



Public Service Commission

State of North Dakota

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April 11, 2023

North Dakota Department of Water Resources
C/O Project Review
1200 Memorial Highway, Dept 770
Bismarck, ND 58504
dwrprojectreview@nd.gov

Dear Project Review Team:

The Reclamation Division has received BNI Coal, Ltd.'s application for Revision No. 59 and Renewal No. 8 to Surface Coal Mining Permit BNCR-8106 for the Center Mine. Among other things, this revision updates the Surface Water Management Plan narrative regarding permanent structures. Although we don't anticipate these updates having any effect on previous decisions, please review the enclosed proposed revisions to the Surface Water Management Plan (Section 4.6) and provide us with any comments by May 11, 2023.

If you have any questions, please contact this office.

Sincerely,

A handwritten signature in blue ink that reads "Zanna Brinkman".

Zanna Brinkman
Director
Reclamation Division

Enclosure

Center Mine\Permits\BNCR - 8106\Revisions & Renewals\No. 59 & Ren 8\Advsry_rvw_rqst_ltr_4-11-23



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April 11, 2023

David Glatt
Dept. of Environmental Quality (DEQ)
4201 Normandy Street
Bismarck, ND 58503-1324
dglatt@nd.gov

Dear Mr. Glatt:

The Reclamation Division has received BNI Coal, Ltd.'s application for Revision No. 59 and Renewal No. 8 to Surface Coal Mining Permit BNCR-8106 for the Center Mine. Among other things, this revision updates the Surface Water Management Plan narrative regarding permanent structures. Although we don't anticipate these updates having any effect on previous decisions, please review the enclosed proposed revisions to the Surface Water Management Plan (Section 4.6) and provide us with any comments by May 11, 2023.

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Zanna Brinkman
Director
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Surface Water Management Plan

Watershed boundaries for the permit area are shown on maps 13 & 13A. These maps and map 3 show the activity that will affect the watersheds in the permit area.

Pond locations, permanency, drainage area, runoff and peak discharge rates, sediment yields and schedules for detailed design plans are included in Appendix N and shown on maps 13, 13A, 15C & 15D. Ponds have been constructed and designed using SCS methods under the direction of and certified by a qualified registered professional engineer.

The embankment is staked according to the design. Once the topsoil is removed, the "core trench or key" is excavated and then backfilled with suitable material. When the fill material reaches a specified elevation, a trench is cut through it for installation of the principle spillway. It is backfilled with suitable material and compacted with the aid of a portable, hand operated tamper. Once this operation is completed, scrapers and patrols compact the embankment to a uniform finish and density. The embankment target density is not less than 90 % standard proctor. Finally, the embankment areas which are not inundated with water at normal operating levels are seeded and mulched to help prevent erosion of the surfaces.

Design & information sheets utilize SCS methods for computing sediment storage volumes, design runoff volumes, principal spillway designs and emergency spillway designs. The USLE was used in determining the sediment storage required:

R=rainfall factor (50) from Wischmeier, 1962;

C = 0.17 (from table 26 of the SCS Tech guide and ARS grazing study at the Center Mine and is base as follows: year 1 = 1 worst condition, year 2 = 0.24, year 3 = 0.15, year 4 & 5 = 0.09, year 6,7 & 8 = 0.043, year 9 & 10 = 0.011.

The sum of these values divided by 10 year design span = a C factor of 0.17. It is more realistic than the suggested value of 0.45. P = 1.0.

Permanent & temporary ponds have been designed to comply with 69-05.2-16-09. The intended use of temporary impoundments is to comply with existing regulations of surface water quality and associate requirements. Design criteria are found in Appendix N.

Discharges from the ponds are outlined later in this section. The ponds not designated as permanent will have the fill removed, the materials disposed of in accordance with PSC procedures, the area shaped, seeded with the appropriate mix and mulched at 1-2 tons per acre.

Dugouts in the undisturbed portions of permit area are utilized as necessary in controlling surface water runoff on the upstream side of the pits. They are positioned in the drainages to intercept and collect surface water runoff before it can run over the highwall and into the pit. They are designed to accommodate the runoff from their associated drainage areas and are temporary measure for drainage control. As the pits progress, new dugouts are constructed as needed. During construction, SPGM are removed and saved.

There are currently 22 constructed & operating ponds in or adjacent to BNCR 8106. Designs of ponds not in this permit were approved under Permit 37 amendment 1, Permit 37 revision 1 and the Shop Site Water Plan.

Ponds, which have been designed, approved and constructed since the original, permit application and approval of BNCR 8106 are as follows:

<u>Permit</u>	<u>Revision No.</u>	<u>Pond No.</u>
37	6	25-5
37	7	36-2
37	8	35-7
37	9	25-2 2nd cell
37	10	35-9
8106	5	25-4
8106	6	35-8
8106	12	26-4

Copies of the designs of ponds in Permit 37 can be found in Appendix N.

Pond 26-4 was designed & approved by the PSC. It was renumbered from that designed on the original plan from 25-6 to 26-4. This pond also replaces ponds 25-10 & 25-7. Pond 26-4 was constructed during the spring of 1986. Ponds 26-2, 26-3 and 35-9 have been mined through and are shown on Map 13 to show their last pertinence. The drainage from pond 35-9 will drain west into the wetlands in section 34, see Section 4.10 of BNCR-8901. Upper cells of 25-5, 25-8, 25-9 and 36-2 have been reclaimed. Preliminary reclamation of Pond 26-4 began in 1990 and is projected to be completed in 1991. Preliminary design information on pond 35-3 is found in Appendix N. This pond was constructed in April and May, 1992.

None of the ponds in this application meet or exceed the size or other criteria of MSHA, 30 CFR 77.216 (a) or 69-05.2-16-09-17.

A typical pond sheet is shown on Map 14. As can be seen on this sheet, there are 2 basic water drawdown systems that will be used with our ponds - siphons and canal gates. Under normal conditions, the siphon valves will be closed to control any discharges. When testing indicates the water can be discharged, the siphons are opened, the water is discharged and monitored according to our NDPDES permit.

Under normal conditions, the canal gate drawdown devices will be closed to prevent discharges. They will be opened when the water has attained the quality necessary to meet our NDPDES permit standards. Ponds will be dewatered as soon as possible after an event so that storage will be available for the next runoff event. In general, the time from when the last runoff enters a settling pond to when it is discharged will not exceed 10 days except in cases when winds are high, which causes the water to become dirty.

Double cell design incorporates a primary settling cell of the approximate volume of the sediment anticipated to flow into the pond during the time the drainage area is spoils. The primary cell will

theoretically trap and hold the sediment from the area. As reclamation proceeds the cell will fill with sediment and prevent the majority of the sediment from reaching the secondary cell. This would theoretically preclude any necessary pond cleanout of the main pond as the sediment level in the main pond should not reach 60% limitation. During removal and reclamation, the primary cell would be reclaimed.

Sediment ponds are regularly inspected during the monitoring of the ponds and every quarter. Any items noted during the inspections are checked and actions initiated to resolve the problems. Maintenance is ongoing.

Erosion is controlled with straw bale dikes, small earthen dikes, seeding and mulching.

It is difficult at this time to propose a schedule regarding removal of non-permanent ponds.

There are no temporary coal processing waste disposal areas or coal processing waste dams or embankments in the permit area.

Sediment will be removed in accordance with 69-05.2-16-09. Sediment elevation is marked a steel post with a white top. Once the sediment level reaches the base of the post, the sediment will be removed to maintain adequate storage volume for the design event.

~~The landowner has requested that Pond 31-1 remains as a permanent structure. We intend to reshape the upstream slope, remove a portion of the existing principle spillway and construct an open channel spillway. Material will be placed in horizontal layers not exceeding a thickness of 6" and compacted to a minimum of 90% of the maximum dry density as determined by the methods described in ASTM: D 698. Available topsoil will be saved and respread after construction. Disturbed areas will be seeded with pubescent wheatgrass at the rate of 80 pure live seeds per square foot. The disturbed areas will then be mulched at the rate of 1-2 tons per acre and the mulch will be crimped into the soil surface. Sheets 40 & 41 contain construction details for Pond 31-1.~~

~~After the pond has been upgraded, we believe that Pond 31-1 will have adequate size for its permanent use as a stock pond. It will provide adequate safety and access for maintenance and water users. A water yield analysis is included in Appendix N and indicates that the water level will be reasonably stable. We expect that the water quality will remain similar to the quality of the water presently flowing into the pond and permanently suitable for watering cattle. Discharges from the impoundment will not exceed the quality limitations imposed by the North Dakota Pollutant Discharge Elimination System or degrade the water quality below the standards established by state law.~~

The landowners have requested that Ponds 23-2, 23-6, 25-1, 25-2 lower cell, 25-3, 25-9, 31-1, 35-1, 35-3, 35-7 and 36-2 be retained as permanent structures. Pond 31-1 has had final bond release on it. Bond Release 4 to BNCR-8106 was approved on October 25, 2002. Ponds 23-6, 25-1, 25-2 lower cell, 25-3, and 31-1 have been retained as permanent structures and have been bond released. Pond 35-1 will remain as a developed water resource. Prior to bond release, Pond 35-1 will be evaluated to ensure that it meets the post mine use of a DWR. A permit revision requesting their approval as a permanent structure will be submitted prior to submission of a bond release application for an area containing a proposed permanent structure. The permit revision will contain the

determination if the impoundment meets the design standards for a permanent structure, NDAC 69-05.2-16-12, and if any modifications are necessary to meet those standards. Additionally, the pond designs must be submitted to the ND Department of Water Resources ~~Quality~~ for approval prior to permit revision approval.

~~Pond 31-1 has had final bond release on it. Bond Release 4 to BNCR-8106 was approved on October 25, 2002.~~

Revision 46

As Bond Release #6 to Permit BNCR-8106 has been proposed ponds 25-2 and 25-3 potentially could be released in 2008 from bond. At that point under NDAC 69-05.2-16-04(1)(c) the commission may allow the use of other sediment control measures for primary sediment control, since existing stockpiles are still located west of pond 25-3. The potential disturbed drainage area of the stockpile area following reclamation would be extremely small and erosion could be controlled easily by a best management practice or combination of best management practices such as, immediate seeding, mulching, crimping, and/or sediment fences. Surrounding vegetation has very high basal cover, productivity, and plant vigor while gentle slopes surround the landscape. With the stabilized vegetation, minimal slopes, and BMP's the existing ponds are not needed to meet future effluent limitations.

Revised 11-27-07 Revision 46

Revision 48

Permanent Impoundments

Bond Release #7 To Permit BNCR-8106 includes approving Ponds 23-6, 23-7, 25-2, and 25-3 as permanent impoundments. Routing Calculations were performed for the Ponds to check for compliance with the requirements of NDAC 69-05.2-16-12. The existing ponds contain a primary and emergency spillway. The primary spillway for Ponds 23-6, 23-7, and 25-2 consists of a drop inlet with a 36-inch diameter CMP riser pipe and 12-inch diameter CMP outlet pipe. Pond 25-3 contains a drop inlet with a 36-inch diameter CMP riser pipe and 24-inch diameter CMP outlet pipe. Connected to each riser pipe is a 12-inch CMP culvert and attached canal gate, used for pond dewatering. Under normal conditions the canal gates remain closed and are only opened to discharge water after a rain event, and once the water has attained the quality necessary to meet our NDPDES permit standards. Proposed as part of the approval of the permanent impoundments, these canal gates will be removed from each ponds drop inlet structure so the culverts will remain open keeping the permanent pool elevation lower than the top of the drop inlet structure. The dewatering devices were not included in the routing calculations, but will only assist the ability for the ponds to contain and discharge runoff from large precipitation events. The primary spillway for Pond 25-2 is proposed to be sealed with grout, and therefore was removed from the routing calculations. It was found that the primary and emergency spillways of Ponds 23-7, 25-2, and 25-3, under existing conditions, were not able to discharge the runoff from a fifty-year, six hour precipitation event as required by NDAC 69-05.2-16-09(9) for permanent impoundments. The proposed modifications to the spillways of Pond 23-7 in order to meet the requirements are as follows:

- The primary spillway (top of the drop inlet riser pipe) will be lowered 2.17-feet.
- The emergency spillway elevation will be lowered 1.75-feet and the bottom width will be widened to 20-feet with 6H:1V side slopes.

The proposed modifications to the spillways of Pond 25-2 in order to meet the requirements are as follows:

- The primary spillway, including the outlet pipe, dewatering pipe, and riser pipe, will be sealed shut with grout providing no runoff discharge. The pipe will be sealed by means of the pressure grout method, using grout achieving a minimum 28 day compressive strength of 150 psi.
- The emergency spillway elevation will be lowered 5.5-feet with a bottom width of 10-feet and 4H:1V side slopes.

The proposed modifications to the spillways of Pond 25-3 in order to meet the requirements are as follows:

- The primary spillway (top of the drop inlet riser pipe) will be lowered 1.91-feet.
- The emergency spillway elevation will be lowered 2.75-feet and the bottom width will be widened to 25-feet with 6H:1V side slopes.

Excavated material, including Topsoil and Subsoil, resulting from spillway modifications will be removed from the impoundment sites and hauled to the mine site where the material will be stored on the appropriate existing stockpiles or directly respread. These modifications allow the spillway combinations to handle the design precipitation event and still meet the minimum 1-foot of freeboard requirement at the pond's peak elevation. Routing calculations showed that Pond 23-6 contains enough storage capacity to allow the existing primary and emergency spillways to handle the runoff from a fifty-year, six-hour precipitation event without any modifications other than removal of the attached canal gate. It will be proposed that the bottom and side slopes of any modified emergency spillway will be lined with random rip rap which will assist in protection from erosion. The discharge pipe outlets will also be rip-rapped if not already in place. Attached in Appendix N is the following information for each pond: routing calculations, elevation-area-capacity curves, stage-discharge curves, emergency spillway velocity calculations, annual yield calculations, and a map showing watershed area, existing conditions, and proposed modifications.

Revised 11/15/10 Revision 48

Revisions 51 and 56 Pond 32-1 Modifications

As part of Revision 51, Pond 32-1 was proposed to be modified to accommodate a total drainage area of 71.7 acres. The additional acreage would control runoff from land which will be disturbed due to the construction of Access Road Section C within Permit BNCR 1101. Plate 13A was added to depict the new drainage area. Additionally, as part of the pond modification, the topsoil pile B32T01 would be relocated to expand the pond to the southwest and the 30 inch culvert which currently passes water through the embankment that will be utilized will either be plugged with grout or removed entirely. The modification Pond 32-1 as part of Revision 51 also proposed raising the existing principle spillway elevation from 1958.8 feet to 1961.0 feet, the top of the embankment elevation from 1962.3 feet to 1964.0 feet, and establishing the new emergency spillway elevation to 1961.5 feet. The above described modifications to Pond 32-1 were approved as part of Revision 51, but are being retracted with Revision 56 as part of approval of Permit BNCR 1101, which contains Access Road Section C. During the BNCR 1101 approval process it was concluded that the amount of disturbed runoff from the watershed of Access Road Section C did not warrant the additional disturbance required for the modification of Pond 32-1. It was therefore determined that the proper way to control runoff from the access road would be through various Best Management Practice techniques. These Best Management Practices generally include such items as seeding, mulching, bale dikes, silt fences, rock checks, and sumps. Although the approved modifications to Pond 32-1, including Plate 13A, from

Revision 51 have been retracted they have been retained within the permit to provide additional information for Pond 32-1's current condition.

Revised 8/17/16 Revision 56

Dewatering procedures

When the water level rises above the dead water storage elevation, the water will be tested. If the test results indicate that the water quality meets the discharge limits shown on the NDPDES permit, the water will be discharged and a discharge sample will be collected for testing. If the results of tests performed on the pre-dewatering sample indicate that the effluent standards have not been met, a new sample will be collected after a period of time is passed and the pond water meets the limits for discharge. This process will be repeated until the tests indicate the water meets the discharge limits. An effort will be made to dewater the pond within 10 days following a precipitation event. Occasionally, high winds or continuing runoff keep the water quality from meeting the discharge standards and further treatment is necessary. Further treatment may consist of adding flocculants or allowing additional time for the water to remain in the pond. This judgment will be made on a case by case basis. As specified in NDAC 69-05.2-16-05, the commission will be notified within 5 days when the results of tests conducted on a discharge sample indicate noncompliance with a permit condition or applicable standard. A copy of the analytical results will be included with the written notice of noncompliance.

Certification Statements

All pond designs, design modifications, and/or construction certifications associated with BNCR 8106 were completed by the following Registered Professional Engineers:

Alan M. Hurlbut P.E.	ND Registration Number <u>2192</u>
David A. Schouweiler P.E.	ND Registration Number <u>2152</u>
Stephen W. Hovey P.E.	ND Registration Number <u>2157</u>
Michael M. Heger P.E.	ND Registration Number <u>5969</u>
Jodey A. Houn P.E.	ND Registration Number <u>5635</u>