and submit an Application for Temporary Electronic Reporting Waiver form (SFN 60992) to the department. The department will have 120 days to approve or deny the waiver request. Once the waiver is approved, the permittee may submit paper versions of monitoring data and reports to the department.
 - a. One of the following criteria must be met in order to obtain a waiver. The department reserves the right to deny any waiver request, even if they meet one of the criteria below.
 1. No internet access,
 2. No computer access,
 3. Annual DMRs (upon approval of the department),
 4. Employee turnover (3-month periods only), or
 5. Short duration permits (upon approval of the department)

All reports must be postmarked by the last day of the month following the end of each reporting period. All original documents and reports required herein shall be signed and submitted to the department at the following address:

ND Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck ND 58503-1324

F. Records Retention

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

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
ND0025232**

PERMIT REISSUANCE

**BASIN ELECTRIC POWER COOPERATIVE
STANTON, ND**

DATE OF THIS FACT SHEET – NOVEMBER 2021

INTRODUCTION

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

The following rules or regulations apply to NDPDES permits:

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

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

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

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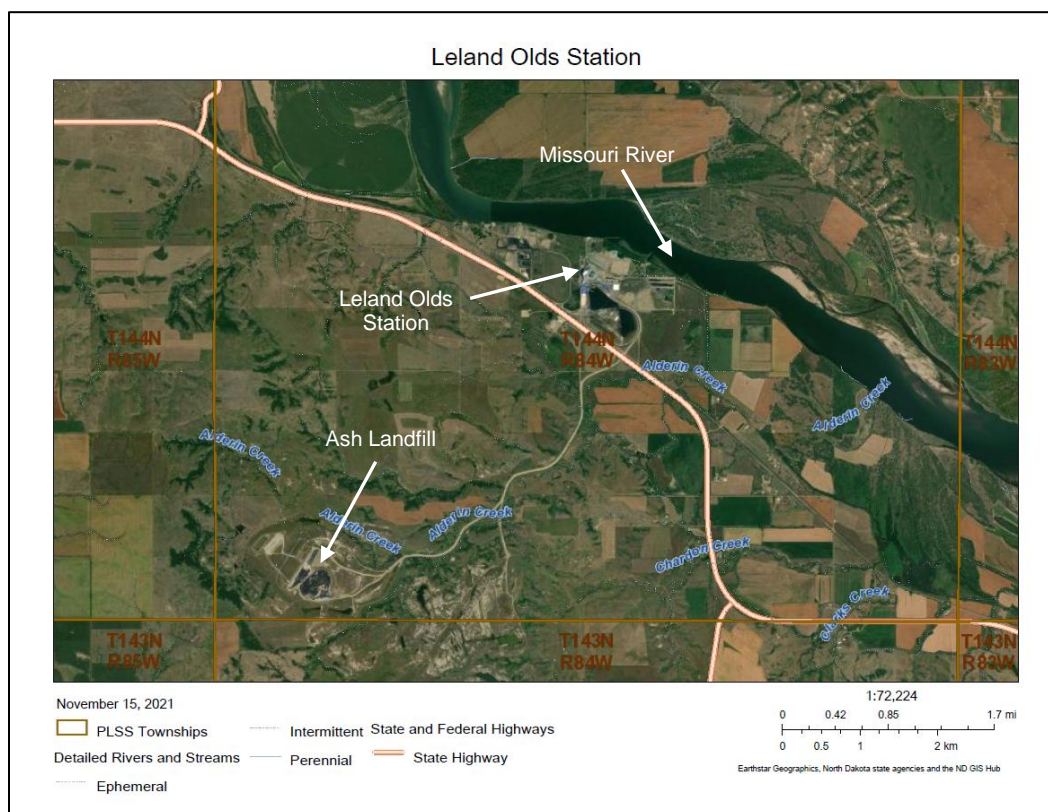
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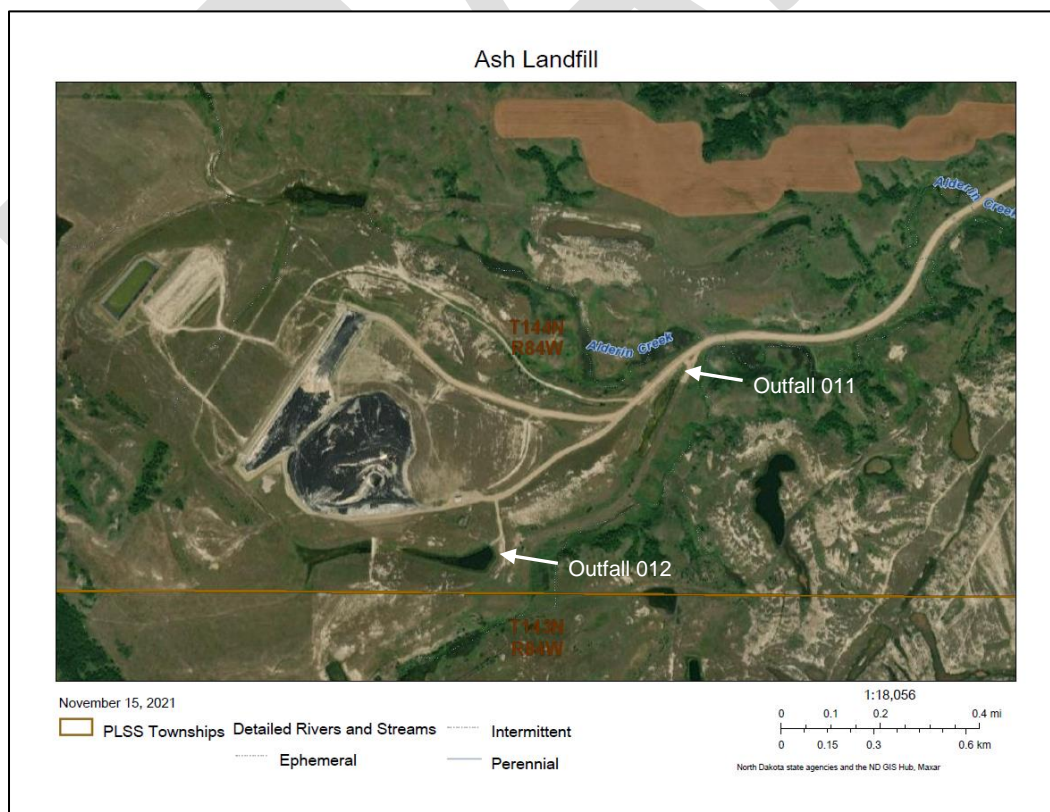
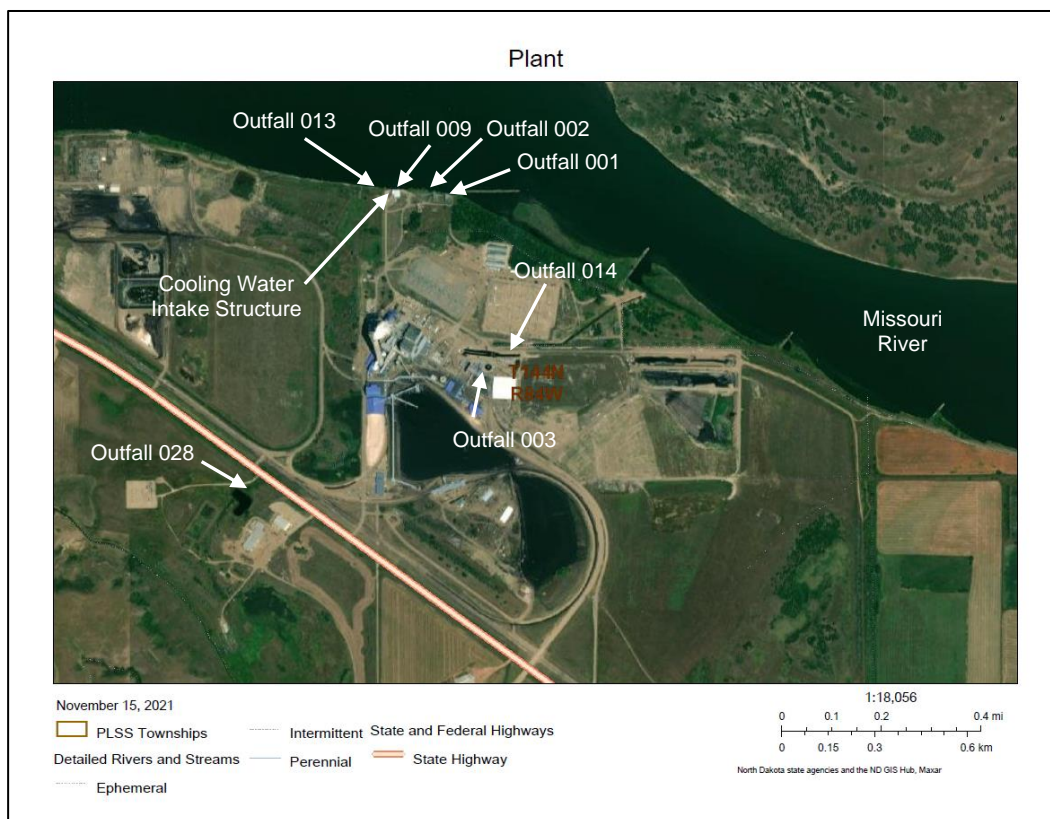
BACKGROUND INFORMATION

Table 1: General Facility Information

Applicant:	Basin Electric Power Cooperative
Facility Name and Address:	Leland Olds Station 3901 Hwy 200A Stanton, ND 58571
Permit Number:	ND0025232
Permit Type:	Major Industrial, Permit Reissuance
Type of Treatment:	Once-Through Non-Contact Cooling Water, Discharge to Surface Water, Flocculation, Sedimentation
SIC Code:	4911
NAICS Code:	221112
Discharge Location:	Missouri River, Class I stream Latitude: 47.287 Longitude: -101.320 Alderin Creek, Class III stream Latitude: 47.248 Longitude: -101.351
Cooling Water Intake Structure Location:	Missouri River, Class I stream Latitude: 47.2859 Longitude: -101.3206
Hydrologic Code:	10130101 – Painted Woods-Square Butte

Figure 1: Aerial photograph of Basin Electric Power Cooperative, Leland Olds Station (North Dakota Geographic Information System, Maps Generated November 2021)





FACILITY DESCRIPTION

Basin Electric Power Cooperative's Leland Olds Station (LOS) is a two-unit, lignite coal-fired steam electric generating plant. The station is located in the NW1/4 of Section 22, Township 144 North, Range 84 West, approximately four miles southeast of the city of Stanton. The ash landfill is located in Sections 31 and 32, Township 144 North, Range 84 West. Discharges are to the Missouri River, a Class I stream and Alderin Creek, a Class III stream.

Unit 1 started operation in 1966 and has a 220 net megawatt capacity. Unit 2 began commercial operation in 1975 and has a 440 net megawatt capacity. Lignite coal comes from the Coteau Properties Company Freedom Mine located near Beulah, ND.

The generating units utilize once-through cooling water for heat rejection. Cooling water is drawn from the Missouri River adjacent to the facility. LOS does not have the ability to add chlorine to the cooling water system. Make-up water used in plant processes is drawn from the cooling water intake structure wet wells. Potable water is provided by Southwest Water Authority. Water from the cooling system is discharged back to the Missouri River approximately 350 feet downstream from the intake pump house. Intake traveling screen wash water discharges directly to the Missouri River.

Flue gas desulfurization (FGD) and fly ash handling occur in the Unit 1 and 2 absorbers. The Unit 1 and 2 absorbers are dry scrubber systems used to remove sulfur dioxide (i.e., FGD) and fly ash from stack gases. Plant process water is added to the collected FGD and fly ash material to condition the material for easier handling. Collected material is sent to the gypsum load out facility where it is loaded on to haul trucks and taken to the active ash landfill. No FGD or fly ash wastewater is generated in the process.

Plant process water is used in the selective non-catalyst reduction (SNCR) process. The SNCR process is used to reduce the emission of nitrogen oxides (NO_x). The SNCR process uses urea as a reagent to convert NO_x into nitrogen (N_2) and water (H_2O). Water generated in the process either evaporates or is sent to the Unit 1 and 2 floor drains where it mixes with other wastewaters before discharging to the clarifier.

Bottom ash is handled in a closed-loop, submerged flight conveyor system that moves bottom ash to a loadout building. As the conveyor moves bottom ash to the loadout building, the bottom ash is partially dewatered as excess water returns to the conveyor system. The excess water is consumed in the conveyor system and plant process water is used for make-up water. No bottom ash transport water is discharged from the system. From the loadout building, the bottom ash is loaded on to haul trucks and taken to the active ash landfill.

LOS uses microfiltration treatment to produce ultra-purified plant process water from intake water. The wastewater generated from the water treatment process is discharged to the LOS clarifier. Ultra-purified water is used as make-up water for the Unit 1 and 2 boilers, and as seal water used for cooling, lubricating, and flushing pump seals and rubber bearings.

The LOS clarifier was built during the 2017 permit cycle as part of the retrofit to the bottom ash handling system and closing of the coal combustion residual surface impoundments. The clarifier was added to provide additional treatment for wastewater streams. Water enters the clarifier from the Unit 1 and 2 floor drains and is a combination of water from the SNCR, water

treatment plant, seal water, boiler makeup water from Units 1 and 2, and groundwater. Water is discharged from the clarifier through the once-through cooling water system to the Missouri River.

Plant process water is used for dust suppression in the coal train unloading area. This water collects in the V-slot located below the train unloading system. Groundwater also collects in the V-slot. Collected water is discharged from a well sump in the V-slot to the coal yard pond.

Discharges from the north stormwater outfall ditch are a combination of stormwater runoff from the eastern part of the plant and discharges from the coal yard pond which includes coal pile runoff, plant site runoff, and water from the V-slot. Discharges from the ditch are to the Missouri River. Stormwater runoff from the western part of the plant discharges through a stormwater pond in the northwestern part of the plant to the Missouri River. All stormwater runoff is covered by the proposed permit. Coverage under the industrial stormwater general permit, NDR05-0000, is not required for LOS.

The active ash landfill is located three miles southwest of the LOS plant. Leachate from the landfill is collected in a surface impoundment that does not discharge. Runoff from closed areas of the landfill (vegetated areas) and the landfill cover storage area are directed to stormwater ponds. Any discharge from the ponds would be to Alderin Creek. The active ash landfill is permitted by the department's Division of Waste Management under solid waste permit number 0143.

In 2018, LOS discontinued discharging bottom ash transport water to the coal combustion residual (CCR) surface impoundments. The CCR impoundments have since been capped. The capped surface impoundments are permitted under solid waste permit 0038.

Sanitary waste is burned within the LOS boiler. Sanitary waste is not allowed to discharge under this permit.

Outfall Description

There are nine active discharge outfalls at the facility. The descriptions for the active outfalls and former outfalls are as follows:

Outfall 001. Active. Final Outfall. Once through cooling water.			
Latitude: 47.28582		Longitude: -101.31888	
County: Mercer			
Township: 144N		Range: 84W	
Section: 15		QQ: CC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of once-through cooling water from Unit No. 1 and effluent from Outfall 003. Outfall 001 has a design flow of 134 MGD. Discharges are to the Missouri River.			

Outfall 002. Active. Final Outfall. Once through cooling water.			
Latitude: 47.28587	Longitude: -101.31926	County: Mercer	
Township: 144N	Range: 84W	Section: 15	QQ: CC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of once-through cooling water from Unit No. 2 and effluent from Outfall 003. Outfall 002 has a design flow of 271 MGD. Discharges are to the Missouri River.			

Outfall 003. Active. Internal Point. Clarifier.			
Latitude: 47.28073	Longitude: -101.31670	County: Mercer	
Township: 144N	Range: 84W	Section: 22	QQ: AC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of low volume wastes. This is an interior point that mixes with Outfall 001 and/or Outfall 002.			

Outfall 009. Active. Final Outfall. Screen washings and intake maintenance dewatering.			
Latitude: 47.28574	Longitude: -101.32047	County: Mercer	
Township: 144N	Range: 84W	Section: 15	QQ: CC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: An intermittent discharge of Unit Nos. 1 and 2 intake screen washings. The discharge also includes dewatering of the intake structure clear wells during maintenance. The discharge is located in the northeast corner of the intake building. Any discharge is to the Missouri River.			

Outfall 011. Active. Final Outfall. Settling pond for ash landfill site.			
Latitude: 47.24771	Longitude: -101.35322	County: Mercer	
Township: 144N	Range: 84W	Section: 32	QQ: CA
Receiving Stream: Alderin Creek		Classification: Class III	
Outfall Description: Discharges consist of runoff water from the exterior portions of the ash landfill and construction associated with landfill expansion. Any discharge is to Alderin Creek.			

Outfall 012. Active. Final Outfall. Settling pond for ash landfill site.			
Latitude: 47.24254	Longitude: -101.36146	County: Mercer	
Township: 144N	Range: 84W	Section: 32	QQ: CC
Receiving Stream: Alderin Creek		Classification: Class III	
Outfall Description: Discharges consist of runoff water from the exterior portions of the ash landfill and construction associated with landfill expansion. Any discharge is to Alderin Creek.			

Outfall 013. Active. Final Outfall. Site Runoff.			
Latitude: 47.28563	Longitude: -101.32124	County: Mercer	
Township: 144N	Range: 84W	Section: 15	QQ: CC
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: The settling pond is for managing stormwater runoff from the west plant area, Units 1 and 2 roof drains, and Glenharold Mine office/shop complex (Outfall 028). Any discharge enters the Missouri River to the west of the cooling water intakes.			

Outfall 014. Active. Final Outfall. Site Runoff.			
Latitude: 47.28110		Longitude: -101.31646	
County: Mercer			
Township: 144N		Range: 84W	
Section: 22		QQ: BC	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This discharge consists of coal pile runoff, plant site runoff, and low volume wastes. Any discharge flows through an open ditch before entering the Missouri River northeast of the facility.			

Outfall 028. Active. Internal Point. Settling Pond.			
Latitude: 47.27715		Longitude: -101.32689	
County: Mercer			
Township: 144N		Range: 84W	
Section: 21		QQ: DB	
Receiving Stream: Missouri River		Classification: Class I	
Outfall Description: This is an internal discharge consisting of runoff from the former Glenharold Mine office/shop complex located in the NW1/4, SE1/4, Section 21, T144N, R84W. Any discharge is to settling pond 013.			

Outfall 004 - Inactive. No discharge point. Originally, this point consisted of domestic wastewater from an extended aeration wastewater treatment plant. Wastewater is collected in the treatment building and pumped to the boiler for incineration. The treatment plant was taken out of service in May 1993.

Outfall 005 - Inactive. No discharge point as of March 1, 1983. It was originally used for boiler blowdown, which was included in the low volume wastes that went to the ash pond.

Outfall 006 - Inactive. No discharge point as of March 1, 1983. It was originally used for boiler blow down, which was included in the low volume wastes that went to the ash pond.

Outfall 007 - Inactive. No discharge point. Originally, this discharge consisted of flash evaporated boiler steam from Unit 1 or 2 and was used to heat the former coal processing facility. The system went out of service in June 1993 and was subsequently removed.

Outfall 008 - Inactive. No discharge point as of January 1, 2022. An internal point for the discharge of metal cleaning waste from the boiler bottom. Boiler metal cleaning waste are combined with coal combustion residuals (fly ash or bottom ash) and landfilled.

Outfall 010 - Inactive. No discharge point as of January 1, 1997. Originally, this internal point was used to monitor site runoff from the west side of the plant site which drained to outfall 003 prior to 2018. Runoff has since been redirected to Outfall 013.

PERMIT STATUS

The department issued the current permit for this facility on April 1, 2017. The permit was modified October 1, 2018 to address changes to discharges and add outfall 014. The modified permit has effluent monitoring requirements for:

- Temperature
- pH
- Whole effluent toxicity (WET)
- Trace elements
- Chloride
- Nitrate & Nitrite
- Total suspended solids (TSS)
- Oil and Grease
- Total Copper
- Total Iron
- Total Phosphorus
- Chemical oxygen demand (COD)
- General chemistry
- Flow
- Total Flow

The permit is scheduled to expire at midnight on December 31, 2021.

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The department conducts annual inspections of the facility. The department's assessment of the compliance is based on review of the facility's Discharge Monitoring Reports (DMRs) and inspections conducted by department staff.

Bypasses

The facility reported two bypasses since April 2017. An anticipated bypass was required for essential maintenance and did not exceed effluent limitations. The other bypass was caused by a valve failure.

Past Discharge Data

The concentrations of pollutants in the discharges were reported with discharge monitoring report (DMR) forms. The effluent is characterized as shown in Table 2. Outfalls 009 and 028 are limited by the use of best management practices so data was not required to be collected and submitted to characterize the quality of discharges from the outfalls.

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
<i>Outfall 001</i>					
Temperature	°F	31.05 – 97.10	61.34	99	0
pH	S.U.	7.73 – 8.60	N/A	7.0 – 9.0	0
Flow	MGD	114 (max)	104	N/A	N/A
Total Flow	Mgal	889 – 3411	3117	N/A	N/A

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Aluminum	ug/L	140 – 160	150	N/A	N/A
Arsenic	ug/L	2 – 2.2	2.1	N/A	N/A
Barium	ug/L	50.8 – 53.4	52.1	N/A	N/A
Cadmium	ug/L	<0.5	<0.5	N/A	N/A
Chromium	ug/L	<2	<2	N/A	N/A
Copper	ug/L	2.3 – 4.6	3.45	N/A	N/A
Iron	mg/L	0.17 – 0.2	0.19	N/A	N/A
Lead	ug/L	0.5 – 1	0.75	N/A	N/A
Manganese	mg/L	0.01 – 0.05	0.03	N/A	N/A
Mercury ^a	ug/L	<0.2	<0.2	N/A	N/A
Nickel	ug/L	2 – 2.1	2.05	N/A	N/A
Selenium	ug/L	<5	<5	N/A	N/A
Silver	ug/L	<0.5	<0.5	N/A	N/A
Thallium ^a	ug/L	<0.5	<0.5	N/A	N/A
Chlorides	mg/L	8.32 – 8.37	8.35	N/A	N/A
Nitrates + Nitrites (as N)	mg/L	0.13 – 0.15	0.14	N/A	N/A
<i>Ceriodaphnia dubia</i>	TUa	<1	<1	<1	0
Fathead Minnow	TUa	<1	<1	<1	0
<i>Outfall 002</i>					
Temperature	°F	31.85 – 94.89	67.16	99	0
pH	S.U.	7.63 – 8.71	N/A	7.0 – 9.0	0
Flow	MGD	257 (max)	201	N/A	N/A
Total Flow	Mgal	850 – 7223	6239	N/A	N/A
Aluminum	ug/L	100 – 780	377	N/A	N/A
Arsenic	ug/L	2 – 2.9	2.6	N/A	N/A

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Barium	ug/L	100 – 101.8	101	N/A	N/A
Cadmium	ug/L	<0.5	<0.5	N/A	N/A
Chromium ^a	ug/L	<2 – <50	<18	N/A	N/A
Copper ^a	ug/L	<2 – <50	<18	N/A	N/A
Iron	mg/L	0.1 – 0.74	0.34	N/A	N/A
Lead	ug/L	0.5 – 0.6	0.53	N/A	N/A
Manganese	mg/L	<0.05	<0.05	N/A	N/A
Mercury ^a	ug/L	<0.2	<0.2	N/A	N/A
Nickel	ug/L	2 – 40	8.7	N/A	N/A
Selenium	ug/L	<5	<5	N/A	N/A
Silver	ug/L	0.5 – 1	0.67	N/A	N/A
Thallium ^a	ug/L	<0.5	<0.5	N/A	N/A
Chlorides	mg/L	8.63 – 17.42	12.03	N/A	N/A
Nitrates + Nitrites (as N)	mg/L	0 – 0.52	0.22	N/A	N/A
<i>Ceriodaphnia dubia</i>	TUa	<1	<1	<1	0
Fathead Minnow	TUa	<1	<1	<1	0
<i>Outfall 003</i>					
TSS ^b	mg/L	46 (max)	13.5	30 Monthly avg 50 Daily max	0 0
TSS ^c	mg/L	97 (max)	6.2	30 Monthly avg 100 Daily max	0 0
Oil & Grease	mg/L	42 (max)	1.62	15 Monthly avg 20 Daily max	0 1
pH	S.U.	7.49 – 8.98	N/A	N/A	N/A
Flow	MGD	9.49 (max)	1.91	N/A	N/A
Total Flow	Mgal	7.8 – 170	58.2	N/A	N/A
Copper ^a	mg/L	0.002 – <0.05	<0.04	1.0 Monthly avg 1.0 Daily max	0 0

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Iron	mg/L	0.1 – 0.65	0.31	1.0 Monthly avg 1.0 Daily max	0 0
Phosphorus	mg/L	0.12 (max)	0.12	N/A	N/A
Nitrates + Nitrites (as N)	mg/L	0 – 0.56	0.22	N/A	N/A
Chlorides	mg/L	9.25 – 17.42	12.98	N/A	N/A
COD	mg/L	12.3 (max)	12.3	N/A	N/A
General Chemistry ^d	N/A	--	--	N/A	N/A
Aluminum	ug/L	100 – 910	405	N/A	N/A
Arsenic	ug/L	2 – 5.6	3.9	N/A	N/A
Barium	ug/L	53.1 – 230	131	N/A	N/A
Cadmium	ug/L	<0.5	<0.5	N/A	N/A
Chromium ^a	ug/L	<2 – <50	<18	N/A	N/A
Lead	ug/L	0.5 – 1	0.63	N/A	N/A
Manganese	mg/L	0.025 – 0.05	0.042	N/A	N/A
Mercury ^a	ug/L	<0.2	<0.2	N/A	N/A
Nickel	mg/L	0.002 – 0.04	0.008	N/A	N/A
Selenium	ug/L	<5	<5	N/A	N/A
Silver	ug/L	0.5 – 1	0.58	N/A	N/A
Thallium ^a	ug/L	<0.5	<0.5	N/A	N/A
<i>Outfall 008</i>					
Copper	mg/L	0.01 – 0.16	0.07	N/A	N/A
Iron	mg/L	0.14 – 212.3	88.6	N/A	N/A
<i>Outfall 011</i>					
TSS	mg/L	5 – 21	13	70 Daily max	0
pH	S.U.	7.79 – 8.96	N/A	6.0 to 9.0	0
Flow	MGD	1.01 (max)	0.335	N/A	N/A

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Drain	Mgal	0.25 – 3.13	1.46	N/A	N/A
Days per Month	Days	1 – 7	4	N/A	N/A
<i>Outfall 012</i>					
TSS	mg/L	0 – 27	11	70 Daily max	0
pH	S.U.	7.55 – 8.27	N/A	6.0 to 9.0	0
Flow	MGD	1.01 (max)	0.721	N/A	N/A
Drain	Mgal	2.24 – 7.85	4.61	N/A	N/A
Days per Month	Days	3 – 10	7	N/A	N/A
<i>Outfall 013</i>					
TSS	mg/L	10 (max)	5	N/A	N/A
O&G – Vis	N/A	No Sheen	No Sheen	N/A	N/A
pH	S.U.	8.1 – 8.22	N/A	N/A	N/A
Flow	MGD	1.8 (max)	0.61	N/A	N/A
Drain	Mgal	1.52 – 30.6	16.1	N/A	N/A
Days per Month	Days	8 - 17	13	N/A	N/A
Phosphorus	mg/L	<0.1	<0.1	N/A	N/A
Nitrates + Nitrites (as N)	mg/L	0.12	0.12	N/A	N/A
COD	mg/L	<10	<10	N/A	N/A
General Chemistry	N/A	Yes	Yes	Yes No	N/A
Aluminum	ug/L	380	380	N/A	N/A
Arsenic	ug/L	<2	<2	N/A	N/A
Barium	ug/L	60.1	60.1	N/A	N/A
Cadmium	ug/L	<0.5	<0.5	N/A	N/A
Chromium	ug/L	<2	<2	N/A	N/A
Copper	ug/L	2	2	N/A	N/A

Table 2: Basin Electric Power Cooperative – LOS (April 2017 to September 2021)

Parameter	Units	Range	Average	Permit Limit	Number of Excursions
Iron	mg/L	0.43	0.43	N/A	N/A
Lead	ug/L	<0.5	<0.5	N/A	N/A
Manganese	mg/L	<0.05	<0.05	N/A	N/A
Mercury ^a	ug/L	<0.2	<0.2	N/A	N/A
Nickel	ug/L	3.2	3.2	N/A	N/A
Selenium	ug/L	<5	<5	N/A	N/A
Silver	ug/L	<0.5	<0.5	N/A	N/A
Thallium ^a	ug/L	<0.5	<0.5	N/A	N/A
<i>Outfall 014</i>					
TSS	mg/L	43 (max)	13.9	30 Monthly avg 50 Daily max	0 0
O&G	mg/L	<1.4	<1.4	15 Monthly avg 20 Daily max	0 0
pH	S.U.	7.79 – 8.96	N/A	7.0 – 9.0	0
Flow	MGD	14.87 (max)	0.47	N/A	N/A
Total Flow	Mgal	4.28 – 75.37	42.50	N/A	N/A
N/A Not Applicable					
a.	Results received from the laboratory were below the detection level but greater than the applicable water quality standard for a class I stream.				
b.	Discharge prior to October 1, 2018 with bottom ash transport water.				
c.	Discharge beginning October 1, 2018 without bottom ash transport water.				
d.	A sample was not collected during the monitoring period prior to the permit modification. Monitoring was no longer required as a condition of the permit once the permit modification took effect.				

PROPOSED EFFLUENT LIMITATIONS

Discharges from steam electric power generating facilities are regulated by national effluent guidelines which establish technology-based effluent limitations. The technology-based effluent limitations may be found in Title 40 of the Code of Federal Regulations, Part 423 – or 40 CFR 423. The department may generate additional limitations using Best Professional Judgment (BPJ) to ensure reasonable control technologies are used to prevent potential harmful effects

from the discharge. The department also must consider and include limitations necessary to protect water quality standards applicable to receiving waters.

Temperature limits for the discharge of once-through cooling water through Outfalls 001 and 002 are based on the 1973 Quirk, Lawler & Matusky Engineers study titled “Missouri River Temperature Survey near United Power Association Stanton, North Dakota Plant” and best professional judgment.

Technology-based effluent limitations for total residual chlorine found in 40 CFR 423.13(b) are not included in the proposed permit. As part of the permit application, Basin Electric Power Cooperative submitted a request to waive monitoring for total residual chlorine as allowed by 40 CFR 122.44(a)(2) stating LOS is not physically able to use chlorine in once-through cooling water. Since LOS is not physically able to use chlorine in once-through cooling water, the department will forego sampling of total residual chlorine.

Discharges from Outfall 008 were redirected from Outfall 003 to the fly ash and bottom ash handling systems during the 2017 permit cycle. As a result, the effluent limitations related to metal cleaning wastewater from Outfall 008 are no longer being applied to Outfall 003.

During the 2017 permit cycle, the bottom ash handling system was retrofitted to no longer discharge. This resulted in the removal of the bottom ash transport water waste stream from Outfall 003. In addition, the 40-acre coal combustion residual surface impoundments (i.e., bottom ash ponds) were closed. With the closure, coal pile runoff and plant site runoff are no longer discharged from Outfall 003. The retrofit and closure resulted in the construction of Outfall 014 to discharge coal pile runoff and plant site runoff from the east side of the plant. The retrofit and closure also changed the west side drainage and ultimate discharge location of the V-slot, both of which used to discharge to Outfall 003. The west side drainage was redirected to Outfall 013 and discharges from the V-slot were directed to Outfall 014.

Limitations based on numeric nutrient criteria are not being included in the proposed permit. Narrative nutrient criteria have been developed for the state of North Dakota that require discharges to be free from nutrients that cause objectionable growth of aquatic vegetation or algae or threaten public health, welfare, or impair beneficial uses.

In the current permit, the lower pH water quality-based effluent limitation applicable to discharges Class I streams was set at 7.0 standard units (S.U.). The water quality-based limitation was based on the Standards of Quality for Waters of the State in place at the time the 2017 permit took effect. In July 2021, the lower pH water quality standard for Class I streams changed from 7.0 S.U. to 6.5 S.U. (NDAC chapter 33.1-16-02.1). Based on a change to the water quality standards, the department changed the lower pH water quality-based effluent limitation for discharges to Class I streams from 7.0 S.U. to 6.5 S.U. in the proposed permit.

Technology-based and water quality-based effluent limitations for pH are not included for Outfall 013. As allowed by 40 CFR 122.44(k)(2) & (4), best management practices (BMPs) may be used for the control of stormwater discharges and when they are reasonably necessary to achieve effluent limitations and standards. LOS has used BMPs to control or abate pollution from Outfall 013 in previous permits. Discharge monitoring data has shown pH remains with technology-based and water quality-based effluent limitations.

The previous permit contained language about allowing the use of the National Weather Service recording station in Hazen to measure precipitation amounts to qualify for overflow waivers at Outfalls 011 and 012. Since precipitation is measured at the ash landfill, the department determined this language was not necessary and removed it from the proposed permit.

The proposed effluent limitations shall take effect upon the effective date of the proposed permit. The effluent limitations and the basis for the limitations are provided in Tables 3 through 9. The notations used in the tables for the basis of the effluent limitations are as follows:

“BPJ” refers to best professional judgment.

“Previous Permit” refers to limitations in the previous permit. The NPDES regulations **40 CFR Part 122.44(1)(1) Reissued permits** require that when a permit is renewed or reissued, interim limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit was issued have materially and substantially changed since the previous permit was issued and would constitute cause for permit modification or revocation and reissuance under **40 CFR Part 122.62**.

“WQS” refers to effluent limitations based on the State of North Dakota’s “Standards of Quality for Waters of the State”, NDAC Chapter 33.1-16-02.1.

“CFR” refers to the Code of Federal Regulations.

Table 3: Effluent Limitations for Outfall 001 and 002

Effluent Parameter	Units	Daily Maximum	Basis
pH	S.U.	Shall remain between 6.5 to 9.0	WQS
Temperature ^a	°C (°F)	37.2 (99)	1973 QL&M Study BPJ Previous Permit
There shall be no discharge of floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.			Previous Permit
There shall be no batch discharges resulting from intermittent intake cleaning.			Previous Permit
There shall be no discharge of polychlorinated biphenyl compounds.			Previous Permit 40 CFR 423.12(b)(2) 40 CFR 423.13(a)
The discharge shall consist only of uncontaminated cooling water and low volume waste.			Previous Permit BPJ
Notes:			
a. For the purpose of reporting excursions above the temperature limit, a single test will be considered to include the rise and fall of temperature or multiple peaks occurring within a one (1) hour period.			

Table 4: Effluent Limitations for Outfall 003

Table 3: Effluent Limitations for Outfall 001 and 002

Effluent Parameter	Units	30-Day Average	Daily Maximum	Basis
TSS	mg/L	30	100	40 CFR 423.12(b)(3)
Oil & Grease	mg/L	15	20	40 CFR 423.12(b)(3)
There shall be no discharge of domestic wastewater.				Previous Permit
There shall be no discharge of floating solids or visible foam in other than trace amounts.				Previous Permit
There shall be no discharge of polychlorinated biphenyl compounds.				Previous Permit 40 CFR 423.12(b)(2) 40 CFR 423.13(a)
There shall be no discharge of industrial chemicals used for plant operation or maintenance without prior department permission.				Previous Permit

Table 5: Effluent Limitations for Outfall 009

Best Management Practice	Basis
Best Management Practices shall be utilized at all times.	Previous Permit 40 CFR 122.44(k)(3) ^a
There shall be no discharge of floating solids or visible foam in other than trace amounts.	Previous Permit 40 CFR 122.44(k)(3) ^a
The quality of the discharge shall be the best which is presently attainable.	Previous Permit 40 CFR 122.44(k)(3) ^a
There shall be no change in operation that will deteriorate the quality of the discharge.	Previous Permit 40 CFR 122.44(k)(3) ^a
No fuel, lubricating oils, chemicals, or process water shall be discharged.	Previous Permit 40 CFR 122.44(k)(3) ^a
Any clear well dewatering shall be done in a manner which, to the extent possible, directs the pumped water to the adjacent clear well for intake into the plant.	Previous Permit 40 CFR 122.44(k)(3) ^a
There shall be no discharge of polychlorinated biphenyl compounds.	40 CFR 423.12(b)(2) 40 CFR 423.13(a)
Notes:	
a. Best Management Practices may be used to control or abate the discharge of pollutants when numeric effluent limitations are infeasible provided in 40 CFR 122.44(k)(3).	

Table 6: Effluent Limitations for Outfall 011 and 012

Effluent Parameter	Units	30-Day Average	Daily Maximum	Basis
TSS ^a	mg/L	*	70	BPJ
pH	S.U.	Shall remain between 6.0 to 9.0		Previous Permit BPJ WQS
The settling ponds and other erosion control features of the facility must be operated and maintained in accordance with Best Management Practices.				Previous Permit Stormwater ^b
The ponds shall not be used to discharge water which has come into contact with ash.				Previous Permit
The department must be notified prior to the start of new construction on the ash disposal site. A landfill expansion phase is considered to be the period beginning with the start of construction of a new disposal cell and lasting through the close of construction and reestablishment of BMP. Construction does not include capping and similar earthmoving activities associated with the day-to-day operation of the landfill.				Previous Permit
There shall be no discharge of polychlorinated biphenyl compounds.				40 CFR 423.12(b)(2) 40 CFR 423.13(a)
Notes:				
a.	If the facility is designed, constructed, operated, and maintained to treat the runoff from a 10-year, 24-hour precipitation event, the daily maximum limitation for total suspended solids shall be waived for any discharge overflow caused by a rainfall in excess of 3.2 inches in a 24-hour period. The permittee shall have the burden of proof that all of these conditions have been met. The precipitation shall be monitored by gauge and recorded daily by the permittee.			
b.	Stormwater associated with industrial activity as defined in 40 CFR 122.26(b)(14)(vii) regulated by best management practices as provided in 40 CFR 122.44(k)(2)&(3).			
*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.			

Table 7: Effluent Limitations for Outfall 013

Best Management Practice	Basis
The discharge shall not have a visible sheen or floating oil.	Previous Permit 40 CFR 122.44(k)(3) ^a
The quality of the discharge shall be the best attainable through the use of Best Management Practices. The pond and discharge structures shall be inspected regularly and maintained appropriately to ensure that the structure and discharge do not deteriorate.	Previous Permit 40 CFR 122.44(k)(3) ^a

Table 7: Effluent Limitations for Outfall 013

There shall be no discharge of floating solids or visible foam in other than trace amounts.	Previous Permit 40 CFR 122.44(k)(3) ^a
No fuel, lubricating oils, chemicals, or process wastewaters shall be discharged.	Previous Permit 40 CFR 122.44(k)(3) ^a
There shall be no discharge of polychlorinated biphenyl compounds.	40 CFR 423.12(b)(2) 40 CFR 423.13(a)
Notes:	
a. Best Management Practices may be used to control or abate the discharge of pollutants when numeric effluent limitations are infeasible provided in 40 CFR 122.44(k)(3).	

Table 8: Effluent Limitations for Outfall 014

Effluent Parameter	Units	30-Day Average	Daily Maximum	Basis
TSS ^a	mg/L	30	50	40 CFR 423.12(b)(3), (9), (10)
pH	S.U.	Within the range 6.5 to 9.0		40 CFR 423.12(b)(1); WQS
Oil & Grease	mg/L	15	20	40 CFR 423(b)(3)
There shall be no discharge of floating solids or visible foam in other than trace amounts.				WQS
There shall be no discharge of polychlorinated biphenyl compounds.				40 CFR 423.12(b)(2); 40 CFR 423.13(a)
a.	If the facility is designed, constructed, operated, and maintained to treat the runoff from a 10-year, 24-hour precipitation event, this limitation shall be waived for any discharge overflow caused by a rainfall in excess of 2.99 inches (or equivalent snowmelt) in 24 hours. The permittee shall have the burden of proof that all of these conditions have been met. The precipitation shall be monitored by gauge and recorded daily by the permittee.			

Table 9: Effluent Limitations for Stormwater Runoff ^a

Best Management Practice	Basis
The quality of the stormwater discharge shall be the best attainable through the implementation of Best Management Practices.	Previous Permit 40 CFR 122.44(k)(3) ^b
No fuel, lubricating oils, chemicals, or process wastewater shall be discharged.	Previous Permit 40 CFR 122.44(k)(3) ^b
Spill prevention and response procedures must be employed to minimize the potential for spilled material to discharge with stormwater. A Spill Prevention Control and Countermeasure (SPCC) Plan developed to satisfy 40 CFR 112 also serves as a stormwater pollution prevention measure.	Previous Permit 40 CFR 122.44(k)(3) ^b

Table 9: Effluent Limitations for Stormwater Runoff ^a

Any areas that do not drain to a pond shall be operated and maintained to minimize, to the extent reasonably practicable, stormwater contact with raw materials, intermediate products, finished products, byproducts, or waste materials. Good housekeeping practices should be employed to keep these areas clean and orderly.	Previous Permit 40 CFR 122.44(k)(3) ^b
No fuel, lubricating oils, chemicals or process wastewater shall be discharged.	Previous Permit 40 CFR 122.44(k)(3) ^b
The haul road and drainage ditches shall be inspected for evidence of material spillage, erosion, sedimentation, and deterioration or ineffectiveness of structural controls. If necessary, the stormwater pollution prevention practices shall be revised based on the observations noted during the inspection.	Previous Permit 40 CFR 122.44(k)(3) ^b
The retention pond and transfer equipment for Outfall 028 must be inspected regularly and maintained appropriately to ensure that the structure, including inlet and outlets, do not deteriorate.	Previous Permit 40 CFR 122.44(k)(3) ^b
There shall be no discharge of polychlorinated biphenyl compounds.	40 CFR 423.12(b)(2) 40 CFR 423.13(a)
Notes:	
a.	Applicable to runoff from the ash landfill haul road corridor, equipment storage and other support areas at the plant site, and the surplus and salvage property yard including the settling pond (Outfall 028).
b.	Best Management Practices may be used to control or abate the discharge of pollutants when numeric effluent limitations are infeasible provided in 40 CFR 122.44(k)(3).

SELF-MONITORING REQUIREMENTS

Effluent parameters are sampled at the outfalls prior to leaving company property and mixing with receiving waters. The monitoring requirements for each outfall are provided in Tables 10 through 14.

Monitoring for total residual chlorine (40 CFR 423.13(b)) at Outfalls 001 and 002 is not included in the proposed permit. Basin Electric Power Cooperative submitted a request to waive monitoring for total residual chlorine in once-through cooling water in accordance with 40 CFR 122.44(a)(2).

Because LOS no longer discharges bottom ash transport water, monitoring for metals will not be required at Outfalls 001, 002, and 003 in the proposed permit. Waste streams that discharge from Outfall 003 to Outfalls 001 and 002 now consist of low volume waste from the SNCR system, microfiltration water treatment system, seal water, boiler makeup water, and groundwater.

Monitoring for total copper and total iron will no longer be required at Outfall 003 in the proposed permit. The waste stream from Outfall 008, which contained metal cleaning waste that was directed to Outfall 003, was redirected and combined with the coal combustion residual waste stream and directed to the landfill. Also, the requirement to conduct a general chemistry and chemical oxygen demand analysis once every five years at Outfall 003 will discontinue in the proposed permit. The low volume waste streams present in the discharge from Outfall 003 (SNCR wastewater, microfiltration wastewater, seal water, boiler makeup water, and groundwater) will be monitored and limited in the proposed permit for parameters present and recognizable in those waste streams.

Nutrient monitoring was added to Outfall 003 and 014 in the proposed permit to coincide with the development of the state's nutrient reduction strategy. Sources of nutrients from Outfall 003 include discharges from the SNCR which utilizes urea in the process. Sources of nutrients from Outfall 014 include organically bound nutrients in coal pile runoff. With the inclusion of nutrient monitoring at Outfall 003, the requirement to collect at least ten nitrate/nitrite samples at Outfalls 001, 002, and 003 during a permit cycle was removed from the proposed permit.

Monitoring for chlorides at Outfalls 001 and 002 will discontinue in the proposed permit. Chloride monitoring will continue at Outfall 003 to monitor changes to the waste stream due to the removal of bottom ash transport water and increased percentage of wastewater from the microfiltration water treatment system in the waste stream. The monitoring frequency will change from collecting ten samples during the five-year permit cycle to once per year.

Monitoring for acute whole effluent toxicity (WET) at Outfalls 001 and 002 will discontinue in the proposed permit. Acute WET testing at Outfalls 001 and 002 was conducted when bottom ash pond effluent and legacy wastewater from Outfall 003 was present in discharges to Outfall 001 or 002. With the removal of the ash pond effluent from the Outfall 003 waste stream, the basis for acute WET testing at Outfalls 001 and 002 is no longer present. The low volume waste streams present in the discharge from Outfall 003 (SNCR wastewater, microfiltration wastewater, seal water, boiler makeup water, and groundwater) will be monitored and limited in the proposed permit for parameters present and recognizable in those waste streams. The absence of acute WET monitoring is consistent with monitoring at other steam electric generating facilities in the state that discharge low volume waste that combines with once-through cooling water. Refer to Whole Effluent Toxicity in the Evaluation of Surface Water Quality-Based Effluent Limits for Numeric Criteria section of the fact sheet for more information.

The requirement to collect a total phosphorus, nitrate and nitrite, chemical oxygen demand, general chemistry, and metals analysis once every five years at Outfall 013 will discontinue in the proposed permit. Discharges from the outfall consist of plant site runoff managed with best management practices and will be monitored for parameters present in stormwater runoff.

Table 10: Self-Monitoring Requirements for Outfall 001 and 002

Effluent Parameter	Frequency	Sample Type ^a
Temperature	Continuous	Recorder
pH	1/Week	Instantaneous
Flow	1/Day	Instantaneous
Total Flow	1/Month	Calculated
Samples taken in compliance with the monitoring requirements shall be taken prior to leaving company property or entering the receiving stream. Temperature shall be measured by continuous recorder at the outfall of the condenser water box outlet.		
Notes:		
a. Refer to Appendix B for definitions.		

Table 11: Self-Monitoring Requirements for Outfall 003

Effluent Parameter	Frequency	Sample Type ^a
TSS	1/Week	Grab
Oil & Grease	1/Month	Grab
pH	1/Week	Instantaneous
Flow	1/Week	Instantaneous
Total Flow	1/Month	Calculated
Total Phosphorus	1/Month	Grab/Calculated
Total Nitrogen ^b	1/Month	Grab/Calculated
Chlorides	1/Year	Grab
Samples shall be taken after the clarifier but prior to mixing with once-through cooling water.		
Notes:		
a. Refer to Appendix B for definitions.		
b. Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).		

Table 12: Self-Monitoring Requirements for Outfall 011 and 012

Effluent Parameter	Frequency	Sample Type ^a
TSS	1/Week	Grab
pH	1/Week	Instantaneous
Flow	1/Day	Calculated
Total Drain	1/Quarter	Calculated
The dewatering samples must be taken prior to the discharge leaving company property or entering any receiving streams.		
The number of days discharged shall be included on the discharge monitoring report.		
Notes:		
a. Refer to Appendix B for definitions.		

Table 13: Self-Monitoring Requirements for Outfall 013

Effluent Parameter	Frequency	Sample Type ^a
TSS	1/Quarter	Grab
Oil and Grease ^b	1/Quarter	Visual/Grab
pH	1/Quarter	Instantaneous
Flow	1/Day	Calculated
Total Drain	1/Quarter	Calculated
Samples shall be taken prior to the discharge water leaving company property or entering any receiving streams.		
The number of days discharged shall be included on the discharge monitoring report.		
Notes:		
a.	Refer to Appendix B for definitions.	
b.	The discharge shall not have a visible sheen or floating oil. If detected, the department shall be notified, and a grab sample shall be analyzed.	

Table 14: Self-Monitoring Requirements for Outfall 014

Effluent Parameter	Frequency	Sample Type ^a
TSS	1/Week	Grab
Oil & Grease	1/Month	Grab
pH	1/Week	Instantaneous
Flow	1/Week	Calculated
Total Flow	1/Month	Calculated
Total Phosphorus	1/Month	Grab/Calculated
Total Nitrogen ^b	1/Month	Grab/Calculated
Samples shall be taken prior to the discharge water leaving company property or entering any receiving streams.		
Notes:		
a.	Refer to Appendix B for definitions.	
b.	Total nitrogen is a combination of nitrate, nitrite, and Total Kjeldahl Nitrogen (TKN).	

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

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

The Missouri River is listed as a class I stream in the Standards of Quality for Waters of the State. The quality of water in class I streams must be suitable for the propagation and/or

protection of resident fish species and other aquatic biota, and for swimming, boating, and other water recreation. The quality also must be suitable for irrigation, stock watering, and wildlife without injurious effects. The quality must be able to meet the bacteriological, physical, and chemical requirements for municipal or domestic use after treatment.

The Missouri River is not listed as impaired in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List). All beneficial uses are attained in this section of the Missouri River.

Alderin Creek is not specifically mentioned in the Standards of Quality for Waters of the State and is considered a class III stream. The quality of water in class III streams must be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation, and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.

Alderin Creek is not listed as impaired in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List). There currently are no TMDLs for Alderin Creek.

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

Temperature

North Dakota's Water Quality Standards (NDAC 33.1-16-02.1) limit the maximum increase in river temperature caused by once-through cooling water to less than 5° Fahrenheit (F). To address the discharge of once-through cooling water, a study was done by Quirk, Lawler & Matusky Engineers titled, "Missouri River Temperature Survey near United Power Association Stanton, North Dakota Plant" January 1973; QL & M Project No. 215-3. The study meets the Field Study Method for determining mixing zone characteristics between temperature and receiving stream found in Appendix III of NDAC 33.1-16-02.1. According to the study, the 4° F isotherm never exceeded 8.8 percent of the river's width or 7.7 percent of the cross-sectional area. This met the guidelines that EPA Region VIII office had suggested. The only indication the 4° F isotherm may be exceeded is when the flow of the Missouri River exceeds 30,000 cubic feet per second (cfs) causing the longitudinal extent of the isotherm to extend further downstream.

Flow data at USGS gage station 06342500 (Missouri River at Bismarck, ND) from 2011 through 2021 showed the 75th-percentile flow for the Missouri River was 27,800 cfs during that period of record. Using discharge data from January 2011 through October 2021, the maximum flow rate for Outfall 001 was 167 MGD, and the maximum flow rate for Discharge 002 was 257 MGD. The 7Q10 low flow for the Missouri River at Bismarck, ND was 12,353 cfs. The minimum temperature for the river is 32° F, and the proposed maximum effluent temperature limitation for Discharges 001 and 002 is 99° F. Since cooling water is obtained from the river, the total

cooling water flow was subtracted from the river flow to determine the total amount of unheated river water. Calculations are shown below:

$$12,653 \text{ cfs} \times \frac{1 \text{ MGD}}{1.55 \text{ cfs}} - (167 \text{ MGD} + 275 \text{ MGD}) = 7,721 \text{ MGD (unheated water)}$$

$$\frac{((167 \text{ MGD} + 275 \text{ MGD}) \times 99^{\circ}\text{F} + 7,721 \text{ MGD} \times 32^{\circ}\text{F})}{12,653 \text{ cfs} \times \frac{1 \text{ MGD}}{1.55 \text{ cfs}}} = 35.6^{\circ}\text{F}$$

$$35.6^{\circ}\text{F} - 32^{\circ}\text{F} = 3.6^{\circ}\text{F}$$

This is the maximum temperature increase in the river, with an effluent temperature limit of 99 degrees F. This situation is never expected to occur, since the maximum temperature of the discharge generally occurs in August and the minimum river temperature occurs during freezing conditions.

pH

Discharges to Class I streams shall have an instantaneous limitation between 6.5 (s.u.) and 9.0 (s.u.). Discharges to Class III streams shall have an instantaneous limitation between 6.0 (s.u.) and 9.0 (s.u.).

Whole Effluent Toxicity

Testing requirements and limitations for whole effluent toxicity (WET) testing are specified in 40 CFR 122.44(d)(1)(iv) & (v) for discharges that may have the reasonable potential to contribute to an in-stream excursion above a numeric or narrative criterion for whole effluent toxicity. The state water quality standards include a narrative standard related to whole effluent toxicity. The narrative standard listed in NDAC 33.1-16-02.1-08(1)(a)(4) states that waters of the state shall be “free from substances attributable to municipal, industrial or other discharges or agricultural practices in concentrations which are toxic or harmful to humans, animals, plants, or resident aquatic biota. For surface water, this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits.”

The department conducted a reasonable potential analysis for whole effluent toxicity for Outfall 003 based on WET monitoring at Outfalls 002 and 001 and flow data from Outfall 003 following the discontinuation of bottom ash water and legacy wastewater from the bottom ash ponds. The department determined no reasonable potential for acute toxicity from Outfall 003 (Appendix D). The department determined the waste streams and runoff discharged from the facility are monitored and limited for parameters present and recognizable in the discharge.

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 has not identified any chemicals in the applicant's discharges for

regulation based on the human health criteria. The department will re-evaluate this discharge for impacts to human health at the next permit reissuance.

COOLING WATER INTAKE STRUCTURE REQUIREMENTS

Cooling Water Intake Structure

The cooling water intake structure (CWIS) for LOS is subject to the final Clean Water Act section 316(b) rule. The rule requires facilities to minimize environmental impact associated with the use of the CWIS. The rule requires facilities to utilize appropriate technology to minimize impingement and entrainment of aquatic species at the CWIS. The rule does not authorize take, as defined by the Endangered Species Act, for the purposes of compliance.

LOS uses a noncontact, once-through cooling water system to dissipate waste heat to the Missouri River. Water drawn from the Missouri River by the CWIS passes through trash racks and traveling screens before being pumped through 60-inch pipes to the main condensers and discharged back to the Missouri River.

The CWIS for the once-through cooling water system is located on the south bank of the Garrison Reach of the Missouri River, roughly four miles south and east of Stanton, ND. The CWIS is contained within a single CWIS building on the north side of the LOS site. The CWIS includes two short concrete forebays for each unit (a total of four forebays) that are flush with the riverbank and perpendicular to the river flow. Spray nozzles are mounted across the base of the forebays to wash accumulated silt back into the river to prevent blockage of inlets. The spray nozzles operate at least twice per day. The Unit 1 intake is located in about 11 feet of water and the Unit 2 intake is located in about 15 feet of water. Both intakes withdraw water from the surface to a low water level elevation of 1,656.5 feet (MSL).

The CWIS consists of trash racks and four circulating water pumps (two for each unit). The trash racks are mechanically cleared when necessary. Water passes through the trash racks, then the traveling screens prior to entering the pump wet well. Unit 1 traveling screens are 10 feet wide and Unit 2 traveling screens are 12 feet wide. The traveling screens have 3/8-inch mesh openings that are cleaned with 125 psi (pound per square inch) wash sprays. The wash sprays can be operated manually or automatically. Wash water from the screens travels through a sluiceway that discharges to the Missouri River downstream of the CWIS. Material that is washed off the screens is collected in a mesh basket for off-site disposal. There is no separate fish handling or return system associated with the intake.

From 2014 to 2018, the net capacity factor of Unit 1 averaged 66 percent and the net capacity factor of Unit 2 averaged 66 percent. The maximum Design Intake Flow (DIF) of Units 1 and 2 are 105 million gallons per day (MGD) and 225 MGD, respectively. The five-year combined Actual Intake Flow (AIF) from 2014 through 2018 averaged 238.4 MGD. More than 99 percent of the AIF is used as non-contact cooling water. Plant process water and traveling screen wash water use 2.19 MGD and 0.61 MGD, respectively.

LOS is a base load power plant that operates continuously (except for planned maintenance or unplanned outages). Because of this, the circulating water system operates 24 hours a day, year-round. Less than 1.65 percent of the Missouri River flow is withdrawn at the CWIS on an

average monthly basis. A higher percentage of river flow is drawn in the winter when the river flow is low, and a lower percentage is drawn in the summer when river flow rates are high.

LOS continuously monitors the CWIS from station operations. Intake flows are monitored by station operations. The flow of each pump at the CWIS also is monitored by station operations. Station operations also monitor whether the pumps are “off” or “on.” Station operations also monitors whether the traveling screens are “off” or “on.” The monitoring system displays alarms when issues or failures occur. In addition to the remote monitoring system, LOS personnel visually inspect the major components of the CWIS as part of regular maintenance.

Basin Electric Power Cooperative worked with three other power companies to collect data on the baseline biology of the Garrison Reach of the Missouri River. Along with data collected at the LOS CWIS, two of the other three companies operated cooling water intake structures in the vicinity of the LOS CWIS when the data was collected. One CWIS has since been removed with the decommission of a steam electric power generating facility. This CWIS was located immediately upstream of LOS.

Fragile species that inhabit the Garrison Reach of the Missouri River include rainbow smelt and gizzard shad. These species are likely to be present and impinged at the LOS CWIS.

The only Federally-listed aquatic species with a potential for occurrence near the LOS CWIS is the pallid sturgeon. While the pallid sturgeon is known to occur in the Missouri River, it is likely to be rarely found in the Garrison Reach. Pallid sturgeon are large fish and strong swimmers and could avoid the LOS CWIS. There has been no record of impingement of a pallid sturgeon at any CWIS.

The CWIS is within the critical habitat area for one Federally-listed threatened species (the piping plover); however, the CWIS is not likely to influence the habitat of this species since its habitat is more directly affected by the operation of the Garrison Dam than the CWIS.

An entrainment characterization study was completed by Basin Electric Power Cooperative at LOS in 2015 and 2016. Entrainment monitoring was conducted from April through September in each of the study years. The number and types of organisms entrained can be found in Appendix E of this statement of basis (40 CFR 125.98(f)(2)(i)). Predominantly early life stages of carps, minnows, redhorse, and suckers were collected during the study (96 percent of collected samples in 2015 and 90 percent of collected samples in 2016). The most common early life stages were yolk-sac larvae. Eggs accounted for about 2 percent of collected samples in 2015 and 10 percent in 2016. Early life states of recreational species (i.e., white bass, walleye, and percidae) accounted for one percent of samples collected during the two-year study. No larval pallid sturgeon or shovelnose sturgeon were collected during the two-year study. Based on the 2015-2016 entrainment study, approximately 7.8 million specimens were estimated to have been entrained in 2015 at LOS and approximately 10.8 million specimens were estimated to have been entrained in 2016. Entrainment estimates followed seasonal patterns with over 90 percent of estimated entrainment occurring from June to August of each study year.

Impingement and Entrainment

Upon review of the site-specific data provided in the permit application required by 40 CFR 122.21(r) and consultation with the U.S. Fish and Wildlife Service, the department has determined the rate of impingement to be *de minimis* (40 CFR 125.94(b)(11)).

The department must establish site-specific BTA standards for entrainment based on best professional judgment (40 CFR 125.94(d) and 125.98(f)). The standards must reflect the department's determination of the maximum reduction in entrainment warranted.

Determination Factors

The department reviewed the information submitted as part of the permittee's application. Basin Electric Power Cooperative expects both LOS units to operate through 2040 (40 CFR 125.98(f)(2)(iv)). Basin Electric Power Cooperative submitted technical feasibility and cost information for the following entrainment control technologies as part of the permit application: closed-cycle recirculating system, fine-mesh screens, alternate cooling sources, and variable speed pumps. Of these technologies, the closed-cycle recirculation system would require land to utilize the technology (40 CFR 125.98(f)(2)(iii)). Alternate cooling sources were determined to be infeasible so were not carried forward to determine the social benefit of the technology. Variable speed pumps were determined to be an impractical and ineffective way to reduce entrainment. The closed-cycle recirculating system and fine-mesh screens were determined to be feasible and considered for the social benefit of the technology versus the current operation.

As provided in Basin Electric Power Cooperative's permit application, the cost of a closed-cycle cooling tower or fine-mesh screen exceeded the social benefit of the technologies (40 CFR 125.98(f)(2)(v)). The monetized value of the recreational and commercial social benefit of a closed-cycle cooling tower would be large but the cost to implement negates the benefit. The cost to implement fine-mesh screens, although not as large as the cost of a closed-cycle cooling tower, also negates the monetized value of the recreational and commercial social benefit of implementing the technology.

The addition of a closed-cycle cooling tower would increase the amount of NO_x, SO₂, and CO₂ generated by LOS by increasing the amount of electricity generated by the plant to provide treatment (40 CFR 125.98(f)(2)(ii)). Technology is in place to reduce the emission of NO_x and SO₂ from LOS; however, there is no technology in place at LOS to reduce the emission of CO₂. The amount of CO₂ generated by LOS is estimated to increase by 68,921 tons per year with the implementation of the technology based on capacity utilization rate. The operation of the cooling tower also would increase the emission of dissolved solids created during evaporation that would drift on to surrounding land. Other pollutant concerns that would be created include increased sulfate, chloride, and sodium concentrations in wastewater discharges from the cooling tower recirculating system to a receiving water.

The addition of fine-mesh screens would increase the amount of electricity generated by the plant to operate the screens which would increase the amount of NO_x, SO₂, and CO₂ generated by LOS (40 CFR 125.98(f)(2)(ii)). The amount of NO_x and SO₂ emitted would be reduced by current technology in place. The amount of CO₂ generated is estimated to increase by 681 tons per year with the implementation of the technology based on capacity utilization rate.

The operation of fine-mesh screens also may be affected by cottonwood seeds and naturally occurring coal particles and other debris. These items can overlay the fine-mesh screens reducing through screen velocity and head loss affecting station reliability and potentially increasing temperature of the once-through cooling water above what is currently established.

Permit Requirements

The proposed permit will contain the following language as required by 40 CFR 125.98(b)(1), “Nothing in this permit authorizes take for the purpose of a facility’s compliance with the Endangered Species Act.”

The proposed permit requires LOS to monitor the CWIS with remote monitoring devices or conduct weekly visual inspections in instances where the remote monitoring devices are not in operation (40 CFR 125.96(e)).

The proposed permit requires the facility to continue to operate at a *de minimis* rate of impingement in accordance with 40 CFR 125.94(a)(1) and 125.94(c)(11). The proposed permit also requires the facility to operate at a *de minimis* rate of entrainment to comply with the best technology available standard for entrainment in accordance with 40 CFR 125.94(a)(1) and 125.94(d). Operating at a *de minimis* rate of entrainment is the site-specific best technology available standard for the maximum reduction in entrainment warranted.

The proposed permit requires the facility to monitor the actual intake flow (AIF) daily. Monitoring of the AIF must be representative of normal operating conditions. In order to determine compliance with the proposed permit, the permittee will be required to submit intake flow monitoring results with the discharge monitoring report (40 CFR 125.97(a)).

The proposed permit requires the facility to submit an annual certification statement and report regarding the operation of the cooling water system. The report must summarize any changes made related to the cooling water system. If the information contained in the previous statement is still relevant, then the facility may simply state that in the certification statement. The certification statement must be signed by a responsible corporate officer. Also, any revision related to the information required by 40 CFR 122.21(r) must be submitted with the next permit application (40 CFR 125.97(c), 125.98(b)(4)).

The proposed permit requires all discharge monitoring reports, and annual certification statements and reports related to cooling water intake operation and closed-cycle recirculating system to be retained until the subsequent permit is issued (40 CFR 125.97(d), 125.98(b)(4)).

The proposed permit includes a statement requiring any revisions to the requirements of 40 CFR 122.21(r) to be included with the next permit application (40 CFR 125.98(b)(6)).

The proposed permit requires all of the information submitted with the permit application used to satisfy the requirements of 40 CFR 122.21(r) to be retained until the subsequent permit is issued (40 CFR 125.95(e)).

The proposed permit requires all records supporting the department’s determination that operating at a *de minimis* rate is a best technology available for entrainment by retained until the next permit is issued (40 CFR 125.97(f)).

The proposed permit includes a requirement for the facility to notify department of any proposed changes to the cooling water intake structure or operation of the cooling water intake. Any changes must be included with the annual certification statement and report.

The proposed permit allows the department and EPA representatives to inspect the cooling water intake structure and operation of the cooling water intake structure, and request information needed to determine permit compliance (40 CFR 125.98(i)).

MONITORING REQUIREMENTS

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

Test Procedures

The collection and transportation of all samples shall conform to 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

The proposed permit contains no additional conditions.

PERMIT ISSUANCE PROCEDURES

Permit Actions

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

Proposed Permit Issuance

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

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to reissue a permit to **Basin Electric Power Cooperative** located near Stanton, North Dakota. 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 on **November 18, 2021** in the **Beulah Beacon** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

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

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

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck, ND 58503-1324

The primary author of this permit and fact sheet is Dallas Grossman.

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

Public Notice Date: 11/18/2021

Public Notice Number: ND-2021-036

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: 6/30/2021

Application Number: ND0025232

Applicant Name: Basin Electric Power Lolds

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

Telephone Number: 701.557.5495

Proposed Permit Expiration Date: 12/31/2026

Facility Description

The reapplication is for a 660 megawatt, lignite coal-fired steam electric power generating plant located in the NW 1/4, Section 22, Township 144 North, Range 84 West and the associated ash landfill located in Sections 31 and 32, Township 144 North, Range 84 West. Discharges from the plant consist of once-through cooling water, wastewater, and stormwater to the Missouri River adjacent to the plant, and stormwater runoff from the closed areas of the ash landfill to Alderin Creek adjacent to the landfill. The reapplication includes the Missouri River cooling water intake 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. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by December 17, 2021 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^{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 Industry Specific

See 40 CFR 423.11

See 40 CFR 125.92

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

The North Dakota Department of Environmental Quality reviewed DMR information and applicable water quality standards for class I and III streams to determine the appropriate requirements to be placed in the permit.

Temperature

The development of the permit required the use of USGS SW Toolbox 1.0.5 to determine the 75th-percentile flow and the 7Q10 flow of the Missouri River at USGS gauging station 06342500 Missouri River at Bismarck, ND from January 2011 through December 2021 (Figure 2). The statistical flows were used to characterize the effects of once-through cooling water mixing with the Missouri River.

Figure 2

RESULTS: USGS 06342500 MISSOURI RIVER AT BISMARCK, ND

File Edit View Help

All available data from Jan 1, 2011 through Dec 31, 2021 are included in analysis. Display Options: 06342500 Copy to Clipboard

Season defined as Jan 1 - Dec 31. Biological flow is calculated for full climatic year starting at Jan 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Jan		
Season Or Year End	31-Dec		
Years Included in Calculations	2011~2021		
Start	2011		
End	2021		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	12,188	0.06%	0.6
4B3	13,179	1.70%	0.9
30B3	13,695	4.08%	0.9
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
1Q10	12,210	0.18%	0
7Q10	12,353	0.33%	0.3
Percentile - 75%	27,800	74.94%	9.6
Harmonic Mean	21,794	43.86%	N/A
Harmonic Mean, Adjusted	21,794	43.86%	N/A

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

Whole Effluent Toxicity (WET)

The development of the permit required the use of USGS SW Toolbox 1.0.5 to determine the 1B3, 4B3, 1Q10, and 7Q10 flows for the Missouri River at USGS gauging station 06342500 Missouri River at Bismarck, ND from January 1999 through December 2021 (Figure 3). The statistical flows were used to conduct a reasonable potential analysis for WET at Outfall 003 based on WET test results from Outfalls 002 and 001. Outfall 003 is an internal point that discharges through Outfall 002 and 001. The analysis found no reasonable potential for discharges from Outfall 003 to be acutely toxic (Figure 4).

Figure 3

RESULTS: USGS 06342500 MISSOURI RIVER AT BISMARCK, ND

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All available data from Jan 1, 1999 through Dec 31, 2021 are included in analysis. Display Options: 06342500 Copy to Clipboard

Season defined as Jan 1 - Dec 31. Biological flow is calculated for full climatic year starting at Jan 1.

Seasonal Calculation?	No		
Season Or Year Start	1-Jan		
Season Or Year End	31-Dec		
Years Included in Calculations	1999~2021		
Start	1999		
End	2021		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	9,760	0.09%	0.95455
4B3	10,035	0.50%	0.95455
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
1Q10	9,660.5	0.08%	0.27273
7Q10	9,919.8	0.27%	0.81818
Harmonic Mean	18,417	49.97%	N/A
Harmonic Mean, Adjusted	18,417	49.97%	N/A

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

Figure 4

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

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

Facility Name:	Leland Olds Station	Receiving Stream:	Missouri River
NDPDES Permit:	ND0025232	1Q10 Acute	9661 cfs
Effluent Flow (mgd):	1.020	1B3 Acute	9760 cfs
Stream Design Mixing:	10.0%	7Q10 Chronic	9920 cfs
WET TUa (max):	1.00	4B3 Chronic	10035 cfs
ACR:	10.00		
Statistical Multiplier:	1.2		

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

Outfall:
 003 (through 002 and 001)

RWC = Receiving water concentration, the resultant magnitude of toxicity in the receiving water after effluent discharge in TUs (also known as the in-stream waste concentration)
 Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)
 Qe = Effluent Design Flow
 Ce = Highest Toxicity Unit (TU) reported. (Use 1 if no WET data is available.)
 pmf = Partial mix factor, percent of Qs allowed for mixing by State authority.
 Qs = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)

Qe	1.020	mgd	Qs - Acute	6241.006	mgd
Ce	1.00	TU	Qs - Acute 1B3	6304.960	mgd
pmf	10.0%		Qs - Chronic	6408.320	mgd
Stat	1.2		Qs - Chronic 4B3	6482.610	mgd
ACR	10.00				

Acute RP RWC - 1Q10 0.00 TUa RWC - 1B3 0.00 TUa	Chronic RP RWC - 7Q10 0.02 TUc RWC - 4B3 0.02 TUc
--	--

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

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

CMC RP Present: 1Q10 Acute OR NO 1B3 Acute NO	CCC RP Present: 7Q10 Chronic OR NO 4B3 Chronic NO
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The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design flows to determine Whole Effluent Toxicity (WET) limits for acute and chronic endpoints.

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APPENDIX D – RESPONSE TO COMMENTS

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

DRAFT

APPENDIX E – NUMBER AND TYPES OF ORGANISMS ENTRAINED

The number and types of organisms entrained as part of the Basin Electric Power Cooperative, Leland Olds Station, Entrainment Characterization Study (EA Engineering, Science, and Technology Inc., 2017) are provided below (40 CFR 125.98(f)(2)(i)).

Scientific Name	Common Name	Life Stage ⁽¹⁾	2015		2016	
			#	%	#	%
<i>Dorosoma cepedianum</i>	Gizzard Shad	PYSL	2	0.7	--	--
<i>Coregonus</i> sp.	Cisco	YSL	3	1.1	6	1.4
<i>Osmerus mordax</i>	Rainbow Smelt	Eggs	2	0.7	1	0.2
		Larvae	--	--	5	1.1
		PYSL	--	--	3	0.7
<i>Osmerus mordax</i> type	Rainbow Smelt type	Eggs (non-viable)	--	--	1	0.2
		Eggs	--	--	7	1.6
<i>Cyprinus carpio</i>	Common Carp	YSL	1	0.4	--	--
<i>Pimephales</i> type	--	YSL	--	--	1	0.2
Cyprinidae type	Minnow type	Eggs	2	0.7	5	1.1
<i>Catostomus</i> sp.	Sucker	YSL	22	7.7	--	--
<i>Ictiobus</i> sp.	Buffalo	YSL	1	0.4	--	--
<i>Moxostoma/Catostomus</i>	Redhorse/Sucker	Larvae	33	11.6	--	--
		PYSL	12	4.2	4	0.9
		YSL	172	60.4	339	77.8
Catostomidae type	Sucker type	Eggs (non-viable)	--	--	2	0.5
		Eggs	--	--	8	1.8
Ictiobinae sp.	Carp sucker/Buffalo	Eggs	1	0.4	--	--
		YSL	27	9.5	13	3.0
Catostomidae sp.	Sucker	Larvae	--	--	2	0.5
		YSL	--	--	6	1.4
<i>Morone</i> type	White Bass	Eggs (non-viable)	--	--	2	0.5
<i>Sander vitreum</i>	Walleye	YSL	2	0.7	1	0.2

Scientific Name	Common Name	Life Stage ⁽¹⁾	2015		2016	
			#	%	#	%
Percidae type	Perch type	YSL	--	--	2	0.5
Percidae sp.	Perch	Larvae	1	0.4	--	--
Cyprinidae/Catostomidae	Minnow/Sucker	Egg	--	--	11	2.5
Cyprinidae/Catostomidae type	Minnow/Sucker type	Larvae	1	0.4	--	--
Unidentified	Unidentified	Eggs (non-viable)	--	--	8	1.8
		Eggs	1	0.4	9	2.1
		Larvae	2	0.7	--	--
Total Ichthyoplankton			285	100.0	436	100.0

⁽¹⁾Life Stages: YSL = yolk-sac larvae; PYSL = post-yolk-sac larvae; Larvae = damaged; unable to identify life stage.