Coal Combustion Residual Legacy Rule
Third 6-Month Applicability Extension Report

Closed William J. Neal Station, Velva, ND

Prepared for:
Basin Electric Power Cooperative
1717 East Interstate Avenue
Bismarck, ND 58503

Prepared by
Barr Engineering Co.

October 2025

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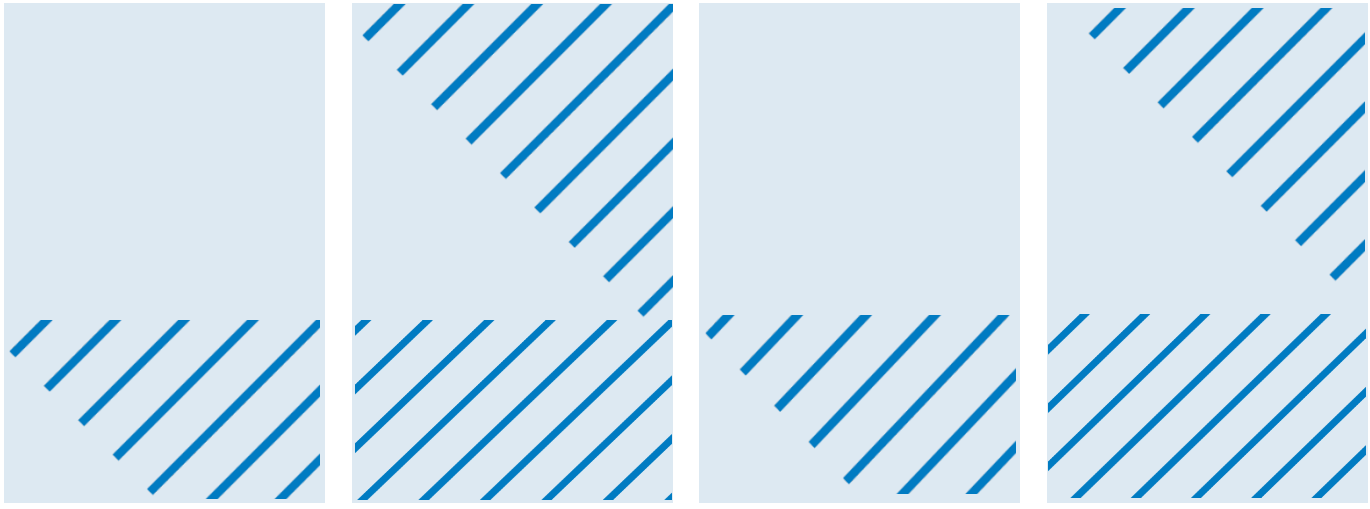
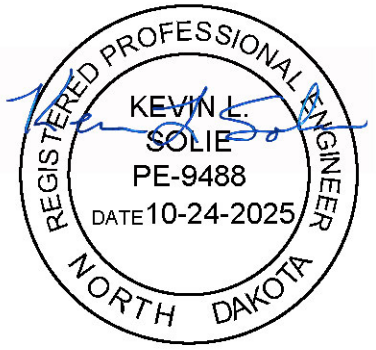


Certification

I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR Part 257 Subpart D, attest that this Field Investigation Work Plan and Certification have been prepared in accordance with good engineering practice, including consideration of relevant industry standards and the requirements of 40 CFR § 257.100(f)(1)(iii). I further certify that I am a duly Licensed Professional Engineer under the laws of the State of North Dakota and that I have professional experience with surface impoundment design, operation, monitoring and closure.

The services performed by Barr for this Project have been conducted in a manner consistent with the level of skill and care ordinarily exercised by other members of the profession currently practicing in this area. No other warranty, expressed or implied, is made.



Kevin L. Solie
North Dakota PE-9488

October 24, 2025
Date

CCR Legacy Rule Third 6-Month Applicability Extension Report

October 2025

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1 Introduction

On May 8, 2024, EPA finalized the Coal Combustion Residual (CCR) Legacy Rule, which includes new regulations for inactive surface impoundments at inactive electric utilities, referred to as "legacy CCR surface impoundments." In addition, the new regulation included requirements for CCR surface impoundments and landfills that closed prior to the effective date of the 2015 CCR Rule and other areas where CCRs were disposed of or managed on land outside of regulated units at active facilities. These newly regulated areas are referred to as “CCR management units” or CCRMUs. The Legacy Rule offers owners the ability to secure additional time (up to 18 months, in 6-month increments) to complete an applicability report for the sole reason of determining through field investigation whether the unit contains both CCRs and liquids. The initial CCR Legacy Rule 6-month extension report was completed on November 6, 2024, and was subsequently posted on the Basin Electric Power Cooperative (Basin Electric) CCR compliance data website. No determination regarding the site has been made yet; Basin Electric is in the process of conducting the field investigation described later in this report. On behalf of Basin Electric, Barr Engineering Co. (Barr) has prepared this third CCR Legacy Rule 6-month applicability extension report for the William J. Neal (WJN) ash pond disposal site. This extension is necessary to allow adequate time to implement the workplan and to make an applicability determination.

In the time since the second extension was published, EPA issued a memorandum on July 10, 2025 entitled "Memorandum: Considerations for the Identification and Elimination of Free Liquids in Coal Combustion Residuals (CCR) Surface Impoundments and Landfills (40 CFR Part 257, Subpart D) Docket ID No. EPA-HQ-OLEM-2020-0107-106.” The memorandum, from Steven Cook, Principal Deputy Assistant Administrator, essentially rescinded the April 22, 2024 EPA memorandum cited and included in previous WJN extensions. The July 10 memorandum explains that the previously issued EPA guidance on how to identify and interpret free liquids was not to be relied upon or used to implement regulatory requirements. More importantly, EPA intends to provide further clarification on these issues which may affect the definitions which are the basis for this investigation.

EPA has indicated that the current Legacy Rule will be modified in the future, and extensions have been proposed. With the current uncertainty about definitions and in the absence of further EPA guidance, a final six-month extension is warranted. The site will continue to be evaluated as per the workplan and additional monitoring to determine potential seasonal effects on groundwater elevations in the area will be conducted.

1.1 Background information

Basin Electric owns and previously operated the William J. Neal Station (WJN), a coal-fired electrical generation station located near Velva, ND. WJN ceased operations in the late 1980s and was subsequently decommissioned and demolished in the late 1990s. CCRs (fly ash and sludge) from WJN were deposited in a disposal area (surface impoundment) located west of the plant site. The site had been previously reviewed by the EPA and received a No Further Remedial Action Planned (NFRAP) designation.

Based on the date WJN ceased providing power to electric power transmission systems, it is considered an “inactive facility” under the CCR Legacy Rule and potentially falls under Legacy Rule regulation.

Owners of Legacy surface impoundments must make an applicability determination and prepare an applicability report, indicating whether or not the unit is subject to the Rule. Existing and available information, however, does not provide a sufficient basis to determine applicability, i.e., it is not evident that the unit contained free liquids on or after October 19, 2015 considering current regulatory uncertainty and the new EPA memorandum issued on July 10, 2025.

1.2 Purpose

The Legacy Rule offers owners the ability to secure additional time to complete an applicability report for the sole reason of determining through field investigation whether the unit contains both CCRs and liquids (and is subject to all the CCR Legacy Rule requirements for inactive impoundments). As per the EPA memorandum dated July 10, 2025, Basin Electric will not use the EPA memorandum entitled "Considerations for the Identification and Elimination of Free Liquids in Coal Combustion Residuals (CCR) Surface Impoundments and Landfills" dated April 22, 2024, to guide field investigation efforts. The EPA memorandum from July 10, 2025 is attached as Appendix A.

If, during implementation of the written field investigation workplan (described in detail in later sections), Basin Electric determines that the unit contains free liquids, Basin Electric will cease operating under the extension provisions and prepare an applicability report within 14 days of determining that the unit contains free liquids. Basin Electric would also comply with the remaining Legacy Rule requirement deadlines under new timeframes, to be determined by adding the total length of the extension(s) to each of the deadlines specified in the Legacy Rule.

Alternatively, if Basin Electric determines that the closed WJN surface impoundment does not contain both CCR and liquids during implementation of the written field investigation work plan, Basin Electric would prepare a notification stating that the field investigation has concluded and has determined that the unit does not contain both CCR and liquids and therefore does not meet the definition of a Legacy CCR surface impoundment. Basin Electric would place the notification in the facility's operating record as required by § 257.105(k)(3).

1.3 Extension Report Requirements

The Legacy Rule applicability extension report (extension report) consists of three parts. First, the extension report must include general identifying information about the potential legacy impoundment, including the name associated with the unit, and information about the location of the unit at the facility. This information is same as the first three elements of the applicability report under § 257.100(f)(1)(i)(A) through (C). Second, the extension report must include a statement by the owner or operator that available information does not provide a sufficient basis to determine that the inactive impoundment contained free liquids on or after October 19, 2015. Finally, the applicability extension report must contain a written field investigation work plan. The purpose of this plan is to describe the approach the owner or operator intends to follow to determine whether the inactive impoundment contains free liquids. This approach will require monitoring to occur after the second applicability extension expires and will be conducted during the third and final extension.

2 General Information Requirements

Following a restatement of the regulatory text, each requirement is addressed in *italics.*

2.1 Owner Contact information

§ 257.100(f)(1)(i)(A). The name and address of the person(s) owning and operating the legacy CCR surface impoundment with their business phone number and email address.

The WJN disposal site is owned by Basin Electric Power Cooperative, 1717 East Intestate Avenue, Bismarck, ND. Basin Electric Power Cooperative's business phone number is 701.223.0441. Basin Electric Power Cooperative's corporate email address is webeditorbepc@bepc.com.

2.2 CCR Surface Impoundment Name

§ 257.100(f)(1)(i)(B). The name associated with the legacy CCR surface impoundment.

The name commonly associated with the legacy CCR surface impoundment is William J. Neal ash pond disposal site.

2.3 Location

§ 257.100(f)(1)(i)(C). Information to identify the legacy CCR surface impoundment, including a figure of the facility and where the unit is located at the facility, facility address, and the latitude and longitude of the facility.

The facility is located south and west of the intersection of US Highway 52 and 14th Ave N in Velva, ND, Latitude 48.026647 N, Longitude 100.885697 W. Figure 1 shows the general location of the facility.

3 Owner/Operator Statement Requirements

Following a restatement of the regulatory text, each requirement is addressed in *italics.*

§ 257.100(f). A statement by the owner or operator that to the best of their knowledge or belief, existing and available information does not provide a sufficient basis to determine that the unit contained free liquids on or after October 19, 2015.

3.1 Statement

I, Troy Tweeten, have personally examined and am familiar with the information submitted in this applicability extension report and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. To the best of Basin Electric Power Cooperative's knowledge or belief, as current owner of the William J. Neal Station ash pond disposal site, existing and available information does not provide a sufficient basis to determine that the unit contained free liquids on or after October 19, 2015.

Troy L. Tweeten
Senior vice president of Generation

October 24, 2025
Date

4 Field Investigation Workplan

The required elements of the WJN field investigation work plan are discussed below. Following a restatement of the regulatory text, each requirement is addressed in *italics.*

4.1 Site Characterization Approach

§ 257.100 (f)(1)(iii)(3)(i). A detailed description of the approach to characterize the physical, topographic, geologic, hydrogeologic, and hydraulic properties of the CCR in the unit and native geologic materials beneath and surrounding the unit, and how those properties will be used to investigate for the presence of free liquids in the CCR unit.

In general, Basin Electric will use the existing site-specific information including historic aerial photographs, maps, soil boring logs, soil boring samples, monitoring well installation data, and other geologic and hydrogeologic site information to inform the preparation of a Conceptual Site Model (CSM) for the WJN ash disposal site. Preparation of the CSM will also require additional field efforts. Basin Electric intends to utilize direct measurements and observations which enable the identification or measurement of free liquids in CCRs. In a groundwater context, standard piezometers and monitoring wells are common tools used for the direct measurement of water levels in the saturated zone. The presence of free-standing water in a well or piezometer is a direct indicator of free liquids which have drained from pore spaces into the boring under ambient pressures and temperatures. Depending upon findings, additional efforts may be made to confirm the presence of free liquids in an area.

In 2024, Basin Electric installed six piezometers around the perimeter of the site to determine the elevation of the local water table. Two borings advanced through perimeter berms were also completed. While current groundwater elevation data appears to indicate the piezometric surface is below the elevation of CCRs in the closed surface impoundment, Basin Electric installed 22 additional piezometers into and through the CCRs in the impoundment to determine the presence or absence of free liquids. To date, a series of four water level measurements have been completed in the newly installed piezometers. The additional piezometers, along with piezometers installed in 2024 and historic soil boring and monitoring well installation records will be integrated into a new CSM. No other CCR Unit instrumentation or monitoring devices are present at the site at this time.

4.2 Methods and Tools

§ 257.100 (f)(1)(iii)(3)(ii). A detailed description of the methods and tools that will be employed to determine whether the inactive impoundment contains free liquids, the rationale for choosing these methods and tools, and how these methods and tools will be implemented, and at what level of spatial resolution at the CCR unit to identify and monitor the presence of free liquids.

The use of piezometers or monitoring wells to determine the presence of free liquids appears to be appropriate for the site. Accordingly, Basin Electric's field investigation included the extensive use of piezometers.

Site field work included the drilling and installation of 22 interior piezometers (through CCR material) at a rate of approximately one piezometer per half-acre as depicted in Figure 2. The driller used a 7822DT GeoProbe™ to collect continuous sample core in 5' intervals utilizing direct-push technology. A geologist/engineer logged the soil and observed the drilling and determined piezometer screen depth. Samples of solids (CCRs and native soils) were collected at 2.5' intervals and retained for future laboratory analysis, if deemed necessary. Wells were 1" diameter PVC with 10' well screens. Sand was placed around and above the well screen (as applicable) and bentonite seal was placed above the sandpack to ground surface.

If there are any free liquids in the pore spaces around the piezometer screen, it should drain into the piezometer and the water level in the standpipe will rise to a level related to the level of saturation in the pore spaces. As the wells are quite small in diameter, the findings will be reviewed to determine if additional confirmation is necessary.

4.3 Groundwater elevation determination

§ 257.100 (f)(1)(iii)(3)(iii). A detailed description of how groundwater elevations will be determined, and at what level of spatial resolution, in relation to the sides and bottom of the CCR unit and how any interaction of the groundwater table with the CCR unit will be evaluated, and at what level of spatial resolution.

In 2024, Basin Electric installed six piezometers around the perimeter of the site to determine the elevation of the local water table. Two borings advanced through perimeter berms were also completed. Water level measurements in the site perimeter piezometers to capture potential seasonal effects are ongoing. Current groundwater elevation data appears to indicate the piezometric surface around the site perimeter is below the elevation of CCRs in the closed surface impoundment.

After the top of casing (TOC) for each well has been surveyed to 0.1-foot accuracy, groundwater elevations will be determined manually, using an electric water level tape by field personnel. The site has a small footprint and the anticipated number of measuring points (six perimeter piezometers and 22 piezometers within the limits of in-place CCRs) allows for efficient field efforts. Accordingly, the water level measurements would be taken in a relatively narrow time window and would provide a point-in-time snapshot of water levels at WJN.

4.4 Stormwater evaluation

§ 257.100 (f)(1)(iii)(3)(iv). A plan for evaluating stormwater flow over the surface of the unit, stormwater drainage from the unit, and stormwater infiltration into the unit and how those processes may result in the formation of free liquids in the CCR unit. This plan must include a current topographic map showing surface water flow and any pertinent natural or man- made features present relevant to stormwater drainage, infiltration and related processes.

Stormwater flow and direction were determined utilizing a one-foot contour interval contour map of the site and surrounding area as depicted in Figure 3. During closure, Basin Electric consolidated waste into

an approximately 16-acre area located in the eastern portion of the former pond location. Basin Electric installed an engineered cover system including an 18-inch-thick compacted clay layer overlain by an additional 18 inches of cover soil. Climatic conditions (relatively low local precipitation, coupled with high evapotranspiration rates) tend to diminish the likelihood of stormwater infiltration. Further, the robust design and thickness of the cover system and site grading to promote positive drainage both function to greatly reduce the infiltration of stormwater.

Utilizing EPA's HELP Model, the site-specific conditions discussed above will be input to estimate infiltration at the site. The one-foot contour map will be reviewed to identify areas that could be interpreted to collect or accumulate stormwater. Finally, the contour map will undergo ground-truthing during this extension via visual inspection, focusing on evidence of erosion or stormwater ponding.

4.5 Estimated Timeline

§ 257.100 (f)(1)(iii)(3)(v). An estimated timeline to complete the workplan and make a determination if the CCR unit contains free liquids.

Basin Electric implemented the field work plan in early May 2025 and will continue through the year to determine if there are seasonal variations in groundwater elevations. Site drilling and piezometer installation were completed the week of May 5, 2025. After piezometer installation, water levels will be obtained on a periodic basis for at least six months in order to observe any seasonal fluctuations in the potentiometric surface. As this effort will take additional time, this is the third and final of three potential extension requests that may need to be prepared and posted to Basin Electric's publicly available CCR compliance data website. It is anticipated that by the end of this six-month extension additional clarity on the CCR Legacy Rule and the definition of free liquids will be provided by EPA.

4.6 Interpretation of Results

§ 257.100 (f)(1)(iii)(3)(vi). A narrative discussion of how the results from implementing the workplan will determine whether the unit contains free liquids specified.

If there is any free liquid in the pore spaces in CCRs around the piezometer screen, it will drain into the piezometer and the water level in the standpipe will rise to a level related to the level of saturation in the pore spaces. In essence, the water level in the piezometer is a direct measure of the readily separable liquids in the vicinity of the piezometer and will provide direct evidence of the presence of free liquids. EPA has indicated it intends to make corrections and revisions to the Legacy Rule, which may impact definitions, interpretations, and ultimately, the Legacy Rule applicability determination.

4.7 Anticipated Problems

§ 257.100 (f)(1)(iii)(3)(vii). A narrative discussion describing any anticipated problems that may be encountered during implementation of the workplan and what actions will be taken to resolve the problems, and anticipated timeframes necessary for such a contingency.

The direct-push drilling method was able to penetrate well-indurated layers of CCRs, when present at the site. The initial response was to be to offset and attempt to penetrate at 5-10' away from initial boring. The drilling method would then be modified, using GeoProbe™ auger attachments. Should additional field data be collected during this extension, a larger hollow-stem auger (HSA) rig would be utilized to

complete the borings. It is anticipated that a HSA rig could be mobilized to the site within 30 days of determining the need. A test pit or open excavation may also be utilized in certain areas if appropriate.

4.8 Engineer Certification

§ 257.100 (f)(1)(iii)(3)(viii). The owner of the CCR unit must obtain a written certification from a qualified professional engineer stating that the field investigation work plan meets the requirements of paragraph (f)(1)(iii)(A)(3) of this section.

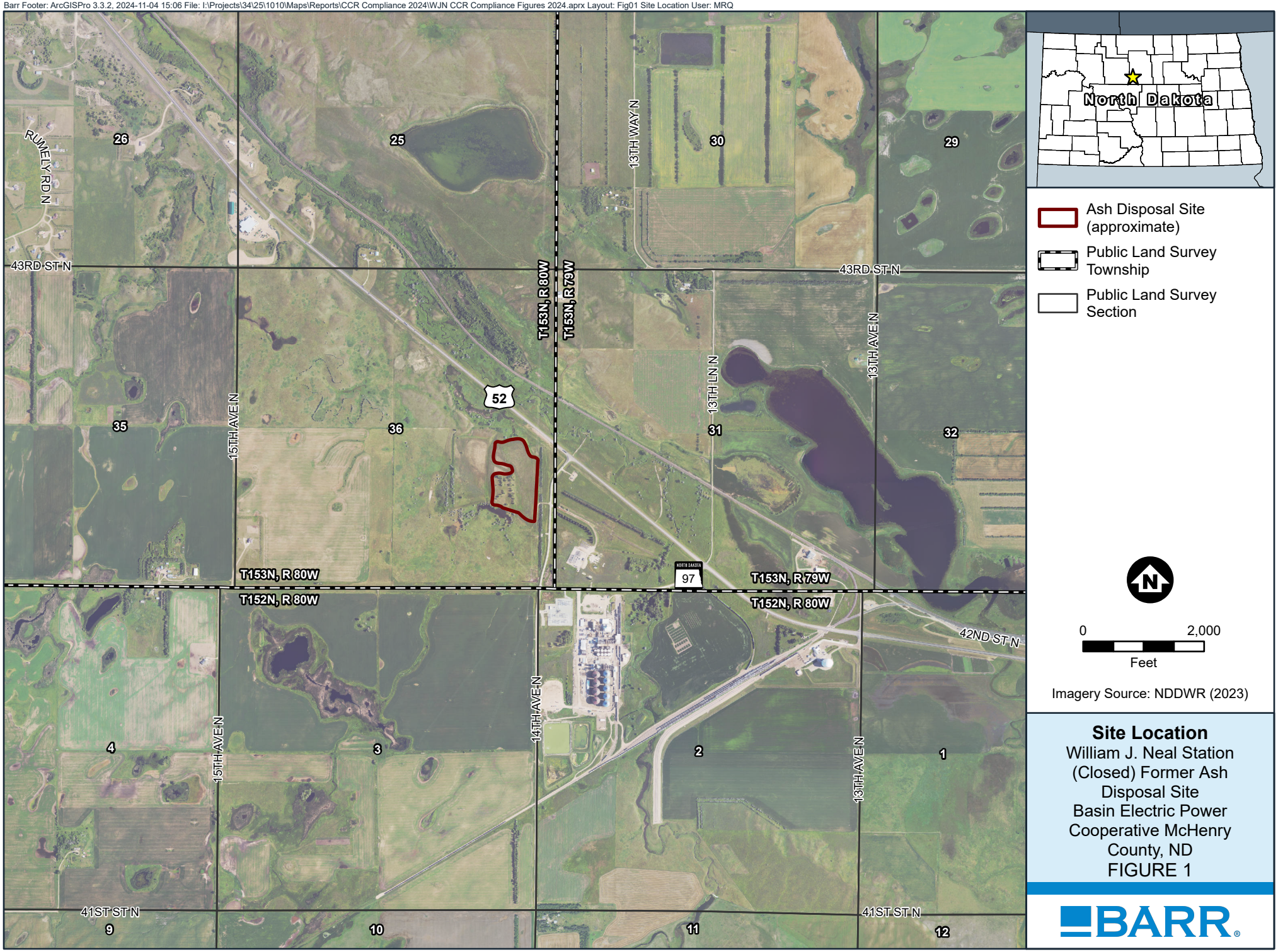
Please see qualified professional engineer certification at the beginning of this report.

Figures

Figure 1

Site Location Map

Barr Footer: ArcGISPro 3.3.2, 2024-11-04 15:06 File: I:\Projects\34\25\1010\Maps\Reports\CCR Compliance 2024\WJN CCR Compliance Figures 2024.aprx Layout: Fig01 Site Location User: MRQ



Site Location
William J. Neal Station (Closed) Former Ash Disposal Site
Basin Electric Power Cooperative McHenry County, ND
FIGURE 1

BARR

Figure 2

Proposed Piezometer Locations

Barr Footer: ArcGISPro 3.3.2, 2025-04-21 10:09 File: I:\Projects\34\25\1010\Maps\MISC\20250421_Proposed_Boring_Locations\20250421_Proposed_Boring_Locations\20250421_Proposed_Boring_Locations.aprx Layout: Fig01 Proposed Boring Locations User: MRQ

Ash Disposal Site (approximate)

Major Highway

5-foot Contour

1-foot Contour

Proposed Boring Location

Notes:
Elevation data derived from 2017 LiDAR data, downloaded from the ND Dept. of Water Resources LiDAR Dissemination MapService.

N

0 200

Feet

Imagery Source: NDDWR (2023)

Proposed Boring Locations
William J. Neal
Ash Disposal Site
Basin Electric
Power Cooperative
McHenry County, ND

FIGURE 2

BARR

Figure 3

Stormwater Flow Map

Ash Disposal Site (approximate)

Major Highway

5-foot Contour

1-foot Contour

Inferred Water Flow Direction

Notes:
Elevation data derived from 2017 LiDAR data, downloaded from the ND Dept. of Water Resources LiDAR Dissemination MapService.

N

0 500
Feet

Imagery Source: NDDWR (2023)

Surface Water Flow
William J. Neal Station
(Closed) Former Ash Pond Disposal Site
Basin Electric Power Cooperative
McHenry County, ND
FIGURE 3

BARR

Appendix A

EPA Memorandum

OFFICE OF LAND AND EMERGENCY MANAGEMENT

WASHINGTON, D.C. 20460

July 10, 2025

MEMORANDUM

SUBJECT: Memorandum: Considerations for the Identification and Elimination of Free Liquids in Coal Combustion Residuals (CCR) Surface Impoundments and Landfills (40 CFR Part 257, Subpart D). Docket ID No. EPA-HQ-OLEM-2020-0107-1068

FROM: Steven Cook, Principal Deputy Assistant Administrator STEVEN COOK Digitally signed by STEVEN COOK Date: 2025.07.10 15:02:16 -04'00'

TO: Regional Land, Chemical, and Redevelopment Division Directors

The EPA included a document titled, "*Memorandum: Considerations for the Identification and Elimination of Free Liquids in Coal Combustion Residuals (CCR) Surface Impoundments and Landfills (40 CFR Part 257, Subpart D) April 19, 2024"* ("Free Liquids Memorandum") in the docket for the final Legacy CCR Surface Impoundments and CCR Management Units Final Rule on May 8, 2024. EPA-HQ-OLEM-2020-0107-1068. The Free Liquids Memorandum was drafted in response to public comments received on the proposed rule (88 Fed. Reg. 31982, May 18, 2023), to provide regulated entities with information on available methods for determining whether free liquids are present in CCR units, as required under the regulatory performance standards. *See*, 40 C.F.R. §§ 257.53, 257.102(d).

Since publication of the final rule, the EPA has received information that the Free Liquids Memorandum has caused confusion, including among the regulated community. EPA understands that some have interpreted the Free Liquids Memorandum to create new requirements or modify existing requirements that must be met to comply with the federal CCR regulations in 40 C.F.R. part 257. Others have indicated that they have treated it as setting a performance standard and incorporated it into specifications for work to be performed. To address this confusion, the EPA is issuing the following clarification.

The Free Liquids Memorandum does not impose legally binding requirements on the EPA, states, or the regulated community. It is not a regulation, nor does it augment or modify the existing regulations in 40 C.F.R. part 257. States and regulated entities are not required to adopt any of the methods discussed in the Free Liquids Memorandum or to follow any of the other statements contained therein. States and regulated entities must comply only with applicable regulatory and statutory requirements.

Given the confusion caused by the Free Liquids Memorandum, it should not be relied upon or used by EPA personnel to carry out the Agency's work to implement the regulatory requirements of this program. Additionally, the EPA intends to provide further clarification on these issues at a later time.

cc: Mallory Richardson, Principal Deputy Associate Administrator
Office of Policy

Carolyn Hoskinson, Office Director
Office of Resource Conservation and Recovery

Andrew Baca, Deputy Office Director
Office of Resource Conservation and Recovery